

Panasonic

Group Catalog

Connectors 2008-2009

**Panasonic**  
ideas for life

Group Catalog

# Connectors

2008-2009

- Narrow-pitch connectors
- I/O connectors
- Interface connectors
- Sockets for memory card
- Connectors for industrial equipment
- IC sockets

[www.mew.co.jp/ac/e/](http://www.mew.co.jp/ac/e/)



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Please contact .....

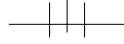
**Matsushita Electric Works, Ltd.**

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<http://www.mew.co.jp/ac/e/>




**Panasonic**

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**Foreign standards**

Mark	Description
	Certified by UL Standards
	Certified by CSA Standards
	Certified by TÜV Standards

For the foreign standard, refer to "STANDARDS CHART" on the end of catalog.

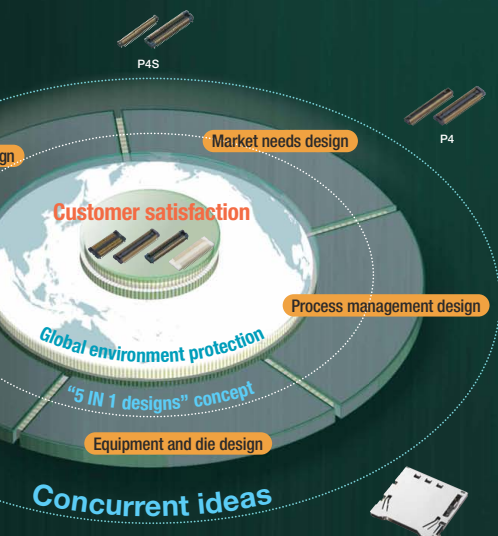


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# Customers first...

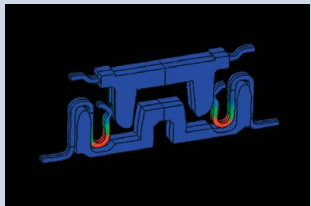
For our customers, we take an approach that is concurrent with each of our business units. From market needs design, evaluation technology, to market new design, evaluation technology, at the same time, we continually improve our market through quick and accurate information.



## Technology Development

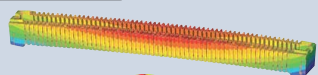
### Design Technology

Applying multi-faceted computer analyses that make use of our vast know-how, we develop highly reliable connectors that are ultra-miniature and able to withstand various environments.

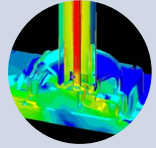


Contact stress analysis

Warping analysis for molded parts



Electromagnetic field analysis



### DESIGN

### Evaluation Technology

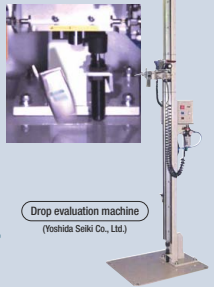
Through the implementation of new evaluation equipment and a company-wide R&D capability that comes with being a comprehensive electronic equipment manufacturer, we develop highly relevant evaluation technology that translates to speedy product development.



Insertion-removal testing machine testing mis-positioned card insertion in SD socket (mis-positioning correction function)  
(Joint research with Dr. Toshiro Higuchi of Tokyo University)



Flatness measuring device being used in the reflow state  
(Cores Co., Ltd.)

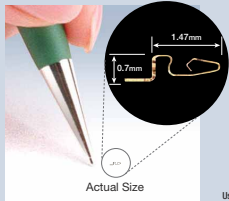


Drop evaluation machine  
(Yoshida Seiki Co., Ltd.)

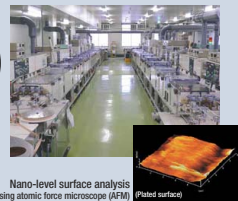
### EVALUATION

### Production Technology

Consistent quality starts with manufacturing. Working at the macron/nano level we develop optimal production equipment while also inventing energy-saving methods that support environmental preservation.



Metal processing technology at the micron level

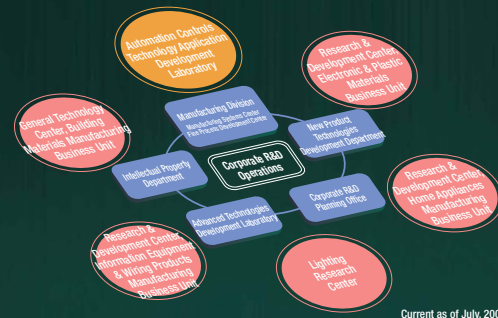


Nano-level surface analysis Using atomic force microscope (AFM) (Plated surface)



Energy-saving injection mold processing system  
Certificate of merit  
Certificate of good standing for plant energy management

### PRODUCTION



Current as of July, 2007

## Customers first...

business in a way that ensures  
 mental, economic and societal  
 work that connects leading-edge  
 information, we bring finished goods  
 new technologies through an  
 manufacturing, sales and  
 t the world.

## Environment and Global support

## Environmentally harmful substances

### RoHS Directive\* compliant.

connector tools, produced in or  
 the RoHS Directive, effective  
 of RoHS compliant products

our website:

Environment/

ed

ational Standards  
 all locations, the  
 al management

### Production factories

for zero emissions,  
 wastes. In October,  
 ant and  
 achieved the status

ed

ISO 9000 Series  
 3-principle quality



## GLOBAL NETWORK

Our production base consists of optimized production facilities located throughout Asia. Through a sales network that spans the entire world, we agilely deliver cutting-edge technology, products and information that are broad-ranging and to the point.

### China



Panasonic Electric Works  
 Automation Controls (Beijing)  
 Co., Ltd.

### Japan



Tsu Plant (Mie Prefecture)



Ise Plant (Mie Prefecture)



### Thailand



Panasonic Electric Works,  
 (Thailand) Ltd.



Panasonic Electric Works,  
 Khon Kaen Plant



Panasonic Electric Works,  
 (Ayuthaya) Ltd.

- ★ Manufacture base
- Selling base
- ▲ Resident Representative Office

Customers first...

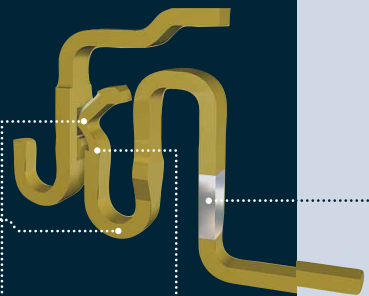
ons being sought after to s smaller devices and varied ability required of connectors Electric Works has developed h technology that will increase ge of environments.

High Reliability

TOUGH CONTACT

opping!  
struction improved  
nd twisting and  
to shock of dropping

provides the right amount of is made possible through our core technologies.



articles and flux!

contact reliability  
(foreign particles)

g part, contact pressure per pared to contacts up to now, n particles has increased. foreign particles before it

■ Evaluation example of plastic powder adhered on post contact surface



to edge contact • Improved after V notch passage • The improves contact reliability

V notched product

More effective in eliminating flux and foreign particles, and also more effective in keeping foreign particles from getting inside

■ F4 Contact Construction View



Same effect as V notch attained by double contact.

Korea: Registration of patent (Patent No. 531938)

Taiwan: Registration of patent (Patent No. I225323)

China and North America: Patent now under application.



Strong resistance to various environments  
**TOUGH CONTACT**

For Board-to-Board and Board-to-FPC Connection  
Narrow-pitch Connectors Series  
F4S, F4, P35S, P4S, P4, P5KL, P5KF, P5K, and P5KS

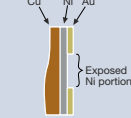


Tough against solder rise!

Anti-solder-rise efficiency increased due to Ni barrier

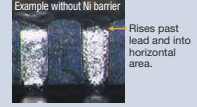
Exposed nickel is placed on mid part of socket contacts. This contact, while being ultra low in profile, prevents solder rise.  
• Influence of solder controlled in contact and contact spring parts.  
• Solder remains in the terminals and stable fillet mold is possible.

■ Exposed Ni barrier portion

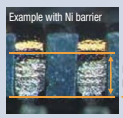


Cross section of the socket side contact

■ Solder rise after reflow



Solder paste coating conditions:  
Metal screen thickness: 120 μm; Open ratio 90% (solder amount 136% of recommended value)  
Reflow conditions:  
(lead-free solder conditions) temperature profile: 260°C peak temperature, atmosphere;  
N2 reflow (nitrogen concentration 1,000 ppm)



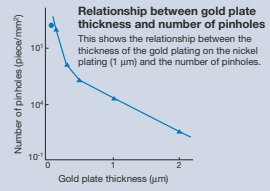
Ni exposure part  
Limit of solder rise.

Tough against corrosive gases!

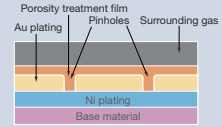
Improved resistance to corrosion by gas, etc., due to porosity treatment

This treatment consists of coating surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures the same contact reliability for thin gold plating as that of thick gold plating.

- Improvement in resistance to corrosion
- Improvement in insertion/ removal durability
- Improvement in contact reliability for digital signals

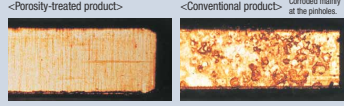


■ Plating technology (Porosity treatment technology)



■ Improvement of the corrosion resistance

Status of the post's contact after the sulfur dioxide test



Test conditions SO<sub>2</sub> concentration: 10±3 ppm, Humidity: 90 to 95% RH  
Temperature: 40±2°C Time: 145 hours

# Automation Controls Website

<http://www.mew.co.jp/ac/e/>

## Automation Controls Website



You can access the FAQ 24 hours a day. You can also send inquiries by e-mail.

**Sustainability**  
You can check the RoHS compliance of our automation control products by conducting a search or via our quick reference chart and environmental activities.

You can check discontinued products.



Current as of July, 2007

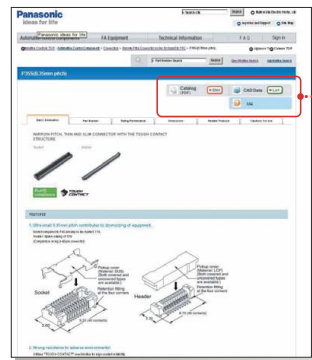
## Product pages

Each product category has its own front page on the website. A variety of search functions are available.

### Front page of connectors



### Product page



PDF catalogs and CAD data can be downloaded\*.  
\*Registration is required to download CAD data.

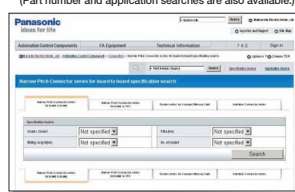
### Product list

Part Number	Description	Other Details
AKS1000	Signal Converter	...
AKS1001	Signal Converter	...

**Specifications are displayed by part number in an easy-to-read form.**  
(You can choose a product even if you only know its part number.)

### Specification search

(Part number and application searches are also available.)



Parameter	Value
Product Name	AKS1000 Signal Converter
Part No.	AKS1000
Product Type	Signal Converter
Product Description	...
Product Features	...
Product Dimensions	...
Product Weight	...
Product Price	...

# CONNECTORS

## Narrow Pitch Connector Series

### for board to board and for board to FPC

2-piece type narrow pitch connector for board to board connection with 1.2 to 14 mm mating height/board to FPC connection with 0.9 to 4.0 mm mating height. Pitch between terminals is 0.35 to 0.8 mm.



P21 to P123

## I/O Connector Series

Compact, low-profile I/O connector.



P124 to P148

## Interface Connector Series

Compact interface connector with compliance to all standards.



P149 to P174

## Socket Series for Compact Memory Card

Compact, highly reliable socket that supports media cards.



P175 to P202

## Connector for Printed Circuit for Industrial Equipment

2.54 mm pitch between terminals. Supports DIN and MIL standards.



P203 to P258

## IC Socket Series

Highly reliable socket that supports all IC cards.



P259 to P279


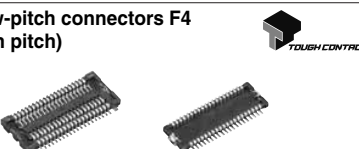


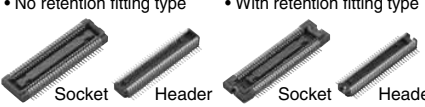
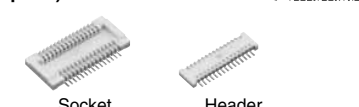
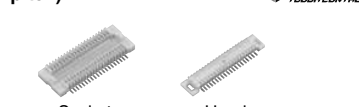

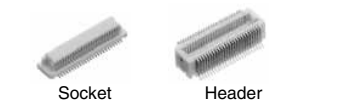
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Narrow-pitch connectors
I/O connectors
Interface connectors
Sockets for memory card
Connectors for industrial equipment
IC sockets
Information

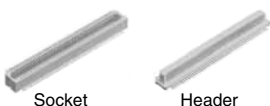
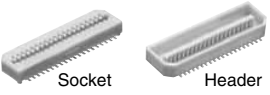
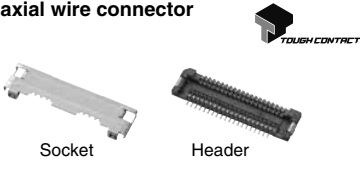







# SELECTOR CHART


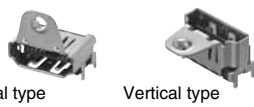
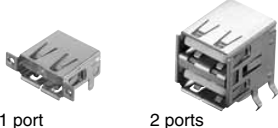

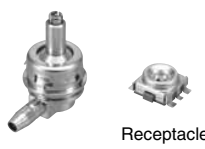
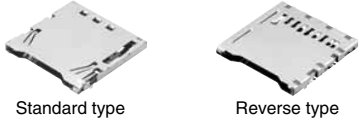


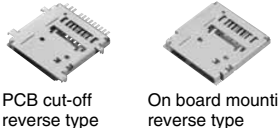
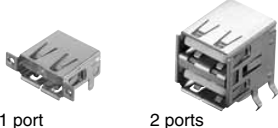
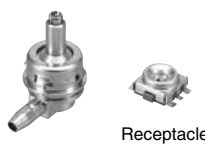
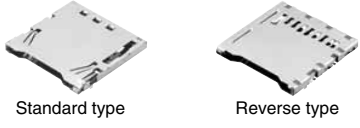
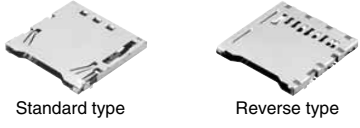


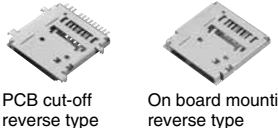
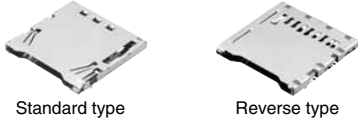


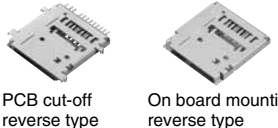
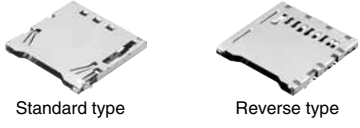


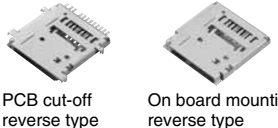
	Terminal shape and pitch	Product name	Features	Part No.	Page
Narrow-pitch connectors (Connector for board-to-FPC)	SMD 0.4mm	<b>Narrow-pitch connectors F4S (0.4mm pitch)</b> 	<ul style="list-style-type: none"> <li>Ultra low-profile connectors that form a board-to-FPC connection with 1.0 mm mated height.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Connectors for inspection are also available.</li> </ul>	AXT5•• AXT6••	P.27
		<b>Narrow-pitch connectors F4 (0.4mm pitch)</b> 	<ul style="list-style-type: none"> <li>Ultra low-profile connectors that form a board-to-FPC connection with 0.9 mm mated height.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> <li>Connectors for inspection are also available.</li> </ul>	AXK7L•• AXK8L••	P.34
Interface connectors	SMD 0.35mm	<b>Narrow-pitch connectors P35S (0.35mm pitch)</b> <b>New</b> 	<ul style="list-style-type: none"> <li>1.5 mm low-profile mated height</li> <li>Narrower pitch version of P4S Narrow-Pitch Connectors</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> <li>Connectors for inspection are also available.</li> </ul>	AXT1•• AXT2••	P.41
		<b>Narrow-pitch connectors P4S (0.4mm pitch)</b> 	<ul style="list-style-type: none"> <li>1.5 mm and 3.0 mm low-profile mated height</li> <li>P4 Narrow-Pitch Connectors now even slimmer.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> <li>Connectors for inspection are also available.</li> </ul>	AXT3•• AXT4••	P.49
Sockets for memory card (Connector for board-to-board and for board-to-FPC connection)	SMD 0.4mm	<b>Narrow-pitch connectors P4 (0.4mm pitch)</b> <ul style="list-style-type: none"> <li>No retention fitting type</li> <li>With retention fitting type</li> </ul> 	<ul style="list-style-type: none"> <li>1.5 mm, 2.0mm, 2.5 mm, 3.0 mm, 3.5 mm and 4.0 mm low-profile mated height</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> <li>Connectors for inspection are also available.</li> </ul>	AXK7•• AXK8••	P.60
		<b>Narrow-pitch connectors P5KL (0.5mm pitch)</b> 	<ul style="list-style-type: none"> <li>Low-profile connectors that connection with 1.2 mm mated height.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> </ul>	AXK5L•• AXK6L••	P.72
Connectors for industrial equipment	SMD	<b>Narrow-pitch connectors P5KF (0.5mm pitch)</b> 	<ul style="list-style-type: none"> <li>The mated height is the low-profile 1.5 mm and includes 2.0 mm and 2.5 mm.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction</li> <li>Pattern wiring possible on PC board below connectors.</li> <li>Connectors for inspection are also available.</li> </ul>	AXK5F•• AXK6F••	P.78
		<b>Narrow-pitch connectors P5K (0.5mm pitch)</b> <b>Narrow-pitch connectors P5KS (0.5mm pitch)</b> <ul style="list-style-type: none"> <li>P5K</li> <li>P5KS</li> </ul> 	<ul style="list-style-type: none"> <li>The mated heights for the P5K are 3.0 mm and 3.5 mm, and for the P5KS are 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 7.0 mm, 8.0 mm, and 9.0 mm.</li> <li>Strong resistance to various environments</li> <li><b>TOUGH CONTACT</b> construction.</li> </ul>	(P5K) AXK5•• AXK6••  (P5KS) AXK5S•• AXK6S••	P.86
		<b>Narrow-pitch connectors Floating type P5 (0.5mm pitch)</b> 	<ul style="list-style-type: none"> <li>The mated height is 5.0 mm.</li> <li>Can absorb a maximum deviation of 0.3 mm in mounting when two sets of connectors are used.</li> </ul>	AXN5•• AXN6••	P.97
IC sockets					
Narrow-pitch connectors (Connector for board-to-board)					



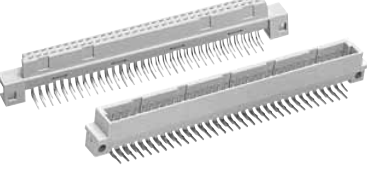
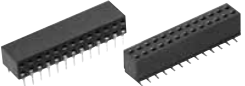
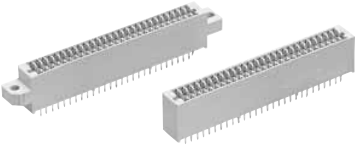

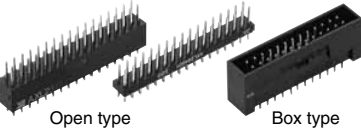

Information

# Selector Chart


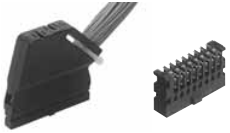
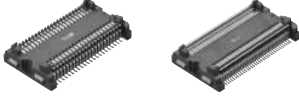

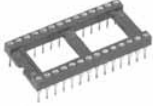
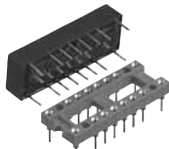

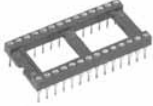
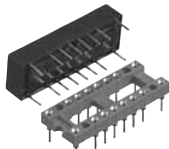
	Terminal shape and pitch	Product name	Features	Part No.	Page	
Narrow-pitch connectors (Connector for board-to-board)	SMD 0.6mm	<b>Narrow-pitch connectors P6S (0.6mm pitch)</b>  Socket      Header	<ul style="list-style-type: none"> <li>The mated heights are 4.0 mm, 5.0 mm, 6.0 mm, 7.0 mm, 8.0 mm, and 9.0 mm.</li> <li>Bellows type contact structure resist vibration and impact.</li> </ul>	AXK3S •• AXK4S ••	P.101	Narrow-pitch connectors
	SMD 0.8mm	<b>Narrow-pitch connectors P8 series (0.8mm pitch)</b>  Socket      Header	<ul style="list-style-type: none"> <li>The mated heights are 3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 7.0 mm, 8.0 mm, 11.5 mm, 13 mm, and 14 mm.</li> <li>Bellows type contact structure resist vibration and impact.</li> </ul>	AXN3 •• AXN4 ••	P.107	
Narrow-pitch connectors (Connector for board-to-fine coaxial wire)	SMD 0.6mm	<b>Fine coaxial wire connector</b>  Socket      Header	<ul style="list-style-type: none"> <li>A terminal pitch of 0.3 mm allows for a short length.</li> <li>Mated height of 1.5 mm.</li> <li>Strong resistance to various environments <b>TOUGH CONTACT</b> construction.</li> </ul>	AXC5 ••	P.117	Interface connectors
System connectors	SMD DIP 0.5mm	<b>System connector for W-CDMA</b> 	<ul style="list-style-type: none"> <li>Compliant with EIAJ RC-5238 (Connector A for IMT-2000 mobile phones)</li> <li>Compatible for high-speed transfers (USB compatible)</li> <li>Metal shell to counter static electricity and EMI</li> </ul>	AXR3W ••	P.124	Sockets for memory card
	SMD Signal portion 0.5mm Coaxial portion 1.2mm	<b>System connectors for cellular phone Ultra low profile type</b> 	<ul style="list-style-type: none"> <li>Receptacle height is low-profile 3.0 mm.</li> <li>Coaxial portion supports GSM/CDMA with high-frequencies up to 2 GHz.</li> <li>The coaxial, power supply, and signal circuits are all integrated together in the same compact connector.</li> </ul>	AXR3 ••	P.130	
	SMD 0.5mm	<b>I/O connectors for portable equipment (0.5 mm pitch)</b> 	<ul style="list-style-type: none"> <li>22-contact, 24-contact and 26-contact receptacles height are low-profile 3.0 mm.</li> <li>50-contact receptacle height is low-profile 3.5 mm.</li> <li>Cross-manufacturer mating error prevention key.</li> </ul>	AXR3 •• AXR5 ••	P.130	Connectors for industrial equipment
	SMD 2.2mm	<b>Battery sockets</b> 	<ul style="list-style-type: none"> <li>Increased reliability through construction that prevents deformation when the contact is pulled up and pushed down</li> <li>Support for battery mounting from the top and by sliding it horizontally.</li> </ul>	AXB7 ••	P.146	IC sockets
Interface connector	SMD	<b>Micro USB connectors</b> <b>New</b>  SMD (retention fitting) type    DIP (retention fitting) type	<ul style="list-style-type: none"> <li>Compatible with the Micro USB standards</li> <li>Resistant to twisting</li> <li>Resistant to forcible insertion of a plug</li> </ul>	AXJ5 ••	P.149	

# Selector Chart

	Terminal shape and pitch	Product name	Features	Part No.	Page
Narrow-pitch connectors	SMD 0.8mm	<b>Mini USB connectors</b>  AB type      B type	<ul style="list-style-type: none"> <li>Compliant with USB 2.0-OTG (Transmission speed: 480 Mbps)</li> <li>Compact and space-saving</li> </ul>	AXJ4 ●●	P.153
		<b>HDMI connectors</b>  Horizontal type      Vertical type	<ul style="list-style-type: none"> <li>High-level impedance matching performance based on HDMI Standards</li> <li>Horizontal and vertical type receptacles are usable on the same foot pattern.</li> <li>Shell having a GND structure for EMI prevention</li> </ul>	AXJ3 ●●	P.157
		<b>USB connectors</b>  1 port      2 ports	<ul style="list-style-type: none"> <li>Compliant with USB1.1 standards.</li> <li>Resistant structure for mating stress.</li> </ul>	AXJ1 ●●	P.161
		<b>IEEE1394 connectors</b>  4 contacts      6 contacts	<ul style="list-style-type: none"> <li>Compliant with IEEE1394 standards.</li> <li>The 4-contact model requires 30% less space when compared with typical products from other manufacturers, and therefore allows for more compact designs.</li> </ul>	AXJ2 ●●	P.165
		<b>RF (Coaxial) connectors</b>  Plug      Receptacle	<ul style="list-style-type: none"> <li>With internal floating mechanism it absorbs mating differences in hands-free goods and automatic detection processes.</li> </ul>	AXR1 ●●	P.171
Interface connectors	SMD DIP 2.5mm Some are 2.0mm	<b>Sockets for SD memory card (R type)</b> <b>New</b>  Standard type      Reverse type	<ul style="list-style-type: none"> <li>Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell</li> <li>The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.</li> <li>Equipped with the card jump-out prevention function existence</li> </ul>	AXA2R ●●	P.175
		<b>Sockets for miniSD™ card</b>  Standard mounting type      Reverse mounting type	<ul style="list-style-type: none"> <li>Triple contact construction of power supply terminal section for improved prevention of minute circuit cutoff from dropping.</li> <li>Robustness and resistance to ESD and EMI have fortified using upper and lower metal shells.</li> <li>Improved contact reliability with V notch construction in detection contact.</li> </ul>	AXA1 ●●	P.183
		<b>Adapter for miniSD™ card</b> 	<ul style="list-style-type: none"> <li>Push-in and lift-out construction realized for stable miniSD™ card insertion and removal</li> </ul>	AXA1A ●●	P.188
		<b>Socket for microSD™ card</b>  PCB cut-off reverse type      On board mounting reverse type	<ul style="list-style-type: none"> <li>1.78-mm thick sockets with superior robustness and EMI resistance achieved by the double-sided metal shell Ultra-low-profile high-reliability socket</li> <li>The twin contact structure of the power terminals reliably prevents the sudden cut-down of power when shock arises.</li> <li>Fully compatible with T-Flash card</li> </ul>	AXA4 ●●	P.191
I/O connectors	SMD 0.5mm	<b>Interface connectors</b>  1 port      2 ports	<ul style="list-style-type: none"> <li>Compliant with IEEE1394 standards.</li> <li>The 4-contact model requires 30% less space when compared with typical products from other manufacturers, and therefore allows for more compact designs.</li> </ul>	AXJ2 ●●	P.165
		<b>RF (Coaxial) connectors</b>  Plug      Receptacle	<ul style="list-style-type: none"> <li>With internal floating mechanism it absorbs mating differences in hands-free goods and automatic detection processes.</li> </ul>	AXR1 ●●	P.171
		<b>Sockets for SD memory card (R type)</b> <b>New</b>  Standard type      Reverse type	<ul style="list-style-type: none"> <li>Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell</li> <li>The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.</li> <li>Equipped with the card jump-out prevention function existence</li> </ul>	AXA2R ●●	P.175
Sockets for memory card	SMD 1.9mm (Receptacle)	<b>Sockets for SD memory card (R type)</b> <b>New</b>  Standard type      Reverse type	<ul style="list-style-type: none"> <li>Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell</li> <li>The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.</li> <li>Equipped with the card jump-out prevention function existence</li> </ul>	AXA2R ●●	P.175
		<b>Sockets for miniSD™ card</b>  Standard mounting type      Reverse mounting type	<ul style="list-style-type: none"> <li>Triple contact construction of power supply terminal section for improved prevention of minute circuit cutoff from dropping.</li> <li>Robustness and resistance to ESD and EMI have fortified using upper and lower metal shells.</li> <li>Improved contact reliability with V notch construction in detection contact.</li> </ul>	AXA1 ●●	P.183
		<b>Adapter for miniSD™ card</b> 	<ul style="list-style-type: none"> <li>Push-in and lift-out construction realized for stable miniSD™ card insertion and removal</li> </ul>	AXA1A ●●	P.188
		<b>Socket for microSD™ card</b>  PCB cut-off reverse type      On board mounting reverse type	<ul style="list-style-type: none"> <li>1.78-mm thick sockets with superior robustness and EMI resistance achieved by the double-sided metal shell Ultra-low-profile high-reliability socket</li> <li>The twin contact structure of the power terminals reliably prevents the sudden cut-down of power when shock arises.</li> <li>Fully compatible with T-Flash card</li> </ul>	AXA4 ●●	P.191
Sockets for industrial equipment	SMD —	<b>Sockets for SD memory card</b>  Standard type      Reverse type	<ul style="list-style-type: none"> <li>Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell</li> <li>The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.</li> <li>Equipped with the card jump-out prevention function existence</li> </ul>	AXA2R ●●	P.175
		<b>Sockets for miniSD™ card</b>  Standard mounting type      Reverse mounting type	<ul style="list-style-type: none"> <li>Triple contact construction of power supply terminal section for improved prevention of minute circuit cutoff from dropping.</li> <li>Robustness and resistance to ESD and EMI have fortified using upper and lower metal shells.</li> <li>Improved contact reliability with V notch construction in detection contact.</li> </ul>	AXA1 ●●	P.183
		<b>Adapter for miniSD™ card</b> 	<ul style="list-style-type: none"> <li>Push-in and lift-out construction realized for stable miniSD™ card insertion and removal</li> </ul>	AXA1A ●●	P.188
		<b>Socket for microSD™ card</b>  PCB cut-off reverse type      On board mounting reverse type	<ul style="list-style-type: none"> <li>1.78-mm thick sockets with superior robustness and EMI resistance achieved by the double-sided metal shell Ultra-low-profile high-reliability socket</li> <li>The twin contact structure of the power terminals reliably prevents the sudden cut-down of power when shock arises.</li> <li>Fully compatible with T-Flash card</li> </ul>	AXA4 ●●	P.191
IC sockets	SMD —	<b>Sockets for SD memory card</b>  Standard type      Reverse type	<ul style="list-style-type: none"> <li>Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell</li> <li>The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.</li> <li>Equipped with the card jump-out prevention function existence</li> </ul>	AXA2R ●●	P.175
		<b>Sockets for miniSD™ card</b>  Standard mounting type      Reverse mounting type	<ul style="list-style-type: none"> <li>Triple contact construction of power supply terminal section for improved prevention of minute circuit cutoff from dropping.</li> <li>Robustness and resistance to ESD and EMI have fortified using upper and lower metal shells.</li> <li>Improved contact reliability with V notch construction in detection contact.</li> </ul>	AXA1 ●●	P.183
		<b>Adapter for miniSD™ card</b> 	<ul style="list-style-type: none"> <li>Push-in and lift-out construction realized for stable miniSD™ card insertion and removal</li> </ul>	AXA1A ●●	P.188
		<b>Socket for microSD™ card</b>  PCB cut-off reverse type      On board mounting reverse type	<ul style="list-style-type: none"> <li>1.78-mm thick sockets with superior robustness and EMI resistance achieved by the double-sided metal shell Ultra-low-profile high-reliability socket</li> <li>The twin contact structure of the power terminals reliably prevents the sudden cut-down of power when shock arises.</li> <li>Fully compatible with T-Flash card</li> </ul>	AXA4 ●●	P.191

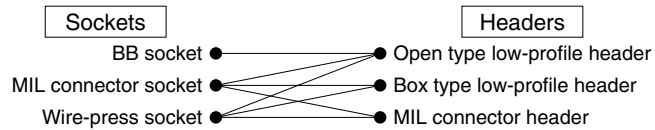
	Terminal shape and pitch	Product name	Features	Part No.	Page		
Sockets for memory card	—	<b>Adapter for microSD™ card</b> 	<ul style="list-style-type: none"> <li>Simple card lock mechanism</li> <li>Compatible with T-Flash card</li> </ul>	AXA4A ••	P.197	Narrow-pitch connectors	
	—	<b>Adapter for microSD™ card (miniSD conversion type)</b> <b>New</b> 	<ul style="list-style-type: none"> <li>Simple lock mechanism that prevents unwanted ejection of card</li> <li>Compatible with T-Flash card</li> </ul>	AXA4B ••	P.200		I/O connectors
Connectors for industrial equipment (Connector for board-to-board)	DIP 2.54mm	<b>DIN connectors</b> 	<ul style="list-style-type: none"> <li>DIN connector conforming to DIN and IEC standards.</li> <li>Socket with double-sided contact construction provides superb mechanical strength through highly reliable contact.</li> </ul>	AXD1 •• AXD2 •• AXD8 ••	P.203	Interface connectors	
		<b>BB sockets</b> 	<ul style="list-style-type: none"> <li>Unique 2-point contact construction provides high contact reliability.</li> <li>SMD terminals also available.</li> </ul>	AXB1 •• AXR8 ••	P.215		Sockets for memory card
		<b>Card-edge connectors</b> 	<ul style="list-style-type: none"> <li>Twin contacts and pre-load contact construction offer high contact reliability.</li> <li>Low insertion force (30% of standard model), long-life (30,000 uses) types also available.</li> </ul>	AXC4 •• AXC8 ••	P.219		
Connectors for industrial equipment (Board-to-Flat cable)	DIP 2.54mm	<b>MIL type connectors</b>  <p style="text-align: center;">Socket      Header</p>	<ul style="list-style-type: none"> <li>MIL-C-83503 compliant.</li> <li>Possible to attach and remove socket even when headers, installed side by side, contact each other.</li> </ul>	AXM1 •• AXM2 •• AXM3 •• AXM8 ••	P.225	Connectors for industrial equipment	
		<b>Low-profile type headers</b>  <p style="text-align: center;">Open type      Box type</p>	<ul style="list-style-type: none"> <li>Open type comes in two heights: 7.4 mm and 2.54 mm.</li> <li>Box type's simple lock feature allows one-touch removal. Structure prevents reverse insertion.</li> </ul>	AXL2 ••	P.231		IC sockets
		<b>PCB type connector</b> 	<ul style="list-style-type: none"> <li>Low 5.7mm profile.</li> <li>Provisional cover lock construction facilitates wiring.</li> </ul>	AXP4 •• AXP5 •• AXP6 ••	P.235		

# Selector Chart

	Terminal shape and pitch	Product name	Features	Part No.	Page
Narrow-pitch connectors	(PC board-mount socket) DIP 2.0mm	<b>Simple wire-press connectors (Compliant with e-CON)</b> <b>New</b> 	<ul style="list-style-type: none"> <li>Wires can be easily crimped without any special tools, contributing to reduction of the total setup time and cost.</li> <li>The structure is designed to temporarily hold inserted wires before crimping, allowing for high workability.</li> <li>Since each single model supports a wider range of wire types, there will be a reduction of connector part numbers to control and inventory.</li> </ul>	AXF1 •• AXF2 ••	P.238
		<b>Wire-press sockets</b> 	<ul style="list-style-type: none"> <li>Pressure connecting possible without removing insulation from ends of loose leads.</li> <li>Easy-to-use pressure connecting tools provided.</li> </ul>	AXW1 •• AXW3 •• AXW6 •• AXW7 ••	P.244
I/O connectors	DIP 2.54mm	<b>SOP IC sockets/SSOP IC sockets</b> 	<ul style="list-style-type: none"> <li>Two-piece socket that features simple assembly to facilitate mass production.</li> <li>High level of resistance to vibration and impact due to the edge-to-terminal contact structure.</li> </ul>	AXS6N •• AXN6S ••	P.259
		<b>μIC sockets</b> 	<ul style="list-style-type: none"> <li>Four-side tulip-style micro-contact provides both economy and high reliability.</li> </ul>	AXS2 ••	P.266
Interface connectors	SMD 1.27mm 0.8mm	<b>Round pin type IC sockets</b> 	<ul style="list-style-type: none"> <li>Highly reliable round pin contact and 4-point contact structure.</li> <li>Terminal shape prevents flux penetration.</li> </ul>	AXS1 ••	P.272
		<b>Sockets for PC board relay</b> 	<ul style="list-style-type: none"> <li>Highly reliable round pin contact and 4-point contact structure.</li> <li>Terminal shape prevents flux penetration.</li> </ul>	AXS1 ••	P.278
Sockets for memory card	DIP 2.54mm	<b>μIC sockets</b> 	<ul style="list-style-type: none"> <li>Four-side tulip-style micro-contact provides both economy and high reliability.</li> </ul>	AXS2 ••	P.266
		<b>Round pin type IC sockets</b> 	<ul style="list-style-type: none"> <li>Highly reliable round pin contact and 4-point contact structure.</li> <li>Terminal shape prevents flux penetration.</li> </ul>	AXS1 ••	P.272
Sockets for industrial equipment	DIP 2.54mm pitch compliant (no unneeded terminals)	<b>Sockets for PC board relay</b> 	<ul style="list-style-type: none"> <li>Highly reliable round pin contact and 4-point contact structure.</li> <li>Terminal shape prevents flux penetration.</li> </ul>	AXS1 ••	P.278

## • Connector Mating Table

\*Places connected by wire can be mated.

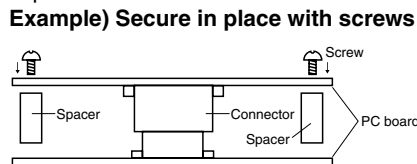


# NOTES FOR USING SMD TYPE CONNECTORS (Common)

## Regarding the design of devices and PC board patterns

- 1) When connecting several connectors together by stacking, make sure to maintain proper accuracy in the design of structure and mounting equipment so that the connectors are not subjected to twisting and torsional forces.
- 2) With mounting equipment, there may be up to a  $\pm 0.2$  to 0.3-mm error in positioning. Be sure to design PC boards and patterns while taking into consideration the performance and abilities of the required equipment.
- 3) Some connectors have tabs embossed on the body to aid in positioning. When using these connectors, make sure that the PC board is designed with positioning holes to match these tabs.
- 4) To ensure the required mechanical strength when soldering the connector terminals, make sure the PC board meets recommended PC board pattern design dimensions given.
- 5) For all connectors of the narrow-pitch series, to prevent the PC board from

coming off during vibrations or impacts, and to prevent loads from falling directly on the soldered portions, be sure to design some means to fix the PC board in place.



When connecting PC boards, take appropriate measures to prevent the connector from coming off.

- 6) Notes when using a FPC.
  - (1) When the connector is soldered to an FPC board, during its insertion and removal procedures, forces may be applied to the terminals and cause the soldering to come off. It is recommended to use a reinforcement board (dimensions bigger than outer limits of the recommended PC board pattern

- drawings; determine the required thickness through experimentation) on the backside of the FPC board to which the connector is being connected.
- (2) Collisions, impacts, or turning of FPC boards, may apply forces on the connector and cause it to come loose. Therefore, make to design retaining plates or screws that will fix the connector in place.
  - 7) The narrow-pitch connector series is designed to be compact and thin. Although ease of handling has been taken into account, take care when mating the connectors, as displacement or angled mating could damage or deform the connector.
  - 8) The AXR3, AXR3W, AXR5, AXR6 and AXR7 Series are designed with minimal thickness in order to be compact and lightweight. Therefore, please design product enclosures in such a way that there will be no excessive twisting during insertion and removal.

## Regarding the selection of the connector placement machine and the mounting procedures

- 1) Select the placement machine taking into consideration the connector height, required positioning accuracy, and packaging conditions.
- 2) Be aware that if the catching force of the placement machine is too great, it may deform the shape of the connector body or connector terminals.

- 3) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.
- 4) Depending on the size of the connector being used, self alignment may not be possible. In such cases, be sure to carefully position the terminal with

- the PC board pattern.
- 5) The positioning bosses give an approximate alignment for positioning on the PC board. For accurate positioning of the connector when mounting it to the PC board, we recommend using an automatic positioning machine.

## Regarding soldering

### 1. Reflow soldering

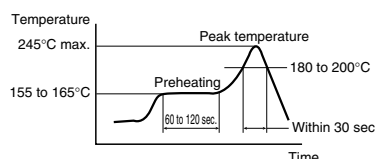
- 1) Measure the recommended profile temperature for reflow soldering by placing a sensor on the PC board near the connector surface or terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)
- 2) As for cream solder printing, screen printing is recommended.
- 3) See the specifications and drawings for the product in question for the metal mask pattern diagrams.
- 4) When mounting on both sides of the PC board and the connector is mounting on the underside, use adhesives or other means to ensure the connector is properly fixed to the PC board. (Double reflow soldering on the same side is possible.)
- 5) N<sub>2</sub> reflow, conducting reflow soldering in a nitrogen atmosphere, increases the solder flow too greatly, enabling wicking

to occur. Make sure that the solder feed rate and temperature profile are appropriate.

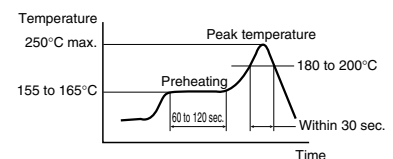
### Soldering conditions

Please use the reflow temperature profile conditions recommended below for reflow soldering. Please contact us before using a temperature profile other than that described below (e.g. lead-free solder).

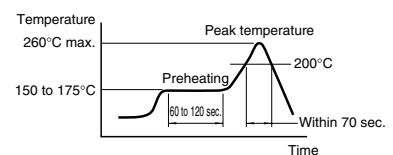
- Narrow-pitch connector for all series
- I/O connector for all series
- USB connectors
- IEEE1394 connectors
- Connector for SIM card
- RF (Coaxial) connectors
- SOP IC sockets



- Socket for SD memory card (R type) (Supports SDIO)
- Socket for miniSD™ card
- Socket for microSD™ card



- Micro USB connectors
- HDMI connectors
- Mini USB connectors



# NOTES FOR USING SMD TYPE CONNECTORS (Common)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

6) The temperatures are measured at the surface of the PC board near the connector terminals. (The setting for the sensor will differ depending on the sensor used, so be sure to carefully read the instructions that comes with it.)

7) The temperature profiles given in this catalog are values measured when using the connector on a resin-based PC board. When performed reflow soldering on a metal board (iron, aluminum, etc.) or a metal table to mount on a FPC, make sure there is no deformation or discoloration of the connector beforehand and then begin mounting.

## 2. Hand soldering

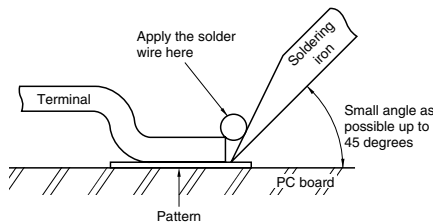
1) Set the soldering iron so that the tip temperature is less than that given in the table below.

**Table A**

Product name	Soldering iron temperature
SMD type connectors	300°C within 5 sec. 350°C within 3 sec.

2) Do not allow flux to spread onto the connector leads or PC board. This may lead to flux rising up to the connector inside.

3) Touch the soldering iron to the foot pattern. After the foot pattern and connector terminal are heated, apply the solder wire so it melts at the end of the connector terminals.



4) Be aware that soldering while applying a load on the connector terminals may cause improper operation of the connector.

5) Thoroughly clean the soldering iron.

6) Flux from the solder wire may get on the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any solder before use.

7) For soldering of prototype devices during product development, you can perform soldering at the necessary locations by heating with a hot-air gun by applying cream solder to the foot pattern

beforehand. However, at this time, make sure that the air pressure does not move connectors by carefully holding them down with tweezers or other similar tool. Also, be careful not to go too close to the connectors and melt any of the molded components.

8) When soldering the shell terminals of, for example, I/O connectors, avoid applying an excessive amount of solder, or it may flow into the shell.

Example:

- Inflidge Industrial, Ltd.
- Super Air Heater
- Digital temperature controller
- Air heater with internal temperature sensor

## 3. Solder reworking

1) Finish reworking in one operation.

2) For reworking of the solder bridge, use a soldering iron with a flat tip. To prevent flux from climbing up to the contact surfaces, do not add more flux.

3) Keep the soldering iron tip temperature below the temperature given in Table A.

4) When soldering the shell terminals of, for example, I/O connectors, avoid applying an excessive amount of solder, or it may flow into the shell.

## Handling Single Components

1) Make sure not to drop or allow parts to fall from work bench

2) Excessive force applied to the terminals could cause them to warp, come out, or weaken the adhesive strength of the solder. Handle with care.

3) Repeated bending of the terminals may break them.

4) Do not use alcohol for cleaning. Doing so may whiten the surface of molded parts.

## Cleaning flux from PC board

1) To increase the cleanliness of the cleaning fluid and cleaning operations, prepare equipment for a cleaning process that begins with boil cleaning, ultrasonic cleaning, and then to vapor cleaning.

2) Carefully oversee the cleanliness of the cleaning fluids to make sure that the contact surfaces do not become dirty from the cleaning fluid itself.

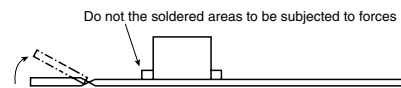
3) Since some powerful cleaning may dissolve molded components of the connector and wipe off printed letters, we recommend aqua pura electronic parts cleaners. Consult us if you wish other types of cleaning fluids.

4) Please note that the surfaces of molded parts may whiten when cleaned with alcohol.

## Handling the PC board

### • Handling the PC board after mounting the connector

When cutting or bending the PC board after mounting the connector, be careful that the soldered sections are subjected to excessive forces.



## Storage of connectors

1) To prevent trouble from voids or air pockets by heat of reflow soldering, avoid storing the connectors in areas of high humidity. When storing the connectors for more than six months, be sure to store them in a storage area where the humidity is properly controlled.

2) Depending on the connector type, the color of the connector may vary from connector to connector if produced at

different times, and some connectors more even change color slightly if subjected to ultraviolet rays during storage. This is normal and will not affect the operation of the connector.

3) When storing the connectors with the PC boards assembled and components already set, be careful not to stack them up so the connectors are subjected to excessive forces.

4) Avoid storing the connectors in locations with excessive dust. The dust may accumulate and cause improper connections at the contact surfaces.

# NOTES FOR USING SMD TYPE CONNECTORS (Common)

## Other Notes

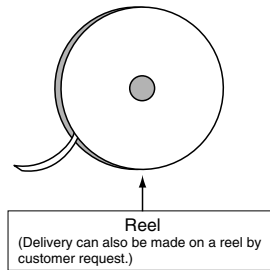
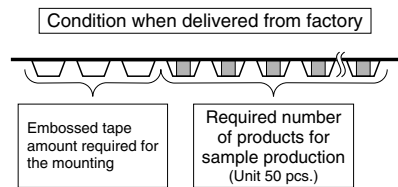
1) These products are made for the design of compact and lightweight devices and therefore the thickness of the molded components has been made very thin. Therefore, be careful during insertion and removal operations for excessive forces applied may damage the products.  
2) Dropping of the products or rugged mishandling may bend or damage the terminals and even hinder proper reflow soldering.

3) Before soldering, try not to insert or remove the connector more than absolutely necessary. If necessary, be careful not to bend or damage any of the terminals. Also, applying external forces on the terminals will result in the loosening of the terminals from the molded portion of the connectors, eventually leading to improper operation.  
4) When coating the PC board after soldering the connector to prevent the deterioration of insulation, perform the

coating in such a way so that the coating does not get on the connector.  
5) There may be variations in the colors of products from different production lots. This is normal.  
6) The connectors are not meant to be used for switching.  
7) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

## Regarding sample orders to confirm proper mounting

When ordering samples to confirm proper mounting with the placement machine, connectors are delivered in 50-piece units in the condition given right. Consult a sale representative for ordering sample units.



For other details, please verify with the product specification sheets.



# NOTES ON USE FOR I/O CONNECTOR SERIES (Common)

Narrow-pitch connectors

I/O connectors

## Handling

### 1. Handling plugs

Please warn the end-user of the following in the instruction manual or similar.

- 1) Do not apply excessive force when inserting. Doing so could damage the receptacle body or plug housing.
- 2) The plug orientation is designed to avoid plugging in the wrong way. Be sure of the orientation of the plug. Do not force in a plug. Doing so could damage the receptacle body or plug housing.
- 3) When removing a plug from a connector with a lock mechanism, do not remove it before the lock has been

completely released, or apply excessive force by twisting the plug. Doing so could damage the plug or adversely affect the locking strength during the next mating operation.

- 4) Do not pull the plug out by the cable, or otherwise remove the plug in an improper fashion. Doing so could exert undue stress on the bushing or cable and contact solder, and cause the connection to break. Be sure to release the lock and grasp the plug when disconnecting.
- 5) The plug is not dust or water resistant.

### 2. PCB handling after mounting of receptacle and plug (Board mounting type)

- 1) Make sure that PCB warping is no more than 0.03 mm over the entire connector length.
- 2) When assembling PCBs or storing them in block assemblies, make sure that undue weight is not exerted on a stacked connector.
- 3) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

Interface connectors

## Other Notes

### 1. Attach a Cover

We recommend using a cover to prevent dirt and dust from entering the receptacle during use. Design the cover for long-term use so that it can withstand repeated use and be easily removed from the main unit.

### 2. Plug Harness Finishing

Plug Assembly Procedure instruction sheets are available. Please check them with your assembly procedures.

### 3. Coating Materials

If you coat the PCB after soldering for insulation and to prevent wear, make sure that the coating does not adhere to the connector.

### 4. To prevent end-users from

**disassembling the plug, please warn them in the instruction manual, or, for the type with screws, provide a screw lock with suitable marking to prevent disassembly.**

Regarding general notes,  
please refer to page 17.

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

For board-to-FPC connection

For board-to-board

# Narrow-pitch Connectors

Extremely small and versatile, let our wide line-up of narrow-pitch connectors make your mobile devices even smaller.



Strong resistance to various environments

## TOUGH CONTACT

For Board-to-Board and Board-to-FPC Connection  
Narrow-pitch Connectors Series  
F4S, F4, P35S, P4, P4S, P5KL, P5KF, P5K and P5KS

Constructed for high reliability in various environments, these four connectors will make mobile devices tougher than ever.

The F4S, F4, P4, P4S, P5KL, P5KF, P5K and P5KS employ our unique "TOUGH CONTACT" which has significant ability to withstand foreign particles and highly resistant to shock, indispensable to all compact mobile devices.

Developing products can be more confident by using our Tough Contact connector series.

High contact reliability is a requirement against the shock and vibration that are unavoidable when it comes to use of mobile devices.

**Tough against dropping!**

**Bellows contact construction**

Even when it comes to ultra-miniature electromechanical parts, the demand is increasing for parts that can be used and stored under various environments.

**Tough against foreign particles and flux!**

**V notch construction**

Improvements to N2 reflow and lead-free solder flux increase wetting characteristic of solder. Also, due to the miniaturization of connectors, solder rising may occur depending on conditions.

**Tough against solder rise!**

**Ni barrier construction**

Since mobile devices are used in various places, the surrounding gas (car exhaust gas, etc.) and sweat from the human body, can affect the contacting parts.

**Tough against corrosive gases!**

**Porosity treatment**

**TOUGH CONTACT** Series

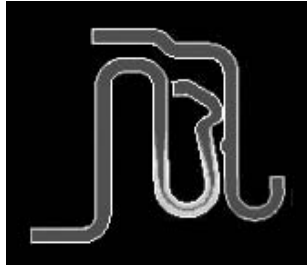


Note: For details, please refer to the pages for each product.

# Four points about our unique **TOUGH CONTACT**

## Bellows contact construction improved the ability to withstand twisting and increased resistance to shock of dropping

High precision curved molding that provides the right amount of spring characteristics for contacts, is made possible through precision metal processing, one of our core technologies. A high-level ability to resist shocks has been made possible. The need to withstand the shock of dropping and twisting during insertion has increased in mobile devices.



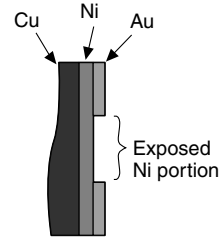
**Simulation analysis**  
We analyzed what the ideal spring shape would be to bring the right spring characteristic to the contact, and then precision molded it using precision metal processing, one of our core technologies.

## Anti-solder-rise efficiency increased due to Ni barrier

Exposed nickel is placed on mid part of socket contacts. This contact, while being ultra low in profile, prevents solder rise.

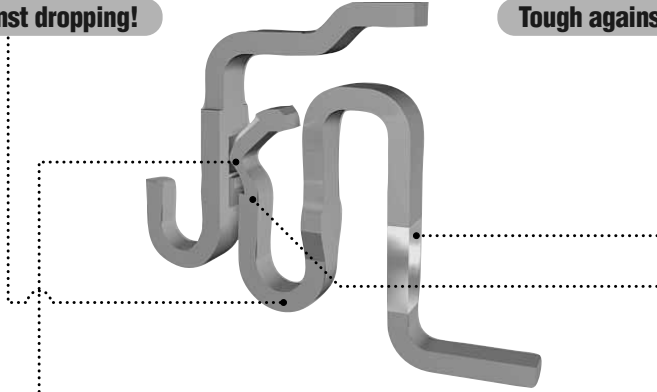
- Influence of solder controlled in contact and contact spring parts.
- Solder remains in the terminals and stable fillet mold is possible.

**Exposed Ni barrier portion**  
Cross section of the socket side contact



**Tough against dropping!**

**Tough against solder rise!**



**Tough against foreign particles and flux!**

**Tough against corrosive gases!**

## V notch improves contact reliability (resistance to entry of foreign particles)

By using the edge for the contacting part, contact pressure per unit area has been increased.

Compared to contacts up to now, the ability to remove flux and foreign particles has increased. Also, the ability to prevent entry of foreign particles before it happens has increased.

- 2-point contacting
- Surface contact to edge contact
- Improved contact movement effect before and after V notch passage
- The combination of these effects greatly improves contact reliability (resistance to entry of foreign matter)

<p><b>Product without notch</b></p> <p>Cross section of the socket side contact</p> <p>Cross section of the header side contact</p> <p>More effective in eliminating flux and foreign particles, and also more effective in keeping foreign particles from getting inside</p>	<p><b>V notched product</b></p>	<p><b>F4 Contact Construction View</b></p> <p>Double contact</p> <p>Same effect as V notch attained by double contact.</p>
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**Patent and Design now under application**

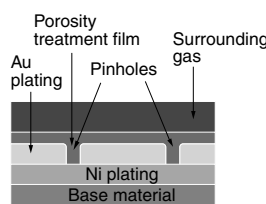
Japan: Registration of patent (Patent No. 3726836)	Taiwan: Registration of patent (Patent No. I225323)
Korea: Registration of patent (Patent No. 531938)	China and North America: Patent now under application.

## Improved resistance to corrosion by gas, etc., due to porosity treatment

This treatment consists of coating surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures the same contact reliability for thin gold plating as that of thick gold plating.

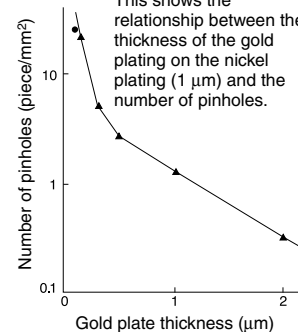
- Improvement in resistance to corrosion
- Improvement in insertion/removal durability
- Improvement in contact reliability for digital signals

### Plating technology (Porosity treatment technology)

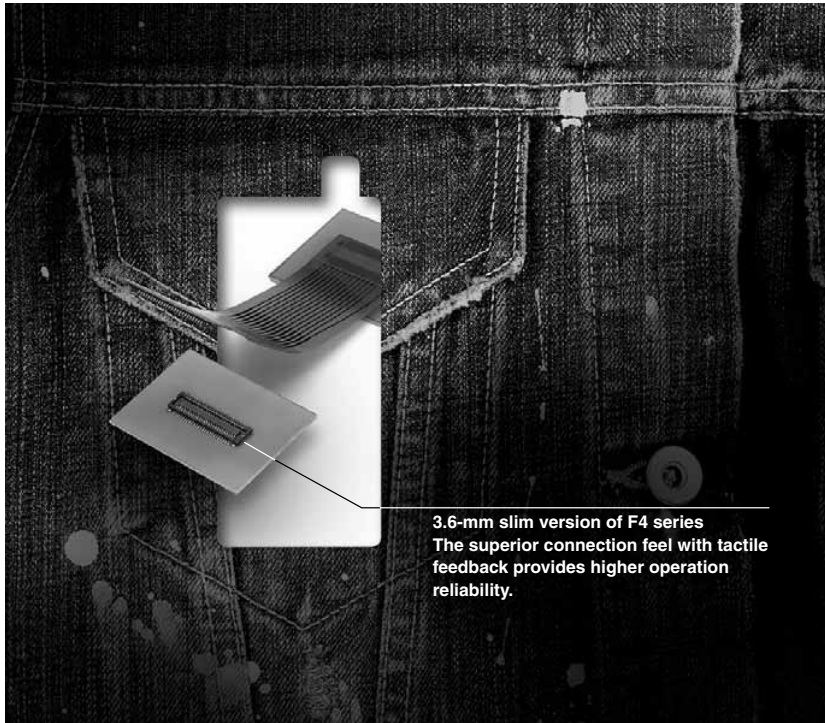


### Relationship between gold plate thickness and number of pinholes

This shows the relationship between the thickness of the gold plating on the nickel plating (1 μm) and the number of pinholes.



**Tough & Slim**  
Narrow-pitch connector  
**F4S (0.4mm pitch)**



3.6-mm slim version of F4 series  
The superior connection feel with tactile feedback provides higher operation reliability.

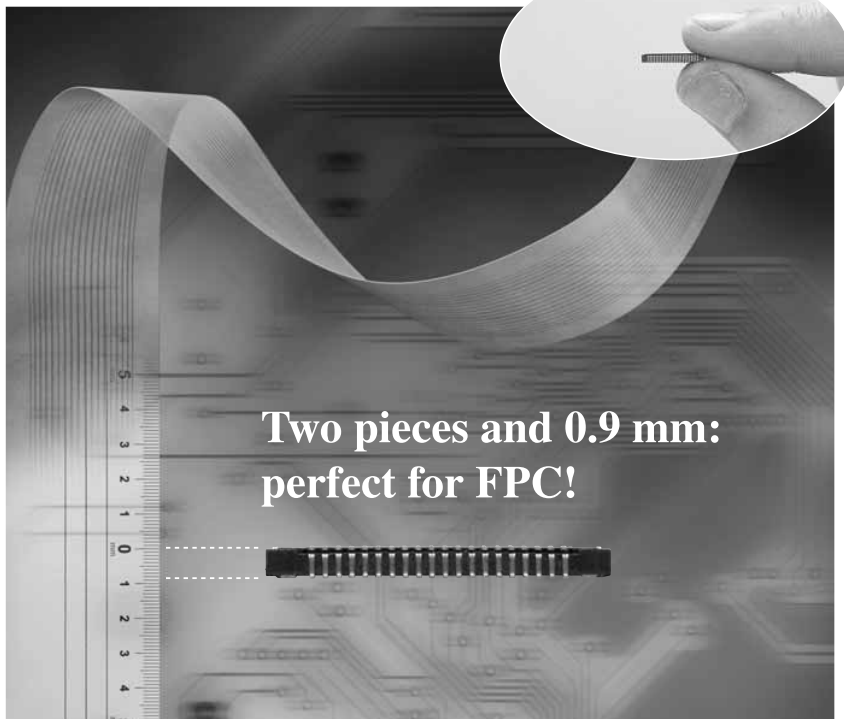


☆: Available for sale **TOUGH CONTACT**

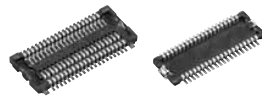
Mated height		1.0mm
<b>TOUGH CONTACT</b>	Bellows-type	○
	V notch	○
	Ni barrier	○
	Porosity treatment	○
Number of contacts	10	☆
	12	☆
	16	☆
	18	☆
	20	☆
	22	☆
	24	☆
	26	☆
	28	☆
	30	☆
	32	☆
	34	☆
	36	☆
	38	☆
	40	☆
	42	☆
44	☆	
46	☆	
48	☆	
50	☆	
54	☆	
60	☆	
64	☆	
70	☆	
80	☆	

Note: Please consult us regarding numbers of contacts other than those given above.

**Thin & Tough**  
Narrow-pitch connector  
**F4 (0.4mm pitch)**



Two pieces and 0.9 mm:  
perfect for FPC!



☆: Available for sale **TOUGH CONTACT**

Mated height		0.9mm
<b>TOUGH CONTACT</b>	Bellows-type	○
	V notch	○ Note 1)
	Ni barrier	○
	Porosity treatment	○
Number of contacts	10	☆
	12	☆
	14	☆
	16	☆
	20	☆
	22	☆
	24	☆
	26	☆
	28	☆
	30	☆
	32	☆
	34	☆
	36	☆
	38	☆
	40	☆
	44	☆
48	☆	
50	☆	
54	☆	
60	☆	
66	☆	
70	☆	
80	☆	

Notes: 1. Double contact  
2. Please consult us regarding numbers of contacts other than those given above.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# Narrow-pitch connectors

Narrow-pitch connectors

## Narrow-pitch connector P35S (0.35mm pitch)



☆: Available for sale



Mated height		1.5mm
TOUGH CONTACT	Bellows-type	○
	V notch	○
	Ni barrier	○
	Porosity treatment	○
Number of contacts	20	☆
	22	☆
	24	☆
	26	☆
	28	☆
	30	☆
	32	☆
	34	☆
	36	☆
	38	☆
	40	☆
	50	☆
	52	☆
	60	☆
	70	☆
	80	☆
90	☆	
100	☆	

Notes: 1. The standard type comes without positioning bosses. Connectors with positioning bosses are available for on-demand production.  
2. Please consult us regarding numbers of contacts other than those given above.

I/O connectors

Interface connectors

Sockets for memory card

## Narrow-pitch connector P4S (0.4mm pitch)



☆: Available for sale



Mated height		1.5mm	3.0mm
TOUGH CONTACT	Bellows-type	○	
	V notch	○	
	Ni barrier	○	
	Porosity treatment	○	
Number of contacts	10	☆	
	16	☆	
	20	☆	☆
	22	☆	
	24	☆	
	26	☆	
	28	☆	
	30	☆	☆
	32	☆	
	34	☆	
	36	☆	
	38	☆	
	40	☆	
	42		☆
	44	☆	
	50	☆	
	54	☆	
	56	☆	☆
	60	☆	☆
	70	☆	
80	☆	☆	
90	☆		
100	☆	☆	
120		☆	

Notes: 1. The standard type comes without positioning bosses. Connectors with positioning bosses are available for on-demand production.  
2. Please consult us regarding numbers of contacts other than those given above.

Connectors for industrial equipment

## Narrow-pitch connector P4 (0.4mm pitch)

### ● Without retention fitting type



☆: Available for sale



Mated height		1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
TOUGH CONTACT	Bellows-type				○		
	V notch				○		
	Ni barrier				○		
	Porosity treatment				○		
Number of contacts	14	☆	☆	☆			
	16	☆					
	20	☆	☆	☆	☆		
	22	☆					
	24	☆	☆	☆	☆		☆
	26	☆	☆				
	28	☆					
	30	☆	☆	☆	☆	☆	
	34	☆	☆	☆			
	36	☆					
	38		☆				
	40	☆	☆	☆	☆	☆	
	42	☆					
	44	☆		☆			
	50	☆	☆	☆	☆		
	54	☆	☆	☆			
60	☆	☆	☆				
64	☆						
70	☆	☆	☆				
80	☆	☆	☆				
90	☆		☆				
100	☆	☆	☆				

### ● With retention fitting type



☆: Available for sale



Mated height		1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
TOUGH CONTACT	Bellows-type				○		
	V notch				○		
	Ni barrier				○		
	Porosity treatment				○		
Number of contacts	10	☆					
	12	☆					
	20	☆	☆	☆	☆	☆	
	22	☆					
	24	☆	☆				
	28	☆		☆			
	30	☆					☆
	32			☆			
	34	☆					☆
	36					☆	
	40	☆	☆	☆	☆	☆	
	42						☆
	44	☆					
	46	☆					
	50	☆	☆	☆	☆	☆	☆
	60	☆	☆	☆	☆	☆	☆
70						☆	
80	☆	☆	☆	☆	☆	☆	
90	☆		☆	☆	☆		
100	☆						

Note: 1. Please consult us regarding numbers of contacts other than those given above.

IC sockets

Information



# Narrow-pitch connectors

Narrow-pitch connectors

I/O connectors

Interface connectors

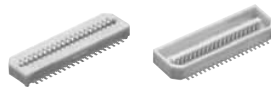
Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

## Narrow-pitch connector P8 (0.8mm pitch)



Mated height		3.0mm	3.5mm	4.0mm	4.5mm	5.0mm	5.5mm	6.0mm	7.0mm	8.0mm	11.5mm	13.0mm	14.0mm
		<i>TOUGH CONTACT</i>	Bellows-type	○									
	V notch												
	Ni barrier												
	Porosity treatment	○											
Number of contacts	12					☆	☆						
	14					☆							
	16	☆	☆	☆	☆								
	20	☆		☆		☆		☆	☆	☆		☆	☆
	22	☆							☆	☆			
	24	☆	☆			☆	☆	☆	☆	☆			
	26	☆	☆	☆	☆	☆	☆	☆	☆	☆			
	30	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	
	34									☆			
	40	☆		☆		☆		☆	☆	☆	☆	☆	☆
	50	☆		☆		☆		☆	☆	☆	☆	☆	☆
	60	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	80	☆		☆		☆		☆	☆	☆	☆	☆	☆
90	☆												
100	☆		☆		☆		☆	☆	☆	☆	☆		

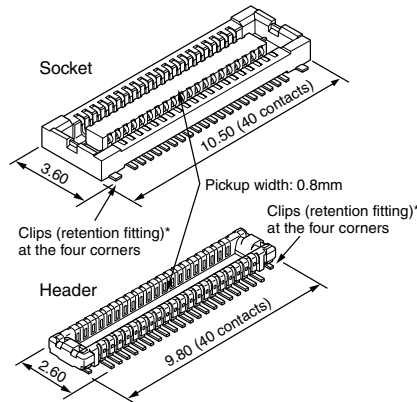
Notes: 1. The standard type comes with positioning bosses. Connectors without positioning boss are available for on-demand production.  
2. Please consult us for products which have no ☆ mark.



Compliance with RoHS Directive

**FEATURES**

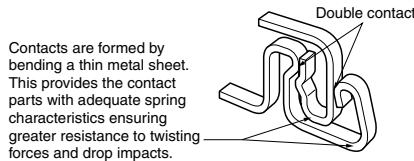
**1. Space-saving (3.6 mm wide)**  
The required space is smaller than our F4 series (40-contact type):  
Socket — 27% smaller,  
Header — 38% smaller  
The small size contributes to the miniaturization of target equipment.



\* Clips for preventing the solder joints from being removed

**2. Highly reliable**  
**TOUGH CONTACT** has strong resistance to adverse environments.

1) Our original bellows contact: High resistance to drop impact and twisting forces.



Contacts are formed by bending a thin metal sheet. This provides the contact parts with adequate spring characteristics ensuring greater resistance to twisting forces and drop impacts.

Note: If extra resistance to shock caused by dropping is required, we recommend using our previous F4 Series.

**NARROW-PITCH, THIN AND SLIM CONNECTOR FOR BOARD-TO-FPC CONNECTION**

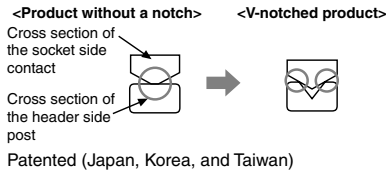
**NARROW PITCH (0.4 mm) CONNECTORS F4S SERIES**

2) V-notch + double contact: High resistance to the penetration of foreign matters and flux.

● **V-notch**

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

**[Cross Section of Contacts]**

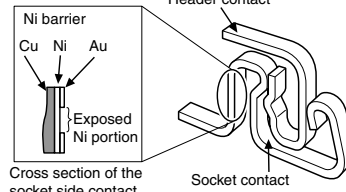


3) Ni barrier: High resistance to solder creep.

● **Ni barrier**

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

**[Contact]**

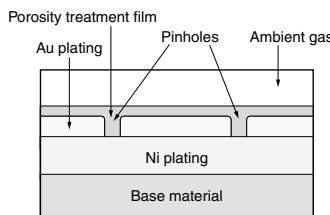


Note: Simultaneous molding of the header contact achieves a construction that prevents solder creep.

4) Porosity treatment: Resistance to corrosion.

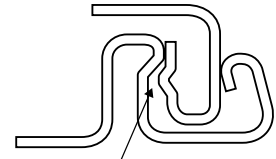
**Porosity treatment**

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improved in insertion/removal durability
- Improved in resistance to corrosion
- Improved in contact reliability for digital signals

3. The simple lock structure gives tactile feedback that ensures a superior mating/unmating operation feel.



Simple lock structure

**4. Gull-wing type terminals**

The gull-wing type terminals facilitate automatic mounting inspections.

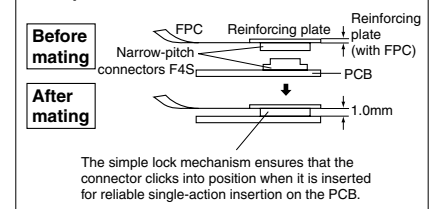
**5. Connectors for inspection available**

Connectors for inspection are available that are ideal for modular unit inspection and inspection in device assembly processes.

**APPLICATIONS**

Compact portable devices "Cellular phones, DVC, Digital cameras, etc"

**Example of Board-to-FPC connections**



The simple lock mechanism ensures that the connector clicks into position when it is inserted for reliable single-action insertion on the PCB.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



# AXT5, 6

Narrow-pitch connectors

## TABLE OF PRODUCT TYPES

F4S (0.4mm pitch): With clips (retention fitting)\*



Socket

Header

☆: Available for sale

I/O connectors

Interface connectors

Sockets for memory card

Mated height	1.0mm	
10		☆
12		☆
16		☆
18		☆
20		☆
22		☆
24		☆
26		☆
28		☆
Number of contacts	30	☆
	32	☆
	34	☆
	36	☆
	38	☆
	40	☆
	42	☆
	44	☆
	46	☆
	48	☆
	50	☆
	54	☆
	60	☆
	64	☆
	70	☆
	80	☆

## ORDERING INFORMATION

Connectors for industrial equipment

IC sockets

Information

AXT     **1**  **4**

5: Narrow Pitch Connector F4S (0.4 mm pitch) Socket  
 6: Narrow Pitch Connector F4S (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

1: For mated height 1.0 mm

<Header>

1: For mated height 1.0 mm

Functions

<Socket, Header>

1: With positioning bosses

2: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

4: Sockets: Base: Ni plating Surface: Au plating (for Ni barrier product available)

4: Headers: Base: Ni plating Surface: Au plating

**PRODUCT TYPES** 

Mated height	Number of contacts	Part number		Packing	
		Socket	Header	Inner carton	Outer carton
1.0mm	10	AXT510124	AXT610124	3,000 pieces	6,000 pieces
	12	AXT512124	AXT612124		
	16	AXT516124	AXT616124		
	18	AXT518124	AXT618124		
	20	AXT520124	AXT620124		
	22	AXT522124	AXT622124		
	24	AXT524124	AXT624124		
	26	AXT526124	AXT626124		
	28	AXT528124	AXT628124		
	30	AXT530124	AXT630124		
	32	AXT532124	AXT632124		
	34	AXT534124	AXT634124		
	36	AXT536124	AXT636124		
	38	AXT538124	AXT638124		
	40	AXT540124	AXT640124		
	42	AXT542124	AXT642124		
	44	AXT544124	AXT644124		
	46	AXT546124	AXT646124		
	48	AXT548124	AXT648124		
	50	AXT550124	AXT650124		
54	AXT554124	AXT654124			
60	AXT560124	AXT660124			
64	AXT564124	AXT664124			
70	AXT570124	AXT670124			
80	AXT580124	AXT680124			

- Notes: 1. Order unit: For mass production: in 1-inner-box (1-reel) units  
 Samples for mounting check: in 50-connector units. Please contact our sales office.  
 Samples: Small lot orders are possible. Please contact our sales office.  
 2. The above part numbers are for connectors without positioning bosses, which are standard. When ordering connectors with positioning bosses, which are available on demand, please replace "2" in the 8th position of the part number with "1".  
 3. Please contact us for connectors having a number of contacts other than those listed above.

**SPECIFICATIONS**

**1. Characteristics**

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.3A/contact (Max. 5 A at total contacts)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	No short-circuiting or damage at a detection current of 1 mA when the specified voltage is applied for one minute.
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N/contacts × contacts (initial)	
	Composite removal force	Min. 0.165N/contacts × contacts	
	Post holding force	Min. 0.49N/contacts	Measure the maximum load each contact can withstand without being removed in the axis direction.
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures. No dew condensation.
	Soldering heat resistance	Peak temperature: 260°C or less (on the surface of the PC board around the connector terminals) 300°C within 5 sec. 350°C within 3 sec.	Infrared reflow soldering Soldering iron
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No freezing at low temperatures. No dew condensation.
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1. -55 <sup>±</sup> 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±</sup> 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
	Unit weight	50-contact type: Socket: 0.05 g Header: 0.03 g	

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# AXT5, 6

Narrow-pitch connectors

## 2. Material and surface treatment

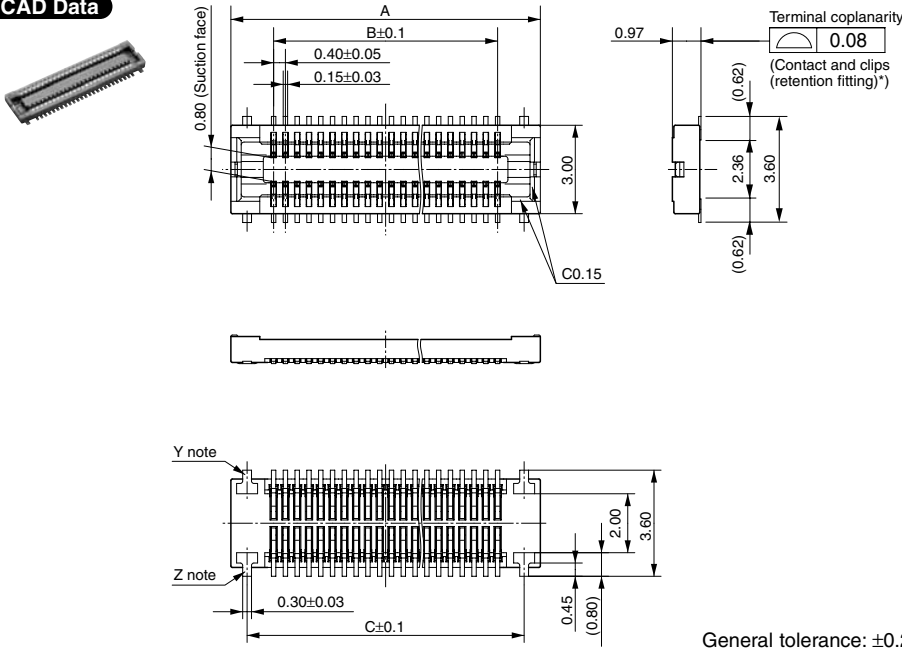
Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and Post	Copper alloy	Contact portion: Base: Ni plating Surface: Au plating Terminal portion: Base: Ni plating Surface: Au plating (except the terminal tips) The socket terminals close to the portion to be soldered have nickel barriers (exposed nickel portions). Metal clips: Sockets: Base: Ni plating Surface: Pd+Au flash plating (except the terminal tips) Headers: Base: Ni plating Surface: Au plating (except the terminal tips)

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

### Socket (Mated height: 1.0 mm)

**CAD Data**



Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	4.5	1.6	3.4
12	4.9	2.0	3.8
16	5.7	2.8	4.6
18	6.1	3.2	5.0
20	6.5	3.6	5.4
22	6.9	4.0	5.8
24	7.3	4.4	6.2
26	7.7	4.8	6.6
28	8.1	5.2	7.0
30	8.5	5.6	7.4
32	8.9	6.0	7.8
34	9.3	6.4	8.2
36	9.7	6.8	8.6
38	10.1	7.2	9.0
40	10.5	7.6	9.4
42	10.9	8.0	9.8
44	11.3	8.4	10.2
46	11.7	8.8	10.6
48	12.1	9.2	11.0
50	12.5	9.6	11.4
54	13.3	10.4	12.2
60	14.5	11.6	13.4
64	15.3	12.4	14.2
70	16.5	13.6	15.4
80	18.5	15.6	17.4

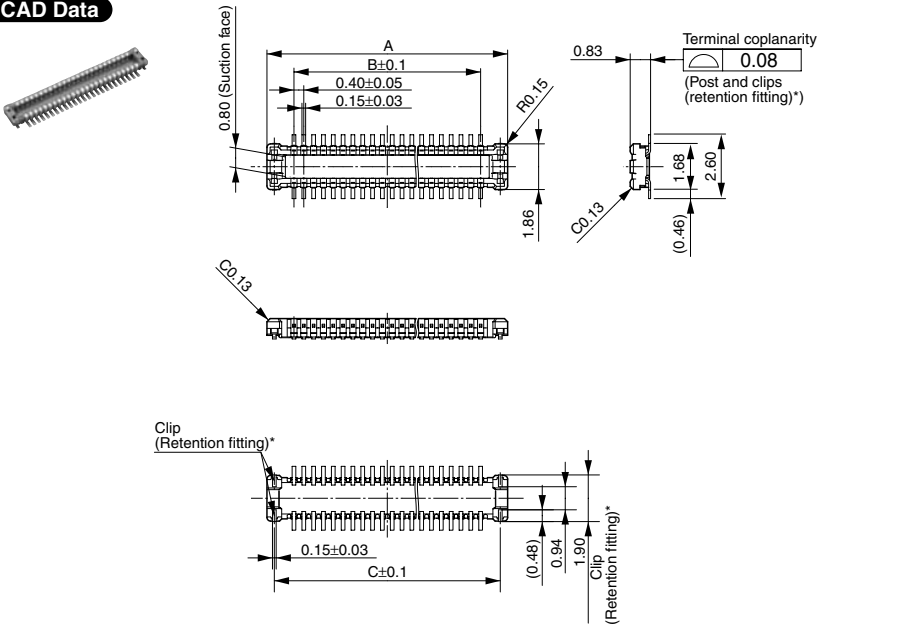
General tolerance: ±0.2

Note: Since the clip (retention fitting)\* has a single-piece construction, sections Y and Z are electrically connected.

\* Clips for preventing the solder joints from being removed

### Header (Mated height: 1.0 mm)

**CAD Data**



Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	3.8	1.6	3.2
12	4.2	2.0	3.6
16	5.0	2.8	4.4
18	5.4	3.2	4.8
20	5.8	3.6	5.2
22	6.2	4.0	5.6
24	6.6	4.4	6.0
26	7.0	4.8	6.4
28	7.4	5.2	6.8
30	7.8	5.6	7.2
32	8.2	6.0	7.6
34	8.6	6.4	8.0
36	9.0	6.8	8.4
38	9.4	7.2	8.8
40	9.8	7.6	9.2
42	10.2	8.0	9.6
44	10.6	8.4	10.0
46	11.0	8.8	10.4
48	11.4	9.2	10.8
50	11.8	9.6	11.2
54	12.6	10.4	12.0
60	13.8	11.6	13.2
64	14.6	12.4	14.0
70	15.8	13.6	15.2
80	17.8	15.6	17.2

General tolerance: ±0.2

\* Clips for preventing the solder joints from being removed

I/O connectors

Interface connectors

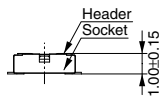
Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

• Socket and Header are mated



**EMBOSSED TAPE DIMENSIONS** (Unit: mm) (Common to all sockets and headers)

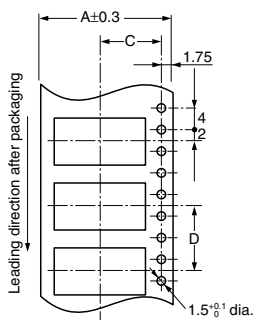
• Specifications for taping

(In accordance with JIS C 0806-1990. However, not applied to the mounting-hole pitch of some connectors.)

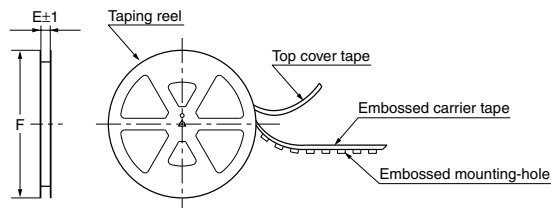
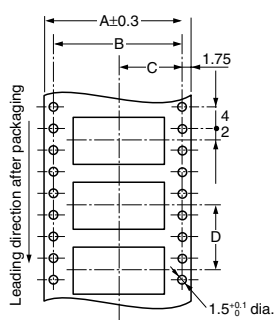
• Specifications for the plastic reel

(In accordance with EIAJET-7200B.)

Tape I



Tape II



• Dimension table (Unit: mm)

Type/Mated height	Number of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Common for sockets and headers	24 or less	Tape I	16.0	7.5	—	8.0	17.4	380 dia.	3,000
	26 to 70	Tape I	24.0	11.5	—	8.0	25.4	380 dia.	3,000
	80	Tape II	32.0	28.4	14.2	8.0	33.4	380 dia.	3,000

• Connector orientation with respect to embossed tape feeding direction

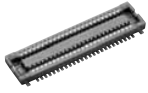
Direction of tape progress	Type	Common for F4S	
	Socket	Header	

Note: There is no indication on this product regarding top-bottom or left-right orientation.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# Panasonic

ideas for life



Socket



Header

**Compliance with RoHS Directive**

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as mated height 1.0mm standard type.

Since shape is the same as mated height 1.0mm standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

**CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES**

**NARROW PITCH CONNECTOR F4S  
(0.4 mm PITCHES) FOR INSPECTION USAGE**

## TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	F4S for inspection
10	☆
12	☆
16	☆
18	☆
20	☆
22	☆
24	☆
26	☆
28	☆
30	☆
32	☆
34	☆
36	☆
38	☆
40	☆
42	☆
44	☆
46	☆
48	☆
50	☆
54	☆
60	☆
64	☆
70	☆
80	☆

Notes:

1. Please inquire about numbers of contacts other than those given above.
2. Please inquire with us regarding delivery times.
3. Please keep the minimum unit for ordering no less than 50 pieces per lot.
4. Please inquire for further information.

## PRODUCT TYPES

Specifications		Part No.	Specifications		Part No.
Socket	With positioning bosses	AXT5E**16	Header	With positioning bosses	AXT6E**16
	Without positioning bosses	AXT5E**26		Without positioning bosses	AXT6E**26

Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

**NOTES**

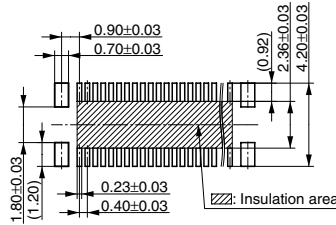
1. If extra resistance to drop impact is required, we recommend using our F4 series.

**2. Recommended PC board and metal mask patterns**

Appropriate control of solder amount is required to minimize solder bridges and other defects for connectors with 0.4-mm or 0.5-mm pitch terminals, which require high-density mounting. Refer to the right-hand drawing for recommended patterns.

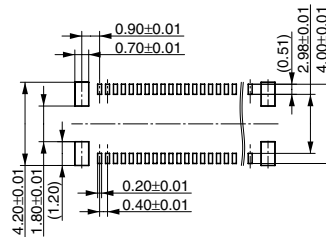
• Socket

Recommended PC board pattern (TOP VIEW)



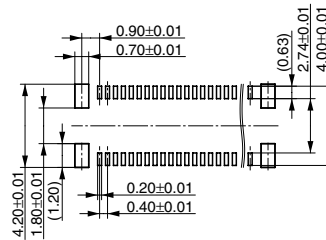
Recommended metal mask opening pattern

Metal mask thickness: When 150μm  
(Terminal opening ratio: 48%)  
(Metal-part opening ratio: 100%)



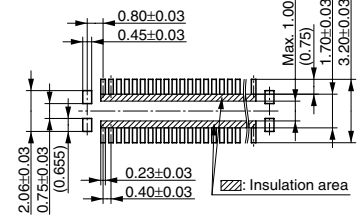
Recommended metal mask opening pattern

Metal mask thickness: When 120μm  
(Terminal opening ratio: 60%)  
(Metal-part opening ratio: 100%)



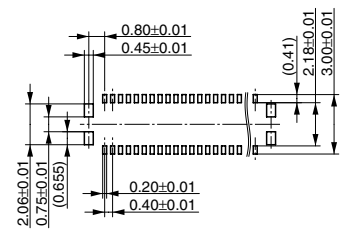
• Header

Recommended PC board pattern (TOP VIEW)



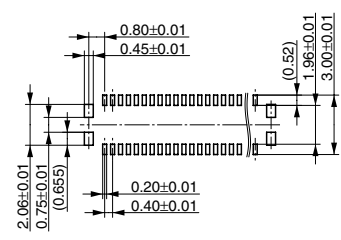
Recommended metal mask opening pattern

Metal mask thickness: When 150μm  
(Terminal opening ratio: 48%)  
(Metal-part opening ratio: 100%)



Recommended metal mask opening pattern

Metal mask thickness: When 120μm  
(Terminal opening ratio: 60%)  
(Metal-part opening ratio: 100%)



Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# Panasonic

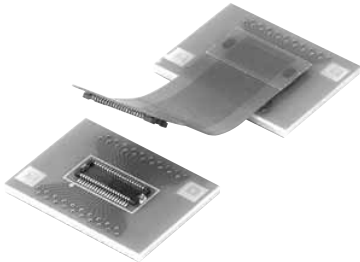
## ideas for life



Socket



Header



### Compliance with RoHS Directive

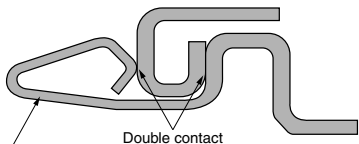
## FEATURES

### 1. The lowest profile class among two-piece connectors in the world (Mated height: 0.9mm)

Achieved both a 0.4 mm pitch and an ultra low profile of 0.9 mm high when mated, contributing to further thickness reduction of products.

### 2. Strong resistance to adverse environments! Utilizes **TOUGH CONTACT** construction for high contact reliability.

1) Our own bellows-type double contact structure provides a high resistance to twisting and shock, ensuring a high contact reliability.



Double contact

Contacts are formed by bending a thin metal sheet, which provides the contact parts with adequate spring characteristics ensuring greater resistance to prying forces and drop impacts.

## NARROW-PITCH CONNECTORS FOR BOARD-TO-FPC CONNECTION

## NARROW PITCH (0.4mm) CONNECTORS F4

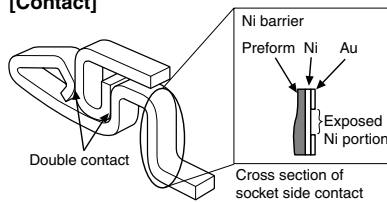
2) Double contact construction makes it highly resistant to foreign substances such as dirt and flux.

3) Standard use of Ni barrier plating  
The use of Ni barrier plating, which is highly resistant against solder creeping, on the socket terminals is standard.

### ● Ni barrier

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

### [Contact]

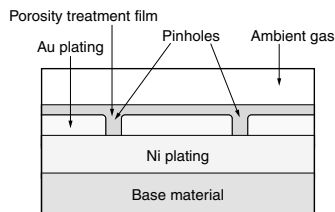


Note: Simultaneous molding of the header contact achieves a construction that prevents solder creep.

4) Porosity treatment applied for improved resistance against corrosion.

### Porosity treatment

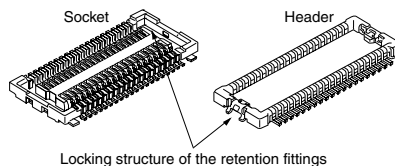
This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

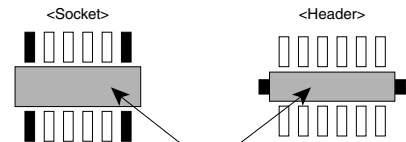
### 3. Improved mating strength between the socket and header

The simple locking structures provided for the retention fittings and the contact points improve the mating strength and provide tactile feedback when locked.



### 4. Easy to design product circuits

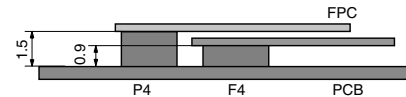
1) An insulating wall provided for the bottom surface of the connector prevents contact between the pattern on the PC board and the metal pins, enabling pattern wiring under the connector, and thus contributing to the reduction in size of PC boards.



Pattern wiring under the connector is possible.

2) The usage shown below further enhances the flexibility of connector positioning.

[Example of application of connection between a board and an FPC]



### 5. Connectors for inspection available

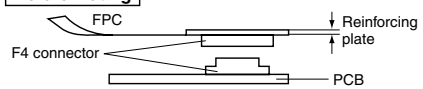
Connectors for inspection are available that are ideal for modular unit inspection and inspection in device assembly processes.

## APPLICATIONS

### Compact portable devices "Cellular phones, DVD, DSC, etc"

Example of connection between a board and an FPC

#### Before mating



#### After mating



**TABLE OF PRODUCT TYPES**



Socket



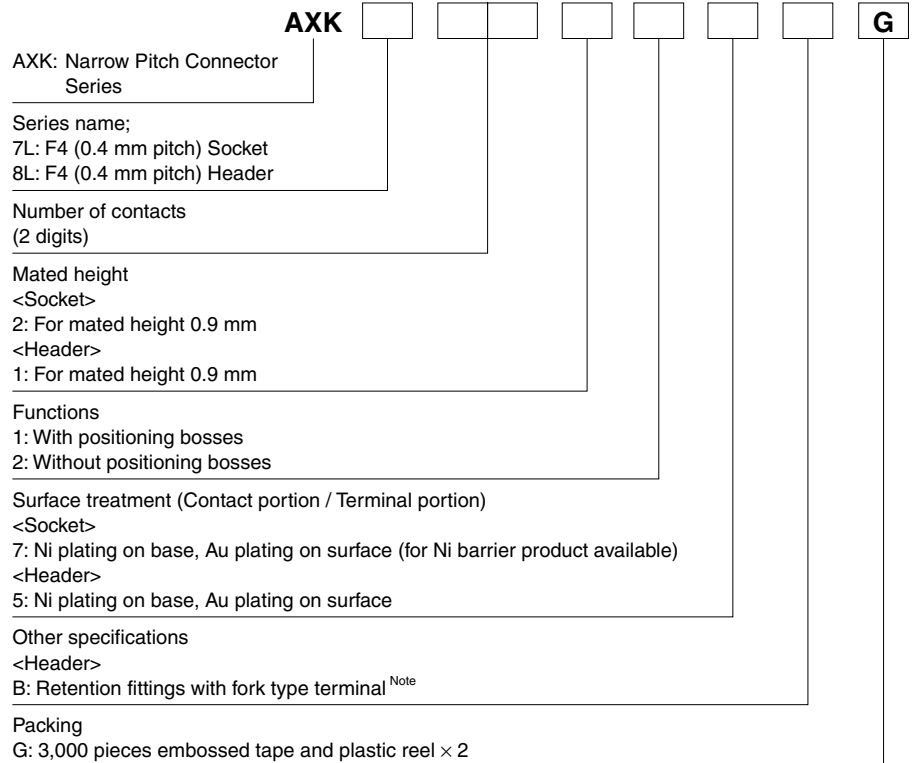
Header

☆: Available for sale

Number of contacts	Mated height	
	0.9mm	
10	☆	
12	☆	
14	☆	
16	☆	
20	☆	
22	☆	
24	☆	
26	☆	
28	☆	
30	☆	
32	☆	
34	☆	
36	☆	
38	☆	
40	☆	
44	☆	
48	☆	
50	☆	
54	☆	
60	☆	
66	☆	
70	☆	
80	☆	

Note: Please contact us regarding numbers of contacts other than those given above.

**ORDERING INFORMATION**



Note: A "B" in the 11th digit of the header part number signifies a fork type retention fittings to lessen the constraint on amount of solder when mounting, and a construction that makes it difficult when mounting for excess solder to interfere with the socket. Although compatible with the previous parts, these parts are not compatible with the recommended PC board pattern and recommended metal mask pattern.

Narrow-pitch connectors  
 I/O connectors  
 Interface connectors  
 Sockets for memory card  
 Connectors for industrial equipment  
 IC sockets  
 Information



## PRODUCT TYPES

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

Mated height	Number of contacts	Part number		Packing	
		Socket	Header	Inner carton (1 reel)	Outer carton
0.9 mm	10	AXK7L10227G	AXK8L10125BG	3,000 pieces	6,000 pieces (2 reels)
	12	AXK7L12227G	AXK8L12125BG		
	14	AXK7L14227G	AXK8L14125BG		
	16	AXK7L16227G	AXK8L16125BG		
	20	AXK7L20227G	AXK8L20125BG		
	22	AXK7L22227G	AXK8L22125BG		
	24	AXK7L24227G	AXK8L24125BG		
	26	AXK7L26227G	AXK8L26125BG		
	28	AXK7L28227G	AXK8L28125BG		
	30	AXK7L30227G	AXK8L30125BG		
	32	AXK7L32227G	AXK8L32125BG		
	34	AXK7L34227G	AXK8L34125BG		
	36	AXK7L36227G	AXK8L36125BG		
	38	AXK7L38227G	AXK8L38125BG		
	40	AXK7L40227G	AXK8L40125BG		
	44	AXK7L44227G	AXK8L44125BG		
	48	AXK7L48227G	AXK8L48125BG		
	50	AXK7L50227G	AXK8L50125BG		
	54	AXK7L54227G	AXK8L54125BG		
	60	AXK7L60227G	AXK8L60125BG		
66	AXK7L66227G	AXK8L66125BG			
70	AXK7L70227G	AXK8L70125BG			
80	AXK7L80227G	AXK8L80125BG			

- Notes: 1. Regarding ordering units:  
 During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please contact us.  
 Samples: Available. Please contact us.
2. The standard type comes without positioning bosses.  
 Connectors with positioning bosses are available on-demand production.  
 For this type of connector, 9th digit of the part number changes from 2 to 1. e.g. 20 contacts for socket without retention fitting: AXK7L20217G
3. Please contact us regarding different number of contacts.
4. A "B" in the 11th digit of the header part number signifies a fork type retention fittings to lessen the constraint on amount of solder when mounting, and a construction that makes it difficult when mounting for excess solder to interfere with the socket.  
 Although compatible with the previous parts, these parts are not compatible with the recommended PC board pattern and recommended metal mask pattern.

## SPECIFICATIONS

### 1. Characteristics

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.3A/terminal (Max. 5 A at total terminals)	—
	Rated voltage	60V AC/DC	—
	Breakdown voltage	150V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA
	Insulation resistance	Min. 1,000MΩ (Initial)	Using 250V DC megger (applied for 1 min.)
Environmental characteristics	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec, 350°C within 3 sec.	Soldering iron
	Storage temperature	-55°C to +85°C (Product only) -40°C to +50°C (Emboss packing)	No freezing at low temperatures
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1. -55 $\frac{3}{5}$ °C, 30 min. 2. ~, Max. 5 min. 3. 85 $\frac{3}{5}$ °C, 30 min. 4. ~, Max. 5 min.
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Temperature 40±2°C, humidity 90 to 95% R.H.
Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Temperature 35±2°C, saltwater concentration 5±1%	
H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	Temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.	
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		40 contacts; Socket: 0.05g Header: 0.03g	—

2. Material and surface treatment

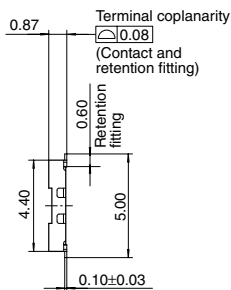
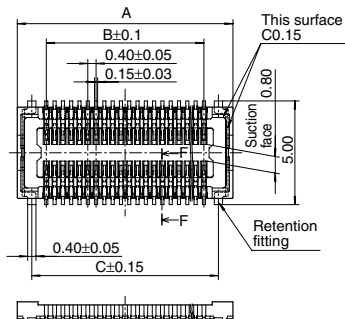
Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact/Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Retention fitting portion: Ni plating on base, Sn plating on surface (Socket: except for front edge of the terminal)

**DIMENSIONS** (unit: mm)

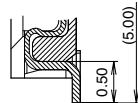
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

• Socket (Mated height 0.9 mm)

**CAD Data**



F-F cross section



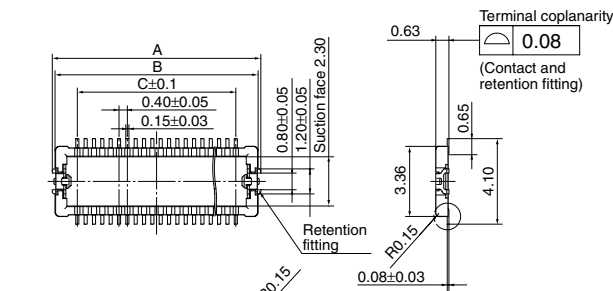
General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ Dimensions	A	B	C
10	4.4	1.6	3.0
12	4.8	2.0	3.4
14	5.2	2.4	3.8
16	5.6	2.8	4.2
20	6.4	3.6	5.0
22	6.8	4.0	5.4
24	7.2	4.4	5.8
26	7.6	4.8	6.2
28	8.0	5.2	6.6
30	8.4	5.6	7.0
32	8.8	6.0	7.4
34	9.2	6.4	7.8
36	9.6	6.8	8.2
38	10.0	7.2	8.6
40	10.4	7.6	9.0
44	11.2	8.4	9.8
48	12.0	9.2	10.6
50	12.4	9.6	11.0
54	13.2	10.4	11.8
60	14.4	11.6	13.0
66	15.6	12.8	14.2
70	16.4	13.6	15.0
80	18.4	15.6	17.0

• Header (Mated height: 0.9 mm)

**CAD Data**

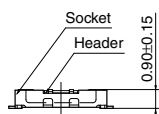


General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ Dimensions	A	B	C
10	4.0	3.74	1.6
12	4.4	4.14	2.0
14	4.8	4.54	2.4
16	5.2	4.94	2.8
20	6.0	5.74	3.6
22	6.4	6.14	4.0
24	6.8	6.54	4.4
26	7.2	6.94	4.8
28	7.6	7.34	5.2
30	8.0	7.74	5.6
32	8.4	8.14	6.0
34	8.8	8.54	6.4
36	9.2	8.94	6.8
38	9.6	9.34	7.2
40	10.0	9.74	7.6
44	10.8	10.54	8.4
48	11.6	11.34	9.2
50	12.0	11.74	9.6
54	12.8	12.54	10.4
60	14.0	13.74	11.6
66	15.2	14.94	12.8
70	16.0	15.74	13.6
80	18.0	17.74	15.6

• Socket and header are mated



Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

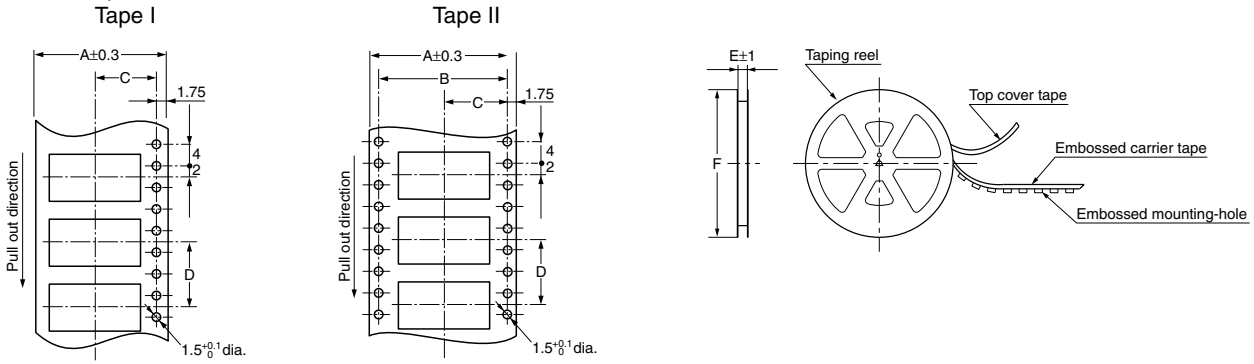
# AXK7L, 8L

Narrow-pitch connectors

## EMBOSSED TAPE DIMENSIONS (unit: mm) (Common for respective contact type, socket and header)

**Tape dimensions** (Conforming to JIS C 0806-1990. However, some tapes have mounting hole pitches that do not comply with the standard.)

**Plastic reel dimensions** (Conforming to EIAJ ET-7200B)



I/O connectors

## TABLE OF DIMENSIONS

Mated height	Number of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Common for socket and header: 0.9mm	Max. 24	Tape I	16.0	—	7.5	8.0	17.4	380 dia.	3000
	26 to 70	Tape I	24.0	—	11.5	8.0	25.4	380 dia.	3000
	80	Tape II	32.0	28.4	14.2	8.0	33.4	380 dia.	3000

Interface connectors

### Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress	Type	Common for F4	
	Socket	Header	
↓			

Sockets for memory card

Note: There is no indication on this product regarding top-bottom or left-right orientation.

Connectors for industrial equipment

IC sockets

Information



**CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES**

**NARROW PITCH CONNECTOR F4  
(0.4 mm PITCHES) FOR INSPECTION USAGE**



Socket



Header

**Compliance with RoHS Directive**

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as standard type.

Since shape is the same as standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Easier to mate

The connector is designed for inspection purpose only that retention force is not strong enough to sustain each side.

Cautious approaches are required when it comes to handling the mated connectors to avoid sudden fall.

The mated connectors are fragile against shocks and vibrations that they should be treated with special attention.

### 4. Lead free

## TABLE OF PRODUCT TYPES

☆: Available for sale

Number of contacts	Mated height	
	0.9mm	
10	☆	
12	☆	
14	☆	
16	☆	
20	☆	
22	☆	
24	☆	
26	☆	
28	☆	
30	☆	
32	☆	
34	☆	
36	☆	
38	☆	
40	☆	
44	☆	
48	☆	
50	☆	
54	☆	
60	☆	
66	☆	
70	☆	
80	☆	

Notes:

1. Please inquire about numbers of contacts other than those given above.
2. Please inquire with us regarding delivery times.
3. Please keep the minimum unit for ordering no less than 50 pieces per lot.
4. Please inquire for further information.

## PRODUCT TYPES

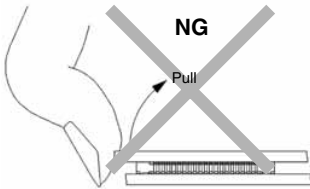
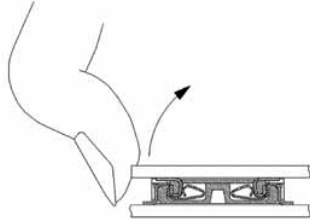
Specifications		Part No.	Specifications		Part No.
Socket	With positioning bosses	AXK7LE**16G	Header	With positioning bosses	AXK8LE**16BG
	Without positioning bosses	AXK7LE**26G		Without positioning bosses	AXK8LE**26BG

Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

## NOTES

1. Removal by pulling up from an end causes the entire connector removal force to concentrate on the retention fittings and end terminals. Therefore, please lift and remove from the side. Doing so will also prevent cracking of the soldered parts.



## 2. PC Boards and Recommended Metal Mask Patterns

Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5 mm.

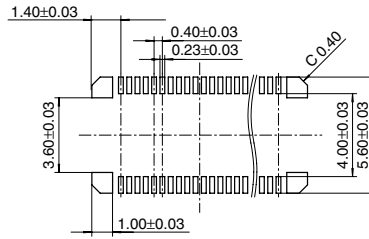
In order to reduce solder bridge and other issues make sure the proper levels of solder are used.

The figures to the right are recommended metal mask patterns. Please use them as a reference.

**In particular, if a lot of solder is used in the header retaining retention fittings, it might interfere with and cause incomplete socket mating. Therefore, please follow the recommended conditions give on the right.**

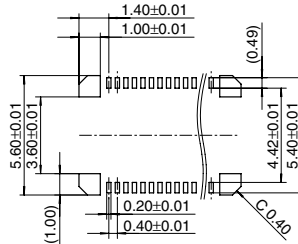
### Socket

Recommended PC board pattern  
(Mount pad arrangement pattern)



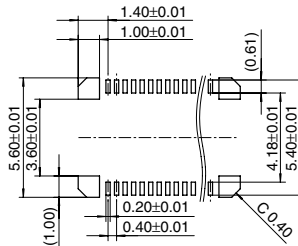
### Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 53 %)  
(Metal portion opening area ratio: 100 %)



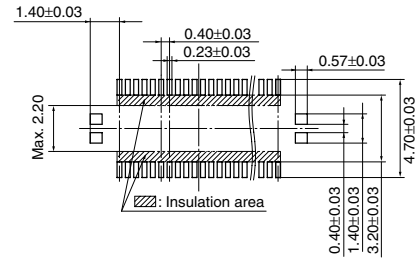
### Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 66 %)  
(Metal portion opening area ratio: 100 %)

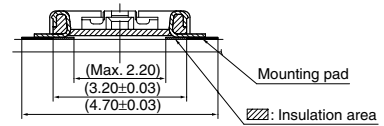


### Header

Recommended PC board pattern  
(Mount pad arrangement pattern)

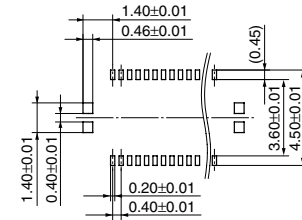


### Relation between connector and mounting pad



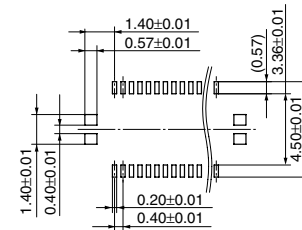
### Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 52 %)  
(Metal portion opening area ratio: 80 %)



### Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 66 %)  
(Metal portion opening area ratio: 100 %)



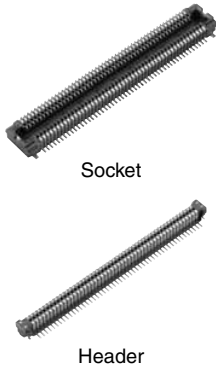
Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**FOR BOARD-TO-BOARD AND BOARD-TO-FPC CONNECTION**

**NARROW PITCH (0.35mm) CONNECTORS P35S SERIES**

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information



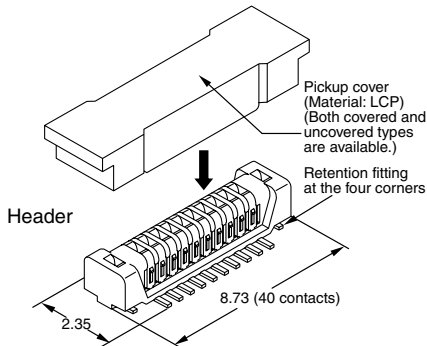
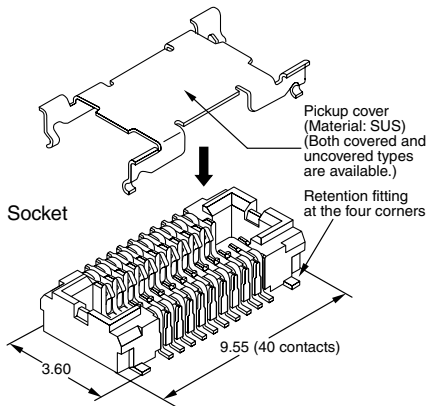
**Compliance with RoHS Directive**

**FEATURES**

**1. Ultra-small 0.35-mm pitch contributes to downsizing of equipment.**

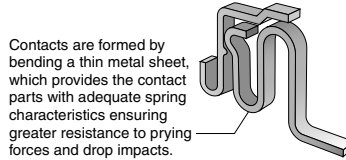
Socket compared to P4S already on the market: 11%

Header: Space-saving of 12% (Comparison using a 40-pin connector)



**2. Strong resistance to adverse environments! Utilizes "TOUGH CONTACT" construction for high contact reliability.**

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.



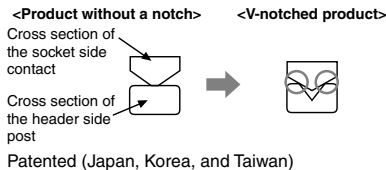
Note: If extra resistance to drop impact is required, we recommend using our P4 series.

2) V notch construction used for excellent resistance against foreign matters.

**● V-notch**

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

**[Cross Section of Contacts]**

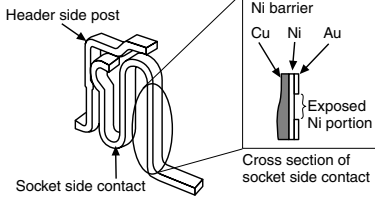


3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

**● Ni barrier**

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

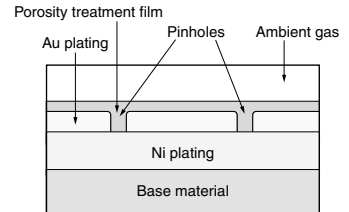
**[Contact]**



4) Porosity treatment applied for improved resistance against corrosion.

**● Porosity treatment**

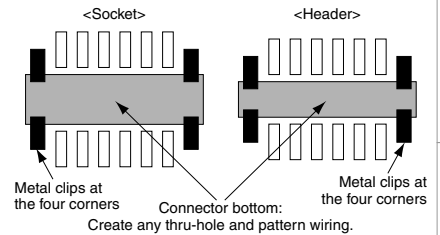
This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

**3. Greater flexibility in connector placement.**

Pattern wiring to the connector bottom is possible because the undersurface of the connector is constructed with a molded covering.



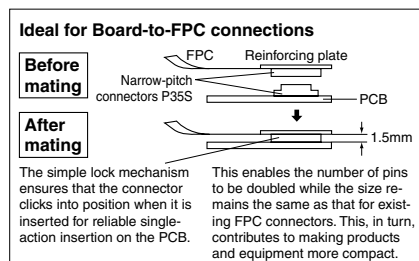
**4. Automatic mounting inspection is facilitated by the gull-wing terminal shape which makes mounting verification easy.**

**5. Connectors for inspection available**  
Connectors are available that are ideal for inspection in module unit inspection and device assembly processes.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

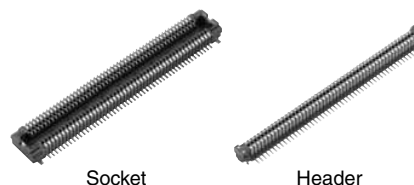
## APPLICATIONS

Compact portable devices “Cellular phones, DVC, Digital cameras, etc”



## TABLE OF PRODUCT TYPES

P35S (0.35mm pitch): With retention fitting



☆: Available for sale

Number of contacts	Mated height
	1.5mm
20	☆
22	☆
24	☆
26	☆
28	☆
30	☆
32	☆
34	☆
36	☆
38	☆
40	☆
50	☆
52	☆
60	☆
70	☆
80	☆
90	☆
100	☆

Notes: 1. The standard type comes without positioning bosses. Connectors with positioning boss are available for on-demand production.  
2. Please consult us regarding numbers of contacts other than those given above.

## ORDERING INFORMATION

AXT    **1**  **4**

1: Narrow Pitch Connector P35S (0.35 mm pitch) Socket  
2: Narrow Pitch Connector P35S (0.35 mm pitch) Header

Number of contacts (2 digits)

Mated height  
<Socket>/<Header>

1: For mated height 1.5 mm

Functions  
<Socket>/<Header>

- 1: No pickup cover, with positioning bosses
- 2: No pickup cover, without positioning bosses
- 5: With pickup cover, with positioning bosses
- 6: With pickup cover, without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>  
4: Ni plating on base, Au plating on surface (for Ni barrier product available)  
<Header>  
4: Ni plating on base, Au plating on surface

**PRODUCT TYPES** 

Mated height	Number of contacts	Part number		Packing	
		Socket	Header	Inner carton	Outer carton
1.5mm	20	AXT120124	AXT220124	3,000 pieces	6,000 pieces
	22	AXT122124	AXT222124		
	24	AXT124124	AXT224124		
	26	AXT126124	AXT226124		
	28	AXT128124	AXT228124		
	30	AXT130124	AXT230124		
	32	AXT132124	AXT232124		
	34	AXT134124	AXT234124		
	36	AXT136124	AXT236124		
	38	AXT138124	AXT238124		
	40	AXT140124	AXT240124		
	50	AXT150124	AXT250124		
	52	AXT152124	AXT252124		
	60	AXT160124	AXT260124		
	70	AXT170124	AXT270124		
80	AXT180124	AXT280124			
90	AXT190124	AXT290124			
100	AXT100124	AXT200124			

- Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us.  
 Samples: Small lot orders are possible. Please consult us.
2. If you require the pickup cover, change the eighth digit of the part number from "2" to "6" in your order. Note that the pickup cover is not available for some types depending on the number of contacts. Check the latest product specifications.
3. The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production.  
 If no pickup cover is required, change the eighth digit of the part number from "2" to "1" in your order. If you require the pickup cover, change the eighth digit of the part number from "2" to "5" in your order.
4. Connectors of different mated height and different number of contacts are available on-demand production only. Please contact us for more details.

**SPECIFICATIONS**

**1. Characteristics**

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.25A/contact (Max. 4 A at total contacts)	—
	Rated voltage	60V AC/DC	—
	Breakdown voltage	150V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 100mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec. or 350°C within 3 sec.	Soldering iron
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No freezing at low temperatures
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 100mΩ	Sequence 1. -55 <sup>±</sup> 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±</sup> 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 100mΩ	Temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 100mΩ	Temperature 35±2°C, saltwater concentration 5±1%
H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 100mΩ	Temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.	
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours

**2. Material and surface treatment**

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Retension fitting portion; Socket: Ni plating on base, Pd + Au flash plating on surface (Expect for front edge of terminal) Header: Ni plating on base, Au plating on surface (Expect for front edge of terminal)

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information



# AXT1, 2

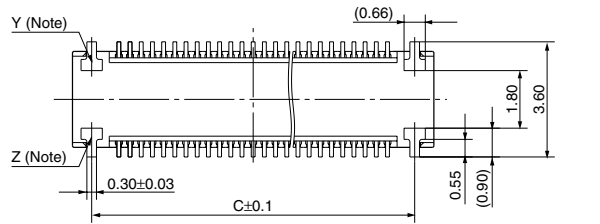
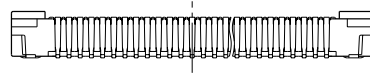
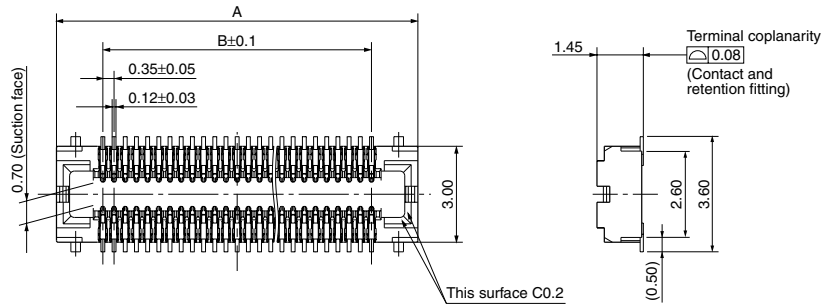
## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

### 1. Socket (Mated height: 1.5mm)

- Without pickup cover

**CAD Data**



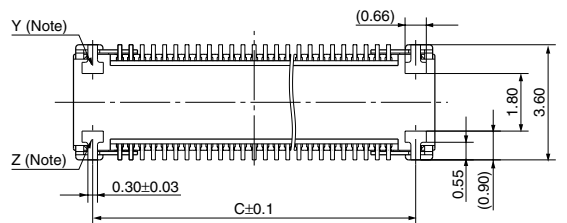
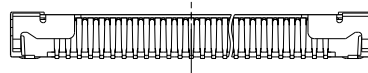
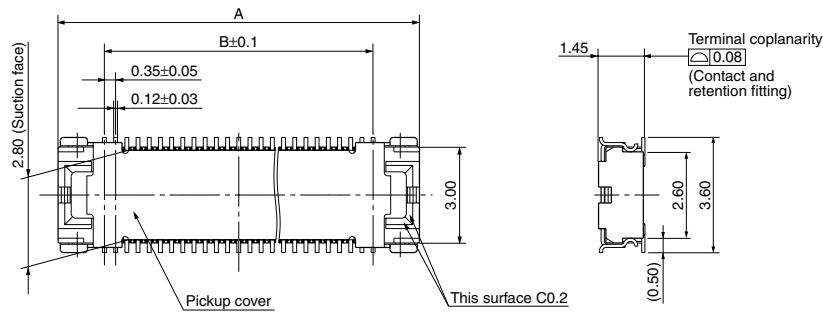
General tolerance:  $\pm 0.2$

Dimension table (mm)

Number of contacts/ dimension	A	B	C
20	6.05	3.15	4.85
22	6.40	3.50	5.20
24	6.75	3.85	5.55
26	7.10	4.20	5.90
28	7.45	4.55	6.25
30	7.80	4.90	6.60
32	8.15	5.25	6.95
34	8.50	5.60	7.30
36	8.85	5.95	7.65
38	9.20	6.30	8.00
40	9.55	6.65	8.23
50	11.30	8.40	10.10
52	11.65	8.75	10.45
60	13.05	10.15	11.85
70	14.80	11.90	13.60
80	16.55	13.65	15.35
90	18.30	15.40	17.10
100	20.05	17.15	18.85

- With pickup cover

**CAD Data**



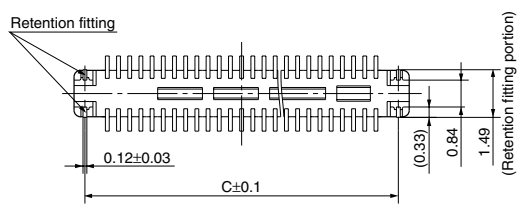
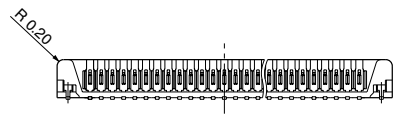
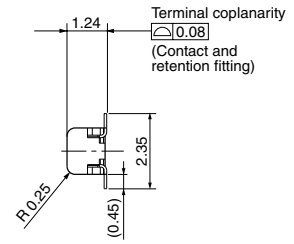
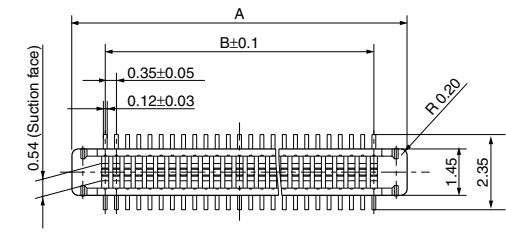
General tolerance:  $\pm 0.2$

Note: Since retention fittings are built into the body, the Y and Z parts are connected electrically.

2. Header (Mated height: 1.5mm)

- Without pickup cover

CAD Data



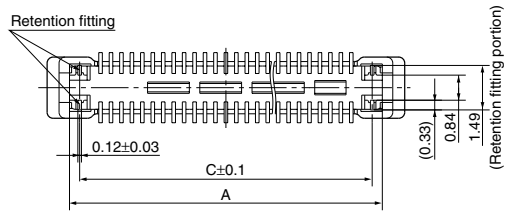
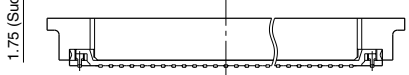
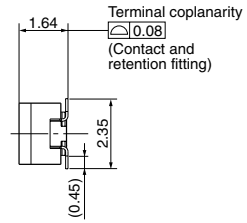
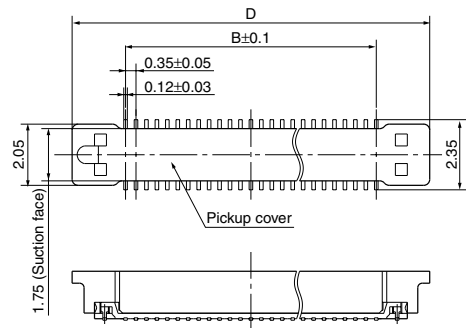
General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ dimension	A	B	C	C
20	5.23	3.15	4.55	6.73
22	5.58	3.50	4.90	7.08
24	5.93	3.85	5.25	7.43
26	6.28	4.20	5.60	7.78
28	6.63	4.55	5.95	8.13
30	6.98	4.90	6.30	8.48
32	7.33	5.25	6.65	8.83
34	7.68	5.60	7.00	9.18
36	8.03	5.95	7.35	9.53
38	8.38	6.30	7.70	9.88
40	8.73	6.65	8.05	10.23
50	10.48	8.40	9.80	11.98
52	10.83	8.75	10.15	—
60	12.23	10.15	11.55	13.73
70	13.98	11.90	13.30	15.48
80	15.73	13.65	15.05	17.23
90	17.48	15.40	16.80	19.98
100	19.23	17.15	18.55	20.73

- With pickup cover

CAD Data

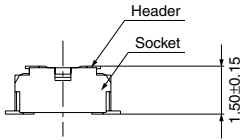


General tolerance: ±0.2

# AXT1, 2

Narrow-pitch connectors

Socket and Header are mated



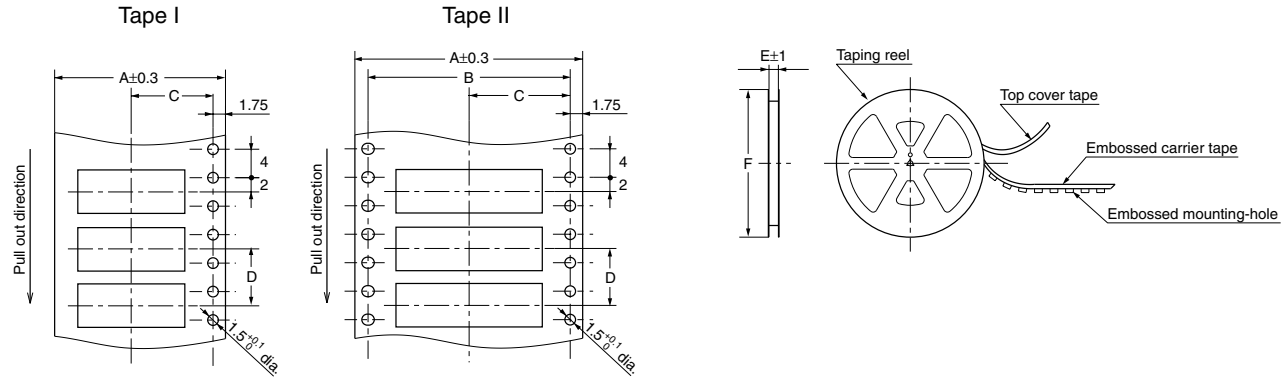
## EMBOSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.  
However, some tapes have mounting hole pitches that do not comply with the standard.)

• Reel dimensions (Conforming to EIAJ ET-7200B)

I/O connectors

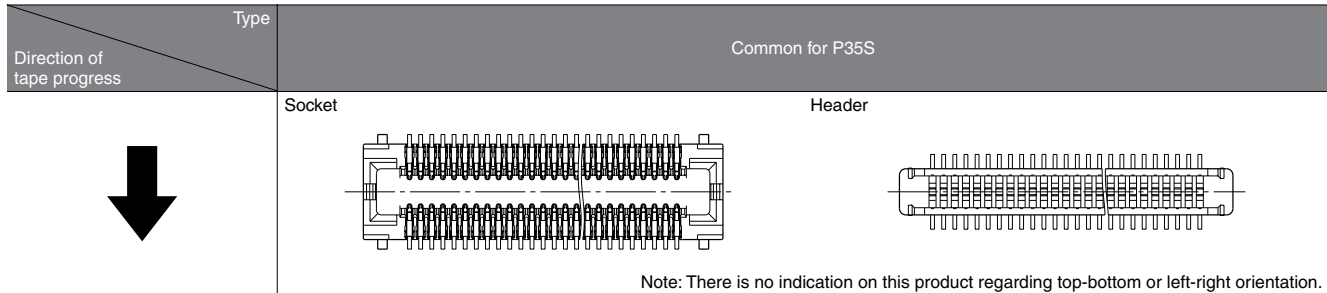
Interface connectors



### Dimension table (mm)

Mated height	Number of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Common for socket and header: 1.5mm	Max. 24	Tape I	16.0	—	7.5	8.0	17.4	380 dia.	3,000
	26 to 70	Tape I	24.0	—	11.5	8.0	25.4	380 dia.	3,000
	72 to 100	Tape II	32.0	28.4	14.2	8.0	33.4	380 dia.	3,000

### Connector orientation with respect to direction of progress of embossed tape



Sockets for memory card

Connectors for industrial equipment

IC sockets

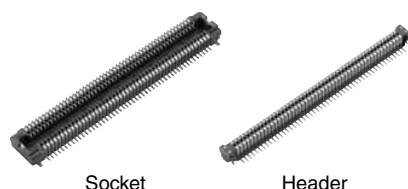
Information



**CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES**

**NARROW PITCH CONNECTOR P35S  
(0.35 mm PITCHES) FOR INSPECTION USAGE**

Narrow-pitch connectors



Socket

Header

**Compliance with RoHS Directive**

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as mated height 1.5mm standard type.

Since shape is the same as mated height 1.5mm standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

## TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	P35S for inspection
20	☆
22	☆
24	☆
26	☆
28	☆
30	☆
32	☆
34	☆
36	☆
38	☆
40	☆
50	☆
52	☆
60	☆
70	☆
80	☆
90	☆
100	☆

Number of contacts

Notes:

- The pickup surface shape of the inspection sockets is different from that of the standard sockets. (For details, refer to the product specification diagram.)
- Please inquire numbers of contacts other than those listed above.
- Please inquire us regarding delivery times.
- Please keep ordering unit no less than 50 pieces per lot.
- Please inquire for further information.

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

## PRODUCT TYPES

Specifications			Part No.	Specifications			Part No.
Socket	With pickup cover	With positioning bosses	AXT1E**56	Header	With pickup cover	With positioning bosses	AXT2E**56
		Without positioning bosses	AXT1E**66			Without positioning bosses	AXT2E**66
	No pickup cover	With positioning bosses	AXT1E**16		No pickup cover	With positioning bosses	AXT2E**16
		Without positioning bosses	AXT1E**26			Without positioning bosses	AXT2E**26

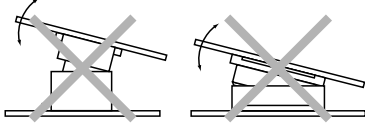
Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

IC sockets

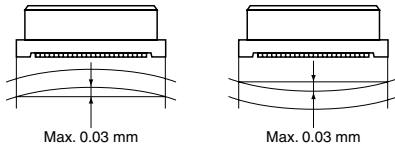
Information

**NOTES**

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03 mm in relation to the overall length of the connector



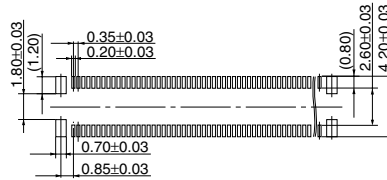
3. If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

**4. PC Boards and Recommended Metal Mask Patterns**

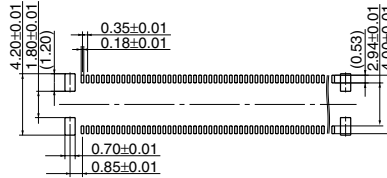
Connectors are mounted with high density, with a pitch interval of 0.35 mm, 0.4 mm or 0.5 mm. In order to reduce solder bridge and other issues make sure the proper levels of solder are used. The figures to the right are recommended metal mask patterns. Please use them as a reference.

**Socket (Mated height: 1.5mm)**

Recommended PC board pattern (TOP VIEW)

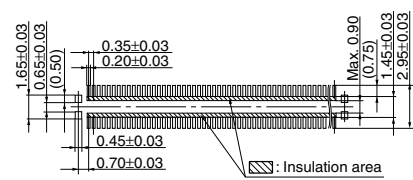


Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 60%)  
(Metal portion opening area ratio: 100%)

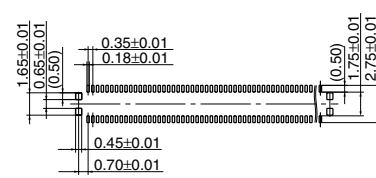


**Header (Mated height: 1.5mm)**

Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 60%)  
(Metal portion opening area ratio: 100%)



Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**FOR BOARD-TO-BOARD AND BOARD-TO-FPC CONNECTION**

**NARROW PITCH (0.4mm) CONNECTORS P4S SERIES**

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



Socket



Header

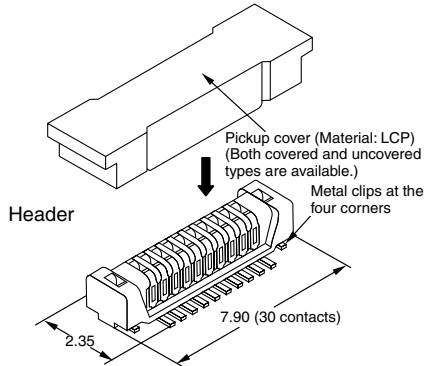
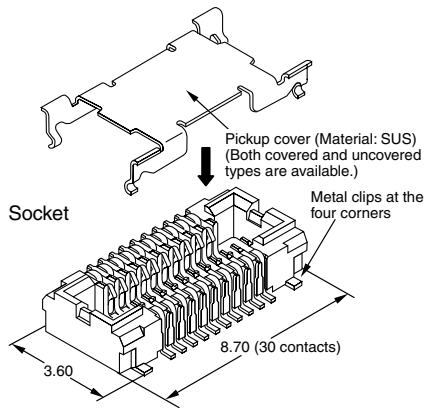
**Compliance with RoHS Directive**

**FEATURES**

**1. Space saving**

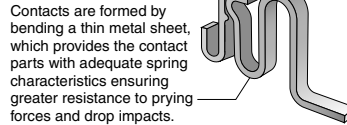
Compared to the currently sold P4 series with retention fitting, 38% space is saved in the socket and 34% space saved in the header.

This will contribute to weight and size savings in devices. (Comparison made with 30 contacts.)



**2. Strong resistance to adverse environments! Utilizes "TOUGH CONTACT" construction for high contact reliability.**

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.



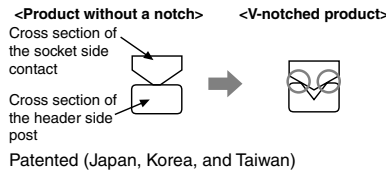
Note: If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

2) V notch construction used for excellent resistance against foreign matters.

**● V-notch**

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

**[Cross Section of Contacts]**

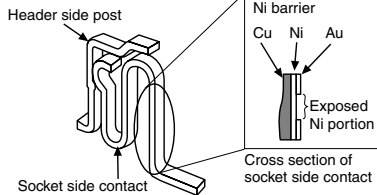


3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

**● Ni barrier**

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

**[Contact]**

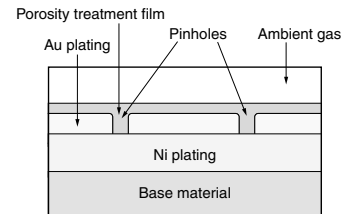


Note: Simultaneous molding of the header contact achieves a construction that prevents solder creep.

4) Porosity treatment applied for improved resistance against corrosion.

**Porosity treatment**

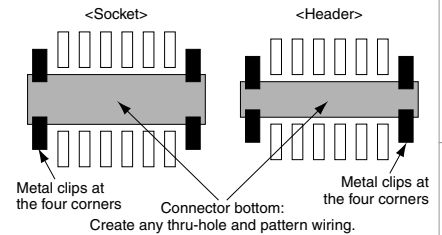
This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

**3. Greater flexibility in connector placement.**

Pattern wiring to the connector bottom is possible because the undersurface of the connector is constructed with a molded covering.

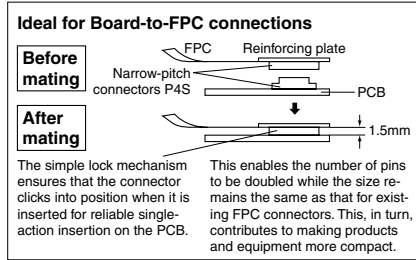


**4. Automatic mounting inspection is facilitated by the gull-wing terminal shape which makes mounting verification easy.**

**5. Connectors for inspection available**  
Connectors are available that are ideal for inspection in module unit inspection and device assembly processes.

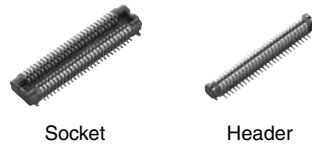
## APPLICATIONS

Compact portable devices “Cellular phones, DVC, Digital cameras, etc”



## TABLE OF PRODUCT TYPES

P4S (0.4mm pitch): With retention fitting



☆: Available for sale

Mated height	Number of contacts	
	1.5mm	3.0mm
10	☆	
16	☆	
20	☆	
22	☆	
24	☆	
26	☆	
28	☆	
30	☆	☆
32	☆	
34	☆	
36	☆	
38	☆	
40	☆	
42		☆
44	☆	
50	☆	
54	☆	
56	☆	☆
60	☆	☆
70	☆	
80	☆	☆
90	☆	
100	☆	☆
120		☆

Note: The standard type comes without positioning bosses. Connectors with positioning boss are available for on-demand production.

## ORDERING INFORMATION

AXT       **4**

3: Narrow Pitch Connector P4S (0.4 mm pitch) Socket  
4: Narrow Pitch Connector P4S (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

1: For mated height 1.5 mm

2: For mated height 3.0 mm

<Header>

1: For mated height 1.5 mm

3: For mated height 3.0 mm

Functions

<Socket/Header>

1: No pickup cover, with positioning bosses

2: No pickup cover, without positioning bosses

5: With pickup cover, with positioning bosses

6: With pickup cover, without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

4: Ni plating on base, Au plating on surface (for Ni barrier product available)

<Header>

4: Ni plating on base, Au plating on surface

**PRODUCT TYPES** 

Mated height	Number of contacts	Part number		Packing	
		Socket (Ni barrier product: Available)	Header	Inner carton	Outer carton
1.5mm	10	AXT310124	AXT410124	3,000 pieces	6,000 pieces
	16	AXT316124	AXT416124		
	20	AXT320124	AXT420124		
	22	AXT322124	AXT422124		
	24	AXT324124	AXT424124		
	26	AXT326124	AXT426124		
	28	AXT328124	AXT428124		
	30	AXT330124	AXT430124		
	32	AXT332124	AXT432124		
	34	AXT334124	AXT434124		
	36	AXT336124	AXT436124		
	38	AXT338124	AXT438124		
	40	AXT340124	AXT440124		
	44	AXT344124	AXT444124		
	50	AXT350124	AXT450124		
	54	AXT354124	AXT454124		
	56	AXT356124	AXT456124		
	3.0mm	60	AXT360124		
70		AXT370124	AXT470124		
80		AXT380124	AXT480124		
90		AXT390124	AXT490124		
100		AXT300124	AXT400124		
30		AXT330224	AXT430324		
42		AXT342224	AXT442324		
56		AXT356224	AXT456324		
60	AXT360224	AXT460324			
80	AXT380224	AXT480324			
100	AXT300224	AXT400324			
120	AXT3A2224	AXT4A2324			

- Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible. Please consult us.
- If you require the pickup cover, change the eighth digit of the part number from "2" to "6" in your order. Note that the pickup cover is not available for some types depending on the number of contacts. Check the latest product specifications.
  - The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production.  
 If no pickup cover is required, change the eighth digit of the part number from "2" to "1" in your order. If you require the pickup cover, change the eighth digit of the part number from "2" to "5" in your order.
  - Connectors of different mated height and different number of contacts are available on-demand production only. Please contact us for more details.

Narrow-pitch connectors  
 I/O connectors  
 Interface connectors  
 Sockets for memory card  
 Connectors for industrial equipment  
 IC sockets  
 Information



**SPECIFICATIONS**

**1. Characteristics**

Item		Specifications	Conditions
Electrical characteristics	Rated current	0.3A/contact (Max. 5 A at total contacts)	—
	Rated voltage	60V AC/DC	—
	Breakdown voltage	150V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.
	Insulation resistance	Min. 1,000MΩ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals) 300°C within 5 sec. or 350°C within 3 sec.	Infrared reflow soldering Soldering iron
	Storage temperature	-55°C to +85°C (product only) -40°C to +50°C (emboss packing)	No freezing at low temperatures
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1. -55 <sup>±3</sup> °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±3</sup> °C, 30 minutes 4. ~, Max. 5 minutes
Interface connectors	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 90mΩ	Temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours

**2. Material and surface treatment**

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for front edge of terminal) However, the area adjacent to the socket terminal is exposed to Ni on base. Retention fitting portion; Socket: Ni plating on base, Pd + Au flash plating on surface (Expect for front edge of terminal) Header: Ni plating on base, Au plating on surface (Expect for front edge of terminal)

Narrow-pitch connectors  
 I/O connectors  
 Interface connectors  
 Sockets for memory card  
 Connectors for industrial equipment  
 IC sockets  
 Information

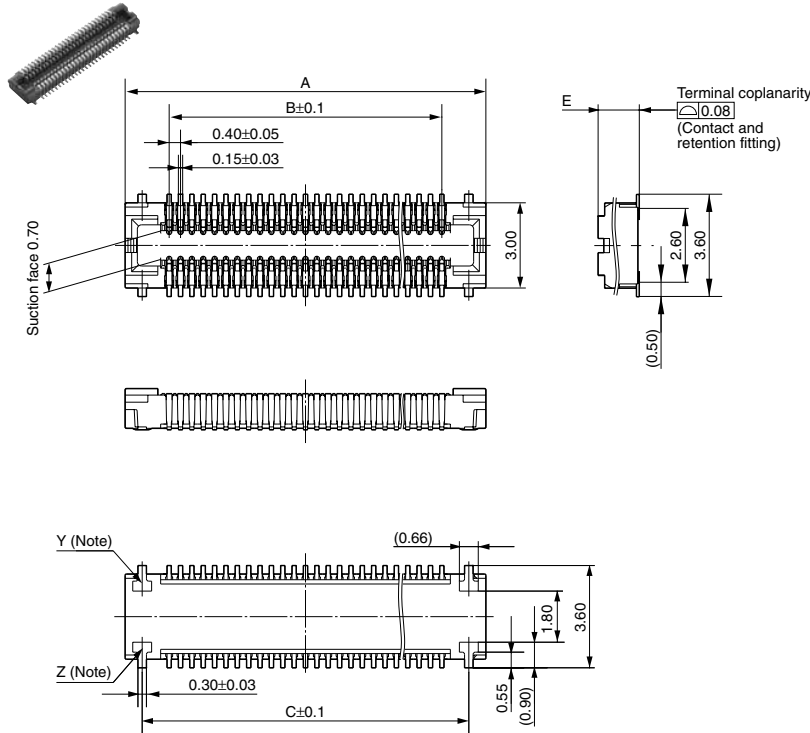
**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

**1. Socket (Mated height: 1.5mm, 3.0mm)**

- Without pickup cover

**CAD Data**



General tolerance: ±0.2

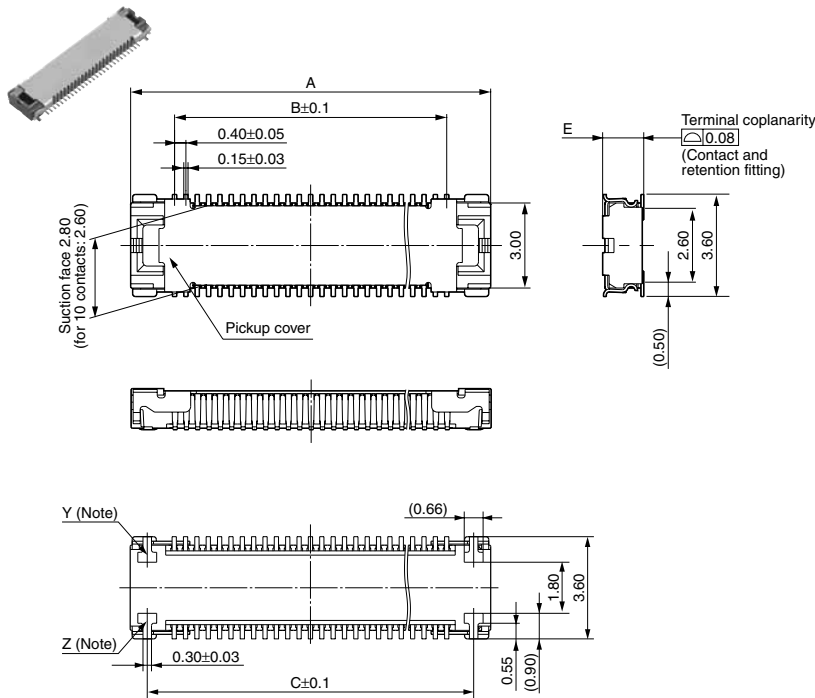
Dimension table (mm)

Number of contacts/ dimension	A	B	C
10	4.7	1.6	3.5
16	5.9	2.8	4.7
20	6.7	3.6	5.5
22	7.1	4.0	5.9
24	7.5	4.4	6.3
26	7.9	4.8	6.7
28	8.3	5.2	7.1
30	8.7	5.6	7.5
32	9.1	6.0	7.9
34	9.5	6.4	8.3
36	9.9	6.8	8.7
38	10.3	7.2	9.1
40	10.7	7.6	9.5
42	11.1	8.0	9.9
44	11.5	8.4	10.3
50	12.7	9.6	11.5
54	13.5	10.4	12.3
56	13.9	10.8	12.7
60	14.7	11.6	13.5
70	16.7	13.6	15.5
80	18.7	15.6	17.5
90	20.7	17.6	19.5
100	22.7	19.6	21.5
120	26.7	23.6	25.5

Mated height/ dimension	E
1.5mm	1.45
3.0mm	2.45

- With pickup cover

**CAD Data**



General tolerance: ±0.2

Note: Since retention fittings are built into the body, the Y and Z parts are connected electrically.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

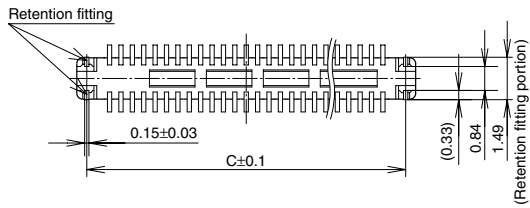
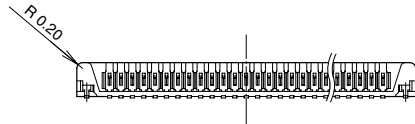
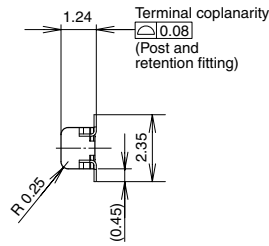
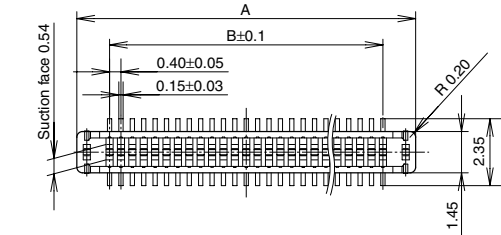
# AXT3, 4

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

## 2. Header (Mated height: 1.5mm)

- Without pickup cover

### CAD Data



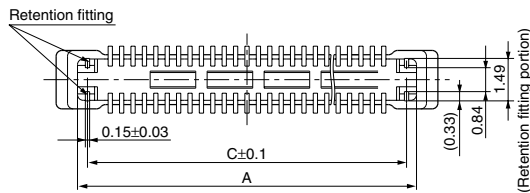
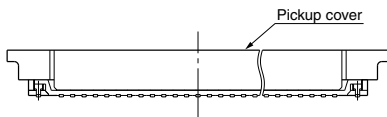
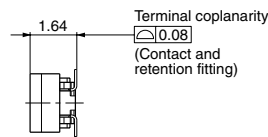
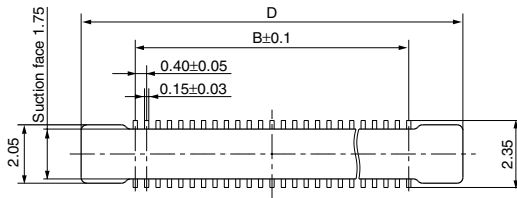
General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
10	3.9	1.6	3.2	5.4
16	5.1	2.8	4.4	6.6
20	5.9	3.6	5.2	7.4
22	6.3	4.0	5.6	7.8
24	6.7	4.4	6.0	8.2
26	7.1	4.8	6.4	8.6
28	7.5	5.2	6.8	9.0
30	7.9	5.6	7.2	9.4
32	8.3	6.0	7.6	9.8
34	8.7	6.4	8.0	10.2
36	9.1	6.8	8.4	10.6
38	9.5	7.2	8.8	11.0
40	9.9	7.6	9.2	11.4
44	10.7	8.4	10.0	12.2
50	11.9	9.6	11.2	13.4
54	12.7	10.4	12.0	14.2
56	13.1	10.8	12.4	14.6
60	13.9	11.6	13.2	15.4
70	15.9	13.6	15.2	17.4
80	17.9	15.6	17.2	19.4
90	19.9	17.6	19.2	21.4
100	21.9	19.6	21.2	23.4

- With pickup cover

### CAD Data



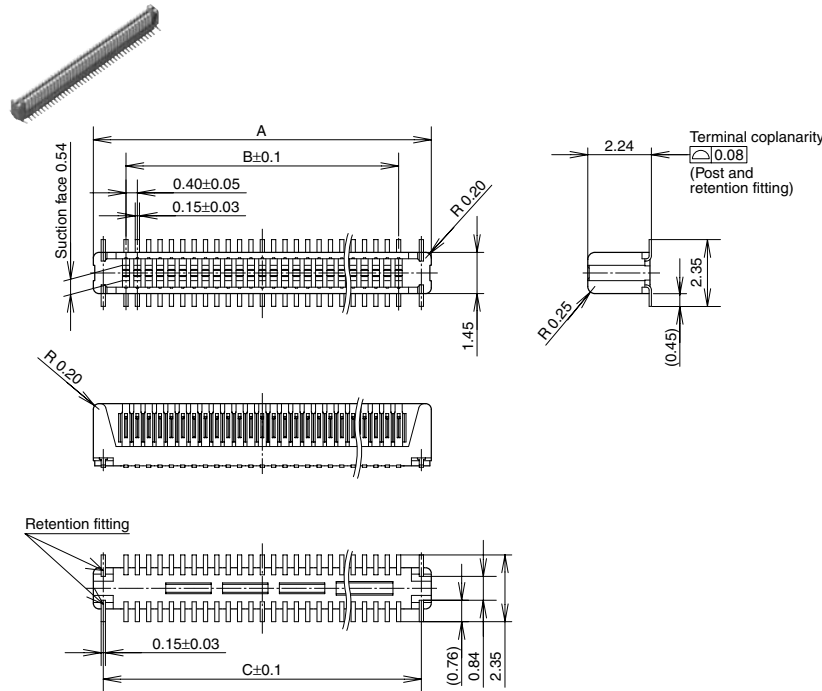
General tolerance: ±0.2

Note: The retention fitting dimensions of headers with mating heights of 1.5mm and 3.0mm are different.

3. Header (Mated height: 3.0mm)

- Without pickup cover

CAD Data



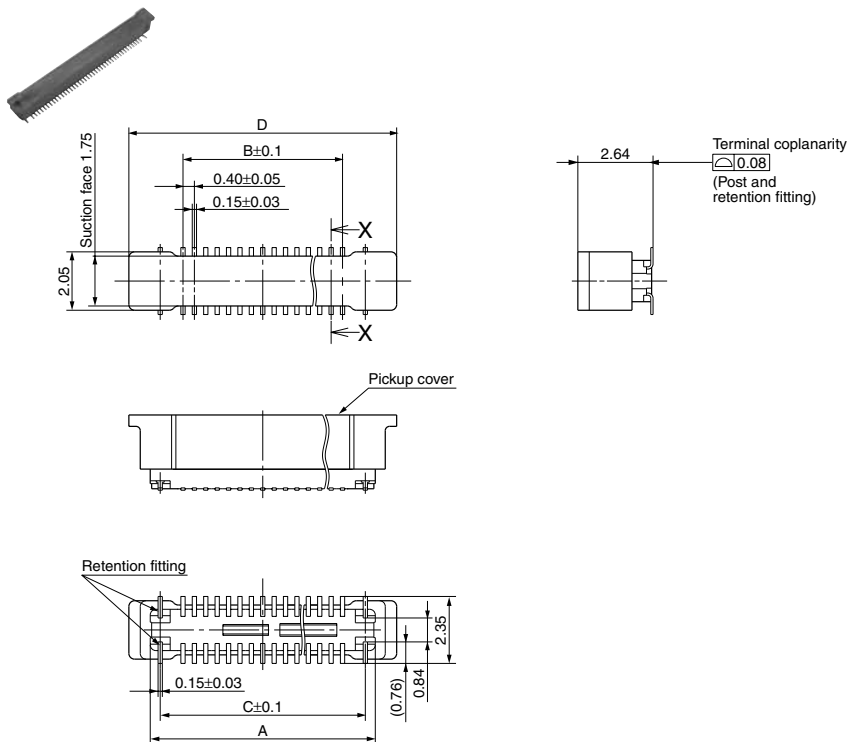
Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
20	5.9	3.6	5.2	—
30	7.9	5.6	7.2	9.4
42	10.3	8.0	9.6	—
56	13.1	10.8	12.4	—
60	13.9	11.6	13.2	—
80	17.9	15.6	17.2	19.4
100	21.9	19.6	21.2	—
120	25.9	23.6	25.2	—

General tolerance: ±0.2

- With pickup cover

CAD Data



General tolerance: ±0.2

Note: The retention fitting dimensions of headers with mating heights of 1.5mm and 3.0mm are different.

# AXT3, 4

Narrow-pitch connectors

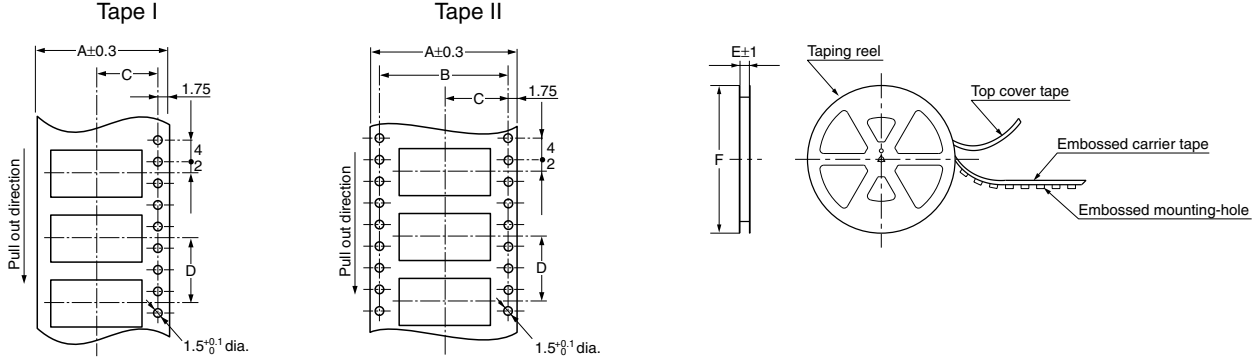
Socket and Header are mated



## EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

- Tape dimensions (Conforming to JIS C 0806-1990. However, some tapes have mounting hole pitches that do not comply with the standard.)
- Reel dimensions (Conforming to EIAJ ET-7200B)

I/O connectors  
Interface connectors



### Dimension table (mm)

Mated height	Number of contacts		Type of taping	A	B	C	D	E	F	Quantity per reel
	Socket (with/without pickup cover)	Header (with pickup cover)								
Common for socket and header: 1.5mm and 3.0mm	Max. 24	Max. 24	Tape I	16.0	—	7.5	8.0	17.5	380 dia.	3,000
	26 to 70	26 to 64	Tape I	24.0	—	11.5	8.0	25.5	380 dia.	3,000
	72 to 100	66 to 90	Tape II	32.0	28.4	14.2	8.0	33.5	380 dia.	3,000
	120	100	Tape II	44.0	40.4	20.2	8.0	45.5	380 dia.	3,000

Sockets for memory card

### Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress	Type	Common for P4S	
		Socket	Header
↓			

Note: There is no indication on this product regarding top-bottom or left-right orientation.

Connectors for industrial equipment

IC sockets

Information



**CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES**

**NARROW PITCH CONNECTOR P4S  
(0.4 mm PITCHES) FOR INSPECTION USAGE**



Socket

Header

**Compliance with RoHS Directive**

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as mated height 1.5mm standard type.

Since shape is the same as mated height 1.5mm standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

## TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	P4S for inspection
10	☆
16	☆
20	☆
22	☆
24	☆
26	☆
28	☆
30	☆
32	☆
34	☆
36	☆
38	☆
40	☆
44	☆
50	☆
54	☆
56	☆
60	☆
70	☆
80	☆
90	☆
100	☆

Number of contacts

Notes:

1. You can use with each mated height in common.
2. The pickup surface shape of the inspection sockets is different from that of the standard sockets. (For details, refer to the product specification diagram.)
3. Please inquire about numbers of contacts other than those given above.
4. Please inquire with us regarding delivery times.
5. Please keep the minimum unit for ordering no less than 50 pieces per lot.
6. Please inquire for further information.

## PRODUCT TYPES

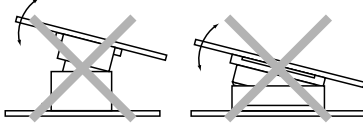
Specifications			Part No.	Specifications			Part No.
Socket	With pickup cover	With positioning bosses	AXT3E**56	Header	With pickup cover	With positioning bosses	AXT4E**56
		Without positioning bosses	AXT3E**66			Without positioning bosses	AXT4E**66
	No pickup cover	With positioning bosses	AXT3E**16		No pickup cover	With positioning bosses	AXT4E**16
		Without positioning bosses	AXT3E**26			Without positioning bosses	AXT4E**26

Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

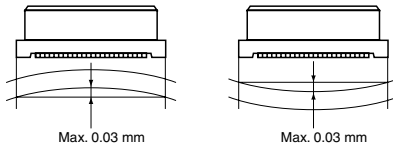
Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

## NOTES

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03mm in relation to the overall length of the connector.



3. If extra resistance to shock caused by dropping is required, we recommend using our previous P4 Series.

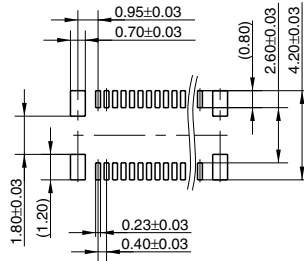
### 4. PC Boards and Recommended Metal Mask Patterns

Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5mm.

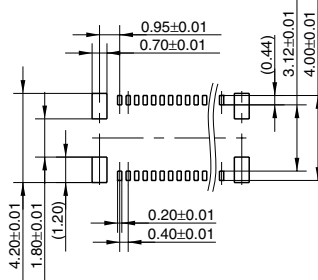
In order to reduce solder bridge and other issues make sure the proper levels of solder are used.

The figures to the right are recommended metal mask patterns. Please use them as a reference.

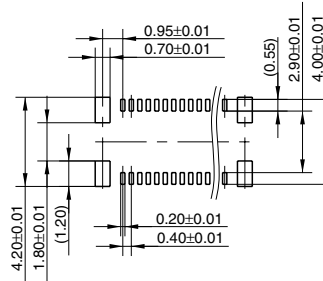
Socket  
(Mated height: 1.5mm and 3.0mm)  
Recommended PC board pattern (TOP VIEW)



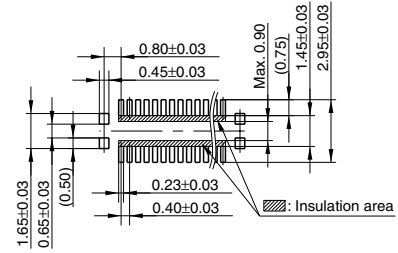
Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 48%)  
(Metal portion opening area ratio: 100%)



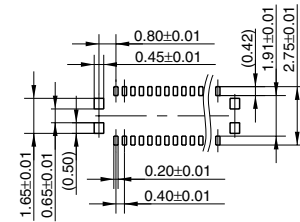
Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 60%)  
(Metal portion opening area ratio: 100%)



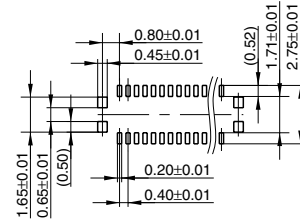
Header  
(Mated height: 1.5mm)  
Recommended PC board pattern (TOP VIEW)



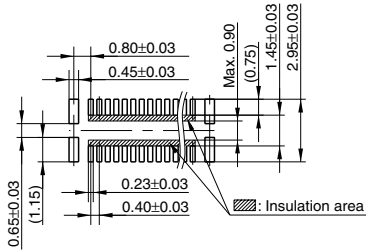
Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 49%)  
(Metal portion opening area ratio: 100%)



Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 60%)  
(Metal portion opening area ratio: 100%)



Header  
 (Mated height: 3.0mm)  
 Recommended PC board pattern (TOP VIEW)

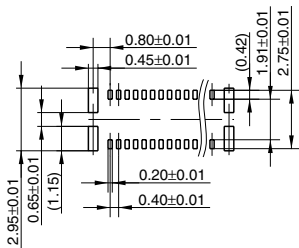


Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

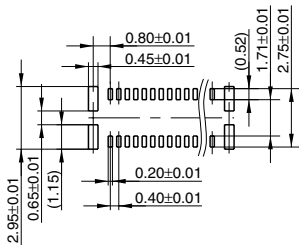
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
 (Terminal portion opening area ratio: 49%)  
 (Metal portion opening area ratio: 100%)



Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
 (Terminal portion opening area ratio: 60%)  
 (Metal portion opening area ratio: 100%)



Note: The recommended PC board pattern diagrams and metal mask pattern diagrams for headers with mating heights of 1.5 mm and 3.0 mm are different.

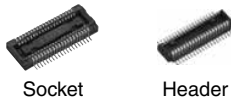


# Panasonic

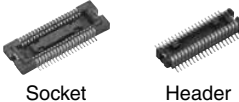
## ideas for life



### • Without retention fitting



### • With retention fitting



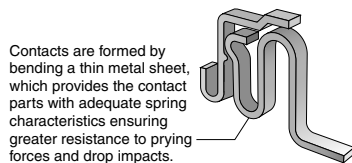
### Compliance with RoHS Directive

## FEATURES

1. 0.4 mm pitch and support for mated heights of up to 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm, and 4.0 mm.

2. Strong resistance to adverse environments! Utilizes **TOUGH CONTACT** construction for high contact reliability.

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.



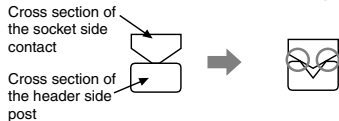
2) V notch construction used for excellent resistance against foreign matters.

### • V-notch

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

#### [Cross Section of Contacts]

<Product without a notch>     <V-notched product>



## NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD AND BOARD-TO-FPC CONNECTION

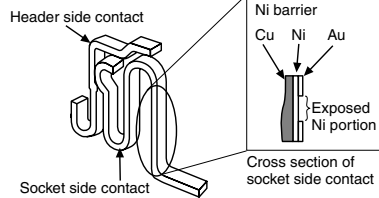
## NARROW PITCH (0.4mm) CONNECTORS P4 SERIES

3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

### • Ni barrier

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

#### [Contact]

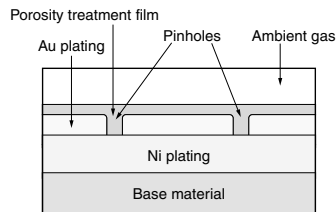


Note: Simultaneous molding of the header contact achieves a construction that prevents solder creep.

4) Porosity treatment applied for improved resistance against corrosion.

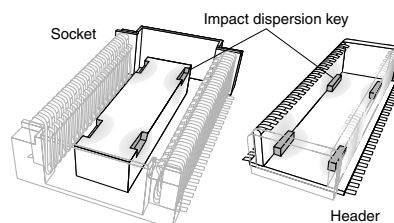
### Porosity treatment

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

3. It is constructed with impact dispersion keys inside the body to disperse shocks when dropped.

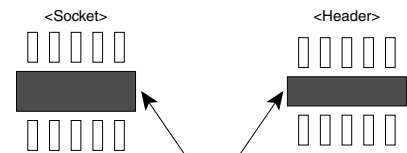


A high level of shock resistance is ensured by dispersing impact over the four locations where the socket indentations and header protrusions are mated together.

Note: The following numbers of contacts are not supported due to suction surface factors.

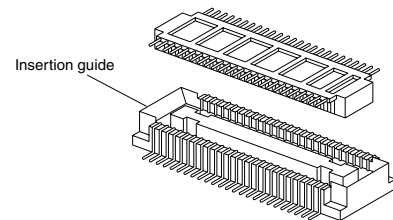
- Without retention fitting: 18 contacts or less
  - With retention fitting: 22 contacts or less
4. Construction makes designing devices easier.

1) The lower connector bottom surface construction prevents contact and shorts between the PCB and metal terminals. This enables freedom in pattern wiring, helping to make PCB's smaller.

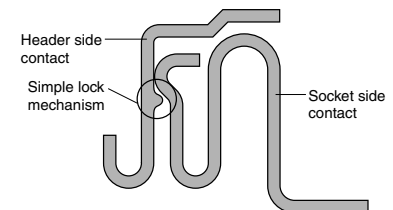


Connector bottom: Create any thru-hole and pattern wiring.

2) Guides are provided to take up any position shift and facilitate insertion.



3) The connector has a simple lock mechanism. Superior mated operation with click feel to indicate that mated is complete.

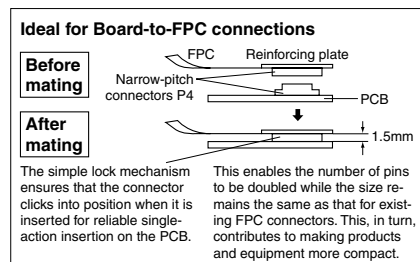


5. Design makes efficient mounting. Features a terminal flatness of 0.08 mm, construction resistant to creeping flux, and design that facilitates visual inspection of the soldered part.

6. Connectors for inspection available. Connectors for inspection are available that are ideal for modular unit inspection and inspection in device assembly processes.

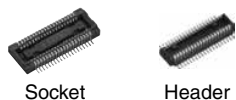
# APPLICATIONS

Compact portable devices “Cellular phones, DVC, Digital cameras, etc”



## TABLE OF PRODUCT TYPES

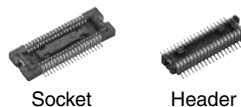
**P4 (0.4 mm pitch): Without retention fitting**



☆: Available for sale

Mated height	Number of contacts					
	1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
14	☆	☆	☆			
16	☆					
20	☆	☆	☆	☆		
22	☆					
24	☆	☆	☆	☆		☆
26	☆	☆				
28	☆					
30	☆	☆	☆	☆	☆	
34	☆	☆	☆			
36	☆					
38		☆				
40	☆	☆	☆	☆	☆	
42	☆					
44	☆		☆			
50	☆	☆	☆	☆		
54	☆	☆				
60	☆	☆	☆			
64	☆					
70	☆	☆	☆			
80	☆	☆	☆			
90	☆		☆			
100	☆	☆	☆			

**P4 (0.4 mm pitch): With retention fitting**



☆: Available for sale

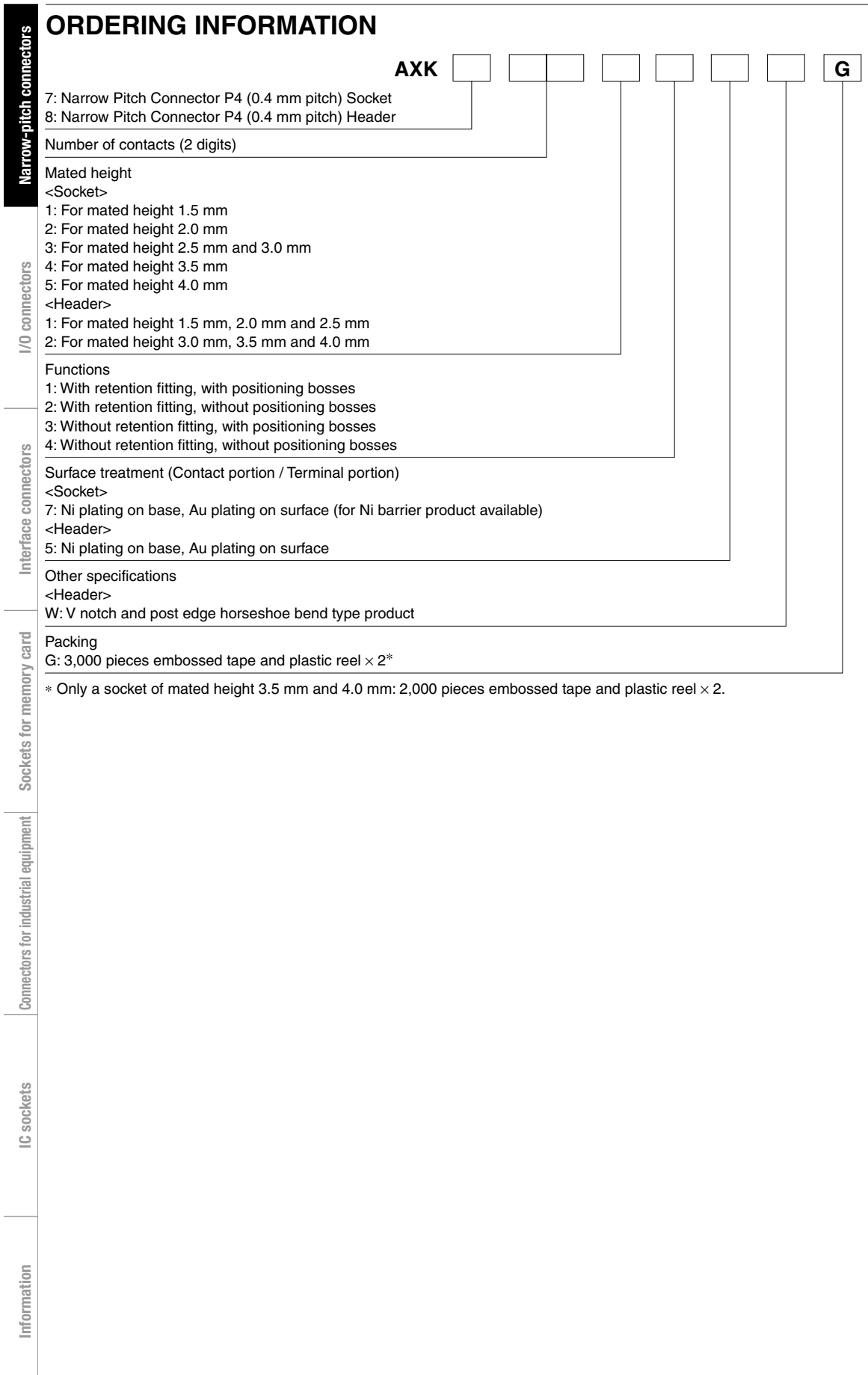
Mated height	Number of contacts					
	1.5mm	2.0mm	2.5mm	3.0mm	3.5mm	4.0mm
10	☆					
12	☆					
20	☆	☆	☆	☆	☆	
22	☆					
24	☆	☆				
28	☆		☆			
30	☆				☆	
32			☆			
34	☆					☆
36				☆		
40	☆	☆	☆	☆	☆	
42						☆
44	☆					
46	☆					
50	☆	☆	☆	☆	☆	☆
60	☆	☆	☆	☆	☆	
70					☆	
80	☆	☆	☆	☆	☆	☆
90	☆		☆	☆		
100	☆					

Note: Please contact us regarding numbers of contacts other than those given above.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# AXK7, 8

## ORDERING INFORMATION



7: Narrow Pitch Connector P4 (0.4 mm pitch) Socket  
 8: Narrow Pitch Connector P4 (0.4 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

- 1: For mated height 1.5 mm
- 2: For mated height 2.0 mm
- 3: For mated height 2.5 mm and 3.0 mm
- 4: For mated height 3.5 mm
- 5: For mated height 4.0 mm

<Header>

- 1: For mated height 1.5 mm, 2.0 mm and 2.5 mm
- 2: For mated height 3.0 mm, 3.5 mm and 4.0 mm

Functions

- 1: With retention fitting, with positioning bosses
- 2: With retention fitting, without positioning bosses
- 3: Without retention fitting, with positioning bosses
- 4: Without retention fitting, without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

7: Ni plating on base, Au plating on surface (for Ni barrier product available)

<Header>

5: Ni plating on base, Au plating on surface

Other specifications

<Header>


W: V notch and post edge horseshoe bend type product

Packing

G: 3,000 pieces embossed tape and plastic reel × 2\*

\* Only a socket of mated height 3.5 mm and 4.0 mm: 2,000 pieces embossed tape and plastic reel × 2.

**PRODUCT TYPES**

**1. Without retention fitting** 

Mated height	Number of contacts	Part number		Packing	
		Socket	Header	Inner carton	Outer carton
		<i>TOUGH CONTACT</i>	<i>TOUGH CONTACT</i>		
1.5 mm	14	AXK714147G	AXK814145WG	3,000 pieces	6,000 pieces
	16	AXK716147G	AXK816145WG		
	20	AXK720147G	AXK820145WG		
	22	AXK722147G	AXK822145WG		
	24	AXK724147G	AXK824145WG		
	26	AXK726147G	AXK826145WG		
	28	AXK728147G	AXK828145WG		
	30	AXK730147G	AXK830145WG		
	34	AXK734147G	AXK834145WG		
	36	AXK736147G	AXK836145WG		
	40	AXK740147G	AXK840145WG		
	42	AXK742147G	AXK842145WG		
	44	AXK744147G	AXK844145WG		
	50	AXK750147G	AXK850145WG		
	54	AXK754147G	AXK854145WG		
	60	AXK760147G	AXK860145WG		
	64	AXK764147G	AXK864145WG		
	70	AXK770147G	AXK870145WG		
80	AXK780147G	AXK880145WG			
90	AXK790147G	AXK890145WG			
100	AXK700147G	AXK800145WG			
2.0 mm	14	AXK714247G	AXK814145WG	3,000 pieces	6,000 pieces
	20	AXK720247G	AXK820145WG		
	24	AXK724247G	AXK824145WG		
	26	AXK726247G	AXK826145WG		
	30	AXK730247G	AXK830145WG		
	34	AXK734247G	AXK834145WG		
	38	AXK738247G	AXK838145WG		
	40	AXK740247G	AXK840145WG		
	50	AXK750247G	AXK850145WG		
	60	AXK760247G	AXK860145WG		
	70	AXK770247G	AXK870145WG		
	80	AXK780247G	AXK880145WG		
100	AXK700247G	AXK800145WG			
2.5 mm	14	AXK714347G	AXK814145WG	3,000 pieces	6,000 pieces
	20	AXK720347G	AXK820145WG		
	24	AXK724347G	AXK824145WG		
	30	AXK730347G	AXK830145WG		
	34	AXK734347G	AXK834145WG		
	40	AXK740347G	AXK840145WG		
	44	AXK744347G	AXK844145WG		
	50	AXK750347G	AXK850145WG		
	60	AXK760347G	AXK860145WG		
	70	AXK770347G	AXK870145WG		
	80	AXK780347G	AXK880145WG		
	90	AXK790347G	AXK890145WG		
100	AXK700347G	AXK800145WG			
3.0 mm	24	AXK724347G	AXK824245WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces
	30	AXK730347G	AXK830245WG		
	50	AXK750347G	AXK850245WG		
3.5 mm	30	AXK730447G	AXK830245WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces
	40	AXK740447G	AXK840245WG		
4.0 mm	24	AXK724547G	AXK824245WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces

- Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible.
2. The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production. For this type of connector, 8th digit of the part number changes from 4 to 3. e.g. Mated height 1.5 mm and 20 contacts for socket without retention fitting: AXK720137G
3. "W" indicates a product with V notch and post edge horseshoe bend. ("Post edge horseshoe bend" refers to a construction that makes it difficult for the header post edge to deform when the connector is inserted and removed at an angle.)
4. Previous V notch types ("Y" in 10 th place of the header part number) and the current V notch + post edge horseshoe bend types ("W" in the 10 th place of the header part number) are compatible for mating.
5. Connectors of different mated height (3.0 mm, 3.5 mm and 4.0 mm) and different number of contacts are available on-demand production only. Please contact us for more details.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# AXK7, 8

## 2. With retention fitting

Narrow-pitch connectors	Mated height	Number of contacts	Part number		Packing	
			Socket	Header	Inner carton	Outer carton
			<b>TOUGH CONTACT</b>	<b>TOUGH CONTACT</b>		
I/O connectors	1.5 mm	10	AXK710127G	AXK810125WG	3,000 pieces	6,000 pieces
		12	AXK712127G	AXK812125WG		
		20	AXK720127G	AXK820125WG		
		22	AXK722127G	AXK822125WG		
		24	AXK724127G	AXK824125WG		
		28	AXK728127G	AXK828125WG		
		30	AXK730127G	AXK830125WG		
		34	AXK734127G	AXK834125WG		
		40	AXK740127G	AXK840125WG		
		44	AXK744127G	AXK844125WG		
		46	AXK746127G	AXK846125WG		
		50	AXK750127G	AXK850125WG		
		60	AXK760127G	AXK860125WG		
		80	AXK780127G	AXK880125WG		
90	AXK790127G	AXK890125WG				
100	AXK700127G	AXK800125WG				
Interface connectors	2.0 mm	20	AXK720227G	AXK820125WG	3,000 pieces	6,000 pieces
		24	AXK724227G	AXK824125WG		
		40	AXK740227G	AXK840125WG		
		50	AXK750227G	AXK850125WG		
		60	AXK760227G	AXK860125WG		
		80	AXK780227G	AXK880125WG		
Sockets for memory card	2.5 mm	20	AXK720327G	AXK820125WG	3,000 pieces	6,000 pieces
		28	AXK728327G	AXK828125WG		
		32	AXK732327G	AXK832125WG		
		40	AXK740327G	AXK840125WG		
		50	AXK750327G	AXK850125WG		
		60	AXK760327G	AXK860125WG		
		80	AXK780327G	AXK880125WG		
90	AXK790327G	AXK890125WG				
Sockets for industrial equipment	3.0 mm	20	AXK720327G	AXK820225WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces
		36	AXK736327G	AXK836225WG		
		40	AXK740327G	AXK840225WG		
		50	AXK750327G	AXK850225WG		
		60	AXK760327G	AXK860225WG		
		80	AXK780327G	AXK880225WG		
Connectors for industrial equipment	3.5 mm	20	AXK720427G	AXK820225WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces
		30	AXK730427G	AXK830225WG		
		40	AXK740427G	AXK840225WG		
		50	AXK750427G	AXK850225WG		
		60	AXK760427G	AXK860225WG		
		70	AXK770427G	AXK870225WG		
IC sockets	4.0 mm	34	AXK734527G	AXK834225WG	Socket: 2,000 pieces Header: 3,000 pieces	Socket: 4,000 pieces Header: 6,000 pieces
		42	AXK742527G	AXK842225WG		
		50	AXK750527G	AXK850225WG		
		80	AXK780527G	AXK880225WG		

- Notes: 1. Regarding ordering units; During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible.
2. The standard type comes without positioning bosses.  
 Connectors with positioning bosses are available on-demand production. For this type of connector, 8th digit of the part number changes from 2 to 1. e.g. Mated height 1.5 mm and 10 contacts for socket with retention fitting: AXK710117G
3. "W" indicates a product with V notch and post edge horseshoe bend. ("Post edge horseshoe bend" refers to a construction that makes it difficult for the header post edge to deform when the connector is inserted and removed at an angle.)
4. Previous V notch types ("Y" in 10 th place of the header part number) and the current V notch + post edge horseshoe bend types ("W" in the 10 th place of the header part number) are compatible for mating.
5. Different number of contacts are available on-demand production only. Please contact us for more details.

Information

# SPECIFICATIONS

## 1. Characteristics

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.3A/contact (Max. 5 A at total contacts)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000M $\Omega$ (initial)	Using 250V DC megger (applied for 1 min.)
	Contact resistance	Max. 70m $\Omega$	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf}/contacts $\times$ contacts (initial)	
	Composite removal force	Min. 0.0588N {6gf}/contacts $\times$ contacts (Mated height 1.5 mm, without removal and retention fitting) Min. 0.118N {12gf}/contacts $\times$ contacts (Mated height 1.5 mm, except without removal and retention fitting)	
	Post holding force	Min. 0.981N {100gf}/contacts	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec. 350°C within 3 sec.	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. 70m $\Omega$	Sequence 1. -55 $\frac{0}{3}$ °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 $\frac{0}{3}$ °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 70m $\Omega$	Bath temperature 40 $\pm$ 2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 70m $\Omega$	Bath temperature 35 $\pm$ 2°C, saltwater concentration 5 $\pm$ 1%
H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 70m $\Omega$	Bath temperature 40 $\pm$ 2°C, gas concentration 3 $\pm$ 1 ppm, humidity 75 to 80% R.H.	
Lifetime characteristics	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		Mated height 1.5mm, 20 contacts; Socket: 0.04g Header: 0.02g	

## 2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact and Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) However, upper terminal of Ni barrier production: Exposed over Ni The area adjacent to the terminal of the sockets on models with Ni barrier is exposed to Ni on base.
Retention fitting portion	Copper alloy	Ni plating on base, Sn plating on surface (Except for front terminal)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXK7, 8

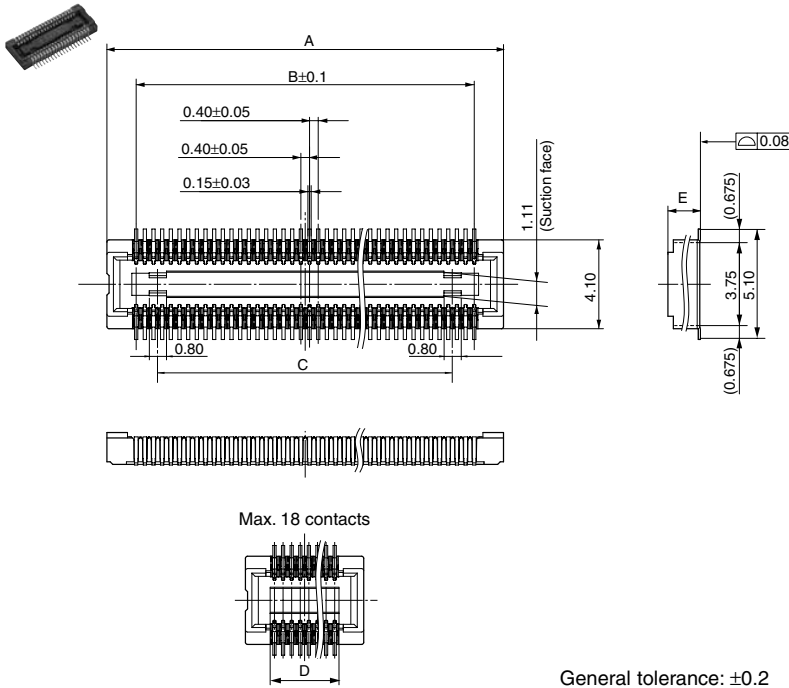
## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

### 1. Without Retention Fitting

Socket (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm and 4.0 mm)

#### CAD Data



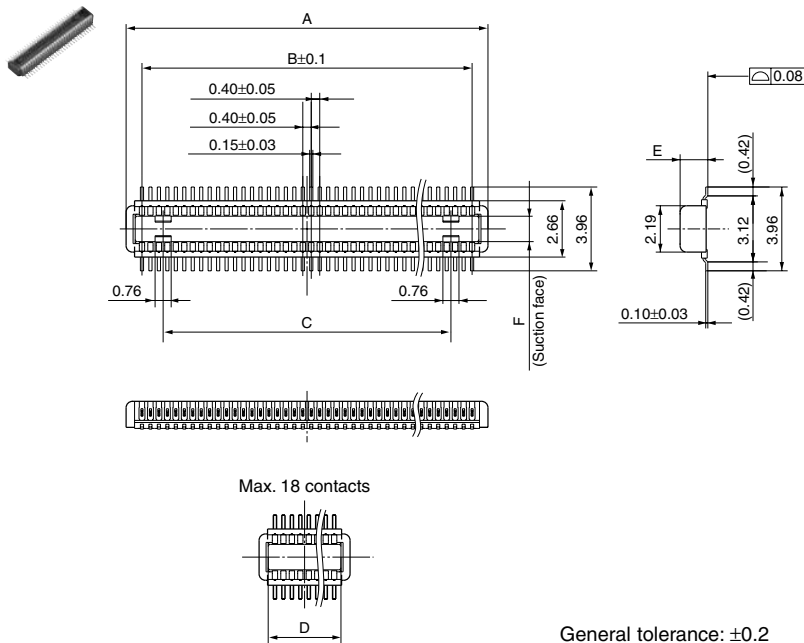
#### Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
14	5.1	2.4	—	2.8
16	5.5	2.8	—	3.2
20	6.3	3.6	1.6	—
22	6.7	4.0	2.0	—
24	7.1	4.4	2.4	—
26	7.5	4.8	2.8	—
28	7.9	5.2	3.2	—
30	8.3	5.6	3.6	—
34	9.1	6.4	4.4	—
36	9.5	6.8	4.8	—
38	9.9	7.2	5.2	—
40	10.3	7.6	5.6	—
42	10.7	8.0	6.0	—
44	11.1	8.4	6.4	—
50	12.3	9.6	7.6	—
54	13.1	10.4	8.4	—
60	14.3	11.6	9.6	—
64	15.1	12.4	10.4	—
70	16.3	13.6	11.6	—
80	18.3	15.6	13.6	—
90	20.3	17.6	15.6	—
100	22.3	19.6	17.6	—

Mated height/dimension	E
1.5mm	1.50
2.0mm	1.92
2.5mm, 3.0mm	2.42
3.5mm	2.92
4.0mm	3.42

Header (Mated height: 1.5 mm, 2.0 mm, 2.5 mm, 3.0 mm, 3.5 mm and 4.0 mm)

#### CAD Data

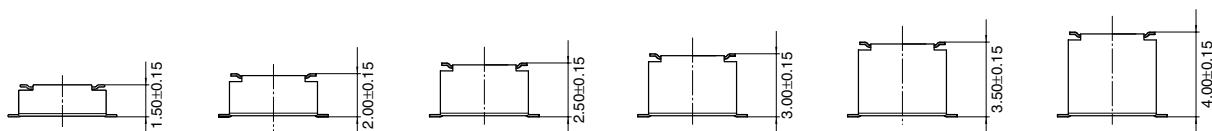


#### Dimension table (mm)

Number of contacts/ dimension	A	B	C	D
14	3.9	2.4	—	3.04
16	4.3	2.8	—	3.44
20	5.1	3.6	1.6	—
22	5.5	4.0	2.0	—
24	5.9	4.4	2.4	—
26	6.3	4.8	2.8	—
28	6.7	5.2	3.2	—
30	7.1	5.6	3.6	—
34	7.9	6.4	4.4	—
36	8.3	6.8	4.8	—
38	8.7	7.2	5.2	—
40	9.1	7.6	5.6	—
42	9.5	8.0	6.0	—
44	9.9	8.4	6.4	—
50	11.1	9.6	7.6	—
54	11.9	10.4	8.4	—
60	13.1	11.6	9.6	—
64	13.9	12.4	10.4	—
70	15.1	13.6	11.6	—
80	17.1	15.6	13.6	—
90	19.1	17.6	15.6	—
100	21.1	19.6	17.6	—

Mated height/dimension	E	F
1.5mm, 2.0mm, 2.5mm	1.31	1.20
3.0mm, 3.5mm, 4.0mm	2.26	1.26

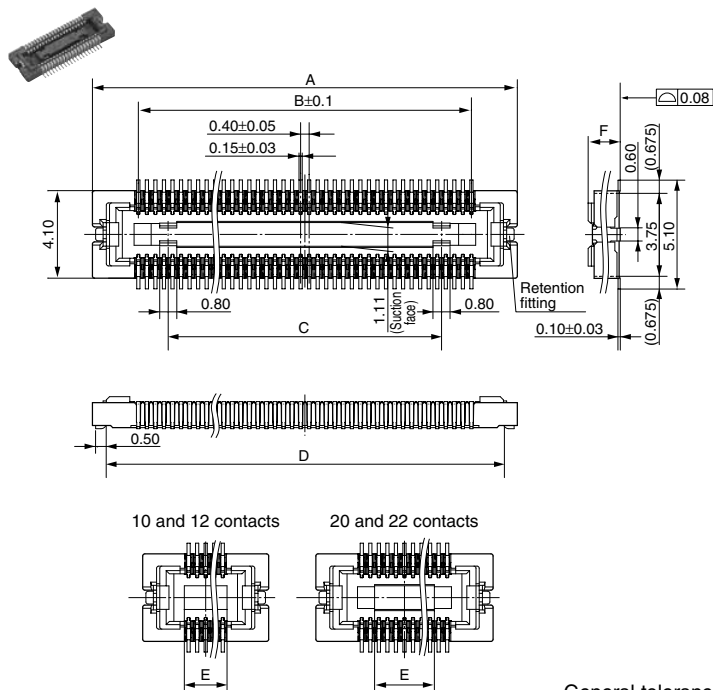
Socket and Header are mated



2. With Retention Fitting

Socket (Mated height: 1.5mm, 2.0mm, 2.5mm, 3.0mm, 3.5mm and 4.0mm)

CAD Data



General tolerance: ±0.2

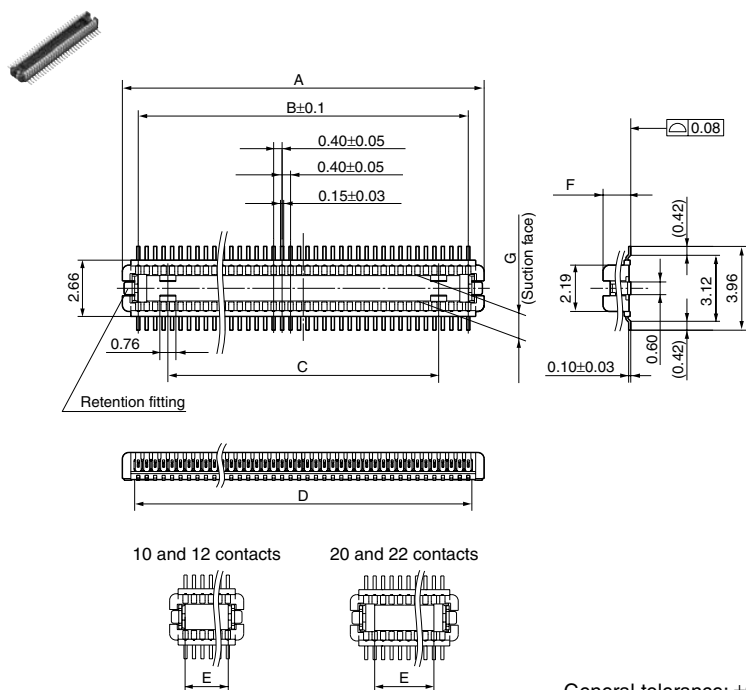
Dimension table (mm)

Number of contacts/ dimension	A	B	C	D	E
10	5.90	1.60	—	4.60	2.00
12	6.30	2.00	—	5.00	2.40
20	7.90	3.60	—	6.60	2.40
22	8.30	4.00	—	7.00	2.80
24	8.70	4.40	1.60	7.40	—
28	9.50	5.20	2.40	8.20	—
30	9.90	5.60	2.80	8.60	—
32	10.30	6.00	3.20	9.00	—
34	10.70	6.40	3.60	9.40	—
36	11.10	6.80	4.00	9.40	—
40	11.90	7.60	4.80	10.60	—
42	12.30	8.00	5.20	11.00	—
44	12.70	8.40	5.60	11.40	—
46	13.10	8.80	6.00	11.80	—
50	13.90	9.60	6.80	12.60	—
60	15.90	11.60	8.80	14.60	—
70	17.90	13.60	10.80	16.60	—
80	19.90	15.60	12.80	18.60	—
90	21.90	17.60	14.80	20.60	—
100	23.90	19.60	16.80	22.60	—

Mated height/dimension	F
1.5mm	1.50
2.0mm	1.92
2.5mm, 3.0mm	2.42
3.5mm	2.92
4.0mm	3.42

Header (Mated height: 1.5mm, 2.0mm, 2.5mm, 3.0mm, 3.5mm and 4.0mm)

CAD Data



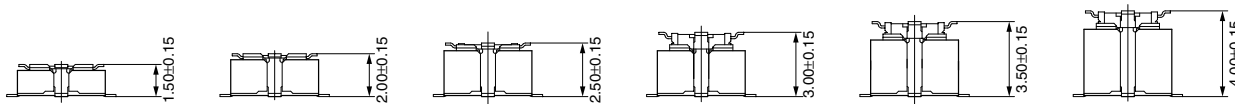
General tolerance: ±0.2

Dimension table (mm)

Number of contacts/ dimension	A	B	C	D	E
10	3.10	1.60	—	1.94	1.64
12	3.50	2.00	—	2.34	2.04
20	5.10	3.60	—	3.94	2.80
22	5.50	4.00	—	4.34	3.20
24	5.90	4.40	1.60	4.74	—
28	6.70	5.20	2.40	5.54	—
30	7.10	5.60	2.80	5.94	—
32	7.50	6.00	3.20	6.34	—
34	7.90	6.40	3.60	6.74	—
36	8.30	6.80	4.00	7.14	—
40	9.10	7.60	4.80	7.94	—
42	9.50	8.00	5.20	8.34	—
44	9.90	8.40	5.60	8.74	—
46	10.30	8.80	6.00	9.14	—
50	11.10	9.60	6.80	9.94	—
60	13.10	11.60	8.80	11.94	—
70	15.10	13.60	10.80	13.94	—
80	17.10	15.60	12.80	15.94	—
90	19.10	17.60	14.80	17.94	—
100	21.10	19.60	16.80	19.94	—

Mated height/dimension	F	G
1.5mm, 2.0mm, 2.5mm	1.31	1.20
3.0mm, 3.5mm, 4.0mm	2.26	1.26

Socket and Header are mated.



Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information



# AXK7, 8

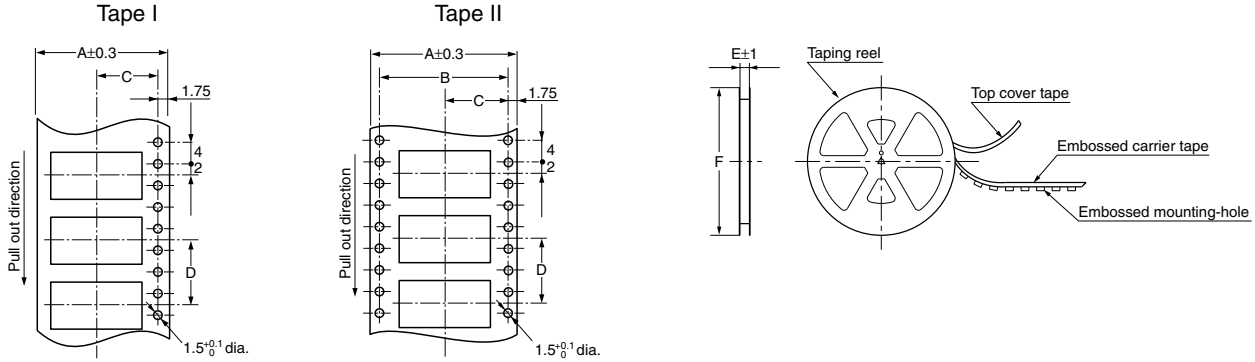
Narrow-pitch connectors

## EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.

• Reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)



I/O connectors

### Dimension table (mm)

#### 1. Without Retention Fitting

Mated height	Number of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Common for socket and header: 1.5 mm, 2.0 mm and 2.5 mm	Max. 18	Tape I	16.0	—	7.5	8.0	17.4	φ380	3,000
	20 to 70	Tape I	24.0	—	11.5	8.0	25.4	φ380	3,000
	80 to 100	Tape II	32.0	28.4	14.2	8.0	33.4	φ380	3,000

#### 2. With Retention Fitting

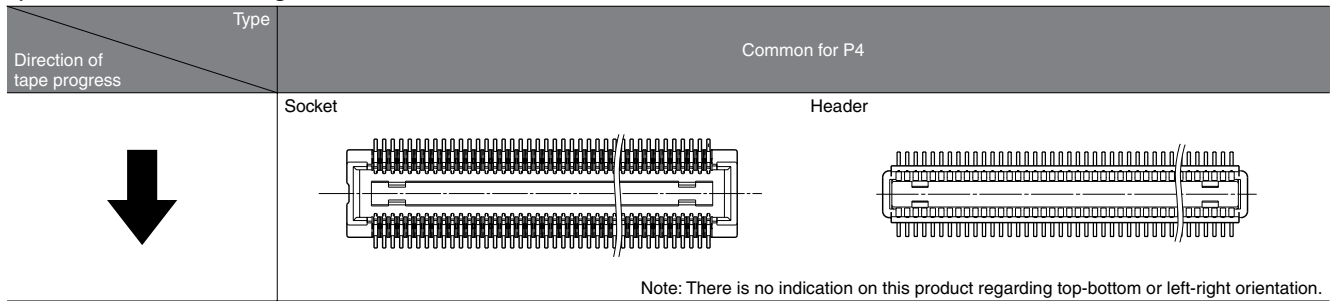
Mated height	Number of contacts		Type of taping	A	B	C	D	E	F	Quantity per reel
	Socket	Header								
Common for socket and header: 1.5 mm, 2.0 mm, 2.5 mm, and 3.0 mm Header: 3.5mm and 4.0 mm	Max. 18	Max. 18	Tape I	16.0	—	7.5	8.0	17.4	φ380	3,000
	20 to 60	20 to 70	Tape I	24.0	—	11.5	8.0	25.4	φ380	3,000
	70 to 90	80 to 100	Tape II	32.0	28.4	14.2	8.0	33.4	φ380	3,000
	100	—	Tape II	44.0	40.4	20.2	8.0	45.4	φ380	3,000
Socket: 3.5mm and 4.0 mm	Max. 18		Tape I	16.0	—	7.5	8.0	17.4	φ380	2,000
	20 to 60		Tape I	24.0	—	11.5	8.0	25.4	φ380	2,000
	70 to 90		Tape II	32.0	28.4	14.2	8.0	33.4	φ380	2,000
	100		Tape II	44.0	40.4	20.2	8.0	45.4	φ380	2,000

Interface connectors

Sockets for memory card

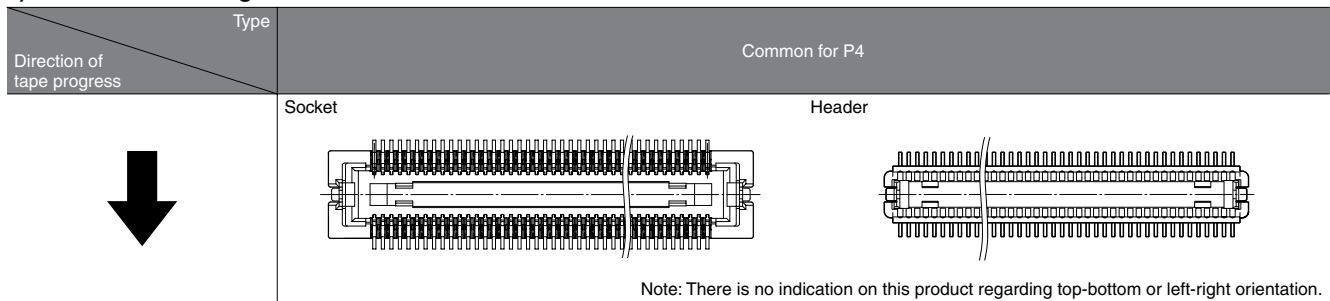
#### 3. Connector orientation with respect to direction of progress of embossed tape

##### 1) Without retention fitting



Connectors for industrial equipment

##### 2) With retention fitting



IC sockets

Information

# Panasonic

ideas for life

**CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES**

**NARROW PITCH CONNECTOR P4  
(0.4 mm PITCHES) FOR INSPECTION USAGE**



Socket



Header

**Compliance with RoHS Directive**

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as standard type.

Since shape is the same as standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

## TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	P4 for inspection	P4 for inspection with retention fitting
10		☆
12		☆
14	☆	
16	☆	
20	☆	☆
22	☆	☆
24	☆	☆
26	☆	
28	☆	☆
30	☆	☆
34	☆	☆
36	☆	
40	☆	☆
42	☆	
44	☆	☆
46		☆
50	☆	☆
54	☆	
60	☆	☆
70	☆	
80	☆	☆
90	☆	☆
100	☆	☆

Number of contacts

Notes:

- You can use with each mated height in common.
- Please inquire about numbers of contacts other than those given above.
- Please inquire with us regarding delivery times.
- Please keep the minimum unit for ordering no less than 50 pieces per lot.
- Please inquire for further information.

## PRODUCT TYPES

Specifications		Part No.		Specifications		Part No.	
Socket	With retention fitting	With positioning bosses	AXK7E**16G	Header	With retention fitting	With positioning bosses	AXK8E**16WG
		Without positioning bosses	AXK7E**26G			Without positioning bosses	AXK8E**26WG
	Without retention fitting	With positioning bosses	AXK7E**36G		Without retention fitting	With positioning bosses	AXK8E**36WG
		Without positioning bosses	AXK7E**46G			Without positioning bosses	AXK8E**46WG

Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

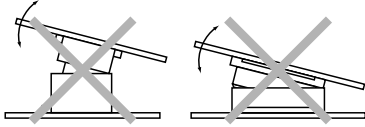
Connectors for industrial equipment

IC sockets

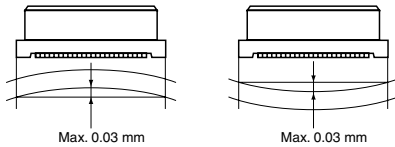
Information

**NOTES**

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03 mm in relation to the overall length of the connector.



**3. PC Boards and Recommended Metal Mask Patterns**

Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5 mm.

In order to reduce solder bridge and other issues make sure the proper levels of solder are used.

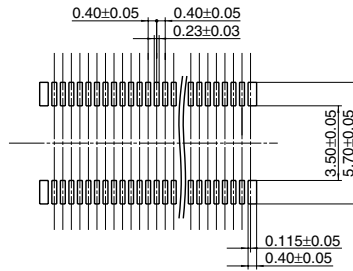
The figures to the right are recommended metal mask patterns.

Please use them as a reference.

1) Without retention fitting

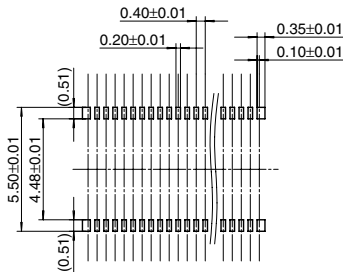
Socket

Recommended PC board pattern (TOP VIEW)



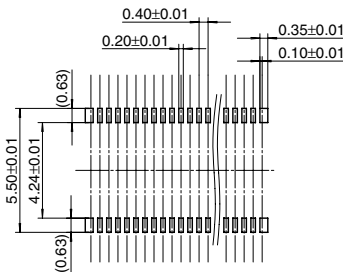
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Opening area ratio: 40 %)



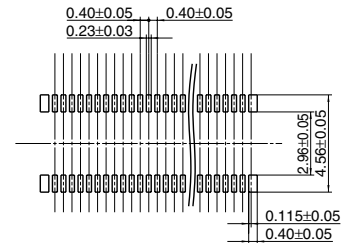
Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Opening area ratio: 50 %)



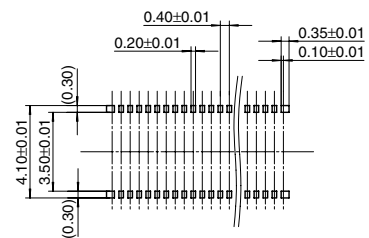
Header

Recommended PC board pattern (TOP VIEW)



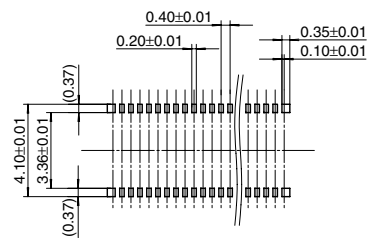
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Opening area ratio: 32 %)



Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Opening area ratio: 40 %)



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

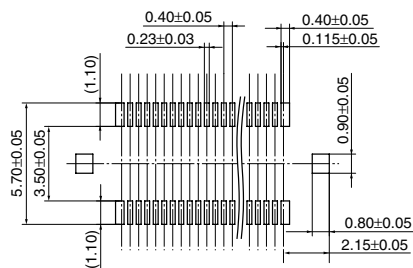
IC sockets

Information

2) With retention fitting

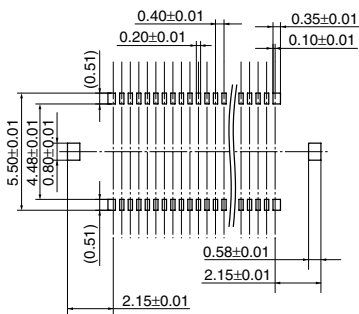
Socket

Recommended PC board pattern (TOP VIEW)



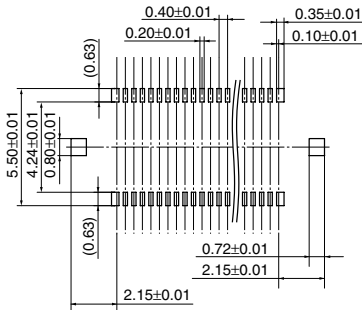
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 40 %)  
(Metal portion opening area ratio: 65 %)



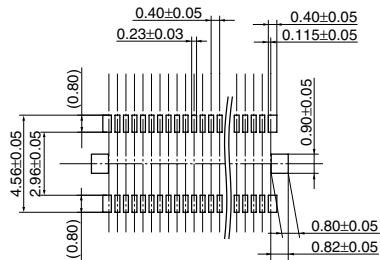
Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 50 %)  
(Metal portion opening area ratio: 80 %)



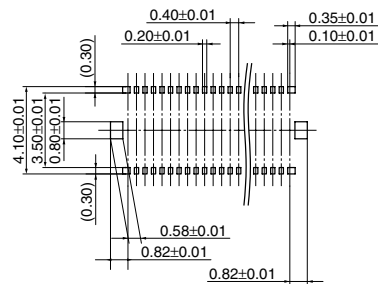
Header

Recommended PC board pattern (TOP VIEW)



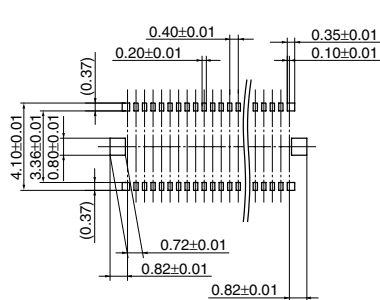
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm  
(Terminal portion opening area ratio: 32 %)  
(Metal portion opening area ratio: 65 %)



Recommended metal mask pattern

Metal mask thickness: Here, 120 μm  
(Terminal portion opening area ratio: 40 %)  
(Metal portion opening area ratio: 80 %)



Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

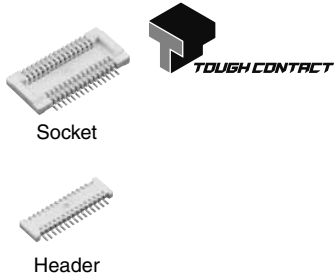
Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



Compliance with RoHS Directive

## NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD CONNECTION

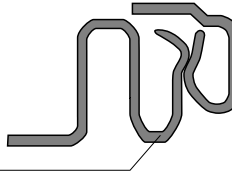
## NARROW PITCH (0.5mm) CONNECTORS P5 SERIES — P5KL —

### FEATURES

1. Low profile mating height of 1.2 mm with 0.5 mm pitch, was obtained. It contributes to device compactness.
2. Strong resistance to adverse environments! Utilizes **TOUGH CONTACT** construction for high contact reliability.

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.

Since the contact is formed by bending thin plate, it has a spring-like quality. This structure makes it resistant to dropping and twisting.



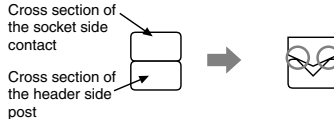
2) V notch construction used for excellent resistance against foreign matters.

#### ● V-notch

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

#### [Cross Section of Contacts]

<Product without a notch>      <V-notched product>

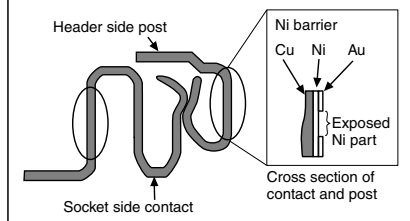


Patented (Japan, Korea, and Taiwan)

3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

#### ● Ni barrier

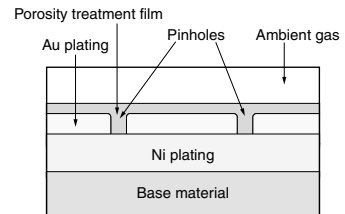
The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.



4) Porosity treatment applied for improved resistance against corrosion.

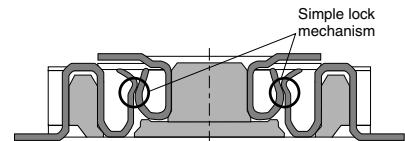
#### Porosity treatment

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.

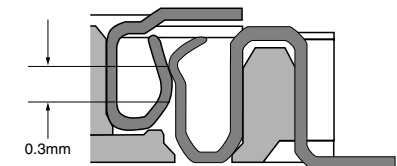


- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

3. Simple lock structure employed to further increase connection reliability



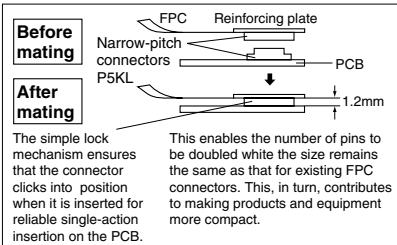
4. Effective mating length 0.3 mm



## APPLICATIONS

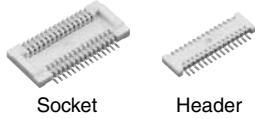
Compact portable devices "Cellular phones, DVC, Digital cameras, etc"

Ideal for Board-to-FPC connections



# TABLE OF PRODUCT TYPES

P5KL (0.5 mm pitch): Without retention fitting



Socket

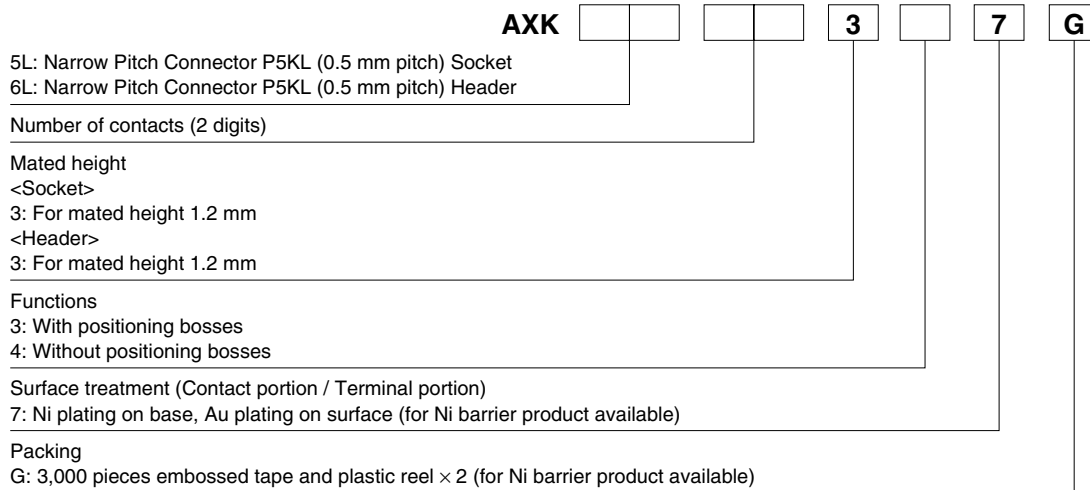
Header

☆: Available for sale

Number of contacts	Mated height	
	1.2mm	
10	☆	
12	☆	
20	☆	
24	☆	
30	☆	
34	☆	
40	☆	
50	☆	
60	☆	

- Notes: 1. The standard type comes with positioning bosses.  
 Connectors with positioning boss are available for on-demand production.  
 2. Please consult us regarding numbers of contacts other than those given above.

## ORDERING INFORMATION



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

## PRODUCT TYPES

Mated height	No. of contacts	Part No.		Packing quantity	
		Socket <i>TOUGH CONTACT</i>	Header <i>TOUGH CONTACT</i>	Inner carton (1-reel)	Outer carton
1.2 mm	10	AXK5L10347G	AXK6L10347G	3,000 pieces	6,000 pieces (2-reel)
	12	AXK5L12347G	AXK6L12347G		
	20	AXK5L20347G	AXK6L20347G		
	24	AXK5L24347G	AXK6L24347G		
	30	AXK5L30347G	AXK6L30347G		
	34	AXK5L34347G	AXK6L34347G		
	40	AXK5L40347G	AXK6L40347G		
	50	AXK5L50347G	AXK6L50347G		
	60	AXK5L60347G	AXK6L60347G		

Notes) 1. Regarding ordering units: During production, Please make orders in 1-reel units. Samples for mounting confirmation: Please consult us. Samples: Small lot orders are possible. Please consult us.  
 2. The standard type comes without positioning bosses. Connectors with positioning bosses are available for on-demand production.  
 For this type of connector, 9th digit of the part no. changes from 4 to 3. e.g. 10 contacts for sockets: AXK5L10337G

## SPECIFICATIONS

### 1. Characteristics

Item	Specifications	Conditions	
Electrical characteristics	Rated current	0.5A/contact (Max. 10 A at total contacts)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 minute	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ (initial)	Using 500V DC megger
	Contact resistance	Max. 90mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf}/contacts × contacts (initial)	
	Composite removal force	Min. 0.0588N {6gf}/contacts × contacts	
	Holding force of terminal securing section	Min. 0.981N {100gf}/contact	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 seconds 350°C within 3 seconds	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Sequence 1. -55 <sup>±3</sup> °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±3</sup> °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 90mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
Lifetime characteristics	Insertion and removal life	48 hours, contact resistance max. 90mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
		50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight	20 contacts; Socket: 0.05g; Header: 0.02g		

### 2. Material and surface treatment

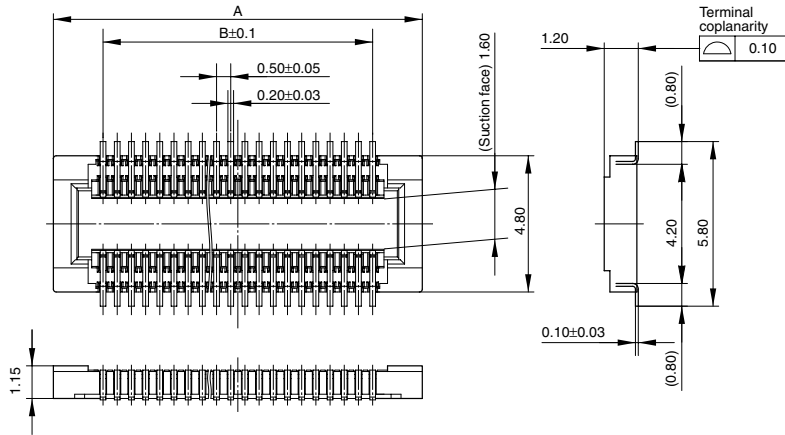
Part name	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—
Contact/Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) The section close to the soldering portion has a nickel barrier. (The nickel base is exposed.)

**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

- Socket (Mated height: 1.2mm)

**CAD Data**



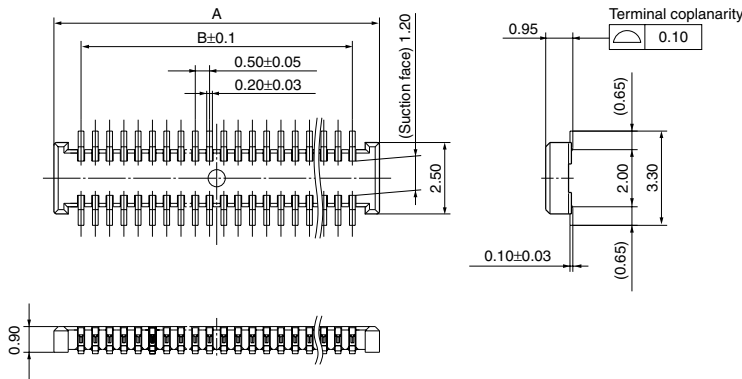
**Dimension table (mm)**

No. of contacts	A	B
10	5.50	2.00
12	6.00	2.50
20	8.00	4.50
24	9.00	5.50
30	10.50	7.00
34	11.50	8.00
40	13.00	9.50
50	15.50	12.00
60	18.00	14.50

General tolerance: ±0.2

- Header (Mated height: 1.2mm)

**CAD Data**

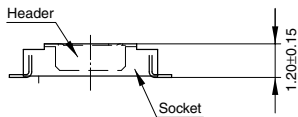


**Dimension table (mm)**

No. of contacts	A	B
10	3.90	2.00
12	4.40	2.50
20	6.40	4.50
24	7.40	5.50
30	8.90	7.00
34	9.90	8.00
40	11.40	9.50
50	13.90	12.00
60	16.40	14.50

General tolerance: ±0.2

- Socket and header are mated



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



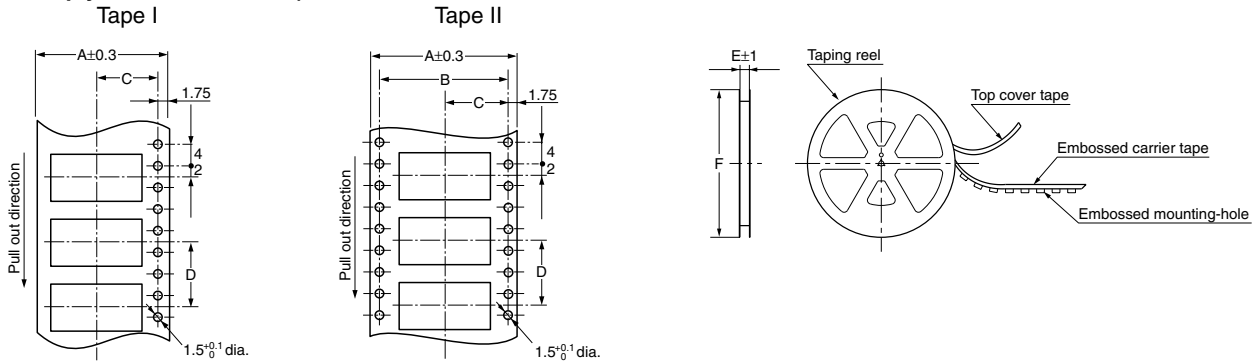
# AXK(5/6)L

Narrow-pitch connectors

## EMBOSSED TAPE DIMENSIONS (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.  
However, some tapes have mounting hole pitches that do not comply with the standard.)

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)  
Paper reel dimensions (Conforming to JIS C 0806-1990)



I/O connectors

### Dimension table (mm)

Suffix: G (1 reel, 3,000 pieces embossed tape: Plastic reel package)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket and header are common: 1.2mm	10 to 18	Tape I	16.0	—	7.5	8.0	17.4	380 dia.	3,000 pcs.
	20 to 50	Tape I	24.0	—	11.5	8.0	25.4	380 dia.	3,000 pcs.
	60	Tape II	32.0	28.4	14.2	8.0	33.4	380 dia.	3,000 pcs.

Interface connectors

### Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress	Type	Common for P5KL	
	Socket	Header	
↓			

Note: There is no indication on this product regarding top-bottom or left-right orientation.

Sockets for memory card

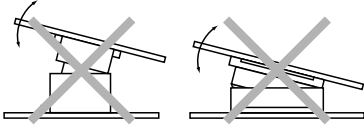
Connectors for industrial equipment

IC sockets

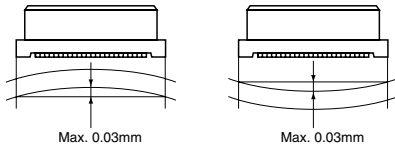
Information

**NOTES**

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03 mm in relation to the overall length of the connector.

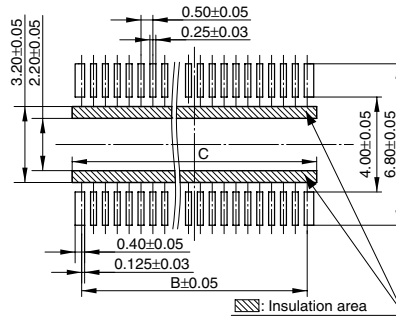


**3. PC Boards and Recommended Metal Mask Patterns**

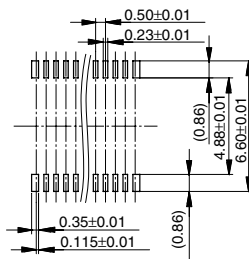
Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5 mm. It is therefore necessary to make sure that the right levels of solder are used, in order to reduce solder bridge and other issues. The figures to the right are recommended metal mask patterns. Please use them as a reference.

**• Socket**

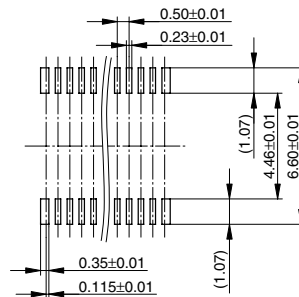
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: 150 μm  
(Terminal portion opening area ratio: 57%)



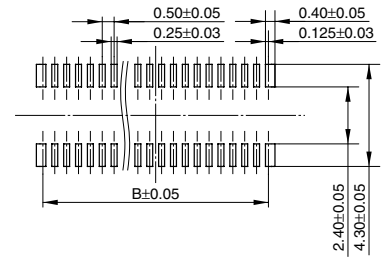
Recommended metal mask pattern  
Metal mask thickness: 120 μm  
(Terminal portion opening area ratio: 70%)



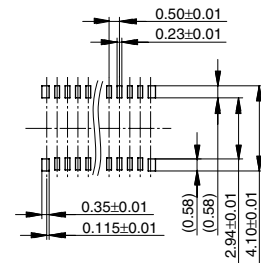
Notes: 1. See the dimension table on page 75 for more information on the B dimension of the socket and header.  
2. The socket C dimension is the B dimension in the dimensions table with 0.8 added.

**• Header**

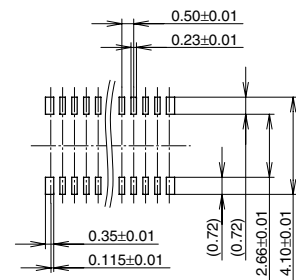
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: 150 μm  
(Terminal portion opening area ratio: 56%)



Recommended metal mask pattern  
Metal mask thickness: 120 μm  
(Terminal portion opening area ratio: 70%)



Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

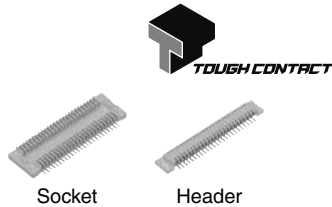
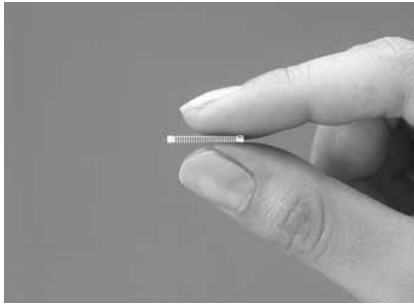
Connectors for industrial equipment

IC sockets

Information

# Panasonic

## ideas for life



### Compliance with RoHS Directive

## FEATURES

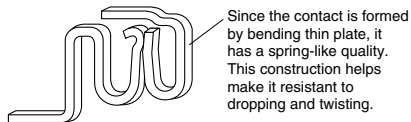
### 1. The connector is a two-piece structure and 0.5mm pitch.

The product lineup consists of the mated height of 1.5mm, 2.0mm and 2.5mm.

### 2. Strong resistance to adverse environments! Utilizes

#### **TOUGH CONTACT** construction for high contact reliability.

1) The socket and header has the same dropping shock and torsion resistant construction as the bellows-type contact.

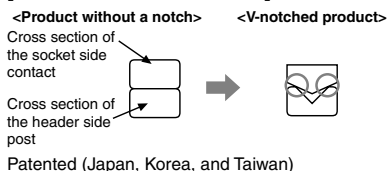


2) V notch construction used for excellent resistance against foreign matters.

#### ● V-notch

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

#### [Cross Section of Contacts]



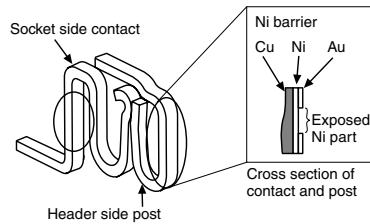
## NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD CONNECTION

## NARROW PITCH (0.5mm) CONNECTORS P5 SERIES — P5KF —

3) Use of Ni barrier construction is standard. Highly effective against solder creeping. (Available from Oct. 2005)

#### ● Ni barrier

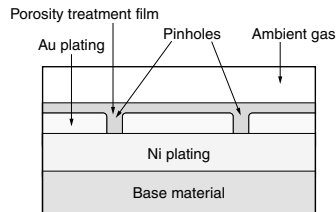
The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.



4) Porosity treatment applied for improved resistance against corrosion.

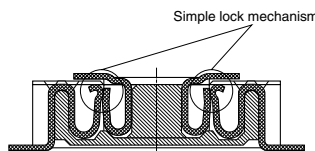
#### Porosity treatment

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



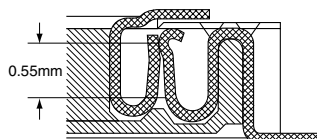
- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

3. Simple locking structure  
Superior mating operation with click feel to indicate that mating is complete.



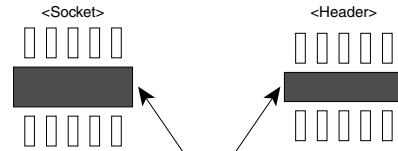
#### 4. Mating length 0.55mm

While achieving a low profile of 1.5mm between PCBs, the effective mating length has been extended to ensure that there is some latitude in the mating.



5. The lower connector bottom surface construction prevents contact and shorts between the PCB and metal terminals.

This enables freedom in pattern wiring, helping to make PCB's smaller.



Connector bottom: Create any thru-hole and pattern wiring.

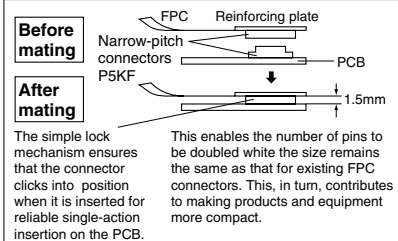
6. Automatic mounting inspection is facilitated by the gull-wing terminal shape which makes mounting verification easy.

7. Connectors for inspection available  
Connectors for inspection are available that are ideal for modular unit inspection and inspection in device assembly processes.

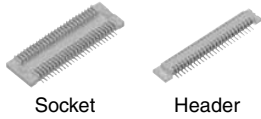
## APPLICATIONS

Compact portable devices "Cellular phones, DVC, Digital cameras, etc"

#### Ideal for Board-to-FPC connections



**TABLE OF PRODUCT TYPES**



Product name		P5KF		
Mated height		1.5mm	2.0mm	2.5mm
		Number of contacts	10	☆
12	☆	☆	☆	☆
14	☆	☆	☆	☆
16	☆	☆	☆	☆
18	☆	☆	☆	☆
20	☆	☆	☆	☆
22	☆	☆	☆	☆
24	☆	☆	☆	☆
26	☆	☆	☆	
30	☆	☆	☆	☆
32	☆			
34	☆	☆	☆	☆
36				☆
40	☆	☆	☆	☆
44				☆
50	☆	☆	☆	☆
60	☆	☆	☆	☆
70	☆	☆	☆	☆
80	☆	☆	☆	☆
100			☆	☆

Notes: 1. The standard type comes without positioning bosses.  
 Connectors with positioning boss are available for on-demand production.  
 2. Please consult us for products which have no ☆ mark.

**ORDERING INFORMATION**

**AXK**      **7** **Y** **G**

5F: Narrow Pitch Connector P5KF (0.5 mm pitch) Socket  
 6F: Narrow Pitch Connector P5KF (0.5 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

3: For mated height 1.5 mm  
 5: For mated height 2.0 mm and 2.5 mm

<Header>

3: For mated height 1.5 mm and 2.0 mm  
 5: For mated height 2.5 mm

Functions

3: With positioning bosses  
 4: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

<Socket>

7: Ni plating on base, Au plating on surface/Ni plating on base, Au plating on surface  
 (for Ni barrier product available)

Contact portion

<Socket>

Y: V notch type product (chamfered on both ends)  
 <Header>

Y: V notch type product

Packing

G: 2,000 pieces embossed tape and plastic reel × 2

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# AXK(5/6)F

## PRODUCT TYPES

Narrow-pitch connectors	Mated height	No. of contacts	Part No.		Packing					
			Socket	Header	Inner carton (1-reel)	Outer carton				
			<i><b>TOUGH CONTACT</b></i>	<i><b>TOUGH CONTACT</b></i>						
I/O connectors	1.5 mm	10	AXK5F10347YG	AXK6F10347YG	2,000 pieces	4,000 pieces				
		12	AXK5F12347YG	AXK6F12347YG						
		14	AXK5F14347YG	AXK6F14347YG						
		16	AXK5F16347YG	AXK6F16347YG						
		18	AXK5F18347YG	AXK6F18347YG						
		20	AXK5F20347YG	AXK6F20347YG						
		22	AXK5F22347YG	AXK6F22347YG						
		24	AXK5F24347YG	AXK6F24347YG						
		26	AXK5F26347YG	AXK6F26347YG						
		30	AXK5F30347YG	AXK6F30347YG						
		32	AXK5F32347YG	AXK6F32347YG						
		34	AXK5F34347YG	AXK6F34347YG						
		40	AXK5F40347YG	AXK6F40347YG						
		50	AXK5F50347YG	AXK6F50347YG						
		60	AXK5F60347YG	AXK6F60347YG						
		70	AXK5F70347YG	AXK6F70347YG						
80	AXK5F80347YG	AXK6F80347YG								
Interface connectors	2.0 mm	10	AXK5F10547YG	AXK6F10347YG	2,000 pieces	4,000 pieces				
		12	AXK5F12547YG	AXK6F12347YG						
		14	AXK5F14547YG	AXK6F14347YG						
		16	AXK5F16547YG	AXK6F16347YG						
		18	AXK5F18547YG	AXK6F18347YG						
		20	AXK5F20547YG	AXK6F20347YG						
		22	AXK5F22547YG	AXK6F22347YG						
		24	AXK5F24547YG	AXK6F24347YG						
		26	AXK5F26547YG	AXK6F26347YG						
		30	AXK5F30547YG	AXK6F30347YG						
		34	AXK5F34547YG	AXK6F34347YG						
		40	AXK5F40547YG	AXK6F40347YG						
Sockets for memory card	2.0 mm	50	AXK5F50547YG	AXK6F50347YG	2,000 pieces	4,000 pieces				
		60	AXK5F60547YG	AXK6F60347YG						
		70	AXK5F70547YG	AXK6F70347YG						
		80	AXK5F80547YG	AXK6F80347YG						
		100	AXK5F00547YG	AXK6F00347YG						
		Connectors for industrial equipment	2.5 mm	10			AXK5F10547YG	AXK6F10547YG	2,000 pieces	4,000 pieces
				12			AXK5F12547YG	AXK6F12547YG		
				14			AXK5F14547YG	AXK6F14547YG		
				16			AXK5F16547YG	AXK6F16547YG		
				20			AXK5F20547YG	AXK6F20547YG		
22	AXK5F22547YG			AXK6F22547YG						
24	AXK5F24547YG			AXK6F24547YG						
30	AXK5F30547YG			AXK6F30547YG						
34	AXK5F34547YG			AXK6F34547YG						
36	AXK5F36547YG			AXK6F36547YG						
40	AXK5F40547YG			AXK6F40547YG						
44	AXK5F44547YG			AXK6F44547YG						
50	AXK5F50547YG			AXK6F50547YG						
60	AXK5F60547YG			AXK6F60547YG						
70	AXK5F70547YG	AXK6F70547YG								
80	AXK5F80547YG	AXK6F80547YG								
100	AXK5F00547YG	AXK6F00547YG								

- Notes: 1. Regarding ordering units, During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible. Please consult us.  
 2. The standard type comes without positioning bosses. Connectors with positioning bosses are available for on-demand production. For this type of connector, 9th digit of the part no. changes from 4 to 3. e.g.  
 Mated height 1.5mm, 10 contacts for sockets: AXK5F10337YG  
 3. The 11th digit "Y" in the socket/header part number indicates the connector has a V notch. (For details, please consult one of our sales offices.)  
 4. Previous non-**TOUGH CONTACT** types and current **TOUGH CONTACT** types are compatible for mating.

Information

# SPECIFICATIONS

## 1. Characteristics

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.5A/contact (Max. 10 A at total contacts)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 minute	Detection current: 1mA
	Insulation resistance	Min. 1,000M $\Omega$ (initial)	Using 500V DC megger
	Contact resistance	Max. 90m $\Omega$	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N/contacts $\times$ contacts (initial)	
	Composite removal force	Min. 0.0588N/contacts $\times$ contacts	
	Post holding force	Min. 0.981N/contact	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 seconds, 350°C within 3 seconds	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	Sequence 1. -55 $\frac{3}{3}$ °C, 30 minutes 2. ~, Max. 5 minutes 3. 85 $\frac{3}{3}$ °C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	Bath temperature 40 $\pm$ 2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100M $\Omega$ , contact resistance max. 90m $\Omega$	Bath temperature 35 $\pm$ 2°C, saltwater concentration 5 $\pm$ 1%
Lifetime characteristics	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 90m $\Omega$	Bath temperature 40 $\pm$ 2°C, gas concentration 3 $\pm$ 1 ppm, humidity 75 to 80% R.H.
	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight		Mated height 1.5mm, 20 contacts; Socket: 0.06g Header: 0.04g	

## 2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	LCP resin (UL94V-0)	—
Contact/Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) The section close to the soldering portion has a nickel barrier. (The nickel base is exposed.)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXK(5/6)F

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

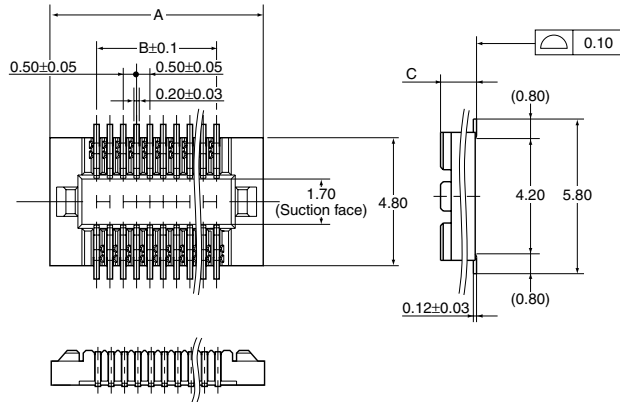
- Socket (Mated height: 1.5mm, 2.0mm, 2.5mm)

### CAD Data



#### Dimension table (mm)

No. of contacts	A	B
10	5.50	2.00
12	6.00	2.50
14	6.50	3.00
16	7.00	3.50
18	7.50	4.00
20	8.00	4.50
22	8.50	5.00
24	9.00	5.50
26	9.50	6.00
30	10.50	7.00
32	11.00	7.50
34	11.50	8.00
36	12.00	8.50
40	13.00	9.50
44	14.00	10.50
50	15.50	12.00
60	18.00	14.50
70	20.50	17.00
80	23.00	19.50
100	28.00	24.50



General tolerance: ±0.2

Mated height	C
1.5 mm	1.35
2.0 mm, 2.5 mm	1.85

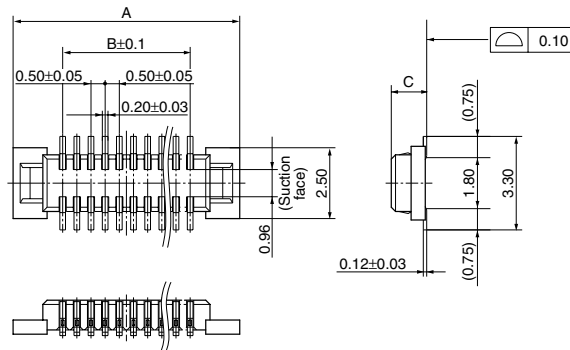
- Header (Mated height: 1.5mm, 2.0mm, 2.5mm)

### CAD Data



#### Dimension table (mm)

No. of contacts	A	B
10	5.50	2.00
12	6.00	2.50
14	6.50	3.00
16	7.00	3.50
18	7.50	4.00
20	8.00	4.50
22	8.50	5.00
24	9.00	5.50
26	9.50	6.00
30	10.50	7.00
32	11.00	7.50
34	11.50	8.00
36	12.00	8.50
40	13.00	9.50
44	14.00	10.50
50	15.50	12.00
60	18.00	14.50
70	20.50	17.00
80	23.00	19.50
100	28.00	24.50



General tolerance: ±0.2

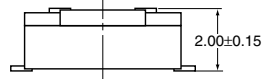
Mated height	C
1.5 mm, 2.0 mm	1.25
2.5 mm	1.75

- Socket and header are mated

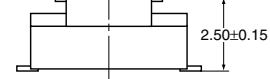
Mated height: 1.5 mm



Mated height: 2.0 mm



Mated height: 2.5 mm

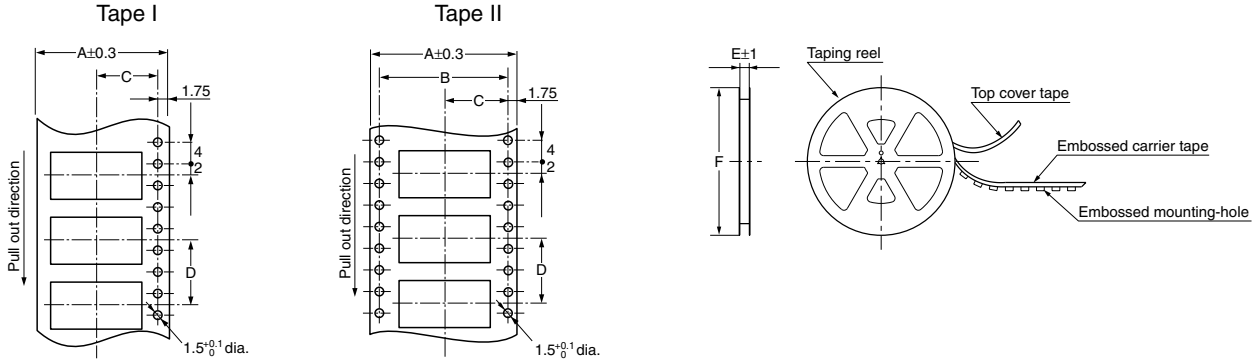


**EMBOSSSED TAPE DIMENSIONS** (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)



**Dimension table (mm)**

Suffix: G (1 reel, 2,000 pieces embossed tape: Plastic reel package)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket and header are common: 1.5mm, 2.0mm, 2.5mm	10 to 58	Tape I	24.0	—	11.5	12.0	25.4	380 dia.	2,000 pcs.
	60 to 70	Tape II	32.0	28.4	14.2	12.0	33.4	380 dia.	2,000 pcs.
	72 to 100	Tape II	44.0	40.4	20.2	12.0	45.4	380 dia.	2,000 pcs.

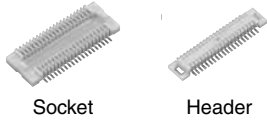
**Connector orientation with respect to direction of progress of embossed tape**

Direction of tape progress ↓	Type	Common for P5KF	
	Socket	Header	

Note: There is no indication on this product regarding top-bottom or left-right orientation.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information





Socket

Header

Compliance with RoHS Directive

## FEATURES

### 1. 3,000 insertion and removals (when as recommended)

From the 50 insertion and removals of standard type, up to 3,000 insertion and removals (with recommended insertion and removal) are possible for use in inspection.

Ideal for inspection of module units and inspection during the device assembly process

### 2. Same external dimensions and foot pattern as standard type.

Since shape is the same as standard type, inspection is possible without interfering with devices in the vicinity of standard connectors.

### 3. Improved mating

Insertion and removal have become easier due to a reduction in the mating retention force required by the simple locking structure and also in the amount of force needed for insertion and removal. (We cannot warrant anything regarding mating retention.)

CONNECTOR FOR INSPECTION  
USAGE APPLICATIONS WITH  
3,000 INSERTION AND  
REMOVAL TIMES

NARROW PITCH CONNECTOR P5KF  
(0.5 mm PITCHES) FOR INSPECTION USAGE

## TABLE OF PRODUCT TYPES

☆: Available for sale

Product name	P5KF for inspection
10	☆
12	☆
14	☆
16	☆
18	☆
20	☆
22	☆
24	☆
26	☆
30	☆
32	☆
34	☆
40	☆
50	☆
60	☆
70	☆
80	☆
100	☆

Notes:

1. You can use with each mated height in common.
2. Please inquire about numbers of contacts other than those given above.
3. Please inquire with us regarding delivery times.
4. Please keep the minimum unit for ordering no less than 50 pieces per lot.
5. Please inquire for further information.

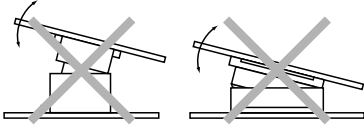
## PRODUCT TYPES

Specifications		Part No.	Specifications		Part No.
Socket	With positioning bosses	AXK5FE**36G	Header	With positioning bosses	AXK6FE**36G
	Without positioning bosses	AXK5FE**46G		Without positioning bosses	AXK6FE**46G

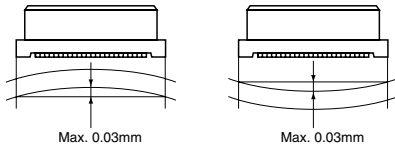
Note: When placing an order, substitute the "\*" (asterisk) in the above part number with the number of contacts for the required connector.

**NOTES**

1. As shown below, excess force during insertion may result in damage to the connector or removal of the solder. Please be careful. Also, to prevent connector damage please confirm the correct position before mating connectors.



2. Keep the PC board warp no more than 0.03 mm in relation to the overall length of the connector.

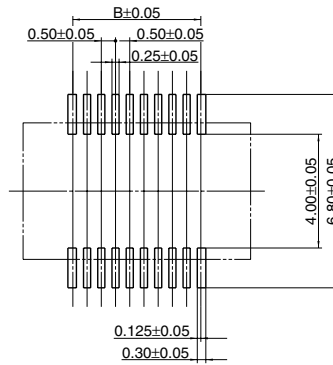


**3. PC Boards and Recommended Metal Mask Patterns**

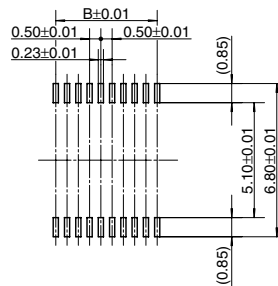
Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5 mm. It is therefore necessary to make sure that the right levels of solder are used, in order to reduce solder bridge and other issues. The figures to the right are recommended metal mask patterns. Please use them as a reference.

• Socket

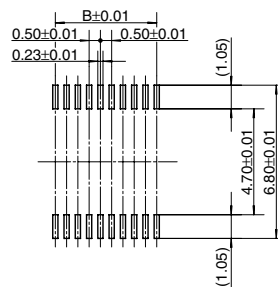
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 56%)

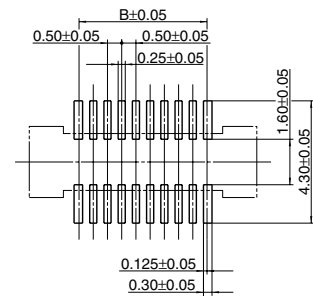


Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 69%)

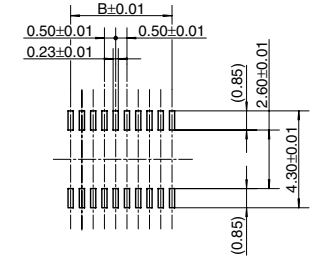


• Header

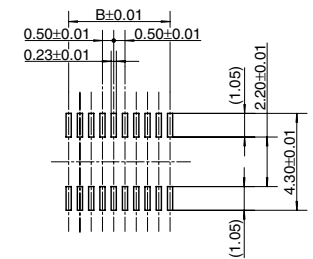
Recommended PC board pattern (TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 58%)



Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 72%)



\* See the dimension table on page 82 for more information on the B dimension of the socket and header.

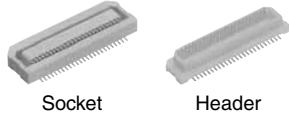
Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

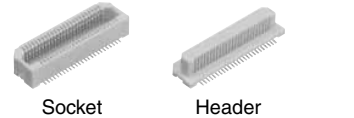
# Panasonic

## ideas for life

### • P5K



### • P5KS



Note) The external appearance and PC board pattern differs for the P5K and P5KS series.

### Compliance with RoHS Directive

## FEATURES

1. The product lineup consists of **3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 7.0 mm, 8.0 mm, and 9.0 mm.**

Type	Mated height	Notes
P5K	3 mm, 3.5 mm	The external appearance and PC board pattern differs for the P5K and P5KS series.
P5KS	4 mm, 4.5 mm, 5 mm, 5.5 mm, 6 mm, 6.5 mm, 7 mm, 8 mm, 9 mm	

2. Strong resistance to adverse environments! Utilizes **TOUGH CONTACT** construction for high contact reliability.

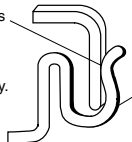
TOUGH CONTACT		P5K	P5KS
4 constructions	Bellows contact construction	○	○
	V notch construction	○	○
	Ni barrier construction	○	○
	Porosity treatment	○	○

1) Contacts are highly resistant to shock caused by dropping and employ our original bellows contact construction.

#### • What is meant by "bellows type" contact?

Rather than two broken-out surfaces, the contact is formed by the surfaces of two rolled plates. This helps the contact hold up better to repeated insertions and removals, while at the same time achieving highly reliable contact.

The roll surfaces are in contact with each other, providing high contact reliability.



Since the contact is formed by bending thin plate, it has a spring-like quality. This construction helps make it resistant to dropping and twisting.

## NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD CONNECTION

## NARROW PITCH (0.5mm) CONNECTORS P5 SERIES — P5K, P5KS —

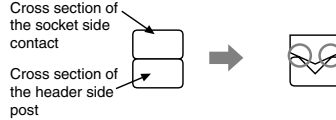
2) V notch construction used for excellent resistance against foreign matters. (P5KS: Available from Nov. 2005)

#### ● V-notch

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

#### [Cross Section of Contacts]

<Product without a notch>      <V-notched product>

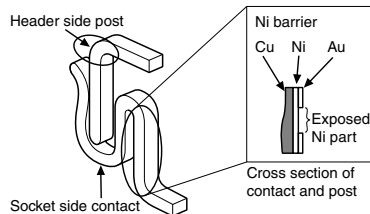


Patented (Japan, Korea, and Taiwan)

3) Use of Ni barrier construction is standard. Highly effective against solder creeping.

#### ● Ni barrier

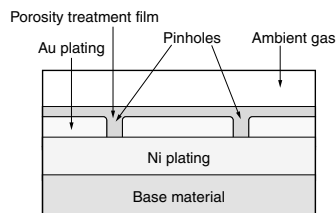
The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.



4) Porosity treatment applied for improved resistance against corrosion.

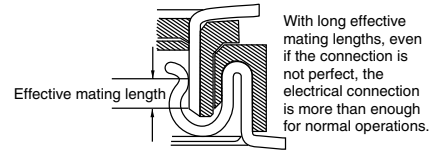
#### Porosity treatment

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improvement in insertion/removal durability
- Improvement in resistance to corrosion
- Improvement in contact reliability for digital signals

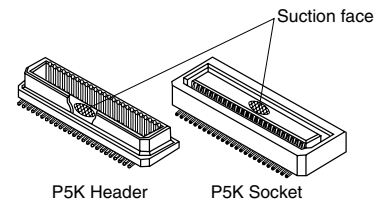
3. Even with the low profile, the effective mating length has been extended to ensure that there is some latitude in the mating.



Type	Effective mating length
P5K	0.65 mm
P5KS	1.0 mm

#### 4. Automatic mounting

1) Suction area for suction-type automatic mounting machines is employed.

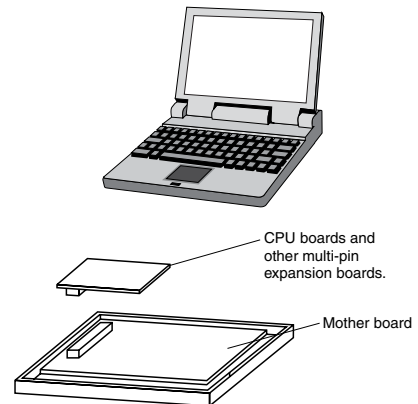


## APPLICATIONS

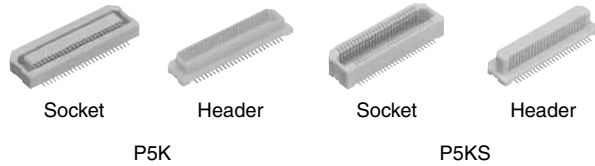
1. Compact portable devices "Cellular phones, DVC, Digital cameras, etc"

2. The 160-contacts connector:

This connector is particularly suited to the motherboard, CPU board, and other multi-pin expansion boards on notebook PCs and other info-communications applications.



## TABLE OF PRODUCT TYPES



Product name	P5K <b>TOUGH CONTACT</b>		P5KS <b>TOUGH CONTACT</b>								
	3.0mm	3.5mm	4.0mm	4.5mm	5.0mm	5.5mm	6.0mm	6.5mm	7.0mm	8.0mm	9.0mm
Number of contacts	20	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	22	☆	☆								
	24			☆	☆						
	30	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	34		☆	☆	☆	☆					
	36				☆						
	40	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	50	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	60	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	70	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	80	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	100	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆
	120	☆	☆	☆	☆						
	130								☆		
	160			☆	☆						

Notes: 1. The standard type comes without positioning bosses. (Positioning bosses come standard on types with 4.0 mm and 4.5 mm mated height with 120 and 160 contacts, and 6.5 mm mated height with 130 contacts.) Connectors with positioning boss are available for on-demand production.  
 2. Please consult us for products which have no ☆ mark.

## ORDERING INFORMATION

### 1. P5K (3.0 mm and 3.5 mm)

AXK             7 Y G

5: Narrow Pitch Connector P5K Socket  
 6: Narrow Pitch Connector P5K Header

Number of contacts (2 digits)

Mated height

<Socket>

1: For mated height 3.0 mm and 3.5 mm

<Header>

2: For mated height 3.5 mm

3: For mated height 3.0 mm

Functions

3: With positioning bosses

4: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

7: Ni plating on base, Au plating on surface /

Ni plating on base, Au plating on surface (Ni barrier product)

Contact portion

<Socket>

Y: V notch type product

<Header>

Y: V notch type product

Packing

G: 1,500 pieces embossed tape and plastic reel × 2

# AXK(5(S)/6(S))

## 2. P5KS (4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 7.0 mm, 8.0 mm and 9.0 mm)

Narrow-pitch connectors	5S: Narrow Pitch Connector P5KS Socket 6S: Narrow Pitch Connector P5KS Header	AXK						7	Y	G
	Number of contacts (2 digits)									
I/O connectors	Mated height <Socket> 0: For mated height 4.0 mm, 5.0 mm and 6.0 mm 2: For mated height 4.5 mm, 5.5 mm and 6.5 mm 3: For mated height 7.0 mm, 8.0 mm and 9.0 mm <Header> 4: For mated height 4.0 mm, 4.5 mm and 7.0 mm 5: For mated height 5.0 mm, 5.5 mm and 8.0 mm 6: For mated height 6.0 mm, 6.5 mm and 9.0 mm									
	Functions 3: With positioning boss and direction for protection from reverse mating 4: Without positioning boss/with direction for protection from reverse mating 7: With positioning boss/without direction for protection from reverse mating 8: Without positioning boss and direction for protection from reverse mating									
	Surface treatment (Contact portion / Terminal portion) 7: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface (Ni barrier product)									
Interface connectors	Contact portion <Socket> Y: V notch type product <Header> Y: V notch type product									
	Packing G: 1,500 pieces embossed tape and plastic reel × 2 (Socket: Mated heights 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm) (Header: Mated heights 4.0 mm, 4.5 mm, 7.0 mm) 1,000 pieces plastic reel × 2 (Socket: Mated heights 7.0 mm, 8.0 mm, 9.0 mm) (Header: Mated heights 5.0 mm, 5.5 mm, 6.0 mm, 6.5 mm, 8.0 mm, 9.0 mm)									
Sockets for memory card	Notes: 1. Models with mating directionality to prevent reverse insertion have less than 100 contacts. Models without mating directionality to prevent reverse insertion have over 100 contacts. 2. The plating on the solder terminal portion has changed from SnPb to Au plating from the production lot of December, 2002, in order to eliminate lead.									
Connectors for industrial equipment										
IC sockets										
Information										

**PRODUCT TYPES**

**1. P5K**

Product name	Mated height	No. of contacts	Part No.		Packing		
			Socket	Header	Inner carton (1 reel)	Outer carton	
			<i><b>TOUGH CONTACT</b></i>	<i><b>TOUGH CONTACT</b></i>			
P5K	3.0 mm	20	AXK520147YG	AXK620347YG	1,500 pieces	3,000 pieces	
		22	AXK522147YG	AXK622347YG			
		30	AXK530147YG	AXK630347YG			
		40	AXK540147YG	AXK640347YG			
		50	AXK550147YG	AXK650347YG			
		60	AXK560147YG	AXK660347YG			
		70	AXK570147YG	AXK670347YG			
		80	AXK580147YG	AXK680347YG			
		100	AXK500147YG	AXK600347YG			
		120	AXK5A2147YG	AXK6A2347YG			
		3.5 mm	20	AXK520147YG			AXK620247YG
			22	AXK522147YG			AXK622247YG
	30		AXK530147YG	AXK630247YG			
	34		AXK534147YG	AXK634247YG			
	40		AXK540147YG	AXK640247YG			
	50		AXK550147YG	AXK650247YG			
	60		AXK560147YG	AXK660247YG			
	70		AXK570147YG	AXK670247YG			
	80		AXK580147YG	AXK680247YG			
	100		AXK500147YG	AXK600247YG			
	120		AXK5A2147YG	AXK6A2247YG			

- Notes) 1. Regarding ordering units: During production: Please make orders in 1 reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible.  
 2. The standard type comes without positioning bosses.  
 Connectors with positioning bosses are available on-demand production. For P5K type of 8th digit of the part no. changes from 4 to 3.  
 e.g. Mated height 3.0 mm, 20 contacts for sockets: AXK520137YG  
 3. Previous non-***TOUGH CONTACT*** types and current ***TOUGH CONTACT*** types are compatible for mating.

**2. P5KS**

Product name	Mated height	No. of contacts	Part No.		Packing		
			Socket	Header	Inner carton (1 reel)	Outer carton	
			<i><b>TOUGH CONTACT</b></i>	<i><b>TOUGH CONTACT</b></i>			
P5KS	4.0 mm	20	AXK5S20047YG	AXK6S20447YG	1,500 pieces	3,000 pieces	
		24	AXK5S24047YG	AXK6S24447YG			
		30	AXK5S30047YG	AXK6S30447YG			
		34	AXK5S34047YG	AXK6S34447YG			
		40	AXK5S40047YG	AXK6S40447YG			
		50	AXK5S50047YG	AXK6S50447YG			
		60	AXK5S60047YG	AXK6S60447YG			
		70	AXK5S70047YG	AXK6S70447YG			
		80	AXK5S80047YG	AXK6S80447YG			
		100	AXK5S00047YG	AXK6S00447YG			
		120	AXK5SA2077YG	AXK6SA2477YG			
		160	AXK5SA6077YG	AXK6SA6477YG			
		4.5 mm	20	AXK5S20247YG			AXK6S20447YG
			24	AXK5S24247YG			AXK6S24447YG
			30	AXK5S30247YG			AXK6S30447YG
			34	AXK5S34247YG			AXK6S34447YG
	36		AXK5S36247YG	AXK6S36447YG			
	40		AXK5S40247YG	AXK6S40447YG			
	50		AXK5S50247YG	AXK6S50447YG			
	60		AXK5S60247YG	AXK6S60447YG			
	70		AXK5S70247YG	AXK6S70447YG			
	80		AXK5S80247YG	AXK6S80447YG			
	100		AXK5S00247YG	AXK6S00447YG			
	120		AXK5SA2277YG	AXK6SA2477YG			
	160	AXK5SA6277YG	AXK6SA6477YG				

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXK(5(S)/6(S))

Product name	Mated height	No. of contacts	Part No.		Packing						
			Socket	Header	Inner carton (1 reel)	Outer carton					
			<b>TOUGH CONTACT</b>	<b>TOUGH CONTACT</b>							
P5KS	5.0 mm	20	AXK5S20047YG	AXK6S20547YG	Socket: 1,500 pieces Header: 1,000 pieces	Socket: 3,000 pieces Header: 2,000 pieces					
		30	AXK5S30047YG	AXK6S30547YG							
		34	AXK5S34047YG	AXK6S34547YG							
		40	AXK5S40047YG	AXK6S40547YG							
		50	AXK5S50047YG	AXK6S50547YG							
		60	AXK5S60047YG	AXK6S60547YG							
		70	AXK5S70047YG	AXK6S70547YG							
		80	AXK5S80047YG	AXK6S80547YG							
		100	AXK5S00047YG	AXK6S00547YG							
		5.5 mm	20	AXK5S20247YG			AXK6S20547YG				
	30		AXK5S30247YG	AXK6S30547YG							
	34		AXK5S34247YG	AXK6S34547YG							
	40		AXK5S40247YG	AXK6S40547YG							
	50		AXK5S50247YG	AXK6S50547YG							
	60		AXK5S60247YG	AXK6S60547YG							
	70		AXK5S70247YG	AXK6S70547YG							
	80		AXK5S80247YG	AXK6S80547YG							
	100		AXK5S00247YG	AXK6S00547YG							
	6.0 mm		20	AXK5S20047YG			AXK6S20647YG				
		30	AXK5S30047YG	AXK6S30647YG							
		40	AXK5S40047YG	AXK6S40647YG							
		50	AXK5S50047YG	AXK6S50647YG							
		60	AXK5S60047YG	AXK6S60647YG							
		70	AXK5S70047YG	AXK6S70647YG							
		80	AXK5S80047YG	AXK6S80647YG							
		100	AXK5S00047YG	AXK6S00647YG							
		6.5 mm	20	AXK5S20247YG			AXK6S20647YG				
			30	AXK5S30247YG			AXK6S30647YG				
	40		AXK5S40247YG	AXK6S40647YG							
	50		AXK5S50247YG	AXK6S50647YG							
	60		AXK5S60247YG	AXK6S60647YG							
	70		AXK5S70247YG	AXK6S70647YG							
	80		AXK5S80247YG	AXK6S80647YG							
	100		AXK5S00247YG	AXK6S00647YG							
	130		AXK5SA3277YG	AXK6SA3677YG							
	7.0 mm		20	AXK5S20347YG			AXK6S20447YG	Socket: 1,000 pieces Header: 1,500 pieces	Socket: 2,000 pieces Header: 3,000 pieces		
		30	AXK5S30347YG	AXK6S30447YG							
		40	AXK5S40347YG	AXK6S40447YG							
		50	AXK5S50347YG	AXK6S50447YG							
		60	AXK5S60347YG	AXK6S60447YG							
		70	AXK5S70347YG	AXK6S70447YG							
		80	AXK5S80347YG	AXK6S80447YG							
		100	AXK5S00347YG	AXK6S00447YG							
		8.0 mm	20	AXK5S20347YG			AXK6S20547YG			1,000 pieces	2,000 pieces
			30	AXK5S30347YG			AXK6S30547YG				
	40		AXK5S40347YG	AXK6S40547YG							
	50		AXK5S50347YG	AXK6S50547YG							
	60		AXK5S60347YG	AXK6S60547YG							
	70		AXK5S70347YG	AXK6S70547YG							
	80		AXK5S80347YG	AXK6S80547YG							
	100		AXK5S00347YG	AXK6S00547YG							
	9.0 mm		20	AXK5S20347YG			AXK6S20647YG				
			30	AXK5S30347YG			AXK6S30647YG				
		40	AXK5S40347YG	AXK6S40647YG							
		50	AXK5S50347YG	AXK6S50647YG							
		60	AXK5S60347YG	AXK6S60647YG							
		70	AXK5S70347YG	AXK6S70647YG							
		80	AXK5S80347YG	AXK6S80647YG							
		100	AXK5S00347YG	AXK6S00647YG							

- Notes) 1. Regarding ordering units: During production: Please make orders in 1 reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible.
2. The standard type comes without positioning bosses (However, mated heights of 4 mm or higher and 120 pins or more comes standard with bosses). Connectors with positioning bosses are available for on-demand production. For P5KS type of 9th digit of the part no. changes from 4 to 3.  
 e.g. Mated height 4.0 mm, 20 contacts for sockets: AXK5S20037YG
3. Previous non-**TOUGH CONTACT** types and current **TOUGH CONTACT** types are compatible for mating.

# SPECIFICATIONS

## 1. Characteristics

Item	Specifications			Conditions
	3mm, 3.5mm type	4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm type	7mm, 8mm, 9mm type	
Electrical characteristics	Rated current	0.5A/terminal (Max. 10A)	0.5A/terminal (Max. 16A)	
	Rated voltage	60V AC/DC		
	Breakdown voltage	150V AC for 1 min.		
	Insulation resistance	Min. 1000MΩ		
	Contact resistance	Max. 60mΩ	Max. 80mΩ	
Mechanical characteristics	Composite insertion force	Max. 0.785N {80gf} × no. of contacts (initial)		
	Composite removal force	Min. 0.0588N {6gf} × no. of contacts		
	Post holding force	Min. 0.98N {100gf}/contacts		
Environmental characteristics	Ambient temperature	-55°C to +85°C		
	Soldering heat resistance	Max. peak temperature of 260°C (on the surface of the PC board around the connector terminals)		
		300°C within 5 sec., 350°C within 3 sec.		
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Sequence 1. -55 <sup>3</sup> /5°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>3</sup> /5°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	120 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	24 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 60mΩ	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Lifetime characteristics	Insertion and removal life	50 times		
Unit weight	P5K 3mm 30 contacts P5KS 4mm 30 contacts	Socket: 0.17g Header: 0.09g Socket: 0.18g Header: 0.16g		

## 2. Material and surface treatment

Part name	Mated height 3mm, 3.5mm, 4mm, 4.5mm, 5mm, 5.5mm, 6mm, 6.5mm, 7mm, 8mm, 9mm	
	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—
Contact/post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal) The section close to the soldering portion has a nickel barrier. (The nickel base is exposed.)

## DIMENSIONS (Unit: mm)

### P5K: Mated height 3mm, 3.5mm type

- Socket

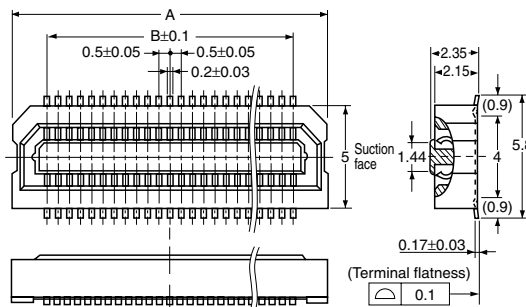
**CAD Data**



Dimension table (mm)

No. of contacts	A	B
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
34	11.70	8.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50
120	33.20	29.50

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>



General tolerance: ±0.2



# AXK(5(S)/6(S))

Narrow-pitch connectors

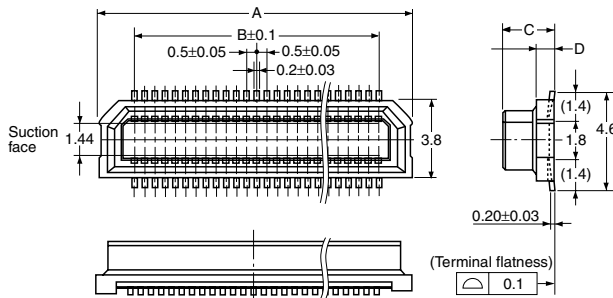
• Header

**CAD Data**



**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
22	8.70	5.00
30	10.70	7.00
34	11.70	8.00
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50
120	33.20	29.50

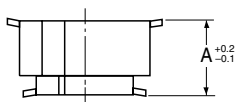


General tolerance:  $\pm 0.2$

Mated height	C	D
3.0 mm	2.4	0.85
3.5 mm	2.9	1.35

I/O connectors

• Socket and header are mated



Mated height	A
3.0 mm	3.0
3.5 mm	3.5

Note) P5KS series (mated heights 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, 8.0mm, and 9.0mm) cannot be mated to this type.

**P5KS: Mated height 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, 8.0mm, 9.0mm type**

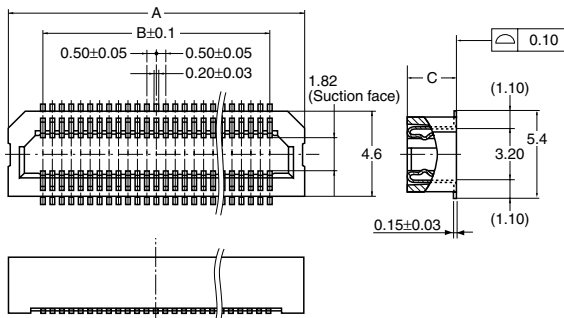
• Socket

**CAD Data**



**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
24	9.20	5.50
30	10.70	7.00
34	11.70	8.00
36	12.20	8.50
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50



General tolerance:  $\pm 0.2$

Mated height	C
4.0 mm, 5.0 mm, 6.0 mm	3.05
4.5 mm, 5.5 mm, 6.5 mm	3.55
7.0 mm, 8.0 mm, 9.0 mm	6.05

Connectors for industrial equipment

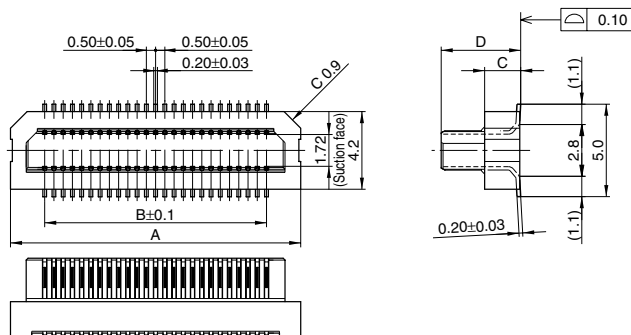
• Header

**CAD Data**



**Dimension table (mm)**

No. of contacts	A	B
20	8.20	4.50
24	9.20	5.50
30	10.70	7.00
34	11.70	8.00
36	12.20	8.50
40	13.20	9.50
50	15.70	12.00
60	18.20	14.50
70	20.70	17.00
80	23.20	19.50
100	28.20	24.50



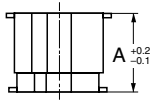
General tolerance:  $\pm 0.2$

Mated height	C	D
4.0 mm, 4.5 mm, 7.0 mm	0.95	3.3
5.0 mm, 5.5 mm, 8.0 mm	1.95	4.3
6.0 mm, 6.5 mm, 9.0 mm	2.95	5.3

IC sockets

Information

- Socket and header are mated



Mated height	A
4.0 mm	4.0
4.5 mm	4.5
5.0 mm	5.0
5.5 mm	5.5
6.0 mm	6.0
6.5 mm	6.5
7.0 mm	7.0
8.0 mm	8.0
9.0 mm	9.0

Note) P5K series (mated heights 3.0mm, 3.5mm) cannot be mated to this type.

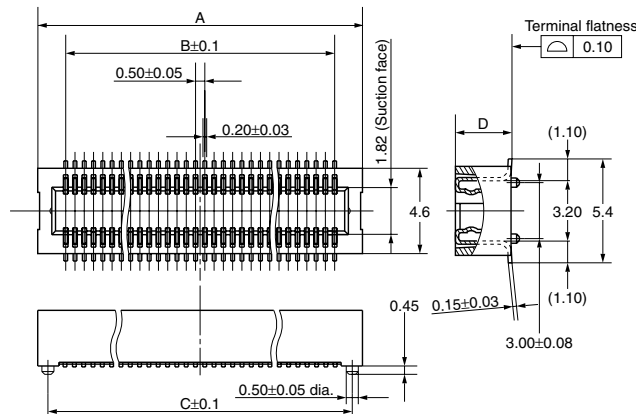
## P5KS: Mated height 4.0mm, 4.5mm for 120 contacts and 160 contacts types, 6.5mm for 130 contacts type

- Socket

### CAD Data



No. of contacts	A	B	C
120	32.50	29.50	32.00
130	35.00	32.00	34.50
160	42.50	39.50	42.00



General tolerance: ±0.2

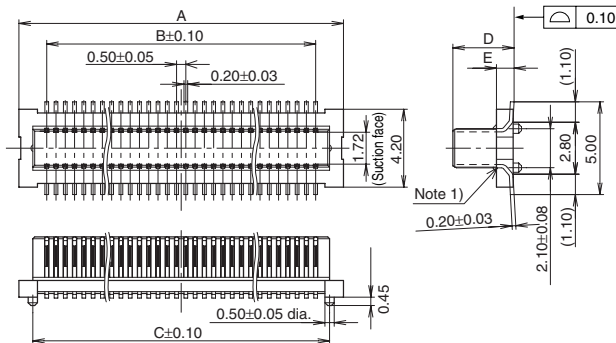
Mated height	D
4.0 mm	3.05
4.5 mm, 6.5 mm	3.55

- Header

### CAD Data



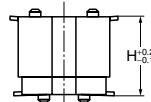
No. of contacts	A	B	C
120	32.50	29.50	31.00
130	35.00	32.00	33.50
160	42.50	39.50	41.00



General tolerance: ±0.2

Mated height	D	E
4.0 mm, 4.5 mm	3.30	0.95
6.5 mm	5.30	2.95

- Socket and header are mated



Mated height	H
4.0 mm	4.0
4.5 mm	4.5
6.5 mm	6.5

Notes) 1. Inquiry separately for diagrams of the embossed tape and cautions for use.  
2. Be sure to ask for proper specifications and drawings before actual use.

# AXK(5(S)/6(S))

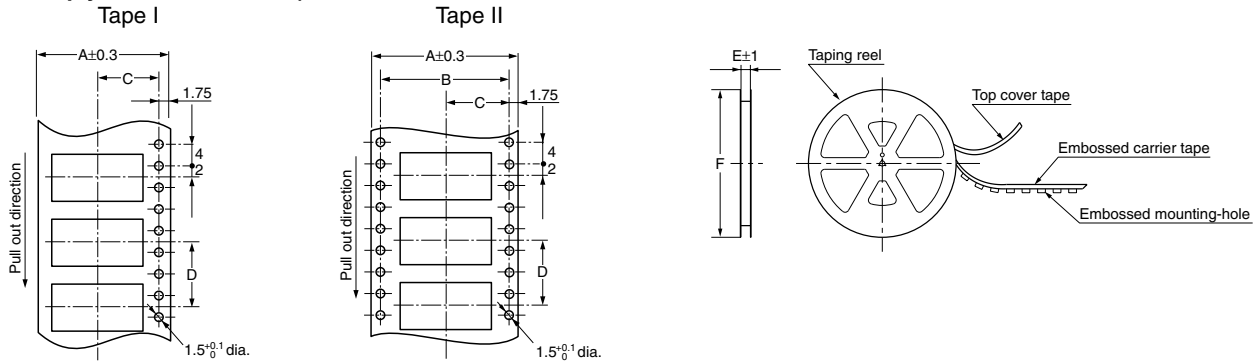
## EMBOSSSED TAPE DIMENSIONS

(unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)

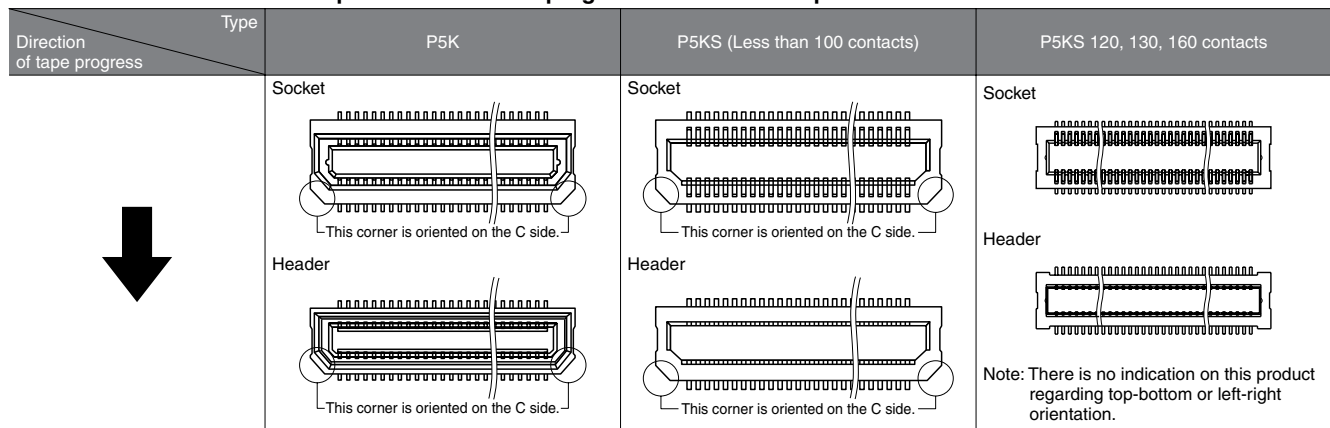


### Dimension table (mm)

Suffix: G (1 reel, 1,500 pieces or 1,000 pieces embossed tape and plastic reel package)

Type	Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
P5K	Socket and header are common 3.0mm, 3.5mm	20 to 50	Tape I	24.0	—	11.5	12.0	25.4	380 dia.	1,500 pcs.
		60 to 70	Tape II	32.0	28.4	14.2	12.0	33.4	380 dia.	
		80 to 100	Tape II	44.0	40.4	20.2	12.0	45.4	380 dia.	
		120	Tape II	56.0	52.4	26.2	12.0	57.4	380 dia.	
P5KS	Socket: 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm Header: 4.0mm, 4.5mm, 7.0mm	20 to 50	Tape I	24.0	—	11.5	12.0	25.4	380 dia.	1,500 pcs.
		60 to 70	Tape II	32.0	28.4	14.2	12.0	33.4	380 dia.	
		80 to 100	Tape II	44.0	40.4	20.2	12.0	45.4	380 dia.	
		120 to 160	Tape II	56.0	52.4	26.2	12.0	57.4	380 dia.	
	Socket: 7.0mm, 8.0mm, 9.0mm Header: 5.0mm, 5.5mm, 6.0mm, 6.5mm, 8.0mm, 9.0mm	20 to 50	Tape I	24.0	—	11.5	12.0	25.4	380 dia.	1,000 pcs.
		60 to 70	Tape II	32.0	28.4	14.2	12.0	33.4	380 dia.	
		80 to 100	Tape II	44.0	40.4	20.2	12.0	45.4	380 dia.	
		130	Tape II	56.0	52.4	26.2	12.0	57.4	380 dia.	

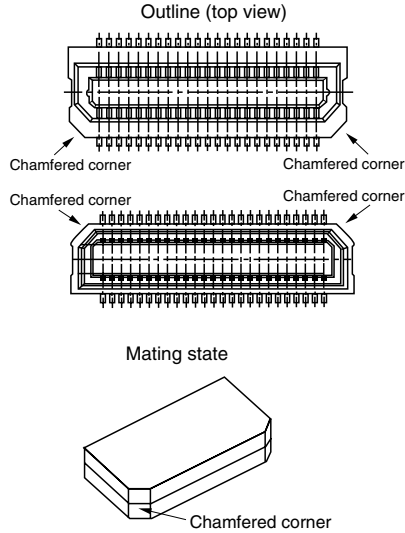
### Connector orientation with respect to direction of progress of embossed tape



**NOTES**

**1. Prevention of reverse mating**

Other than P5KS series 120, 130, 160 contacts type, the socket and header are protected from reverse mating by a molded resin key. Excessive mating force may damage the key, so be sure to match chamfered corners when mating.

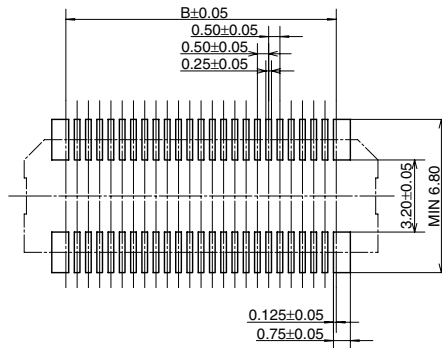


**2. PC Boards and Recommended Metal Mask Patterns**

Connectors are mounted with high density, with a pitch interval of 0.4 to 0.5 mm. It is therefore necessary to make sure that the right levels of solder are used, in order to reduce solder bridge and other issues. The figures to the right are recommended metal mask patterns. Please use them as a reference.

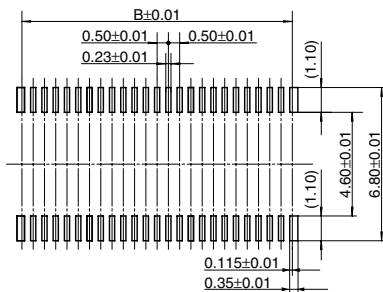
• P5K Socket

Recommended PC board pattern (TOP VIEW)



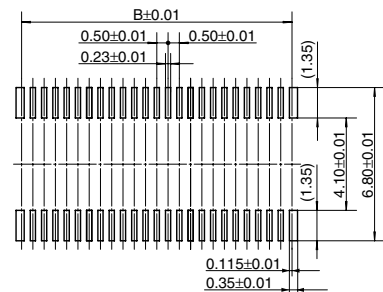
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm (Opening area ratio: 56%)



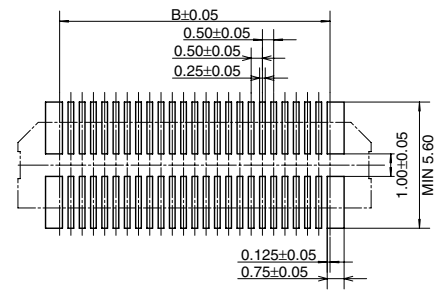
Recommended metal mask pattern

Metal mask thickness: Here, 120 μm (Opening area ratio: 69%)



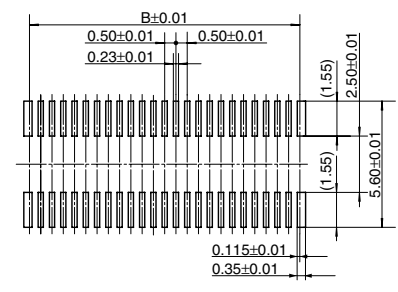
• P5K Header

Recommended PC board pattern (TOP VIEW)



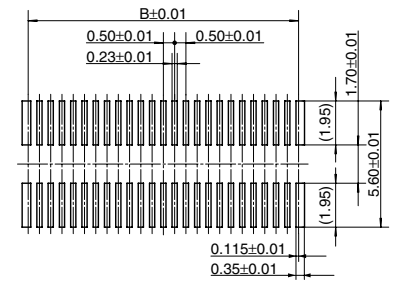
Recommended metal mask pattern

Metal mask thickness: Here, 150 μm (Opening area ratio: 62%)



Recommended metal mask pattern

Metal mask thickness: Here, 120 μm (Opening area ratio: 78%)



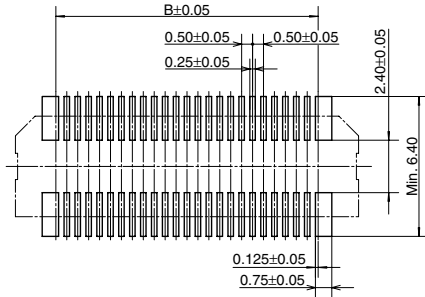
\* See the dimension table on page 91 for more information on the B dimension of the socket and header.

# AXK(5(S)/6(S))

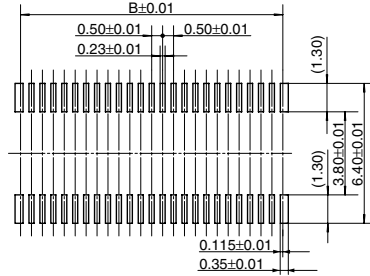
**P5KS: Mated height 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 6.5mm, 7.0mm, 8.0mm, 9.0mm type**

**• Socket**

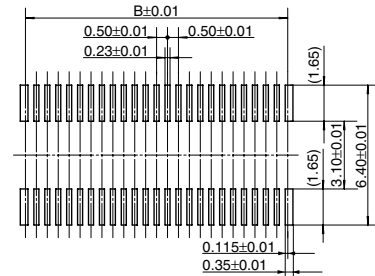
Recommended PC board pattern  
(TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 60%)



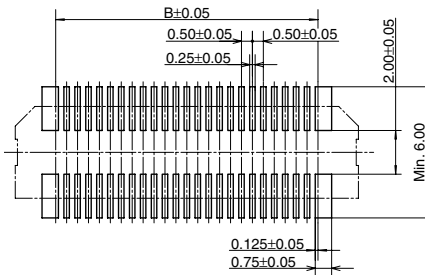
Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 76%)



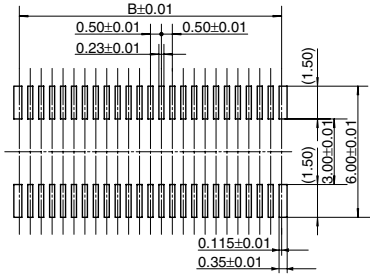
\* See the dimension table on page 92 for more information on the B dimension.

**• Header**

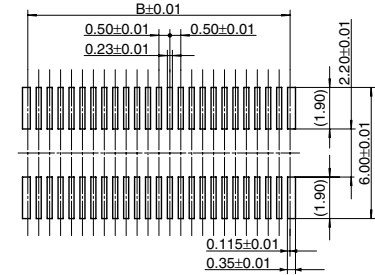
Recommended PC board pattern  
(TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 69%)



Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 87%)

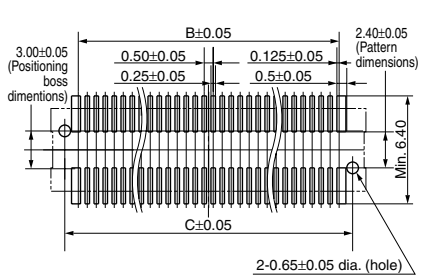


\* See the dimension table on page 92 for more information on the B dimension.

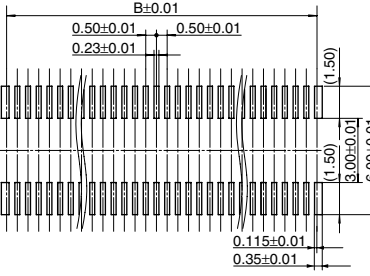
**P5KS: Mated height 4.0mm, 4.5mm for 120 contacts and 160 contacts types, 6.5mm for 130 contacts type**

**• Socket**

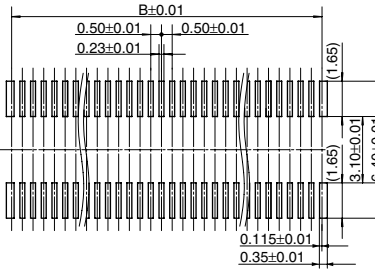
Recommended PC board pattern  
(TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 60%)



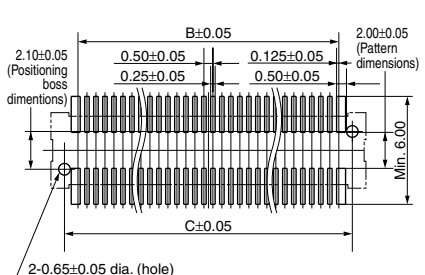
Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 76%)



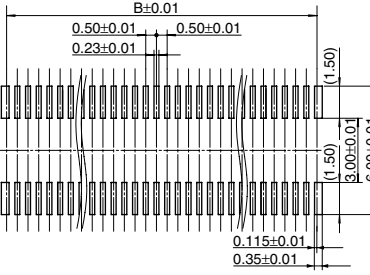
\* See the dimension table on page 93 for more information on the B and C dimensions.

**• Header**

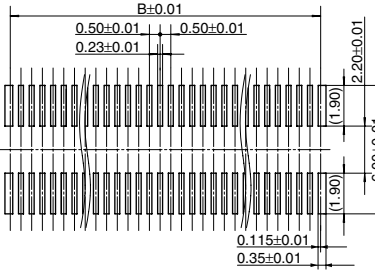
Recommended PC board pattern  
(TOP VIEW)



Recommended metal mask pattern  
Metal mask thickness: Here, 150 μm  
(Opening area ratio: 69%)



Recommended metal mask pattern  
Metal mask thickness: Here, 120 μm  
(Opening area ratio: 87%)



\* See the dimension table on page 93 for more information on the B and C dimensions.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**NARROW-PITCH CONNECTORS FOR BOARD-TO-BOARD CONNECTION**

**NARROW PITCH (0.5mm) CONNECTORS  
P5 SERIES - FLOATING TYPE -**

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

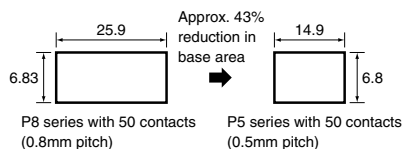
Connectors for industrial equipment

IC sockets

Information

**FEATURES**

1. The 0.5mm pitch stacking connector with a built-in floating mechanism.
2. Further reduction of equipment size is now possible.



3. The original structure ensures higher reliability performance for both electrical and mechanical connections.

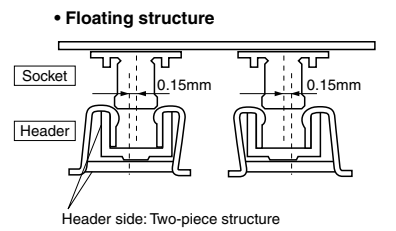
- Flux-creeping prevention structure (header)
  - Simple lock mechanism
4. Automatic Mounting
  - Embossed tape packaging is standard.
  5. Porosity treatment applied for improved resistance against corrosion

**APPLICATIONS**

Cellular telephone, PHS, Portable data terminals

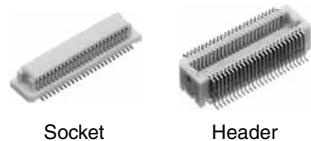
**What is a floating structure?**

The header is a two-piece structure that can absorb any variation caused when a connector (header and socket) is integrated into a printed circuit board. (When two sets of connectors are used as shown below, a maximum deviation of 0.3mm can be absorbed.)



Compliance with RoHS Directive

**TABLE OF PRODUCT TYPES**



Number of contacts	Mated height	
	20	5.0mm
20	☆	
30	☆	
40	☆	
50	☆	
60	☆	
80	☆	
100	☆	

**ORDERING INFORMATION**

AXN      **5** **G**

- 5: Narrow Pitch Connector P5 Floating type (0.5 mm pitch) Socket
- 6: Narrow Pitch Connector P5 Floating type (0.5 mm pitch) Header

Number of contacts (2 digits)

Terminal shape/Mated direction/Mated height

<Socket>

0: For SMD vertical mating, mated height 5.0 mm

<Header>

5: For SMD vertical mating, mated height 5.0 mm

Functions

<Socket>

4: Without retention fitting, without positioning bosses

<Header>

8: With floating function, without retention fitting, without positioning bosses

Surface treatment (Contact portion / Terminal portion)

5: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

Packing

G: 1,000 pieces embossed tape and plastic reel x 2

## PRODUCT TYPES

Mated height	No. of contacts	Part No.		Packing quantity	
		Socket	Header	Inner carton (1 reel)	Outer carton
5 mm	20	AXN520045G	AXN620585G	1,000 pcs.	2,000 pcs.
	30	AXN530045G	AXN630585G		
	40	AXN540045G	AXN640585G		
	50	AXN550045G	AXN650585G		
	60	AXN560045G	AXN660585G		
	80	AXN580045G	AXN680585G		
	100	AXN500045G	AXN600585G		

Note) Connectors are available in a standard embossed tape package (1,000 pcs/lot). Minimum ordering quantity is a single reel.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders for the above models are possible.

## SPECIFICATIONS

### 1. Characteristics

Item	Specifications	Conditions	
Electrical characteristics	Rated current	0.2A	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1000MΩ	Using 500V DC megger
	Contact resistance	Max. 80mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.981N {100gf} × no. of contacts (initial)	
	Composite removal force	Min. 0.0785N {8gf} × no. of contacts	
	Post holding force	Min. 2.94N {300gf}/2 contacts	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 245°C (on the surface of the PC board around the connector terminals) 300°C within 5 seconds	Infrared reflow soldering
			Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Sequence 1. -55 <sup>±</sup> 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±</sup> 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
SO <sub>2</sub> resistance (header and socket mated)	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 10±3 ppm, humidity 90 to 95% R.H.	
Lifetime characteristics	Insertion and removal life	20 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight	30 contacts; Socket: 0.19g Header: 0.32g 50 contacts; Socket: 0.29g Header: 0.50g		

### 2. Material and surface treatment


Part name	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—
Contact/post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal)

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

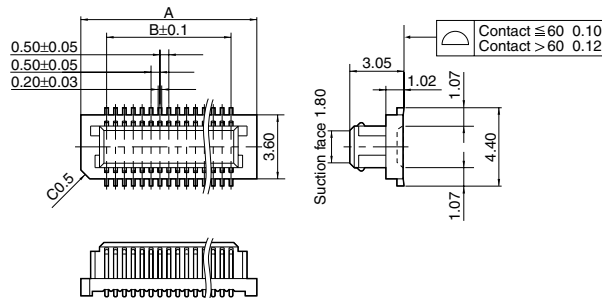
### • Socket

#### CAD Data



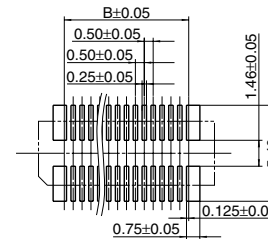
**Dimension table (mm)**

No. of contacts	A	B
20	7.40	4.50
30	9.90	7.00
40	12.40	9.50
50	14.90	12.00
60	17.40	14.50
80	22.40	19.50
100	27.40	24.50



General tolerance: ±0.2

### Recommended PC board pattern (TOP VIEW)



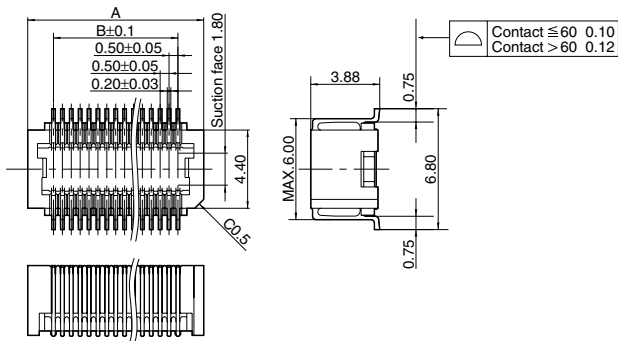
• Header

CAD Data

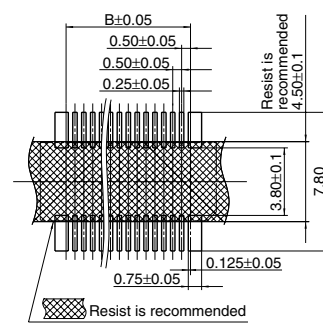


Dimension table (mm)

No. of contacts	A	B
20	7.40	4.50
30	9.90	7.00
40	12.40	9.50
50	14.90	12.00
60	17.40	14.50
80	22.40	19.50
100	27.40	24.50

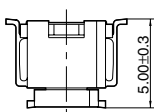


Recommended PC board pattern (TOP VIEW)



General tolerance: ±0.2

• Socket and Header are mated

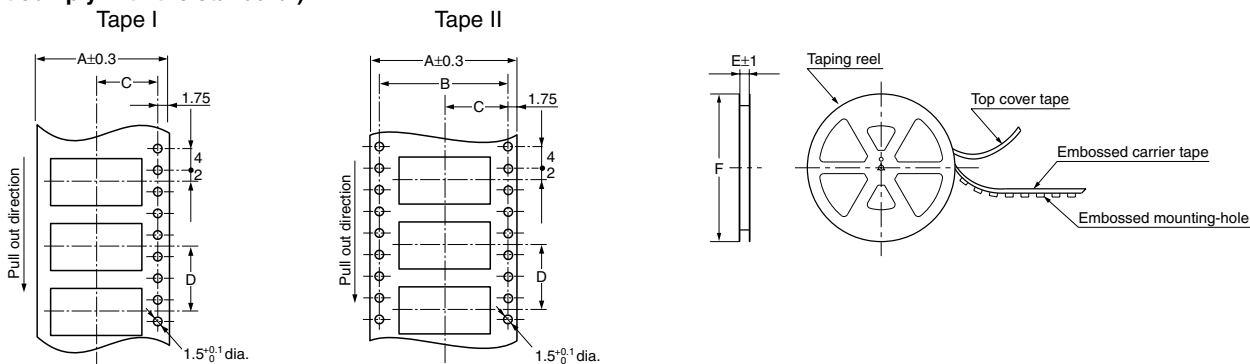


**EMBOSSED TAPE DIMENSIONS** (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)



Dimension table (mm)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket and header are common: 5.0mm	20 to 60	Tape I	24.0	—	11.5	12.0	25.4±1	380 dia.	1,000
	80	Tape II	32.0	28.4	14.2	12.0	33.4±1	380 dia.	1,000
	100	Tape II	44.0	40.4	20.2	12.0	45.4±1	380 dia.	1,000

Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress	Type	Common for P5 Floating type	
	Socket	Header	
↓			

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

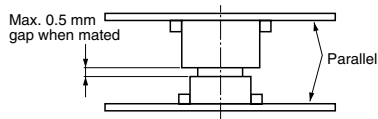


**NOTES**

**1. Preventing vibration and shock**

To prevent the PC board from drop-off faults and to protect soldered spots from direct stress, use vibration-proof pads across boards.

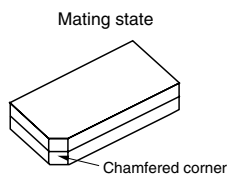
Fix the PC boards in place or install a stopper so that the gap between the connectors is less than 0.5 mm and that their mating is level.



**2. Prevention of reverse mating**

The socket and header are protected from reverse mating by a molded resin key. Excessive mating force may damage the key, so be sure to match chamfered corners when mating.

• Floating type

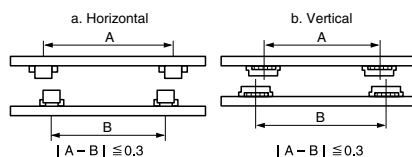


**3. Static electricity**

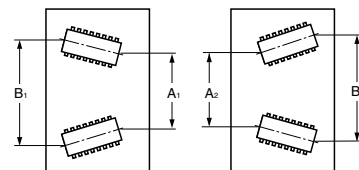
This type of socket has the terminals exposed from the connector walls, and therefore if they are touched with anything metal, a short circuit will occur. Also, if the terminals are touched by hand, the static electricity may damage the IC.

**4. About floating-type connectors**

(1) When two floating-type connectors are used on header, distance tolerance between connectors is 0.3mm max.



(2) If rotational error exists between two connectors, distance tolerance between the two connectors is as follows:



$|A_1 - A_2| \leq 0.3$   
 $|B_1 - B_2| \leq 0.3$

However, A1 is mated with A2, and B1 is mated with B2.

(3) Please consult us regarding allowable installation pitch tolerance between connectors when using two connectors that have differing number of terminals.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

**NARROW-PITCH  
CONNECTORS FOR  
BOARD-TO-BOARD  
CONNECTION**

**NARROW PITCH (0.6mm)  
CONNECTORS P6 SERIES - P6S -**



Socket



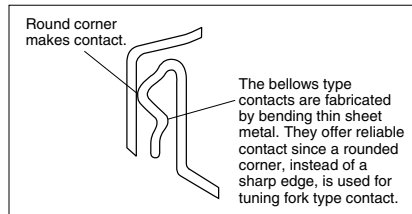
Header

Compliance with RoHS Directive

**FEATURES**

**1. Bellows-type contacts**

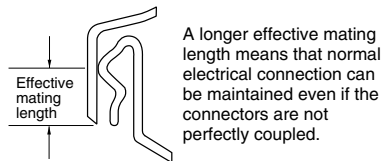
Bellows-type contacts resist mating stress and offer high contact reliability.



**2. Porosity treatment applied for improved resistance against corrosion.**

**3. Mating length 1.1mm**

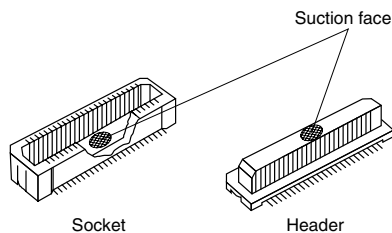
The effective mating length has been extended to ensure that there is some latitude in the mating.



Type	Effective mating length
P6S	1.1mm

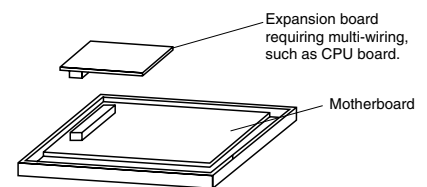
**4. Automatic mounting**

- 1) Suction area for suction-type automatic mounting machines is employed.
- 2) Embossed tape packaging is standard.
- 3) Terminal construction which is virtually resistant to solder bridging.



**APPLICATIONS**

1. Compact portable devices "Cellular phones, DVC, Digital cameras, etc"
2. This is ideal in applications involving information devices such as notebook computers, where connections are required between a backplane and a CPU board or another type of multi-wiring expansion board.



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXK(3/4)S

## TABLE OF PRODUCT TYPES



Socket

Header

Mated height	4.0mm	5.0mm	6.0mm	7.0mm	8.0mm	9.0mm
	20	☆	☆	☆	☆	☆
30	☆	☆	☆	☆	☆	☆
40	☆	☆	☆	☆	☆	☆
50	☆	☆	☆	☆	☆	☆
60	☆	☆	☆	☆	☆	☆
80	☆	☆	☆	☆	☆	☆
100	☆	☆	☆	☆	☆	☆

Notes: 1. Special orders are possible for contact numbers not listed in the table above.  
(Please consult us in such a case.)  
2. The standard type comes with positioning bosses. Connectors without positioning boss are available for on-demand production.

## ORDERING INFORMATION

**AXK**      **5** **G**

3S: Narrow Pitch Connector P6S (0.6 mm pitch) Socket  
4S: Narrow Pitch Connector P6S (0.6 mm pitch) Header

Number of contacts (2 digits)

Mated height

<Socket>

0: For mated height 4.0 mm, 5.0 mm and 6.0 mm

3: For mated height 7.0 mm, 8.0 mm and 9.0 mm

<Header>

4: For mated height 4.0 mm and 7.0 mm

5: For mated height 5.0 mm and 8.0 mm

6: For mated height 6.0 mm and 9.0 mm

Functions

3: With positioning bosses

4: Without positioning bosses

Surface treatment (Contact portion / Terminal portion)

5: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

Packing

G: Socket for mated height 4.0, 5.0, 6.0 mm and header for mated height 4.0, 7.0 mm:

1,500 pieces embossed tape and plastic reel × 2

Socket for mated height 7.0, 8.0, 9.0 mm and header for mated height 5.0, 6.0, 8.0, 9.0 mm:

1,000 pieces embossed tape and plastic reel × 2

## PRODUCT TYPES

Mated height	No. of contacts	Part No.		Packing	
		Socket	Header	Inner carton (1 reel)	Outer carton
4.0 mm	20	AXK3S20035G	AXK4S20435G	1,500 pieces	3,000 pieces
	30	AXK3S30035G	AXK4S30435G		
	40	AXK3S40035G	AXK4S40435G		
	50	AXK3S50035G	AXK4S50435G		
	60	AXK3S60035G	AXK4S60435G		
	80	AXK3S80035G	AXK4S80435G		
	100	AXK3S00035G	AXK4S00435G		
5.0 mm	20	AXK3S20035G	AXK4S20535G	Socket: 1,500 pieces Header: 1,000 pieces	Socket: 3,000 pieces Header: 2,000 pieces
	30	AXK3S30035G	AXK4S30535G		
	40	AXK3S40035G	AXK4S40535G		
	50	AXK3S50035G	AXK4S50535G		
	60	AXK3S60035G	AXK4S60535G		
	80	AXK3S80035G	AXK4S80535G		
	100	AXK3S00035G	AXK4S00535G		
6.0 mm	20	AXK3S20035G	AXK4S20635G	Socket: 1,000 pieces Header: 1,500 pieces	Socket: 2,000 pieces Header: 3,000 pieces
	30	AXK3S30035G	AXK4S30635G		
	40	AXK3S40035G	AXK4S40635G		
	50	AXK3S50035G	AXK4S50635G		
	60	AXK3S60035G	AXK4S60635G		
	80	AXK3S80035G	AXK4S80635G		
	100	AXK3S00035G	AXK4S00635G		
7.0 mm	20	AXK3S20335G	AXK4S20435G	1,000 pieces	2,000 pieces
	30	AXK3S30335G	AXK4S30435G		
	40	AXK3S40335G	AXK4S40435G		
	50	AXK3S50335G	AXK4S50435G		
	60	AXK3S60335G	AXK4S60435G		
	80	AXK3S80335G	AXK4S80435G		
	100	AXK3S00335G	AXK4S00435G		
8.0 mm	20	AXK3S20335G	AXK4S20535G	1,000 pieces	2,000 pieces
	30	AXK3S30335G	AXK4S30535G		
	40	AXK3S40335G	AXK4S40535G		
	50	AXK3S50335G	AXK4S50535G		
	60	AXK3S60335G	AXK4S60535G		
	80	AXK3S80335G	AXK4S80535G		
	100	AXK3S00335G	AXK4S00535G		
9.0 mm	20	AXK3S20335G	AXK4S20635G	1,000 pieces	2,000 pieces
	30	AXK3S30335G	AXK4S30635G		
	40	AXK3S40335G	AXK4S40635G		
	50	AXK3S50335G	AXK4S50635G		
	60	AXK3S60335G	AXK4S60635G		
	80	AXK3S80335G	AXK4S80635G		
	100	AXK3S00335G	AXK4S00635G		

Notes) 1. Regarding ordering units: During production: Please make orders in 1 reel units.

Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)

Samples: Small lot orders are possible.

2. The standard type comes without positioning bosses. Connectors with positioning bosses are available for on-demand production.

For this type of connector, 9th digit of the part no. changes from 3 to 4 e.g. Mated height 4.0 mm, 20 contacts for sockets: AXK3S20045G.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

## SPECIFICATIONS

### 1. Characteristics

Item	Specifications		Conditions
	Mated height: 4.0mm, 5.0mm, 6.0mm, 7.0mm, 8.0mm, 9.0mm		
Electrical characteristics	Rated current	0.5A/terminal (Max. 16 A)	
	Rated voltage	60V AC/DC	
	Breakdown voltage	150V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	Using 500V DC megger
	Contact resistance	Max. 80mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.785N {80gf} × no. of contacts (initial)	
	Composite removal force	Min. 0.0588N {6gf} × no. of contacts	
	Post holding force	Min. 0.98N {100gf}	Measures the maximum load in the post axial direction until removal
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 245°C (on the surface of the PC board around the connector terminals)	Infrared reflow soldering
		300°C within 5 sec.	Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Sequence 1. -55 <sup>±</sup> 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±</sup> 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 80mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
Lifetime characteristics	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 80mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
	Insertion and removal life	50 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight	P6S Mated height: 4mm 50 contacts; Socket: 0.29g Header: 0.26g		

### 2. Material and surface treatment

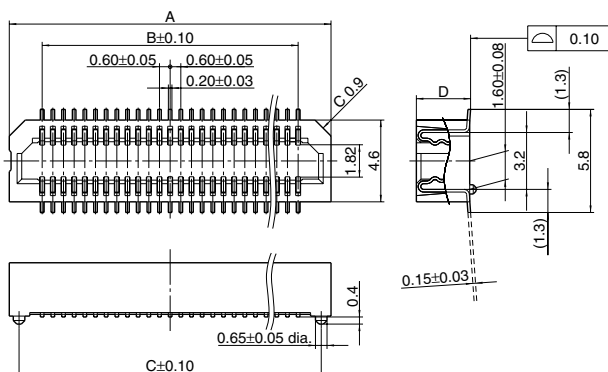
Part name	Mated height: 4.0mm, 5.0mm, 6.0mm, 7.0mm, 8.0mm, 9.0mm	
	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—
Contact/post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal)

## DIMENSIONS (Unit: mm)

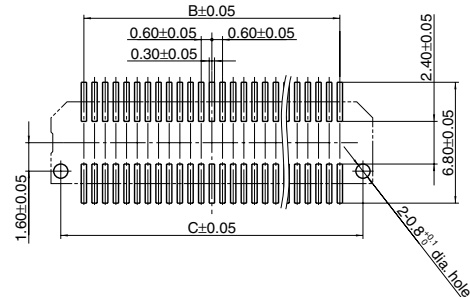
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

- Mated height: 4.0mm, 5.0mm, 6.0mm, 7.0mm, 8.0mm, 9.0mm
- Socket

**CAD Data**



Recommended PC board pattern (TOP VIEW)



General tolerance: ±0.2

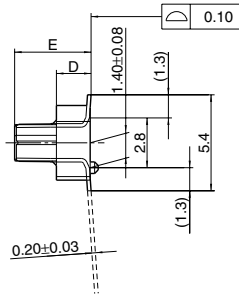
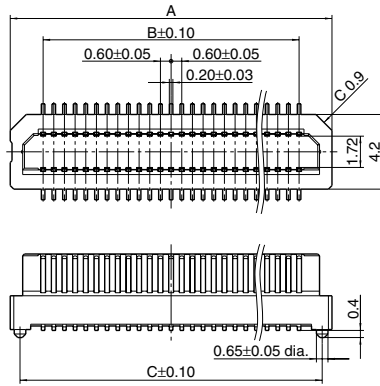
### Dimension table (mm)

No. of contact	A	B	C	Mated height	D
20	9.1	5.40	8.00	4.0mm, 5.0mm, 6.0mm	3.05
30	12.1	8.40	11.00	7.0mm, 8.0mm, 9.0mm	6.05
40	15.1	11.40	14.00		
50	18.1	14.40	17.00		
60	21.1	17.40	20.00		
80	27.1	23.40	26.00		
100	33.1	29.40	32.00		

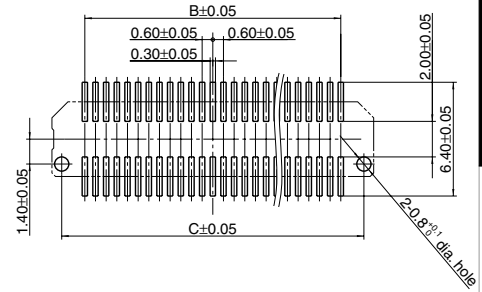
The specifications and appearance of this product are subject to change for improvement. Please contact us for details.

• Header

CAD Data



Recommended PC board pattern (TOP VIEW)



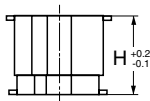
General tolerance: ±0.2

Dimension table (mm)

No. of contact	A	B	C
20	9.1	5.40	8.00
30	12.1	8.40	11.00
40	15.1	11.40	14.00
50	18.1	14.40	17.00
60	21.1	17.40	20.00
80	27.1	23.40	26.00
100	33.1	29.40	32.00

Mated height	D	E
4.0mm, 7.0mm	0.95	3.3
5.0mm, 8.0mm	1.95	4.3
6.0mm, 9.0mm	2.95	5.3

Socket and header are mated



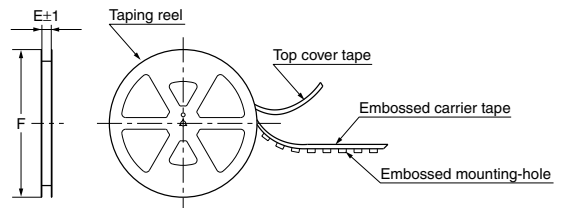
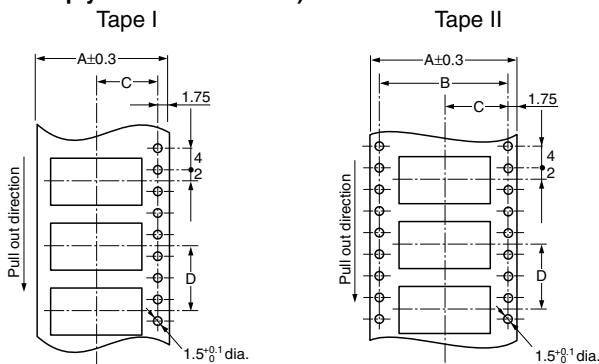
Mated height	H
4.0mm	4
5.0mm	5
6.0mm	6
7.0mm	7
8.0mm	8
9.0mm	9

**EMBOSSED TAPE DIMENSIONS** (unit: mm, Common for respective contact type, socket and header)

• Tape dimensions (Conforming to JIS C 0806-1990.)

• Plastic reel dimensions (Conforming to EIAJ ET-7200B)

However, some tapes have mounting hole pitches that do not comply with the standard.)



The specifications and appearance of this product are subject to change for improvement. Please contact us for details.

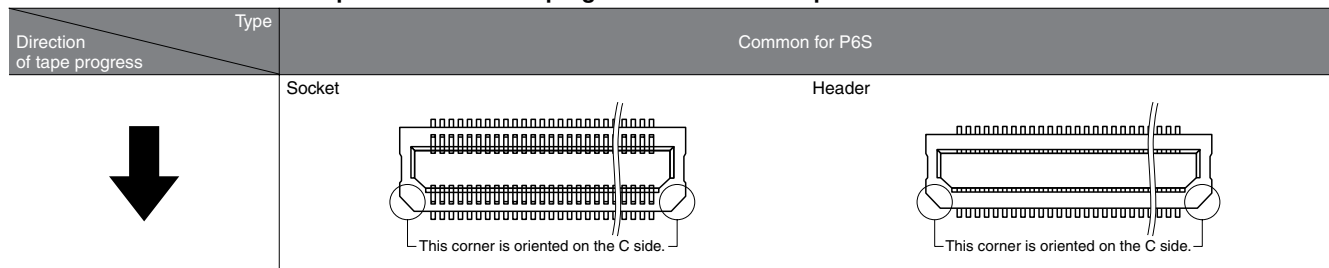
# AXK(3/4)S

## Dimension table (mm)

Suffix: G (embossed tape package)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket: 4.0mm, 5.0mm, 6.0mm	20 to 40	Tape I	24.0	—	11.5	12.0	25.4±1	380 dia.	1,500
	50 to 60	Tape II	32.0	28.4	14.2	12.0	33.4±1		
	80	Tape II	44.0	40.4	20.2	12.0	45.4±1		
	100	Tape II	56.0	52.4	26.2	12.0	57.4±1		
Socket: 7.0mm, 8.0mm, 9.0mm	20 to 40	Tape I	24.0	—	11.5	12.0	25.4±1	380 dia.	1,000
	50 to 60	Tape II	32.0	28.4	14.2	12.0	33.4±1		
	80	Tape II	44.0	40.4	20.2	12.0	45.4±1		
	100	Tape II	56.0	52.4	26.2	12.0	57.4±1		
Header: 4.0mm, 7.0mm	20 to 40	Tape I	24.0	—	11.5	12.0	25.4±1	380 dia.	1,500
	50	Tape II	32.0	28.4	14.2	12.0	33.4±1		
	60 to 80	Tape II	44.0	40.4	20.2	12.0	45.4±1		
	100	Tape II	56.0	52.4	26.2	12.0	57.4±1		
Header: 5.0mm, 6.0mm, 8.0mm, 9.0mm	20 to 40	Tape I	24.0	—	11.5	12.0	25.4±1	380 dia.	1,000
	50 to 60	Tape II	32.0	28.4	14.2	12.0	33.4±1		
	80	Tape II	44.0	40.4	20.2	12.0	45.4±1		
	100	Tape II	56.0	52.4	26.2	12.0	57.4±1		

## Connector orientation with respect to direction of progress of embossed tape



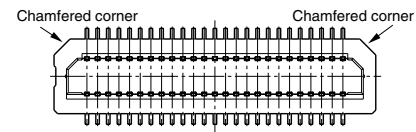
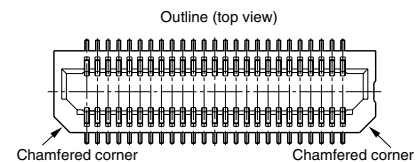
## NOTES

### 1. Prevention of reverse mating

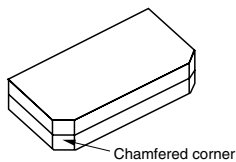
Excessive mating force may damage the key, so be sure to match chamfered corners when mating.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.



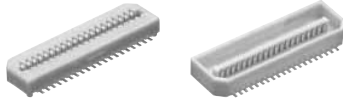
Mating state



The specifications and appearance of this product are subject to change for improvement. Please contact us for details.

**NARROW-PITCH CONNECTORS FOR PC BOARDS**

**NARROW-PITCH (0.8mm) CONNECTORS P8 SERIES**

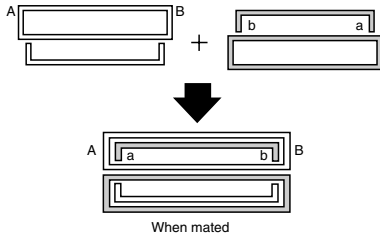


Socket Header

**Compliance with RoHS Directive**

**FEATURES**

1. The product lineup consists of the low profile of 3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 7.0 mm, 8.0 mm, 11.5 mm, and 13.0 mm 14.0 mm.
2. For the 11.5-mm type, the socket and header have the same shape. This simplifies management of stock and delivering.

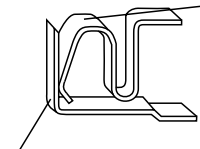


3. Perfect for portable devices, the bellows-type contacts provide a strong resistance against falling, impacts, and forced insertions and removals.

**Bellows-type contacts**

Bellows-type contacts resist mating stress and offer high contact reliability.

Ex.: Stacking height of 3.0 mm



Round corner makes contact.

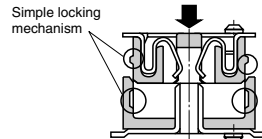
The bellows type contacts are fabricated by bending thin sheet metal. They offer reliable contact since a rounded corner, instead of a sharp edge, is used for tuning fork type contact.

4. Porosity treatment applied for improved resistance against corrosion.

**5. Simple lock mechanism**

Lock mechanism ensures proper contact and provides resistance against vibrations and shocks.

3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 7.0 mm, 8.0 mm, 13.0 mm, and 14.0 mm.

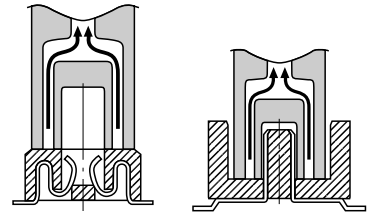


The simple lock mechanism is not featured on the 11.5-mm type. However, proper contact and resistance against vibrations and shocks are both ensured by the long mating length.

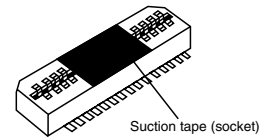
6. Automatic mounting (excluding 11.5 mm type)

1) Automatic mounting machine is available with an exclusive mounting nozzle.

Using the following types of suction nozzles make the connectors compatible with automatic mounting without the need for suction tape.

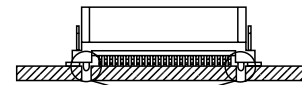


Suction tape and covers are also available for compatibility with other types of mounting machines.



Suction tape (socket)

- 2) Positioning bosses (those without bosses are also available)



Bosses for positioning on the PC board (those without bosses are also available). Suitable for both manual and automatic mounting.

**APPLICATIONS**

Small portable equipment, laptop computers, video equipment, radio communication, cellular telephones, etc.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



## TABLE OF PRODUCT TYPES



Socket



Header

Mated height	Mated height												
	3.0mm	3.5mm	4.0mm	4.5mm	5.0mm	5.5mm	6.0mm	7.0mm	8.0mm	11.5mm	13.0mm	14.0mm	
12					☆	☆							
14					☆								
16	☆	☆	☆	☆									
20	☆		☆		☆		☆	☆	☆		☆	☆	
22								☆	☆				
24	☆	☆			☆	☆	☆		☆				
26	☆	☆	☆	☆	☆	☆	☆	☆	☆				
30	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆		
34									☆				
40	☆		☆		☆		☆	☆	☆	☆	☆		
50	☆		☆		☆		☆	☆	☆	☆	☆		
60	☆	☆	☆	☆	☆	☆	☆	☆	☆		☆		
80	☆		☆		☆		☆	☆	☆	☆	☆		
90	☆												
100	☆		☆		☆		☆	☆	☆	☆			

Notes: 1. The standard type comes with positioning bosses.  
 Connectors without positioning bosses are available for on-demand production.  
 2. Please consult us for products which have no ☆ mark.

## ORDERING INFORMATION

### 1. P8 (11.5 mm)

AXN **1**    **0** **1** **1** **5**

1: Narrow Pitch Connector P8 (0.8 mm pitch)  
 Socket and header are common

Number of contacts (2 digits)

Suction cover  
 Nil: Without suction tape  
 C: With suction tape

Terminal shape/Mated direction/Mated height  
 0: For SMD vertical mating, mated height 11.5 mm

Functions  
 1: With retention fitting, with positioning bosses

Surface treatment (Contact portion / Terminal portion)  
 1: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

Other specifications  
 5: Part control number

Packing  
 P: 1,000 pieces embossed tape and paper reel × 2  
 S: Tube package

**2. P8 (3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, 5.5 mm, 6.0 mm, 7.0 mm, 8.0 mm, 13.0 mm, 14.0 mm)**

AXN



3: Narrow Pitch Connector P8 (0.8 mm pitch) Socket

4: Narrow Pitch Connector P8 (0.8 mm pitch) Header

Number of contacts (2 digits)

Suction tape and cover

Nil: Socket; without suction tape, Header; without suction cover

C: Socket; with suction tape, Header; with suction cover

Mated height

&lt;Socket&gt;

0: For mated height 3.0 mm, 4.0 mm and 5.0 mm

1: For mated height 6.0 mm, 7.0 mm, 8.0 mm, 13.0 mm and 14.0 mm

2: For mated height 3.5 mm, 4.5 mm and 5.5 mm

&lt;Header&gt;

0: For mated height 13.0 mm

1: For mated height 14.0 mm

3: For mated height 3.0 mm, 3.5 mm and 6.0 mm

4: For mated height 4.0 mm, 4.5 mm and 7.0 mm

5: For mated height 5.0 mm, 5.5 mm and 8.0 mm

Functions

3: With positioning bosses

(Except for mated height 13.0 mm header, embossed tape packing)

4: Without positioning bosses

(Mated height 13.0 mm header, embossed tape packing and mated height 14.0 mm header only)

Surface treatment (Contact portion / Terminal portion)

&lt;Socket&gt;

0: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

8: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

&lt;Header&gt;

0: Ni plating on base, Au plating on surface / Ni plating on base, Au plating on surface

Packing

J: 1,500 pieces embossed tape and paper reel × 2

P: 1,000 pieces embossed tape and paper reel × 2

S: Tube package

Notes: 1. The tape width for 100-pin embossed tape packaging is non-JIS standard. Please inquire.

2. The depth of the embossed tape for headers with 13 mm and 14 mm mated heights is non-JIS standard. Please test with your moulder before using.

3. Models possible for "J" packaging are as follows:

Socket mated heights: 3.0 mm, 3.5 mm, 4.0 mm, 4.5 mm, 5.0 mm, and 5.5 mm

Headers: Mated heights 3.0 mm, 3.5 mm, and 6.0 mm

PRODUCT TYPES

Mated height	No. of contacts	Stick package				Embossed tape package			
		Part No.		Packing quantity		Part No.		Packing quantity	
		Socket	Header	Stick	Outer carton	Socket	Header	Inner carton (1 reel)	Outer carton
3.0 mm	16	AXN316038S	AXN416330S	50 pcs.	300 pcs.	AXN316038*	AXN416330*		
	20	AXN320038S	AXN420330S	50 pcs.	300 pcs.	AXN320038*	AXN420330*		
	24	AXN324038S	AXN424330S	30 pcs.	300 pcs.	AXN324038*	AXN424330*		
	26	AXN326038S	AXN426330S	30 pcs.	300 pcs.	AXN326038*	AXN426330*		
	30	AXN330038S	AXN430330S	30 pcs.	300 pcs.	AXN330038*	AXN430330*		
	40	AXN340038S	AXN440330S	25 pcs.	300 pcs.	AXN340038*	AXN440330*		
	50	AXN350038S	AXN450330S	20 pcs.	300 pcs.	AXN350038*	AXN450330*		
	60	AXN360038S	AXN460330S	15 pcs.	300 pcs.	AXN360038*	AXN460330*		
	80	AXN380038S	AXN480330S	12 pcs.	300 pcs.	AXN380038*	AXN480330*		
100	AXN300038S	AXN400330S	12 pcs.	300 pcs.	—	—			
3.5 mm	16	AXN316238S	AXN416330S	50 pcs.	300 pcs.	AXN316238*	AXN416330*		
	24	AXN324238S	AXN424330S	30 pcs.	300 pcs.	AXN324238*	AXN424330*		
	26	AXN326238S	AXN426330S	30 pcs.	300 pcs.	AXN326238*	AXN426330*		
	30	AXN330238S	AXN430330S	30 pcs.	300 pcs.	AXN330238*	AXN430330*		
	60	AXN360238S	AXN460330S	15 pcs.	300 pcs.	AXN360238*	AXN460330*		
4.0 mm	16	AXN316038S	AXN416430S	50 pcs.	300 pcs.	AXN316038*	AXN416430P		
	20	AXN320038S	AXN420430S	50 pcs.	300 pcs.	AXN320038*	AXN420430P		
	26	AXN326038S	AXN426430S	30 pcs.	300 pcs.	AXN326038*	AXN426430P		
	30	AXN330038S	AXN430430S	30 pcs.	300 pcs.	AXN330038*	AXN430430P		
	40	AXN340038S	AXN440430S	25 pcs.	300 pcs.	AXN340038*	AXN440430P		
	50	AXN350038S	AXN450430S	20 pcs.	300 pcs.	AXN350038*	AXN450430P		
	60	AXN360038S	AXN460430S	15 pcs.	300 pcs.	AXN360038*	AXN460430P		
	80	AXN380038S	AXN480430S	12 pcs.	300 pcs.	AXN380038*	AXN480430P		
100	AXN300038S	AXN400430S	12 pcs.	300 pcs.	—	—			
4.5 mm	16	AXN316238S	AXN416430S	50 pcs.	300 pcs.	AXN316238*	AXN416430P		
	26	AXN326238S	AXN426430S	30 pcs.	300 pcs.	AXN326238*	AXN426430P		
	30	AXN330238S	AXN430430S	30 pcs.	300 pcs.	AXN330238*	AXN430430P		
	60	AXN360238S	AXN460430S	15 pcs.	300 pcs.	AXN360238*	AXN460430P		
5.0 mm	12	AXN312038S	AXN412530S	50 pcs.	300 pcs.	AXN312038*	AXN412530P	Note 1) "Asterisk" mark on end of part No.; J: 1,500 pieces (recommendation) P: 1,000 pieces	Note 1) "Asterisk" mark on end of part No.; J: 3,000 pieces (recommendation) P: 2,000 pieces
	14	AXN314038S	AXN414530S	50 pcs.	300 pcs.	AXN314038*	AXN414530P		
	20	AXN320038S	AXN420530S	50 pcs.	300 pcs.	AXN320038*	AXN420530P		
	24	AXN324038S	AXN424530S	30 pcs.	300 pcs.	AXN324038*	AXN424530P		
	26	AXN326038S	AXN426530S	30 pcs.	300 pcs.	AXN326038*	AXN426530P		
	30	AXN330038S	AXN430530S	30 pcs.	300 pcs.	AXN330038*	AXN430530P		
	40	AXN340038S	AXN440530S	25 pcs.	300 pcs.	AXN340038*	AXN440530P		
	50	AXN350038S	AXN450530S	20 pcs.	300 pcs.	AXN350038*	AXN450530P		
	60	AXN360038S	AXN460530S	15 pcs.	300 pcs.	AXN360038*	AXN460530P		
	80	AXN380038S	AXN480530S	12 pcs.	300 pcs.	AXN380038*	AXN480530P		
100	AXN300038S	AXN400530S	12 pcs.	300 pcs.	—	—			
5.5 mm	12	AXN312238S	AXN412530S	50 pcs.	300 pcs.	AXN312238*	AXN412530P		
	24	AXN324238S	AXN424530S	30 pcs.	300 pcs.	AXN324238*	AXN424530P		
	26	AXN326238S	AXN426530S	30 pcs.	300 pcs.	AXN326238*	AXN426530P		
	30	AXN330238S	AXN430530S	30 pcs.	300 pcs.	AXN330238*	AXN430530P		
	60	AXN360238S	AXN460530S	15 pcs.	300 pcs.	AXN360238*	AXN460530P		
6.0 mm	20	AXN320130S	AXN420330S	50 pcs.	300 pcs.	AXN320130P	AXN420330*		
	24	AXN324130S	AXN424330S	30 pcs.	300 pcs.	AXN324130P	AXN424330*		
	26	AXN326130S	AXN426330S	30 pcs.	300 pcs.	AXN326130P	AXN426330*		
	30	AXN330130S	AXN430330S	30 pcs.	300 pcs.	AXN330130P	AXN430330*		
	40	AXN340130S	AXN440330S	25 pcs.	300 pcs.	AXN340130P	AXN440330*		
	50	AXN350130S	AXN450330S	20 pcs.	300 pcs.	AXN350130P	AXN450330*		
	60	AXN360130S	AXN460330S	15 pcs.	300 pcs.	AXN360130P	AXN460330*		
	80	AXN380130S	AXN480330S	12 pcs.	300 pcs.	AXN380130P	AXN480330*		
100	AXN300130S	AXN400330S	12 pcs.	300 pcs.	—	—			
7.0 mm	20	AXN320130S	AXN420430S	50 pcs.	300 pcs.	AXN320130P	AXN420430P		
	22	AXN322130S	AXN422430S	30 pcs.	300 pcs.	AXN322130P	AXN422430P		
	26	AXN326130S	AXN426430S	30 pcs.	300 pcs.	AXN326130P	AXN426430P		
	30	AXN330130S	AXN430430S	30 pcs.	300 pcs.	AXN330130P	AXN430430P		
	40	AXN340130S	AXN440430S	25 pcs.	300 pcs.	AXN340130P	AXN440430P		
	50	AXN350130S	AXN450430S	20 pcs.	300 pcs.	AXN350130P	AXN450430P		
	60	AXN360130S	AXN460430S	15 pcs.	300 pcs.	AXN360130P	AXN460430P		
	80	AXN380130S	AXN480430S	12 pcs.	300 pcs.	AXN380130P	AXN480430P		
100	AXN300130S	AXN400430S	12 pcs.	300 pcs.	—	—			

Mated height	No. of contacts	Stick package				Embossed tape package			
		Part No.		Packing quantity		Part No.		Packing quantity	
		Socket	Header	Stick	Outer carton	Socket	Header	Inner carton (1 reel)	Outer carton
8.0 mm	20	AXN320130S	AXN420530S	50 pcs.	300 pcs.	AXN320130P	AXN420530P	1,000 pcs.	2,000 pcs.
	22	AXN322130S	AXN422530S	30 pcs.	300 pcs.	AXN322130P	AXN422530P		
	24	AXN324130S	AXN424530S	30 pcs.	300 pcs.	AXN324130P	AXN424530P		
	26	AXN326130S	AXN426530S	30 pcs.	300 pcs.	AXN326130P	AXN426530P		
	30	AXN330130S	AXN430530S	30 pcs.	300 pcs.	AXN330130P	AXN430530P		
	34	AXN334130S	AXN434530S	30 pcs.	300 pcs.	AXN334130P	AXN434530P		
	40	AXN340130S	AXN440530S	25 pcs.	300 pcs.	AXN340130P	AXN440530P		
	50	AXN350130S	AXN450530S	20 pcs.	300 pcs.	AXN350130P	AXN450530P		
	60	AXN360130S	AXN460530S	15 pcs.	300 pcs.	AXN360130P	AXN460530P		
	80	AXN380130S	AXN480530S	12 pcs.	300 pcs.	AXN380130P	AXN480530P		
11.5 mm	100	AXN300130S	AXN400530S	12 pcs.	300 pcs.	—	—	—	—
	30	AXN1300115S (Socket, Header)		30 pcs.	300 pcs.	AXN1300115P (Socket, Header)		350 pcs.	700 pcs.
	40	AXN1400115S (Socket, Header)		25 pcs.	300 pcs.	AXN1400115P (Socket, Header)		350 pcs.	700 pcs.
	50	AXN1500115S (Socket, Header)		20 pcs.	300 pcs.	AXN1500115P (Socket, Header)		350 pcs.	700 pcs.
	80	AXN1800115S (Socket, Header)		12 pcs.	300 pcs.	AXN1800115P (Socket, Header)		250 pcs.	500 pcs.
13.0 mm	100	AXN1000115S (Socket, Header)		12 pcs.	300 pcs.	—		—	—
	20	AXN320130S	AXN420030S	50 pcs.	300 pcs.	AXN320130P	AXN420040P <sup>Note 5)</sup>	Socket: 1,000 pcs. Header: 500 pcs.	Socket: 2,000 pcs. Header: 1,000 pcs.
	30	AXN330130S	AXN430030S	30 pcs.	300 pcs.	AXN330130P	AXN430040P <sup>Note 5)</sup>		
	40	AXN340130S	AXN440030S	25 pcs.	300 pcs.	AXN340130P	AXN440040P <sup>Note 5)</sup>		
	50	AXN350130S	AXN450030S	20 pcs.	300 pcs.	AXN350130P	AXN450040P <sup>Note 5)</sup>		
	60	AXN360130S	AXN460030S	15 pcs.	300 pcs.	AXN360130P	AXN460040P <sup>Note 5)</sup>		
80	AXN380130S	AXN480030S	12 pcs.	300 pcs.	AXN380130P	AXN480040P <sup>Note 5)</sup>			
14.0 mm	20	AXN320130S	AXN420130S	50 pcs.	300 pcs.	AXN320130P	AXN420130P	Socket: 1,000 pcs. Header: 400 pcs.	Socket: 2,000 pcs. Header: 800 pcs.

- Notes) 1. Please add following suffix at \* marked positions.  
 J: Inner carton (1 reel) 1,500 pcs. (Outer carton: 3,000 pcs.)  
 P: Inner carton (1 reel) 1,000 pcs. (Outer carton: 2,000 pcs.)  
 In order to reduce the amount of packaging materials used to help protect the global environment, it is recommended that each packaging box contains 1,500 units with the "J" product number suffix.  
 As for the part No. P is suffixed, only 1,000 pcs. reel is available.
2. Regarding ordering units: During production: Please make orders in 1-reel units.  
 Samples for mounting confirmation: Available in units of 50 pieces. Please consult us. (See "Regarding sample orders to confirm proper mounting" on page 19.)  
 Samples: Small lot orders are possible. Change the suffix "J" to the suffix "P".
3. Connectors with suction tape are also available except for 16 contacts type. For this type of connector, insert the letter "C" between the 6th and 7th column of the ordering number.  
 Example: For a 20-contact socket with 3mm mated height (embossed tape package): AXN320C038P
4. The standard type comes with positioning bosses. Connectors without positioning bosses are available for on-demand production (3,000 pcs/lot or more).
5. Regarding of 100-contact connectors are please consult us. In an embossed tape package as the required embossed tape width exceeds the JIS standard.
6. The standard type of 13mm embossed tape package does not come with positioning bosses.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

**SPECIFICATIONS**

**1. Characteristics**

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

Item	Specifications		Conditions	
	3mm, 3.5mm, 4mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 7.0mm, 8.0mm, 13.0mm, 14.0mm type	11.5mm type		
Electrical characteristics	Rated current	0.5A		
	Rated voltage	60V AC/DC		
	Breakdown voltage	250V AC for 1 minute		
	Insulation resistance	Min. 1,000MΩ		
	Contact resistance	Max. 60mΩ	Max. 50mΩ	Based on the contact resistance measurement method specified by JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 43.1N {4.40kgf} (30 contacts)	Max. 0.785N {80gf} × no. of contacts (initial)	
	Composite removal force	Min. 6.37N {0.65kgf} (30 contacts)	Min. 0.127N {13gf} × no. of contacts	
	Terminal holding force	40 contacts or less: Min. 1.96N {200 gf} 50 contacts or more: Min. 0.981N {100 gf}	Min. 1.96N {200 gf}	Measure max. load up to where it will fall out in post axial direction.
Environmental characteristics	Ambient temperature	-55°C to +85°C		No freezing at low temperatures
	Soldering heat resistance	Max. peak temperature of 245°C (on the surface of the PC board around the connector terminals)		Infrared reflow soldering
		300°C within 5 seconds		Soldering iron
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 50mΩ	Sequence 1. -55 <sup>±</sup> 3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85 <sup>±</sup> 3°C, 30 minutes 4. ~, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	240 hours, insulation resistance min. 100MΩ, contact resistance max. 50mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 60mΩ	48 hours, insulation resistance min. 100MΩ, contact resistance max. 50mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 60mΩ	96 hours, contact resistance max. 50mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
	SO <sub>2</sub> resistance (header and socket mated)	48 hours, contact resistance max. 60mΩ	96 hours, contact resistance max. 50mΩ	Bath temperature 40±2°C, gas concentration 10±3 ppm, humidity 90 to 95% R.H.
Lifetime characteristics	Insertion and removal life	50 times	100 times	Repeated insertion and removal speed of max. 200 times/hours
Unit weight	Mated height 3mm 30 contacts; Socket: 0.26g Header: 0.26g 50 contacts; Socket: 0.40g Header: 0.44g			

**2. Material and surface treatment**

Part name	3.0mm, 3.5mm, 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 7.0mm, 8.0mm, 13.0mm, 14.0mm type		11.5mm type	
	Material	Surface treatment	Material	Surface treatment
Molded portion	Heat-resistant resin (UL94V-0)	—	Liquid crystal polymer resin (UL94V-0)	—
Bracket	—	—	Copper alloy	Cu plating on base, Sn plating on surface
Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal)	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except for thick of terminal)

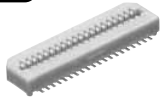
**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

• Mated height 3.0mm, 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 7.0mm, 8.0mm, 13.0mm, 14.0mm type

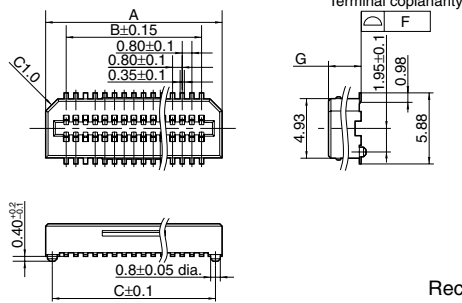
1) Socket

**CAD Data**



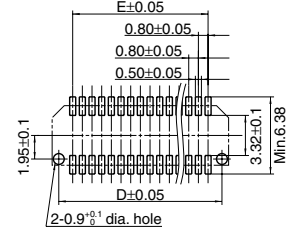
Dimension table (mm)

No. of contacts	A	B	C	D	E	F	
12	7.40	4.00	6.30	6.30	4.00		
14	8.20	4.80	7.10	7.10	4.80		
16	9.00	5.60	7.90	7.90	5.60		
20	10.60	7.20	9.50	9.50	7.20		
22	11.40	8.00	10.30	10.30	8.00		
24	12.20	8.80	11.10	11.10	8.80		
26	13.00	9.60	11.90	11.90	9.60		
30	14.60	11.20	13.50	13.50	11.20		
34	16.20	12.80	15.10	15.10	12.80		
40	18.60	15.20	17.50	17.50	15.20		
50	23.40	19.20	21.50	21.50	19.20		0.15
60	27.40	23.20	25.50	25.50	23.20		
80	35.40	31.20	33.50	33.50	31.20		
90	39.40	35.20	37.50	37.50	35.20		
100	43.40	39.20	41.50	41.50	39.20		
Mated height							
3.0mm, 4.0mm, 5.0mm common							2.2
3.5mm, 4.5mm, 5.5mm common							2.7
6.0mm, 7.0mm, 8.0mm, 13.0mm, 14.0mm common							5.2



General tolerance: ±0.3

Recommended PC board pattern (TOP VIEW)



2) Header

**CAD Data**

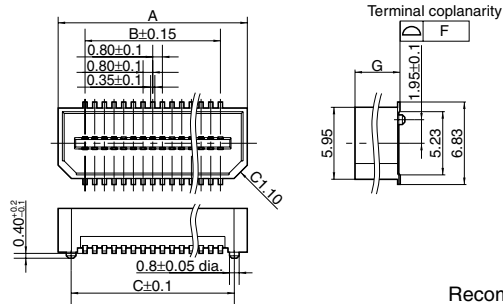


Dimension table (mm)

No. of contacts	A	B	C	D	E	F	
12	8.45	4.00	6.30	6.30	4.00		
14	9.25	4.80	7.10	7.10	4.80		
16	10.05	5.60	7.90	7.90	5.60		
20	11.65	7.20	9.50	9.50	7.20		
22	12.45	8.00	10.30	10.30	8.00		
24	13.25	8.80	11.10	11.10	8.80		
26	14.05	9.60	11.90	11.90	9.60		
30	15.65	11.20	13.50	13.50	11.20		
34	17.25	12.80	15.10	15.10	12.80		
40	19.65	15.20	17.50	17.50	15.20		
50	25.85	19.20	21.50	21.50	19.20		Note) 0.15
60	29.85	23.20	25.50	25.50	23.20		
80	37.85	31.20	33.50	33.50	31.20		
90	41.85	35.20	37.50	37.50	35.20		
100	45.85	39.20	41.50	41.50	39.20		

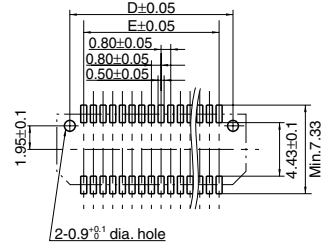
Note) The 13 mm mated height (20 to 80 contacts) terminal flatness is 0.1 mm.

Mated height	G
3.0mm, 3.5mm, 6.0mm common	2.72
4.0mm, 4.5mm, 7.0mm common	3.72
5.0mm, 5.5mm, 8.0mm common	4.72
13.0mm	10.14
14.0mm	11.14



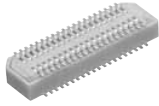
General tolerance: ±0.3

Recommended PC board pattern (TOP VIEW)



# AXN(1/3/4)

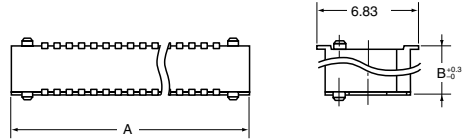
3) Socket and header are mated



Dimension table (mm)

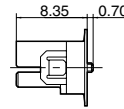
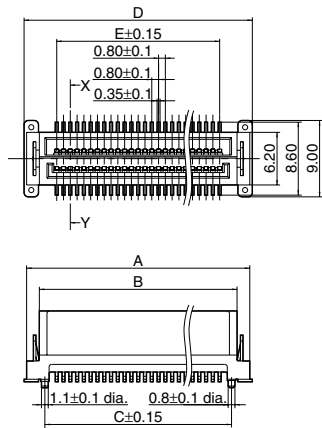
No. of contacts	A	Mated height	B
12	8.45	3.0mm	3
14	9.25	3.5mm	3.5
16	10.05	4.0mm	4
20	11.65	4.5mm	4.5
22	12.45	5.0mm	5
24	13.25	5.5mm	5.5
26	14.05	6.0mm	6
30	15.65	7.0mm	7
34	17.25	8.0mm	8
40	19.65	13.0mm	13
50	25.85	14.0mm	14
60	29.85		
80	37.85		
90	41.85		
100	45.85		

Note) Common for all mated heights.

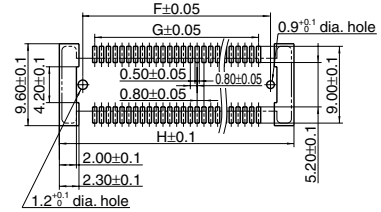


• Mated height 11.5mm type (Socket and Header)  
(30 contacts, 40 contacts, 50 contacts)

**CAD Data**

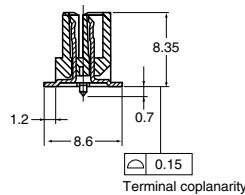


Recommended PC board pattern (TOP VIEW)

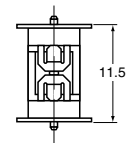


General tolerance:  $\pm 0.3$

X-Y cross section



Stacking mated diagram

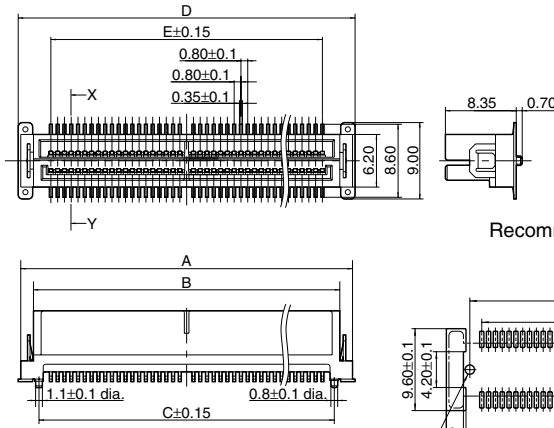


Dimension table (mm)

No. of contacts	A	B	C	D	E	F	G	H
30	18.3	15.3	14.0	18.9	11.2	14.0	11.2	19.5
40	22.3	19.3	18.0	22.9	15.2	18.0	15.2	23.5
50	26.3	23.3	22.0	26.9	19.2	22.0	19.2	27.5

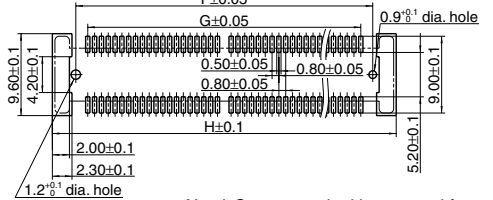
- Mated height 11.5mm type (Socket and Header)  
(80 contacts, 100 contacts)

**CAD Data**



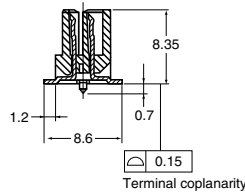
General tolerance: ±0.3

Recommended PC board pattern  
(TOP VIEW)

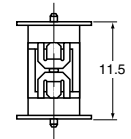


Note) Center terminal is removed for 80 and 100 contact type

X-Y cross section



Stacking mated diagram

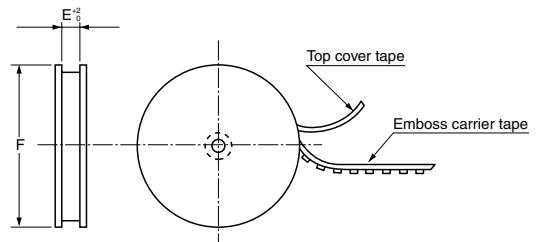
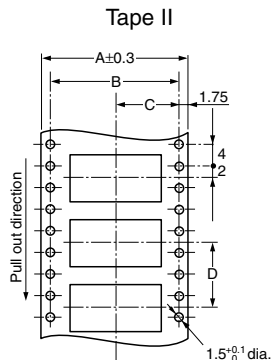
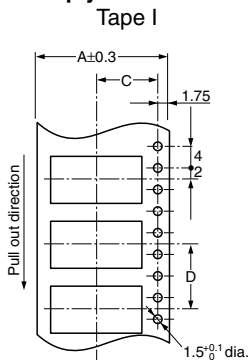


**Dimension table (mm)**

No. of contacts	A	B	C	D	E	F	G	H
80	39.1	36.1	34.8	39.7	32.0	34.8	32.0	40.3
100	47.1	44.1	42.8	47.7	40.0	42.8	40.0	48.3

**EMBOSSSED TAPE DIMENSIONS** (unit: mm, Common for respective contact type, socket and header)

- Tape dimensions (Conforming to JIS C 0806-1990.)
  - Paper reel dimensions (Conforming to JIS C 0806-1990)
- However, some tapes have mounting hole pitches that do not comply with the standard.)





# AXN(1/3/4)

## Dimension table (mm)


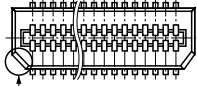
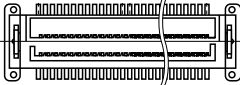
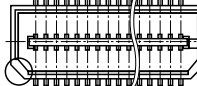
(1) Suffix: J (1 reel, 1,500 pieces embossed tape package)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket: 3.0mm, 3.5mm, 4.0mm, 4.5mm, 5.0mm, 5.5mm Header: 3.0mm, 3.5mm, 6.0mm	12 to 32	Tape I	24.0	—	11.5	12.0	24.4	370 dia.	1,500 pcs.
	34 to 40	Tape II	32.0	28.4	14.2	12.0	32.4	370 dia.	
	50 to 60	Tape II	44.0	40.4	20.2	12.0	44.4	370 dia.	
	80 to 90	Tape II	56.0	52.4	26.2	12.0	56.4	370 dia.	

(2) Suffix: P (1 reel, 1,000, 500, 350 and 250 pieces embossed tape package)

Mated height	No. of contacts	Type of taping	A	B	C	D	E	F	Quantity per reel
Socket: 3.0mm, 3.5mm, 4.0mm, 4.5mm, 5.0mm, 5.5mm Header: 3.0mm, 3.5mm, 4.0mm, 4.5mm, 6.0mm, 7.0mm	12 to 32	Tape I	24.0	—	11.5	12.0	24.4	330 dia.	1,000 pcs.
	34 to 40	Tape II	32.0	28.4	14.2	12.0	32.4	330 dia.	
	50 to 60	Tape II	44.0	40.4	20.2	12.0	44.4	330 dia.	
	80 to 90	Tape II	56.0	52.4	26.2	12.0	56.4	330 dia.	
Socket: 6.0mm, 7.0mm, 8.0mm, 13.0mm, 14.0mm Header: 5.0mm, 5.5mm, 8.0mm	16 to 32	Tape I	24.0	—	11.5	12.0	24.4	370 dia.	1,000 pcs.
	34 to 40	Tape II	32.0	28.4	14.2	12.0	32.4	370 dia.	
	50 to 60	Tape II	44.0	40.4	20.2	12.0	44.4	370 dia.	
	80 to 90	Tape II	56.0	52.4	26.2	12.0	56.4	370 dia.	
11.5mm	30 to 40	Tape II	32.0	28.4	14.2	24.0	32.4	370 dia.	350 pcs.
	50	Tape II	44.0	40.4	20.2	24.0	44.4	370 dia.	350 pcs.
	80	Tape II	56.0	52.4	26.2	24.0	56.4	370 dia.	250 pcs.
Header: 13.0mm	20	Tape I	24.0	—	11.5	16.0	24.4	370 dia.	500 pcs.
	30	Tape I	24.0	—	11.5	16.0	24.4	370 dia.	500 pcs.
	40	Tape II	32.0	28.4	14.2	16.0	32.4	370 dia.	500 pcs.
	50	Tape II	44.0	40.4	20.2	16.0	44.4	370 dia.	500 pcs.
	60	Tape II	44.0	40.4	20.2	16.0	44.4	370 dia.	500 pcs.
	80	Tape II	56.0	52.4	26.2	16.0	56.4	370 dia.	500 pcs.
Header: 14.0mm	20	Tape I	24.0	—	11.5	16.0	24.4	370 dia.	400 pcs.

## Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress	Type	Mated height: 3.0mm, 3.5mm, 4.0mm, 4.5mm, 5.0mm, 5.5mm, 6.0mm, 7.0mm, 8.0mm, 13.0mm	Stacking height 11.5mm
	Socket	 <p>This corner is oriented on the C side.</p>	 <p>Socket and header are common</p>
	Header	 <p>This corner is oriented on the C side.</p>	

## NOTES

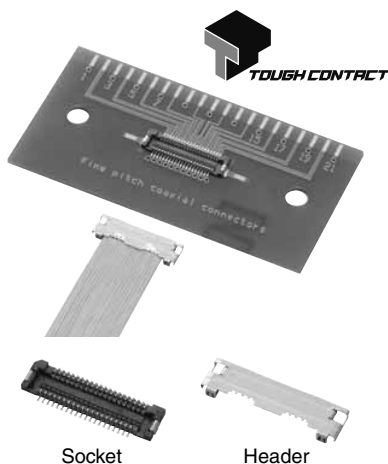
Note that types having a mated height of 11.5mm cannot be mated with products having other mated heights even though the shape of their socket headers is the same as the rated shape (position of the positioning boss and arrangement of mounting pads) is different.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**ULTRA COMPACT AND SUPER-FINE COAXIAL WIRE CONNECTOR WITH A MATED HEIGHT OF 1.5 mm AND A TERMINAL PITCH OF 0.3 mm**

**FINE COAXIAL WIRE CONNECTOR**

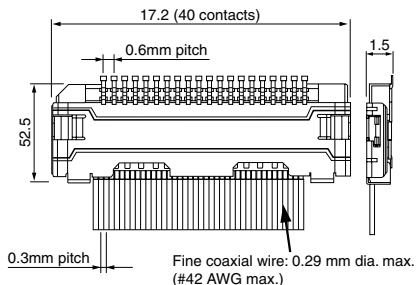


**Compliance with RoHS Directive**

**FEATURES**

**1. Ultra compact**

A terminal pitch of 0.3 mm allows for a short length and a wired height of only 1.5 mm.

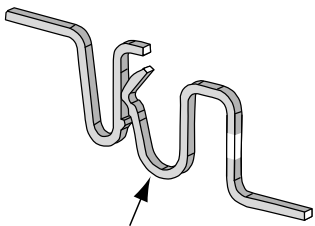


**2. Highly reliable**

**TOUGH CONTACT** has strong resistance to adverse environments.

Stable contact reliability is achieved by applying the expertise we accumulated while developing Narrow-pitch connectors for the mobile phone market.

1) Our original bellows contact: High resistance to drop impact and twisting forces.



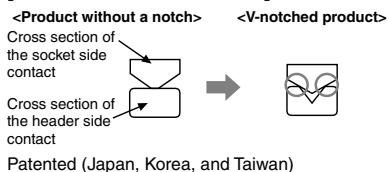
Contacts are formed by bending a thin metal sheet. This provides the contact parts with adequate spring characteristics ensuring greater resistance to twisting forces and drop impacts.

2) V-notch: High resistance to the penetration of foreign matters and flux.

**● V-notch**

By making contact with the edges and thus increasing the contact pressure, this product can eliminate flux and other foreign matters more effectively than conventional products, which also helps to prevent foreign matters from obstructing the contact.

**[Cross Section of Contacts]**

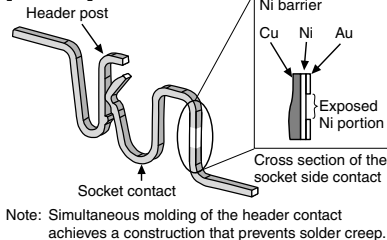


3) Ni barrier: High resistance to solder creep.

**● Ni barrier**

The exposed nickel-plated portion of the gold-plated contact prevents solder creep despite the ultra low profile of the contact.

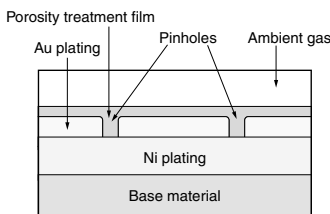
**[Contact]**



4) Porosity treatment: Resistance to corrosion.

**Porosity treatment**

This treatment consists in coating the surface with a very thin film to seal pinholes in the gold plating. We have developed this porosity treatment technology, which ensures contact reliability for thin gold plating comparable to that of thick gold plating.



- Improved in mating/unmating durability
- Improved in resistance to corrosion
- Improved in contact reliability for digital signals

**3. Zig-zag DIL terminals with a 0.6 mm pitch used for the socket, facilitating mounting on the PC board.**

Compared to the 0.4 mm pitch SIL layout, a better horizontal weight balance is achieved.

Furthermore, these terminals offer, (1) Better pickup balance on mounting. (2) Good solderability due to the 0.6 mm pitch. (3) Prevention of solder bridges during reflow soldering.

**4. Designed for fine wiring**

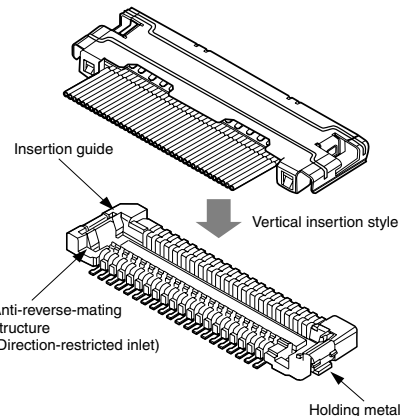
The pulse-heating system allows the use of general-purpose equipment. A shape designed for easy wiring has been adopted, focusing on the operability of fine wiring.

**5. Strong resistance to pulling of the fine wire and reliability of wired portion.**

The fine wire is sandwiched between the two GND bars and soldered. This structure gives better resistance to pulling than caulking.

**6. Vertical insertion style facilitates connector mating.**

A vertical mating system featuring a simple locking mechanism and insertion guide facilitates accurate mating.



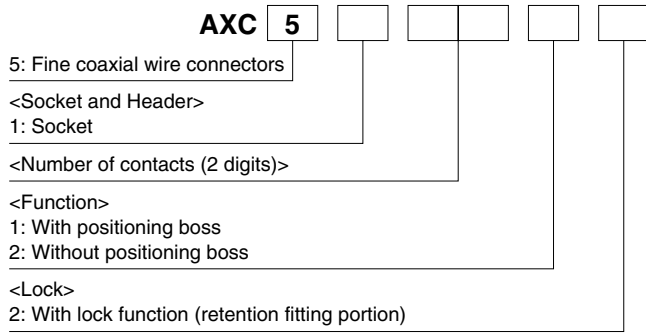
**APPLICATIONS**

Devices that have a complex rotating hinge mechanism such as mobile phones, DSCs, and DVCs.

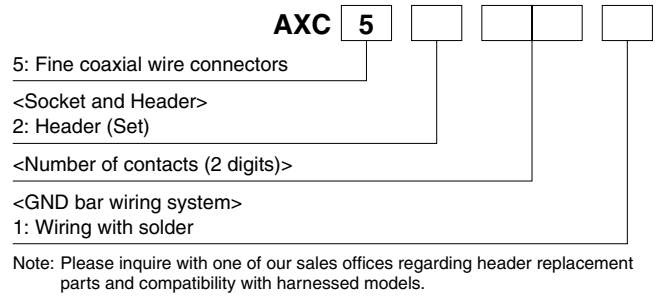
Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

**ORDERING INFORMATION**

**1. Socket**



**2. Header (Set)**



**PRODUCT TYPES**

**1. Socket**

Mated height	No. of contacts	Part Number	Packing quantity	
			Inner carton (embossed)	Outer carton
1.5mm	40	AXC514022	3, 000 pieces	6, 000 pieces

Note: The standard type comes without positioning bosses. Connectors with positioning bosses are available on-demand production.

**2. Header (Set)**

Mated height	No. of contacts	Part Number	Packing quantity	
			Inner carton (embossed)	Outer carton
1.5mm	40	AXC52401	1, 000 pieces	2, 000 pieces

Note: The header removal tool is required for unmating this connector. (See PRECAUTIONS FOR USE.) Please contact us for details.

Narrow-pitch connectors  
 I/O connectors  
 Interface connectors  
 Sockets for memory card  
 Connectors for industrial equipment  
 IC sockets  
 Information

# SPECIFICATIONS

## 1. Characteristics

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.3A/terminal (Max. 5A at total contacts)	Maximum current that one contact can conduct.
	Rated voltage	60V AC/DC	
	Insulation resistance	Min. 1, 000 MΩ (initial)	Using 250 V DC megger (applied for 1 minute)
	Breakdown voltage	200 V AC for 1 minute	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.
	Contact resistance	Max. 90mΩ	Measured based on the milliohmmeter measurement method of JIS C 5402
Mechanical characteristics	Composite insertion force	Max. 50N (40 contacts)(initial)	
	Lock strength	Min. 20N/30 sec. (40 contacts)(initial)	
	Holding force for terminal	Socket connector: Min. 0.49N, Socket retention fitting: Min. 0.98N	Measures the maximum load in the contact axial direction until removal
	Wire tensile strength (mated)	5N/30 sec.	No breakage at mated part when 40 restrained pins are pulled by at least 0.98 N.
Environmental characteristics	Ambient temperature	-55°C to +85°C	No freezing at low temperatures
	Storage environment	-55°C to +85°C (Product unit) -40°C to +50°C (Embossed packing style) -40°C to +50°C (Tray packing style)	No freezing at low temperatures
	Thermal shock resistance (header and socket mated)	5 cycles, insulation resistance min. 100MΩ, contact resistance max. 25mΩ	Sequence 1. -55 <sup>+5</sup> / <sub>-5</sub> °C, 30 minutes 2. 25 <sup>+10</sup> / <sub>-5</sub> °C, Max. 5 minutes 3. 85 <sup>+5</sup> / <sub>-5</sub> °C, 30 minutes 4. 25 <sup>+10</sup> / <sub>-5</sub> °C, Max. 5 minutes
	Humidity resistance (header and socket mated)	120 hours, insulation resistance min. 100MΩ, contact resistance max. 25mΩ	Bath temperature 40±2°C, humidity 90 to 95% R.H.
	Saltwater spray resistance (header and socket mated)	24 hours, insulation resistance min. 100MΩ, contact resistance max. 25mΩ	Bath temperature 35±2°C, saltwater concentration 5±1%
	H <sub>2</sub> S resistance (header and socket mated)	48 hours, contact resistance max. 25mΩ	Bath temperature 40±2°C, gas concentration 3±1 ppm, humidity 75 to 80% R.H.
Insertion and removal life	Mechanical life	30 times, contact resistance max. 25mΩ	Repeated insertion and removal speed of max. 200 times/hours
Resistance to soldering heat	Socket	Infrared reflow soldering: Peak temperature 260°C max. (Surface temperature of PC board adjacent to connector terminals) Soldering iron: 350°C for 3 seconds max. 300°C for 5 seconds max.	—
	Header	Connected part pulse heat: Peak temperature 290°C for 3 seconds max. (Heater head must not directly contact connector molded part.) Shell retaining part Soldering iron: 350°C for 3 seconds max. 300°C for 5 seconds max.	—

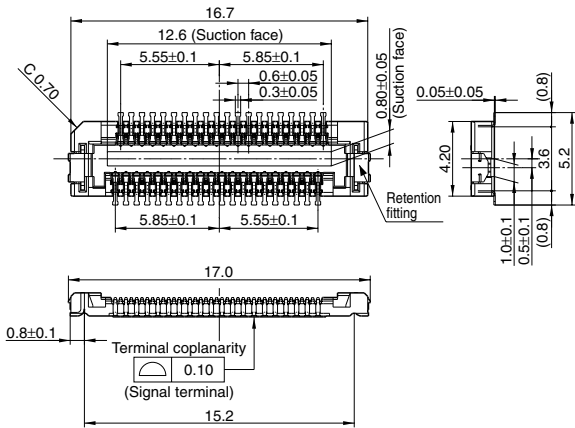
## 2. Material and surface treatment

	Part name	Material	Surface treatment
Socket	Resin-molding portion	LCP resin (UL94V-0), Black	—
	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface (Min. 0.1μm) Solder portion: Ni plating on base, Au plating on surface (except for thick of terminal)
	Retention fitting	Copper alloy	Ni plating on base, Pd + Au flash on surface
Header block	Resin-molding portion	LCP resin (UL94V-0), Black	—
	Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface (Min. 0.1μm) Wire soldering terminal: Ni plating on base, Au plating on surface
Shell	Shell	Stainless steel	Ni plating on base, Pd + Au flash on surface
	Insulating tape	Polyimide resin	—

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
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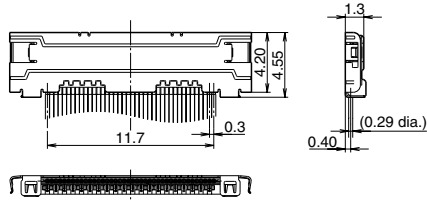
**DIMENSIONS** (Unit: mm)

•Socket



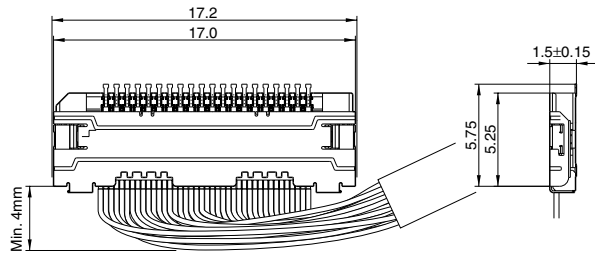
General tolerance:  $\pm 0.2$

•Header



General tolerance:  $\pm 0.2$

•Socket and header are mated



General tolerance:  $\pm 0.2$

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Sockets for industrial equipment  
IC sockets  
Information

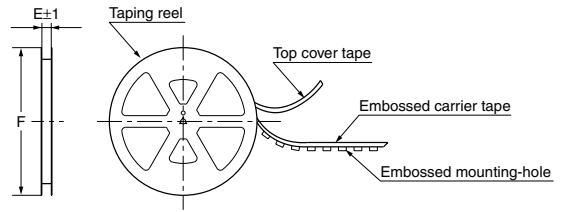
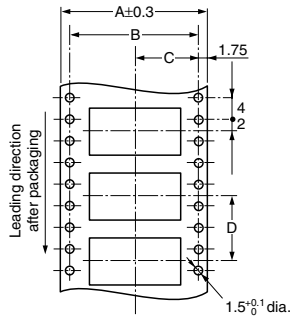
# EMBOSED TAPE DIMENSIONS (Unit: mm) (Common to all sockets and headers)

**• Specifications for taping**

(In accordance with JIS C 0806-1990. However, not applied to the mounting-hole pitch of some connectors.)

**• Specifications for the plastic reel**

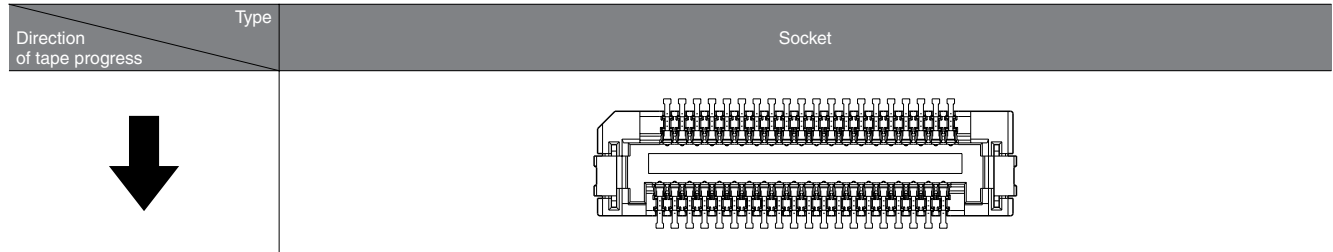
(In accordance with EIAJET-7200B.)



**Dimensions (Unit: mm)**

Types	No. of contacts	A	B	C	D	E	F	Quantity per reel
Socket	40	32.0	28.4	14.2	8.0	33.4	380 dia.	3,000

**Product direction with respect to the forwarding direction of the embossed tape**

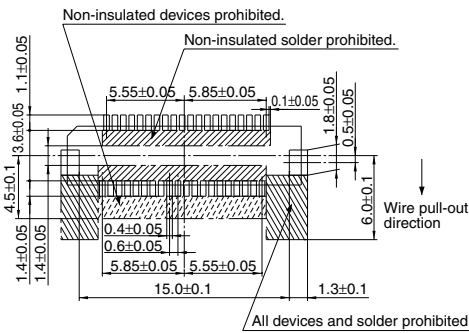


## PRECAUTIONS FOR USE

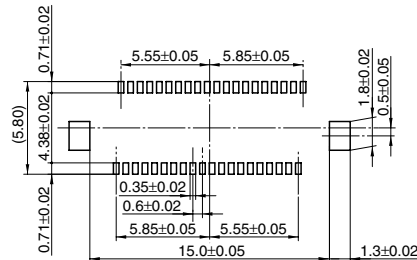
### 1. Recommended PC Board and Metal Mask Patterns

Sockets are densely mounted with a pitch interval of 0.4 to 0.6 mm. In order to reduce solder bridges and other defects, the solder amount must be controlled and kept at a proper level. Refer to the recommended patterns on the right for this purpose.

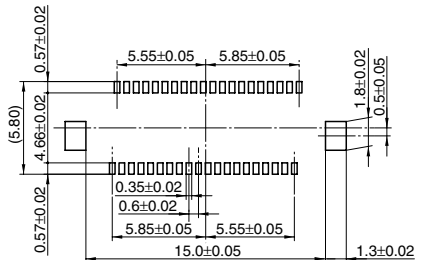
Socket Recommended PC board pattern (TOP VIEW)



Recommended metal mask opening pattern  
Metal mask thickness: When 120 μm  
(Terminal opening ratio: 56%)  
(Metal-part opening ratio: 100%)



Recommended metal mask opening pattern  
Metal mask thickness: When 150 μm  
(Terminal opening ratio: 45%)  
(Metal-part opening ratio: 100%)



## 2. Safety precautions

Observe the following safety precautions to prevent accidents and injuries.

1) The use of the connector outside of the specified rated current and withstand voltage ranges may cause abnormal heating, smoke, and fire. Never use the connector beyond the specified ranges of the product.

2) In order to avoid accidents, make sure you have thoroughly reviewed the specifications before use. Consult us if you plan to use the product in a way not covered by the specifications.

## 3. Precautions for harnessing and header assembly

The header of this product is wired by soldering the 0.3 mm pitch cable. If harnessing is desired, then carry it out based on the separately attached "Header Assembly Procedures". Make sure to get familiar with and observe all the precautions in the procedures.

## 4. PC board design

Design the recommended foot pattern in order to secure the mechanical strength in the soldered areas of the terminal.

## 5. Connector mounting

In case the connector is picked up by chucking during mounting, an excessive mounter chucking force may deform the molded or metal part of the connector. Consult us in advance if chucking is to be applied.

## 6. Soldering

1) Manual soldering.

- Since this is a low-profile product, avoid supplying too much solder when soldering manually. Otherwise, solder may creep into the vicinity of the contact portion, or the contact can lose its springing ability.

- Make sure that the soldering iron tip is heated within the temperature and time limits indicated in the specifications.
- Flux from the solder wire may adhere to the contact surfaces during soldering operations. After soldering, carefully check the contact surfaces and clean off any flux before use.

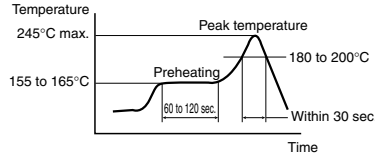
- Be aware that a load applied to the connector terminals while soldering may displace the contact.
- Thoroughly clean the iron tip.

2) Reflow soldering

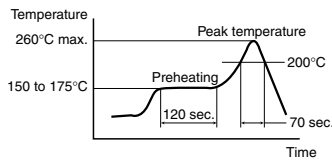
- Screen-printing is recommended for printing paste solder.

- To determine the relationship between the screen opening area and the PC-board foot pattern area, refer to the diagrams in the recommended patterns for PC boards and metal masks. Make sure to use the terminal tip as a reference position when setting.

- Consult us when using a screen-printing thickness other than that recommended.
- Depending on the size of the connector being used, self alignment may not be possible. Accordingly, carefully position the terminal with the PC board pattern.
- The recommended reflow temperature profile is given in the figure below



Recommended reflow temperature profile (eutectic solder)



Recommended reflow temperature profile (lead-free solder)

- The temperature is measured on the surface of the PC board near the connector terminal.
  - When performing reflow soldering on the back of the PC board after reflow soldering the connector, secure the connector using, for example, an adhesive (Double reflow soldering on the same side is possible)
- 3) Reworking on a soldered portion
- Finish reworking in one operation.
  - For reworking of the solder bridge, use a soldering iron with a flat tip. Do not add flux, otherwise, the flux may creep to the contact parts.
  - Use a soldering iron whose tip temperature is within the temperature range specified in the specifications.

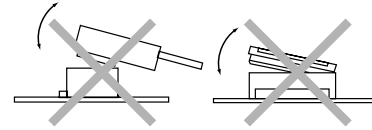
## 7. Prevention of vibration and shock

1) Since this product has a particularly low-profile, is compact and lightweight, its molded parts are thinned. To prevent the connector from detaching due to vibration and shock, make sure to consider means to avoid applying tension to the connector such as by providing a stopper to fix the connector toward the mating direction or fixing the wire.

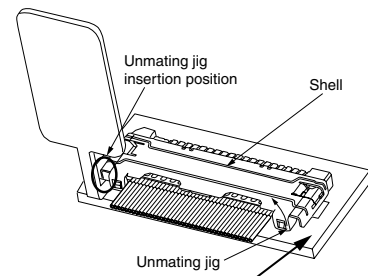
2) Do not drop the product or handle it carelessly. Otherwise, the terminals may become deformed due to excessive force or the solderability during reflow soldering may degrade.

3) Do not insert or remove the connector when it is not soldered. Also, forcibly applied external pressure on the terminals can weaken the adherence of the terminals to the molded part or cause the terminals to lose their evenness.

4) Excessive twisting during insertion and removal can lead to product damage and separation of the terminals' soldered part. An excessive force applied around the mating inlet during mating can also lead to product damage. Therefore, be careful when handling the product, and during mating, always align the mating positions and mate in parallel.



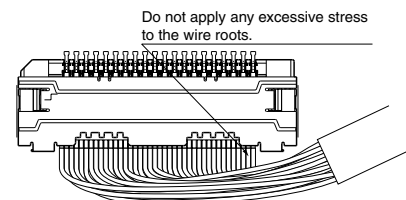
5) Do not pull the wires when unmating the connector. Doing so may damage the product or degrade the locking ability. Unmate the connector by referring to the figure below.



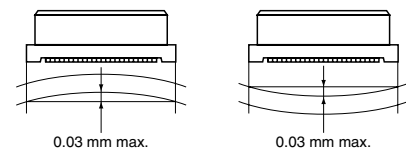
Insert the unmating jig and, with the lock released, lift it directly up.

Removal of this product requires a header removal tool. Please inquire for details.

6) After harnessing, be careful not to apply any excessive stress to the wire roots.

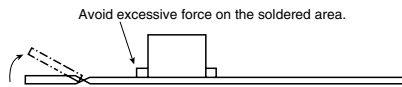


7) Keep the PC board warp within 0.03 mm with respect to the total length of the connector.



8) The positioning boss of this product is for rough positioning with the PC board. For accurate positioning when mounting the connector to a PC board, we recommend positioning by an automated machine.

9) When cutting or bending the PC board after mounting the connector, be careful that no excessive force is applied to the soldered area.



**8. Others**

- 1) If you coat the PC board after soldering, so as to prevent degradation of the insulation, make sure that the coating agent does not adhere to the connector.
- 2) Basically, you cannot perform switching with the connector.

For other details, please verify with the product specification sheets.



# Panasonic

ideas for life

**SYSTEM CONNECTORS  
COMPLIANT WITH EIAJ RC-5238  
(CONNECTOR A FOR IMT-2000  
MOBILE PHONES)**

**SYSTEM CONNECTORS  
FOR W-CDMA**

## Receptacle



Signal 10 contacts with coaxial, with charging terminals (A type)



Signal 10 contacts with coaxial (B type)



For charging block, 3 contacts (B type)

## Plug



Mini-plug for charging, 3 contacts (B type)



Mini-plug for USB connection, 4 contacts (B type)

**Compliance with RoHS Directive**

## FEATURES

### [Features for Receptacles and Plugs]

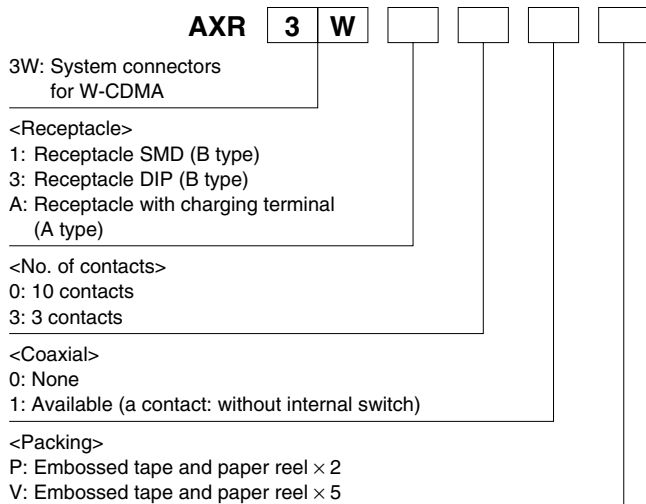
1. Compliant with EIAJ RC-5238 (Connector A for IMT-2000 mobile phones)
2. Lineup also includes models for peripheral devices (accessories).
3. Compatible for high-speed transfers (USB compatible).
4. Hot plug compatible signal contact. (Step provided on contact location of receptacle.)
5. Metal shell to counter static electricity and EMI.

### [Features for Plug]

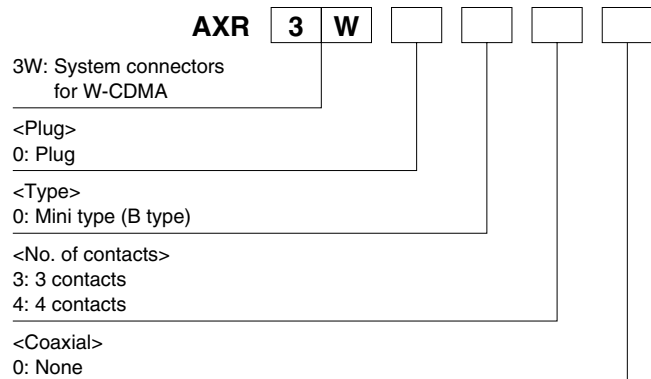
1. Lineup of compact plugs ideal for mobility.
2. Plug mating mouth constructed without alignment location and with metal shell that covers. (Prevents opening of alignment location, has good appearance, and maintains twisting strength.)
3. Lock arm is covered by metal shell to counter deformation caused by outside force.
4. Constructed with bushings in two locations to ensure sufficient retention despite small size.
5. Smooth operation due to large lock button.

## ORDERING INFORMATION

### 1. Receptacle



### 2. Plug



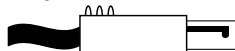
## RECEPTACLE AND PLUG COMPATIBILITY TABLE

• Mini-plug (Cable connection type)



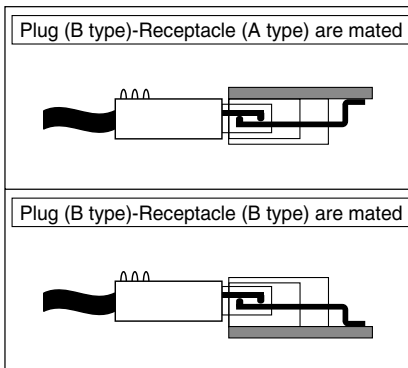
B type

Design side



3 contacts for charging: AXR3W0030  
4 contacts for USB connection: AXR3W0040

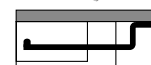
• Combination table



• Receptacle



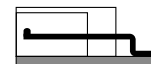
A type



10 contacts, coaxial and with charging terminals:  
AXR3WA01P

Note: When using an AXR3W Series receptacle (A Type), it must be mounted on the bottom side of the board.

B type



10 contacts, coaxial: AXR3W101P  
3 contacts: AXR3W330V

Note: When using an AXR3W Series receptacle (B Type), it must be mounted on the top side of the board.

Note: Please see page 133 for information about A Type and B Type.

## PRODUCT TYPES

### 1. Receptacle

No. of signal terminals	Type	No. of coaxial	No. of charging terminal	Part No.	Packing quantity	
					Inner carton (1 reel)	Outer carton
3 contacts	For charging block	None	None	AXR3W330V	800 pcs.	4,000 pcs.
10 contacts	(B type)	Available	None	AXR3W101P	1,000 pcs.	2,000 pcs.
	(A type)	Available	2 contacts	AXR3WA01P	800 pcs.	1,600 pcs.

### 2. Plug (Cable connection type)

No. of signal terminals	Type	EMI immunity	Part No.	Packing quantity	
				Inner carton	Outer carton
3 contacts	Mini-plug for charging (B type)	Not available	AXR3W0030	—	2,000 pcs.
4 contacts	Mini-plug for USB connection (B type)	Available	AXR3W0040	—	2,000 pcs.

## SPECIFICATIONS

### 1. Characteristics

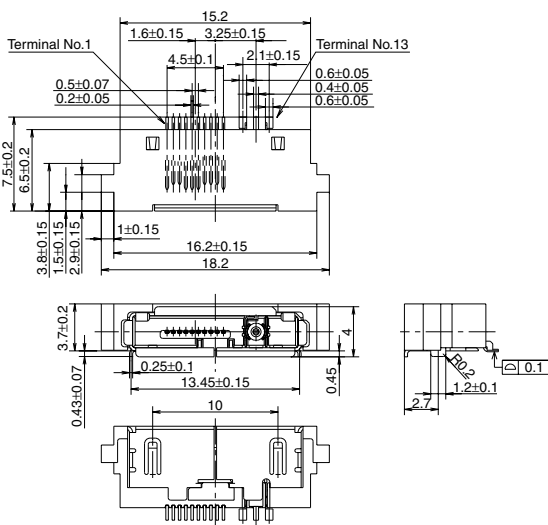
#### 1) Receptacle-Plug (cable connection type)

Item			Specifications		Condition
			Receptacle: 10 contacts, with 1 coaxial and 2 charge terminals		
Electrical characteristics	Rated Current	Signal terminal	1 A: 5 terminals (No.1, 4, 5, 6, 10), 0.5 A: Except 5 terminals		
	Rated voltage	Signal terminal	30 V AC/DC		
	Contact resistance	Signal terminal	Max. 50mΩ (Initial)		Measured based on the HP4338B measurement method of JIS C 5402, except for the resistance of the cord on the plug side.
		Coaxial portion	Max. 50mΩ (Initial)		
	Insulation resistance		Min. 1,000MΩ (Initial)		Using 250 V DC megger for signal portion and 100 V DC megger for coaxial portion (applied 1 min.)
	Breakdown voltage	Signal terminal	300V AC for 1 min.		Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 2 mA.
		Coaxial portion	100V AC for 1 min.		
Electrostatic capacity		Max. 2pF		Measured frequency: 1000 Hz ±200 Hz	
High frequency characteristics	Nominal impedance		50Ω		—
	Applicable frequency		1.92GHz to 2.17GHz		—
	Insertion loss		Max. 0.5dB		—
	VSWR		Max. 1.5dB		—
Mechanical characteristics	Lever lock strength		30 N for 1 min		The plug is pulled off with the connectors mated.
Lifetime characteristics	Insertion and removal life of plug and receptacle		10,000 times		The connectors are connected and disconnected at a rate of 500 times/hour or less.
Environmental characteristics	Ambient temperature		-25°C to +70°C		No freezing or condensation in low temperatures
	Storage temperature		-40°C to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)		No freezing or condensation in low temperatures
	Resistance to soldering heat	Receptacle	Reflow soldering: peak temperature 245°C or less		PCB surface temperature near connector terminal
Plug		Manual soldering: Soldering iron temperature 300°C, 5 sec. or less			
Unit weight		0.9g		—	

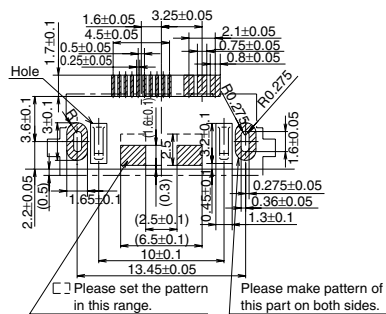


Signal 10 contacts with coaxial (B type)

Part number  
AXR3W101P



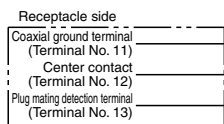
Recommended PC board pattern  
(TOP VIEW)



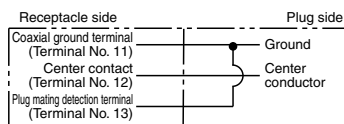
General tolerance: ±0.3

Circuit diagram of coaxial portion

(1) Plug not mating condition

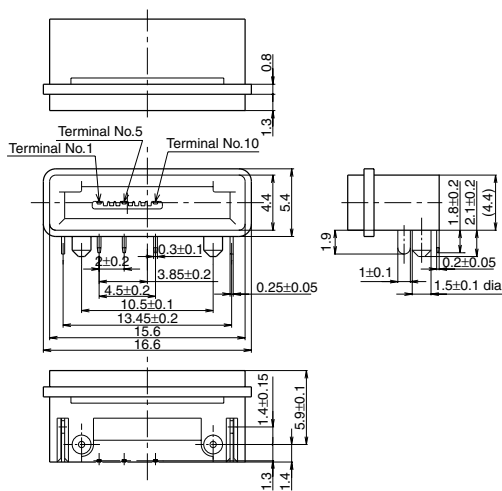


(2) Plug mating condition

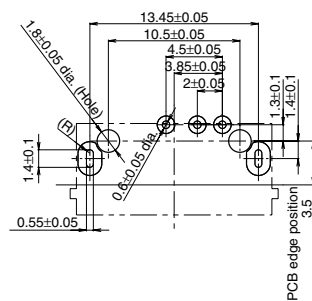


• For charging block, 3 contacts (B type)

Part number  
AXR3W330V



Recommended PC board pattern  
(TOP VIEW)



General tolerance: ±0.3

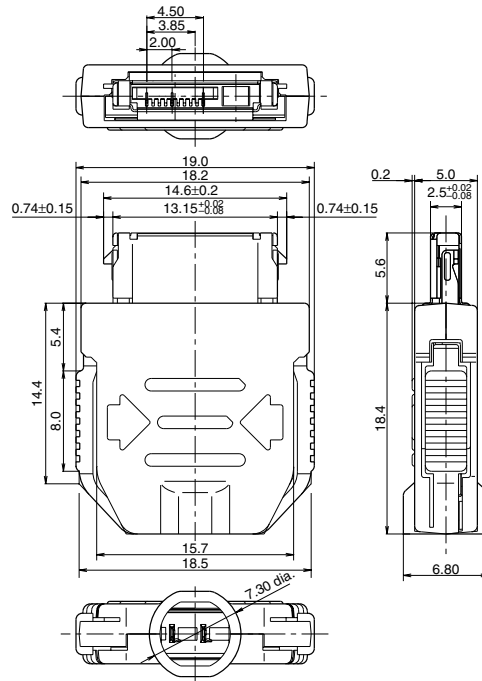
# AXR3W

Narrow-pitch connectors

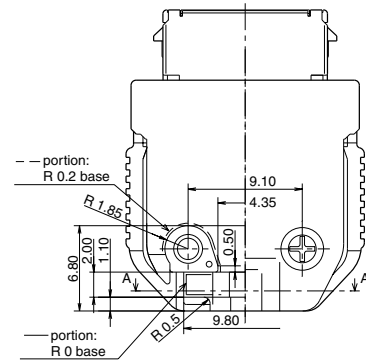
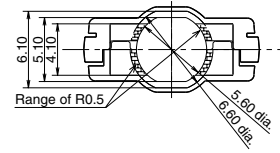
## 2. Plug (Cable connection type)

- Mini-plug for charging, 3 contacts (B type)

Part number  
AXR3W0030



A-A cross section



General tolerance:  $\pm 0.3$

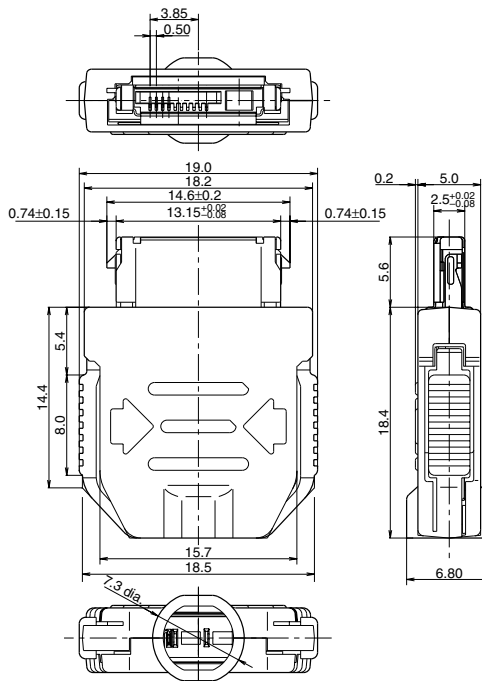
I/O connectors

Interface connectors

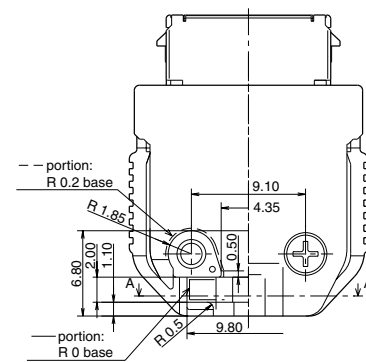
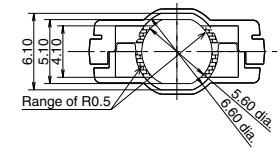
Sockets for memory card

- Mini-plug for USB connection (B type)

Part number  
AXR3W0040



A-A cross section



General tolerance:  $\pm 0.3$

Connectors for industrial equipment

IC sockets

Information

## NOTES

1. Being more compact and thinner than its predecessor, the bushing of this product has been molded together with the cable during manufacture.

Also, it is constructed so that the cable is not secured by clamps.

Therefore, please request the manufacturer where the assembly will take place to make bushings in accordance with the bushing build-in dimensions given on the product use diagram.

Also, if the cable is being pulled, please implement a method to secure the cable so that stress is not applied to the soldered parts of the contacts.

2. Avoid stripping the lower hole of the cover surface with a tapping screw.

Tighten the screw with a torque of 0.059 N·m/0.6 kgf·cm or less.

Regarding general notes, please refer to page 20.

For other details, please verify with the product specification sheets.

# Panasonic

## ideas for life

I/O connectors for portable equipment  
Receptacle  
18, 22, 24 and 26 contacts



50 contacts



System connector ultra low profile type  
Plug (cable connection type)  
18, 22, 24 and 26 contacts



I/O connectors for portable equipment  
Plug (cable connection type)  
50 contacts



System connector ultra low profile type  
Plug (Board mounting type)  
22, 26 and 50 contacts



Customizable for several contacts.  
Ask about details.

**Compliance with RoHS Directive**

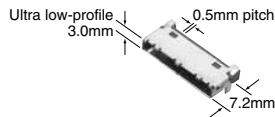
**FOR CELLULAR PHONE;  
ULTRA LOW PROFILE TYPE  
FOR PORTABLE EQUIPMENT  
(0.5mm PITCH)**

**SYSTEM CONNECTORS ULTRA-LOW  
PROFILE TYPE (AXR3)  
I/O CONNECTORS FOR PORTABLE  
EQUIPMENT (AXR5)**

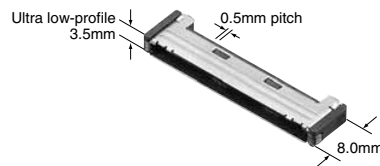
## FEATURES

**1. Compact receptacle helps to design lighter, slimmer, smaller devices.**

I/O connector for portable equipment  
• 18, 22, 24 and 26 contacts



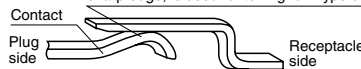
• 50 contacts



**2. Bellows-type contacts**

Our bellows-type contacts resist mating stress and offer high contact reliability.

The bellows type contacts are fabricated by bending thin sheet metal. They offer reliable contact since a rounded corner, instead of a sharp edge, is used for tuning fork type contact.

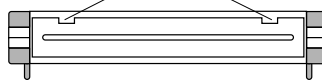


**3. Coaxial portion with switching function (1 Form B configuration) can be applied up to 2GHz.**

**4. Connection of incorrect pairs is prevented by cross-manufacturer mating error prevention key.**

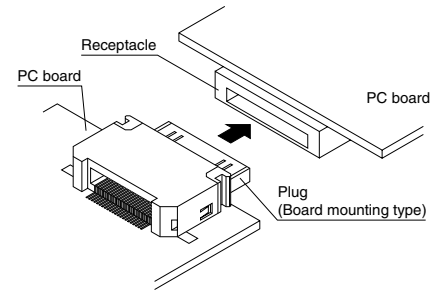
By changing the location of the mating error prevention key, erroneous insertion of a different connector is prevented. This eliminates the chance of any problems that may be caused by mistaken connections. Please consult us for more information.

Error prevention key



The key groove is different for every customer.

**5. Plugs with 22, 26 and 50 contacts are also available in board mounting types. These are ideal for such applications as the connection between PDAs and data-communication cradles.**



# ORDERING INFORMATION

## 1. I/O connectors for portable equipment receptacle

AXR **5** **1**    **P**

5: I/O connectors for portable equipment  
 <Receptacle>  
 1: Receptacle

<No. of signal wire>  
 18: SIL 18 contacts  
 22: SIL 22 contacts  
 24: SIL 24 contacts  
 26: SIL 26 contacts  
 50: SIL 50 contacts

<Function>

	A type/B type	On board/ board cutting/ board mounting	Positioning boss
4	B type	On board	Not available
8	A type		

<Packing>  
 P: Embossed tape and paper reel × 2

## 2. System connectors ultra-low profile type plug

AXR **3** **0**  **4**

3: System connectors ultra-low profile type  
 <Plug>  
 0: Plug

<No. of signal wire>  
 2: SIL 18 contacts  
 3: SIL 22 contacts  
 4: SIL 24 contacts  
 5: SIL 26 contacts  
 6: SIL 50 contacts

<Applicable receptacle>

	On board/board cutting	No. of coaxial pin
4	On board	Without

<Function>

	Cable connection type/ Board mounting type	A type/B type	Shield
0	Cable connection type	A type	Available
1		B type	
3	Cable connection type	A type	Not available
4		B type	
5	Board mounting type	A type	Available
A		B type	

<Packing>  
 Nil: Embossed tape and paper reel × 2  
 \* Board mounting type only.

## 3. I/O connectors for portable equipment plug

AXR **5** **2** **5**

5: I/O connectors for portable equipment  
 <Plug, A type/B type>  
 2: Plug A type

<No. of signal wire>  
 5: SIL 50 contacts

<Applicable cable dia.>  
 6: 5.5mm dia.  
 7: 6.2mm dia.

<Shield>  
 S: With shield

Note) Applicable for cable connection type 50 contacts

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



# RECEPTACLE AND PLUG COMPATIBILITY TABLE

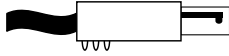
## 1. Signal terminals 18 to 50 contacts

### 1) Plug (Cable connection type)

#### • Plug



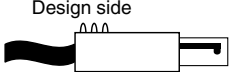
A type



Design side

- Corresponds to on board mounting type receptacle 50 contacts

B type

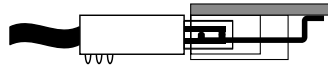


Design side

- Corresponds to on board mounting type receptacle 18, 22, 24 and 26 contacts

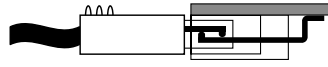
#### • Combination table

Plug (A type)-Receptacle (A type) are mated



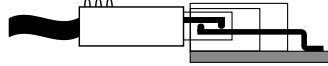
No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
50 contacts	On board mounting type	Signal terminals only	AXR5256S AXR5257S	AXR51508P

Plug (B type)-Receptacle (A type) are mated



No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
18 contacts	On board mounting type	Signal terminals only	AXR30244	AXR51188P
22 contacts		Signal terminals only	AXR30341 AXR30344	AXR51228P
24 contacts		Signal terminals only	AXR30444	AXR51248P
26 contacts		Signal terminals only	AXR30541	AXR51268P

Plug (B type)-Receptacle (B type) are mated



No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
22 contacts	On board mounting type	Signal terminals only	AXR30341 AXR30344	AXR51224P

#### • Receptacle

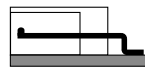


A type



- On board mounting type 18, 24, 26 and 50 contacts

B type



- On board mounting type 22 contacts

### Plug (Board mounting type)

#### • Plug



A type



- Corresponds to on board mounting type receptacle 22 contacts

B type



- Corresponds to on board mounting type receptacle 22, 26 and 50 contacts

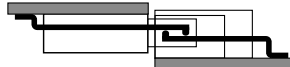
#### • Combination table

Plug (A type)-Receptacle (A type) are mated



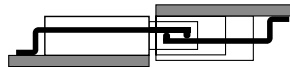
No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
22 contacts	On board mounting type	Signal terminals only	AXR3034A	AXR51228P

Plug (A type)-Receptacle (B type) are mated



No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
22 contacts	On board mounting type	Signal terminals only	AXR3034A	AXR51224P

Plug (B type)-Receptacle (A type) are mated



No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
26 contacts	On board mounting type	Signal terminals only	AXR30545	AXR51268P
50 contacts			AXR30645	AXR51508P

Plug (B type)-Receptacle (B type) are mated

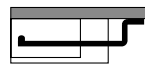


No. of signal terminals	On board/board cutting	Receptacle composite function	Part No. (Plug)	Part No. (Receptacle)
22 contacts	On board mounting type	Signal terminals only	AXR30345	AXR51224P

#### • Receptacle



A type



- On board mounting type 22, 26 and 50 contacts

B type



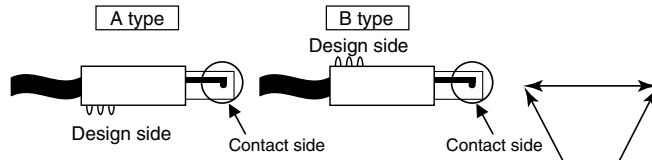
- On board mounting type 22 contacts

3. Information about A and B types

• Plug

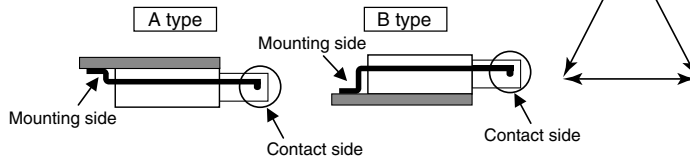
1) Cable connection type

- When the contact side and design side,
  - face in the same direction it is A Type
  - face in opposite directions it is B Type



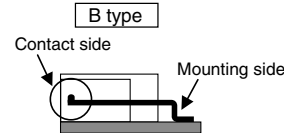
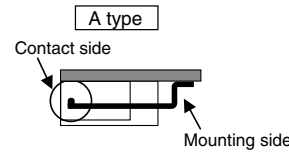
2) Board mounting type

- When the contact side and mounting side,
  - face in the same direction it is A Type
  - face in opposite directions it is B Type



• Receptacle

- When the contact side and mounting side,
  - face face in opposite directions it is A Type
  - face the in the same direction it is B Type



PRODUCT TYPES

1. Receptacle

No. of signal terminals	Type	No. of coaxial	No. of battery terminal	Part No.	Packing quantity	
					Inner carton (1 reel)	Outer carton
18 contacts	On board mounting type (A type)	None	None	AXR51188P	1,000 pcs.	2,000 pcs.
22 contacts	On board mounting type (A type)	None	None	AXR51228P	1,000 pcs.	2,000 pcs.
	On board mounting type (B type)	None	None	AXR51224P	1,000 pcs.	2,000 pcs.
24 contacts	On board mounting type (A type)	None	None	AXR51248P	1,000 pcs.	2,000 pcs.
26 contacts	On board mounting type (A type)	None	None	AXR51268P	1,000 pcs.	2,000 pcs.
50 contacts	On board mounting type (A type)	None	None	AXR51508P	750 pcs.	1,500 pcs.

Note) For cellular phones and other applications where problems of insertion into the wrong device is possible, the location of the key will be changed for each order. An order number will be set for each separate order.

2. Plug (Cable connection type)

No. of signal terminals	Applicable receptacle	Type	EMI immunity	Part No.	Packing quantity	
					Inner carton	Outer carton
18 contacts	On board mounting type	B type	Not available	AXR30244	-	600 pcs.
22 contacts	On board mounting type	B type	Available	AXR30341	-	600 pcs.
			Not available	AXR30344	-	600 pcs.
24 contacts	On board mounting type	B type	Not available	AXR30444	-	600 pcs.
26 contacts	On board mounting type	B type	Available	AXR30541	-	600 pcs.
50 contacts	On board mounting type	A type	Available	AXR5256S (for 5.5 dia. cable)	-	200 pcs.
	On board mounting type	A type	Available	AXR5257S (for 6.2 dia. cable)	-	200 pcs.

Note) For cellular phones and other applications where problems of insertion into the wrong device is possible, the location of the key will be changed for each order. An order number will be set for each separate order.

3. Plug (PC board mounting type)

No. of signal terminals	Type	EMI countermeasure	Part No.	Packing quantity	
				Inner carton	Outer carton
22 contacts	On board mounting type (A type)	Available	AXR3034A	500 pcs.	1,000 pcs.
	On board mounting type (B type)	Available	AXR30345	500 pcs.	1,000 pcs.
26 contacts	On board mounting type (B type)	Available	AXR30545	500 pcs.	1,000 pcs.
50 contacts	On board mounting type (B type)	Available	AXR30645	500 pcs.	1,000 pcs.

**SPECIFICATIONS**

**1. Characteristics**

**1) Receptacle–Plug (cable connection type)**

Item			Specifications			Condition
			18 , 22, 24 contacts	26 contacts	50 contacts	
Electrical characteristics	Rated Current	Signal contact	0.5 A (1 A can be passed through two terminals connected in series) (Total for all terminals is max. 10 A.)			—
		Battery contact	2 A	—	—	Characteristic of receptacle alone.
	Contact resistance	Signal contact	Max. 110mΩ (Initial)			Measured based on the milliohmmeter measurement method of JIS C 5402, except for the resistance of the cord on the plug side.
		Battery contact	Max. 50mΩ (Initial)	—	—	Measured based on the milliohmmeter measurement method of JIS C 5402, except for the resistance of the terminals on the battery side.
	Insulation resistance		Min. 1,000MΩ (Initial)			Using 500V DC megger (applied for 1 min.)
	Breakdown voltage		150V AC for 1 min.			Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Mechanical characteristics	Lever lock strength		Min. 49N {5kgf}		The plug is pulled off with the connectors mated.	
Lifetime characteristics	Insertion and removal life of plug and receptacle		Mechanical life: 10,000 times Contact resistance after testing: Max. 110mΩ	Mechanical life: 5,000 times (mechanical insertion and removal) Contact resistance after testing: Max. 110mΩ	The connectors are connected and disconnected at a rate of 200 times/hour or less.	
Environmental characteristics	Ambient temperature		-35°C to +65°C			No freezing or condensation in low temperatures
	Storage temperature		-40°C to +70°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)			No freezing or condensation in low temperatures
	Resistance to soldering heat	Receptacle	Reflow soldering: peak temperature 245°C or less			Surface temperature (shell) from infrared reflow soldering machine
Plug		Hand soldering: Soldering iron temperature 300°C, 5 sec. or less			—	
Unit weight		Receptacle (AXR35371P) 22 contacts: 0.86 g Plug (AXR30341) 22 contacts: 6.18 g		Receptacle (AXR51508P) 50 contacts: 1.42 g Plug (AXR5256S) 50 contacts: 11.1 g	—	

**2) Receptacle–Plug (Board mounting type)**

Item			Specifications		Condition
			22, 26, 50 contacts		
Electrical characteristics	Rated current	Signal contact	0.5 A (7 A can be passed through all terminals connected) (The total for 50 terminals is max. 10 A.)		—
	Contact resistance	Signal contact	22 contacts (A type) Max. 110 mΩ (Initial) 22 contacts (B type) Max. 140 mΩ (Initial) 26 contacts (B type) Max. 110 mΩ (Initial) 50 contacts (B type) Max. 110 mΩ (Initial)		Measured based on the milliohmmeter measurement method of JIS C 5402
	Insulation resistance		Min. 1,000MΩ (Initial)		Using 500V DC megger (applied for 1 min.)
	Breakdown voltage		150 V AC for 1 min.		Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Lifetime characteristics	Insertion and removal life of plug and receptacle		Mechanical life: 5,000 times Contact resistance after testing: Max. 110 mΩ (Contact resistance after testing satisfies initial value.)		The connectors are connected and disconnected at a rate of 200 times/hour or less.
Environmental characteristics	Ambient temperature		-35°C to +65°C		No freezing or condensation in low temperatures
	Storage temperature		-40°C to +70°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)		No freezing or condensation in low temperatures
Resistance to soldering heat	Plug	Reflow soldering: peak temperature 245°C or less		Surface temperature (shell) from infrared reflow soldering machine	
		Hand soldering: Soldering iron temperature 300°C, 5 sec. or less		—	
Unit weight		22 contacts (A type): 1.43 g, 22 contacts (B type): 1.53 g, 26 contacts (B type): 1.48 g, 50 contacts (B type): 2.30 g		—	

Note) Refer to above table for the characteristics of the receptacle.

2. Material and surface treatment

	Portion	Material	Surface
Receptacle	Resin-molding portion	Heat resistant resin (UL94V-0)	—
	Shell	Stainless steel	Cu plating base, Sn plating on surface
	Post/battery contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for end of the terminal)
Plug (cable connection type)	Resin-molding portion	Heat resistant resin (UL94V-0) Only bushing is polyurethane resin (UL94HB)	—
	Shell	Stainless steel	—
	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Signal wire soldering portion: Ni plating on base, Au plating on surface
	Tapping screw	Carbon steel	Rust proofed
	Insulation plate	Phenolic resin or PBT	—
Plug (Board mounting type)	Resin-molding portion	Heat resistant resin (UL94V-0)	—
	Shell	Stainless steel	Cu plating base, Sn plating on surface
	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for end of the terminal)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXR(3/5)

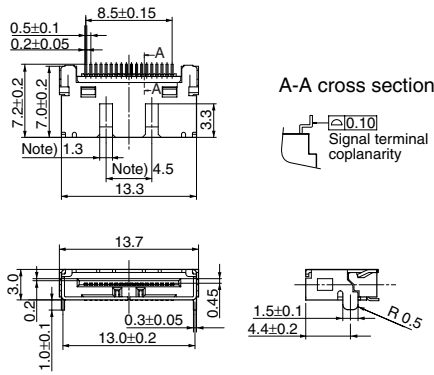
Narrow-pitch connectors

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

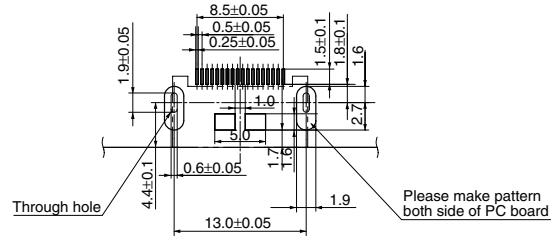
### 1. Signal terminals 18 contacts/On board mounting type

- Receptacle (A type)  
AXR51188P



General tolerance: ±0.3

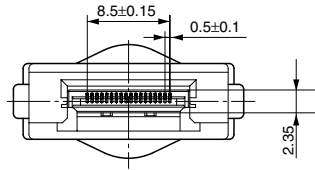
### Recommended PC board pattern (TOP VIEW)



- Notes) 1. The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.  
2. Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

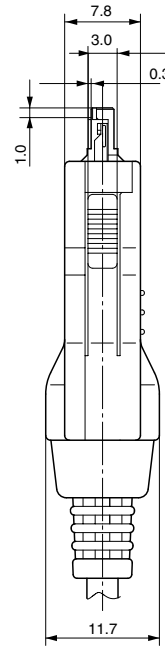
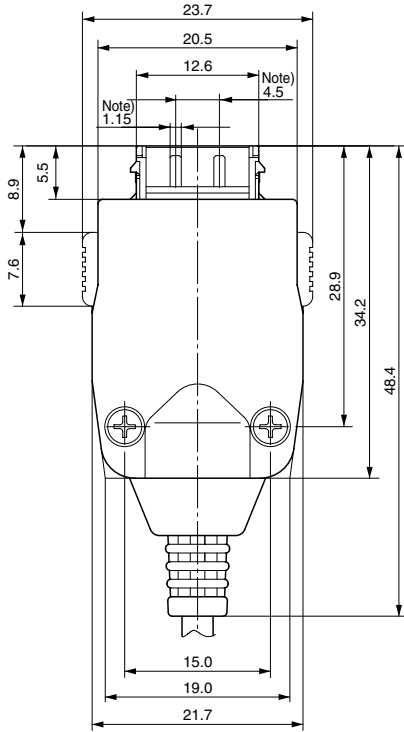
Interface connectors

- Plug (cable connection type) (B type)  
(assembled condition)  
AXR30244



- Note) The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.

Sockets for memory card

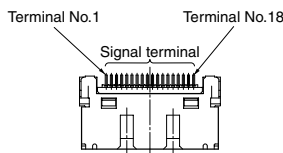


General tolerance: ±0.3

Connectors for industrial equipment

IC sockets

### No. of signal terminal (A type)

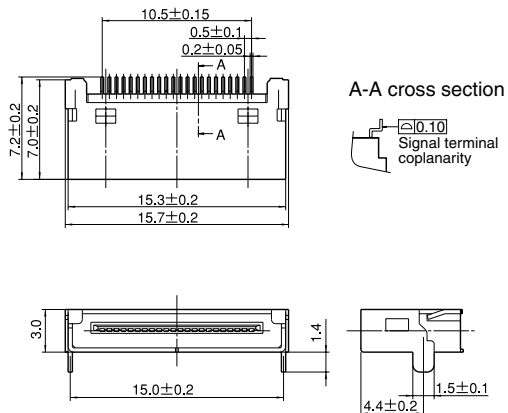


Information

2. Signal terminals 22 contacts/On board mounting type

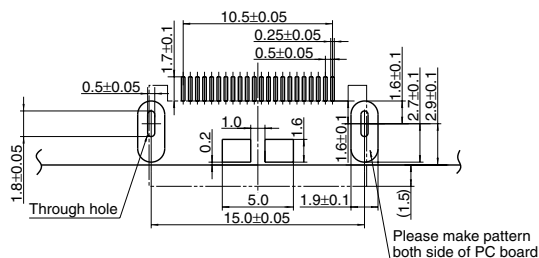
- Receptacle (A type)  
AXR51228P

**CAD Data**



General tolerance: ±0.3

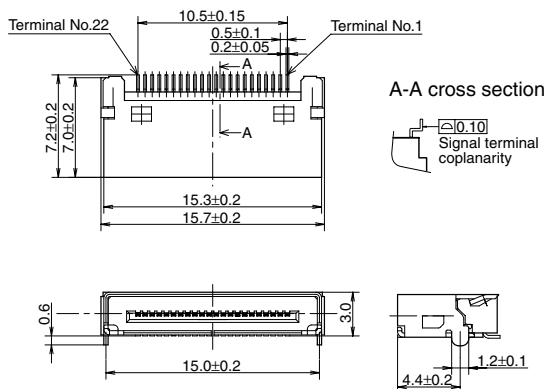
Recommended PC board pattern (TOP VIEW)



- Notes 1. The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.  
2. Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

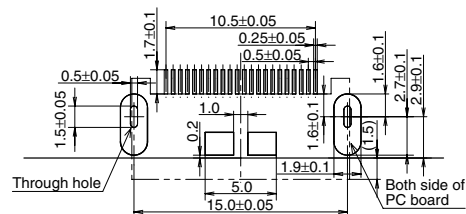
- Receptacle (B type)  
AXR51224P

**CAD Data**



General tolerance: ±0.3

Recommended PC board pattern (TOP VIEW)



- Notes 1. The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.  
2. Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXR(3/5)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

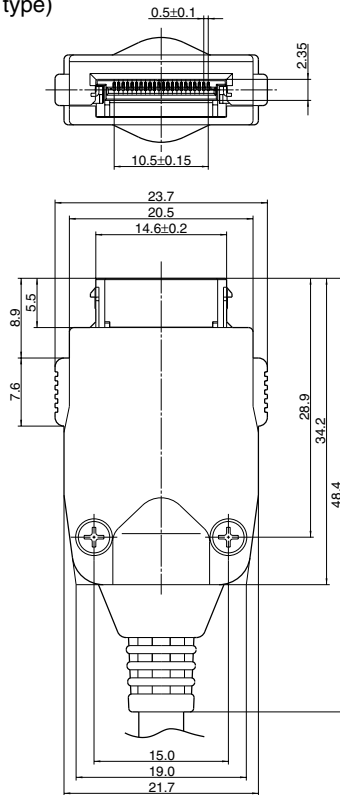
Connectors for industrial equipment

IC sockets

Information

- Plug (cable connection type) (B type)  
(assembled condition)  
AXR30341  
AXR30343

**CAD Data**

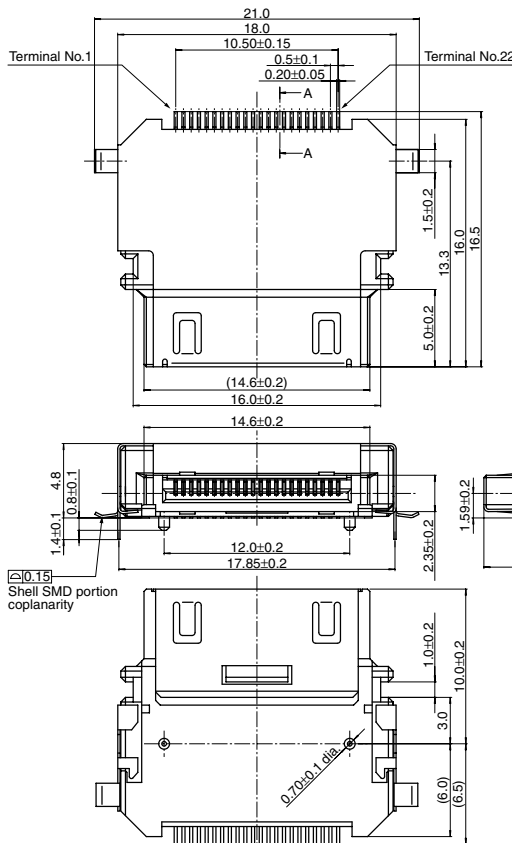
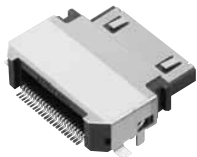


- Notes) 1. The drawing shows AXR30344. (External dimensions are the same also for AXR30341.)  
2. The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.

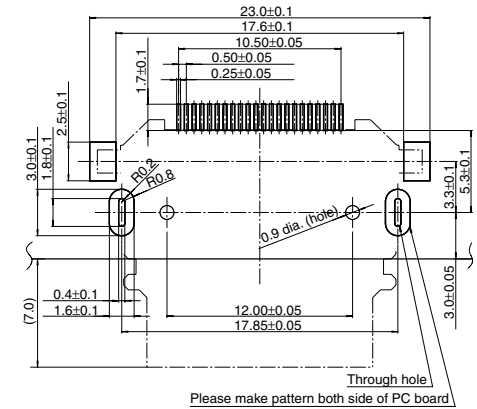
General tolerance: ±0.3

- Plug (Board mounting type) (B type)  
AXR30345

**CAD Data**

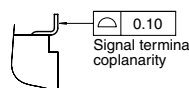


Recommended PC board pattern  
(TOP VIEW)



Note) This product is not compatible with mismatch prevention keys.

A-A cross section

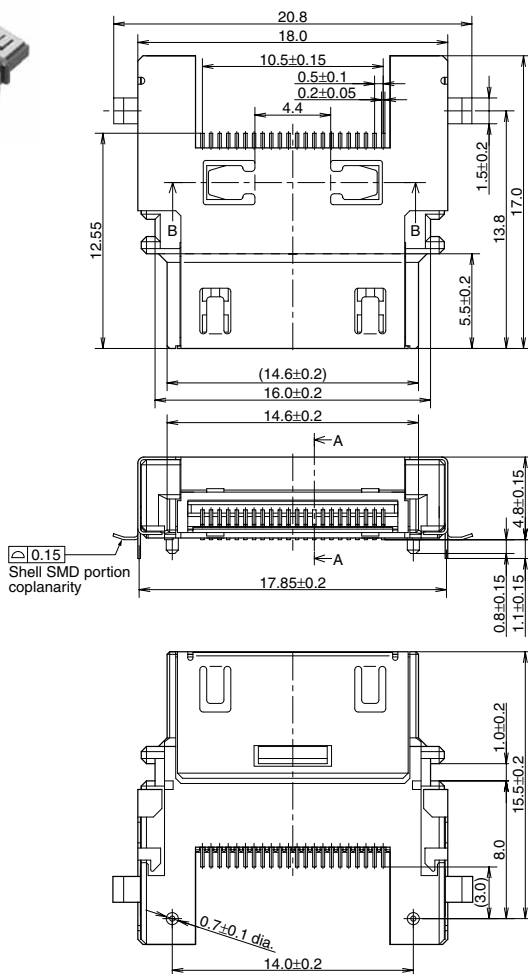


General tolerance: ±0.3

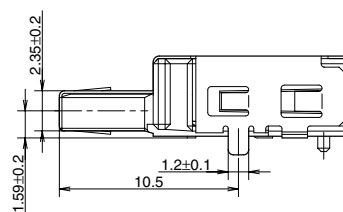
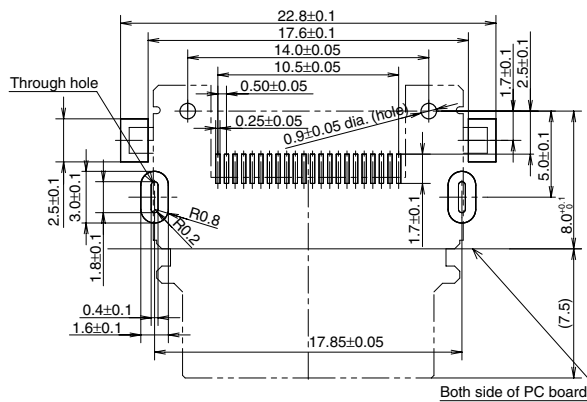
• Plug (Board mounting type) (A type)  
AXR3034A

mm General tolerance:  $\pm 0.3$

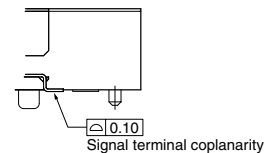
**CAD Data**



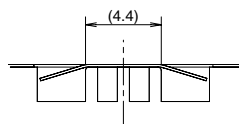
Recommended PC board pattern  
(TOP VIEW)



A-A cross section



B-B cross section

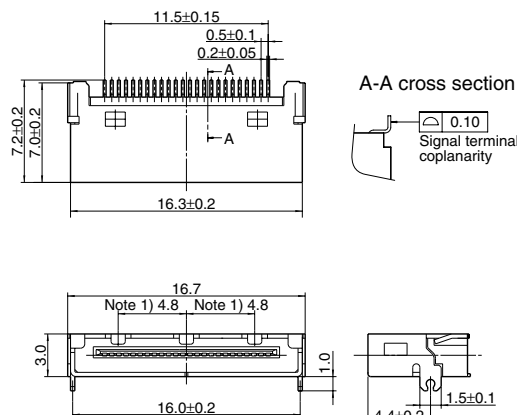


3. Signal terminals 24 contacts/On board mounting type

mm General tolerance:  $\pm 0.3$

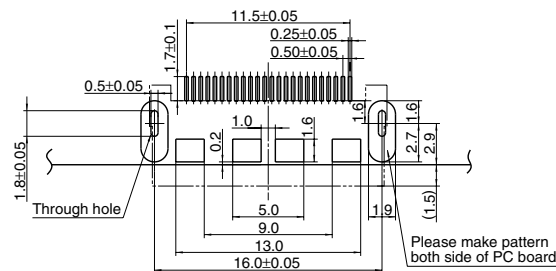
• Receptacle (A type)  
AXR51248P

**CAD Data**



(#) The dimensions for the improper connection prevention key are set by the customer.

Recommended PC board pattern  
(TOP VIEW)



- Notes 1. The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.  
2. Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



# AXR(3/5)

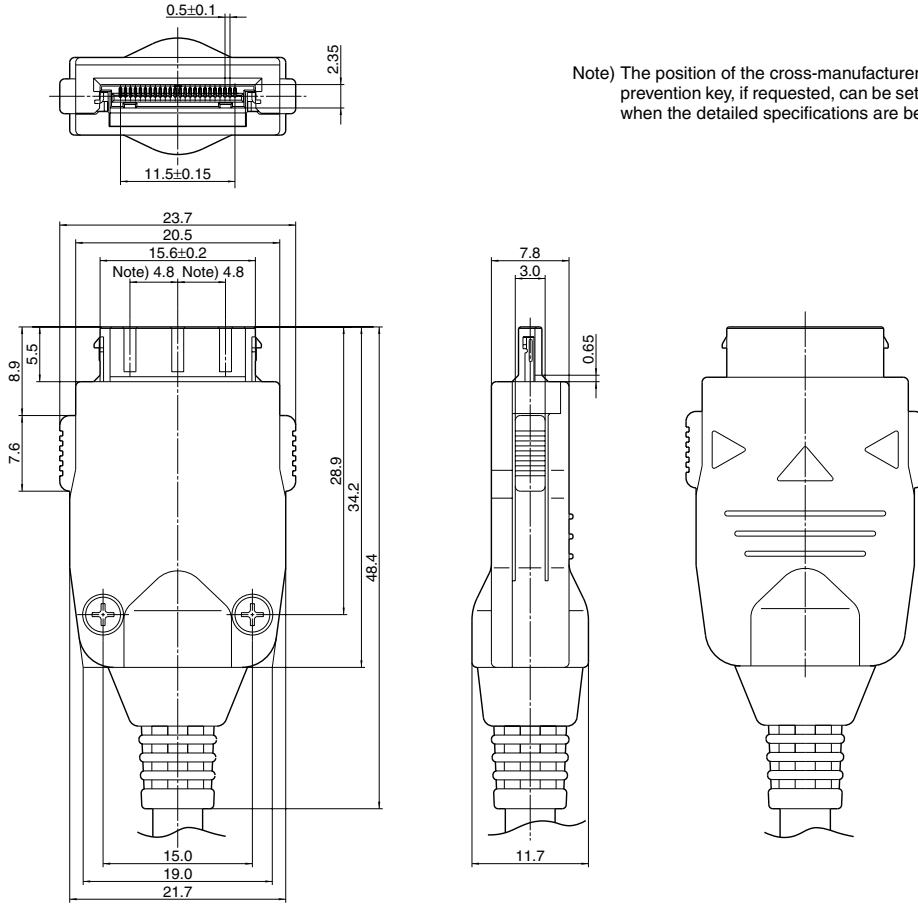
- Plug (cable connection type) (B type)  
(assembled condition)  
AXR30444

**CAD Data**



mm General tolerance:  $\pm 0.3$

Note) The position of the cross-manufacturer mating error prevention key, if requested, can be set for each user when the detailed specifications are being decided.



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

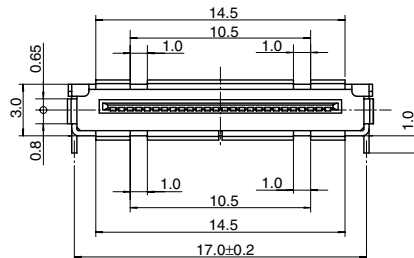
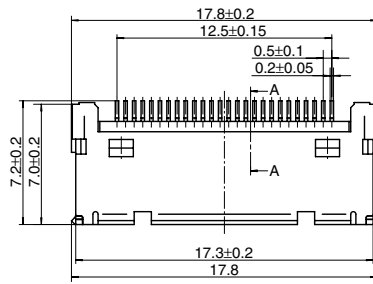
Information

## 4. Signal terminals 26 contacts/On board mounting type

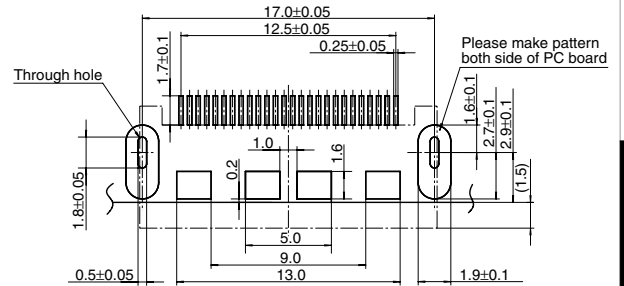
mm General tolerance:  $\pm 0.3$

- Receptacle (A type)  
AXR51268P

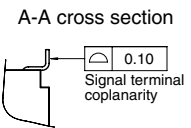
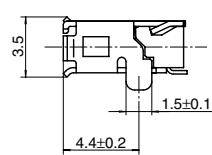
**CAD Data**



### Recommended PC board pattern (TOP VIEW)



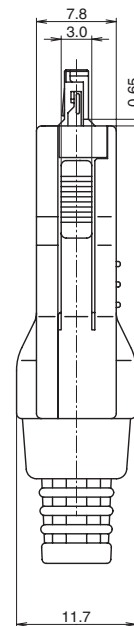
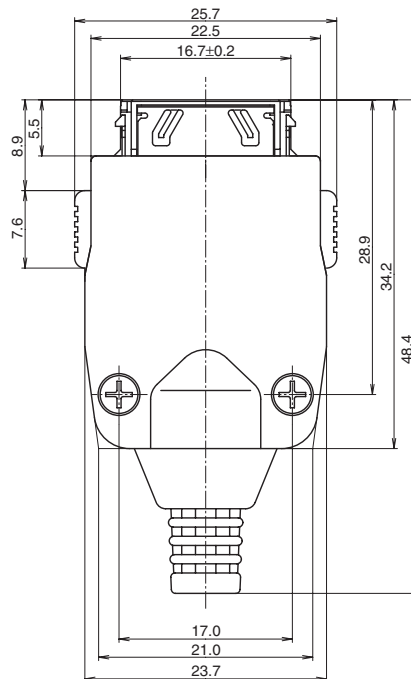
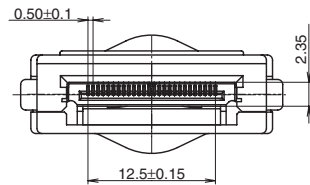
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



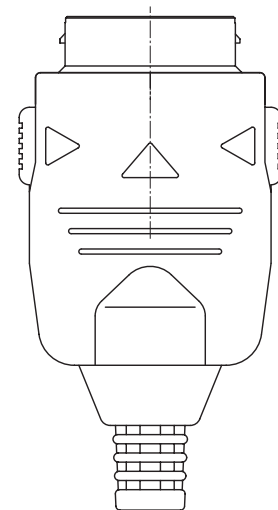
- Plug (cable connection type) (B type)  
(assembled condition)  
AXR30541

mm General tolerance:  $\pm 0.3$

**CAD Data**



Note) This product is not compatible with mismatch prevention keys.

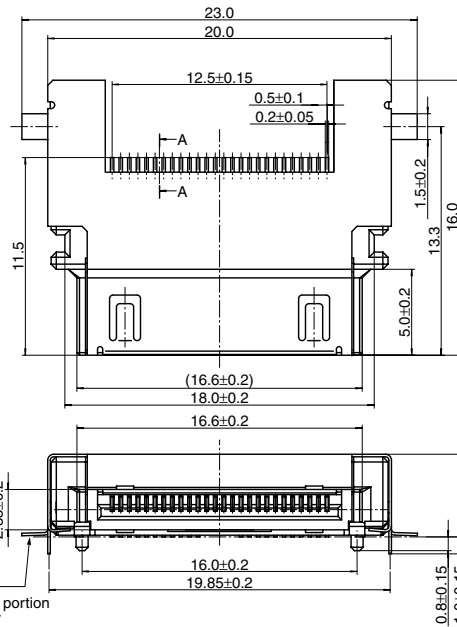
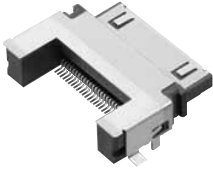


# AXR(3/5)

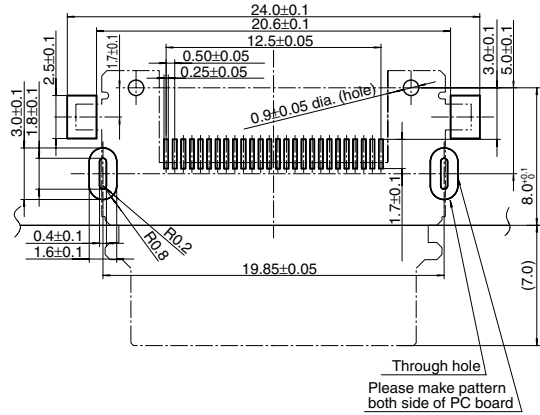
• Plug (Board mounting type) (B type)  
AXR30545

mm General tolerance:  $\pm 0.3$

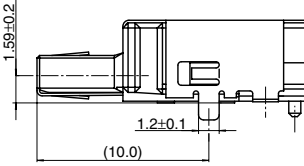
**CAD Data**



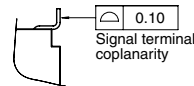
Recommended PC board pattern  
(TOP VIEW)



Note) This product is not compatible with mismatch prevention keys.



A-A cross section



Narrow-pitch connectors

I/O connectors

Interface connectors

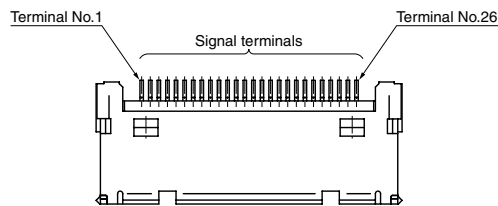
Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

No. of signal terminal (A type)

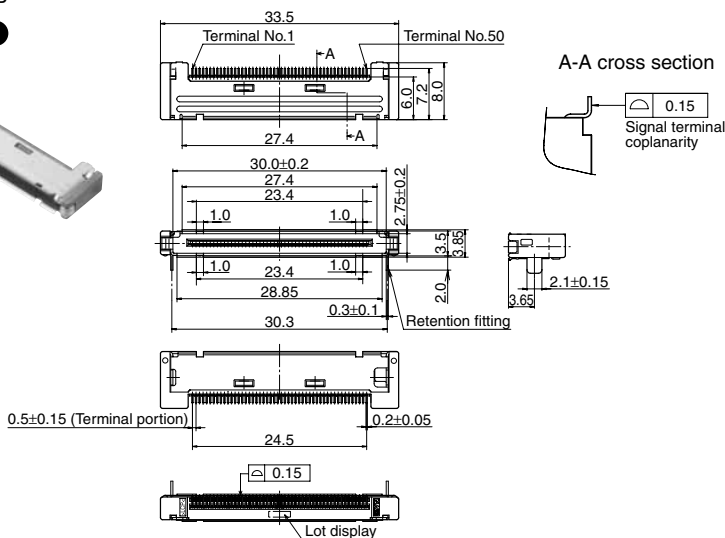


5. Signal terminals 50 contacts/On board mounting type

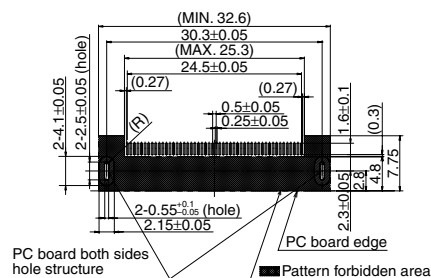
mm General tolerance: ±0.3

- Receptacle (A type)  
AXR51508P

**CAD Data**



Recommended PC board pattern (TOP VIEW)



Notes

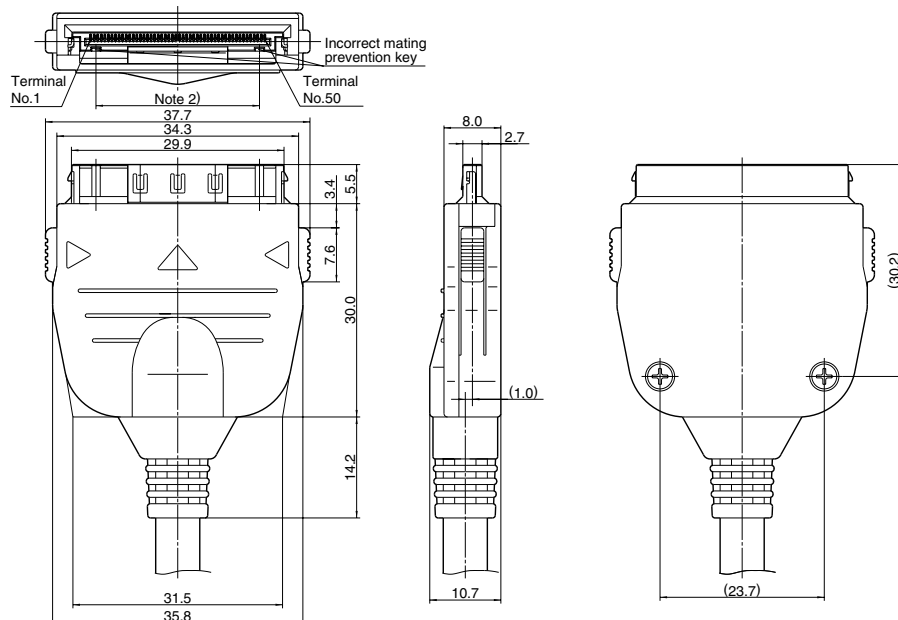
1. The values in parenthesis are reference dimensions.
2. To reinforce the shell portion of the receptacle, have the shell guided by the casing in some way. The gap between the device casing and receptacle should be constructed to be very small, for example, under 0.1 mm.
3. The dimensions of the cross-manufacturer mating error prevention key, if requested, can be set for each user.

- Plug (cable connection type) (A type)  
(assembled condition)

mm General tolerance: ±0.3

- AXR5256S
- AXR5257S

**CAD Data**



Notes

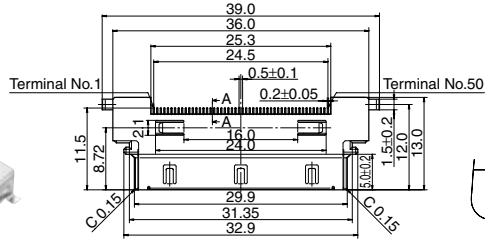
1. The values in parenthesis are reference dimensions.
2. The dimensions of the cross-manufacturer mating error prevention key, if requested, can be set for each user.

# AXR(3/5)

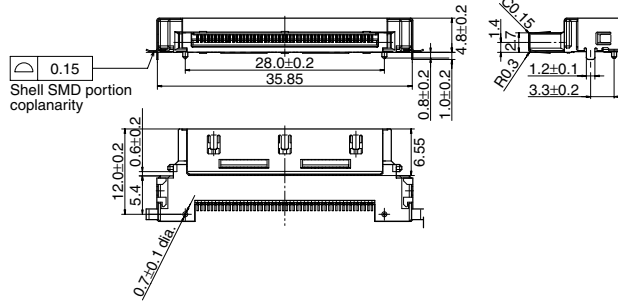
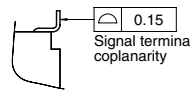
- Plug (Board mounting type)  
AXR30645

mm General tolerance:  $\pm 0.3$

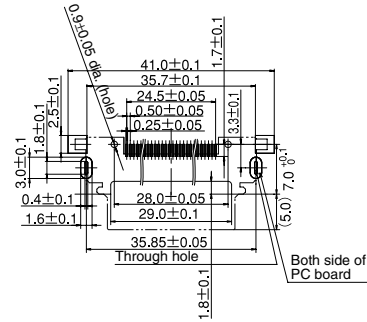
## CAD Data



### A-A cross section



## Recommended PC board pattern (TOP VIEW)



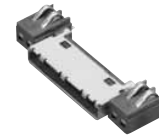
### Notes

1. The values in parenthesis are reference dimensions.
2. To reinforce the shell portion of the receptacle, have the shell guided by the casing in some way. The gap between the device casing and receptacle should be constructed to be very small, for example, under 0.1 mm.
3. The dimensions of the cross-manufacturer mating error prevention key, if requested, can be set for each user.

## APPLICATIONS

Products can be made to match your applications, so please contact us if necessary.

1. SMD type with retention fitting
2. With battery and charging terminals
3. With compact battery terminal



4. Difference in battery terminal number
5. A type products (18, 22, 24 and 26 contacts)  
B type products (50 contacts)



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

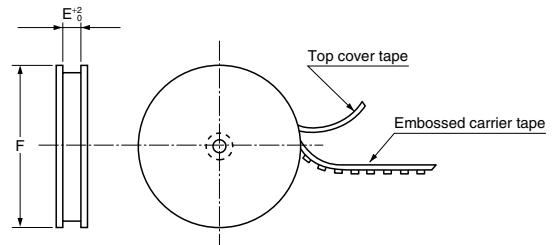
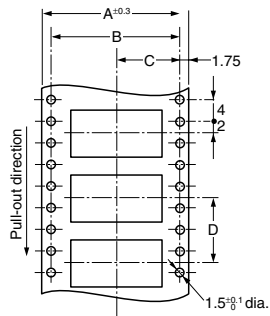
IC sockets

Information

### EMBOSSED TAPE DIMENSIONS (unit: mm)

- Tape dimensions (Conforming to JIS C 0806, 1995.  
However, some tapes have mounting hole pitches that do not comply with the standard.)

- Reel dimensions (Conforming to JIS C 0806, 1995)



#### 1. Receptacle

	A	B	C	D	E	F	Quantity per reel
I/O connector for portable equipment 18, 22, 24 and 26 contacts	32.0	28.4	14.2	16.0	32.4	370 dia.	1,000
I/O connector for portable equipment 50 contacts	44.0	40.4	20.2	16.0	44.4	370 dia.	750

#### 2. Plug (PC board mounting type)

	A	B	C	D	E	F	Quantity per reel
22 and 26 contacts	44.0	40.4	20.2	24.0	44.4	370 dia.	500
50 contacts	56.0	52.4	26.2	24.0	56.4	370 dia.	500

- Connector orientation with respect to direction of progress of embossed tape

Direction of tape progress \ Type	I/O connector for portable equipment Receptacle	Plug (Board mounting type)

Regarding general notes, please refer to page 20.

For other details, please verify with the product specification sheets.

# Panasonic

ideas for life

**COMPACT, LOW-PROFILE BATTERY SOCKET  
WITH BELLOWS CONTACT CONSTRUCTION  
FOR SUPERIOR ANTI-VIBRATION AND  
ANTI-SHOCK PROPERTIES**

## BATTERY SOCKETS



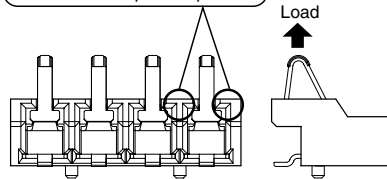
Compliance with RoHS Directive

### FEATURES

**1. Increased reliability through construction that prevents deformation when the contact is pulled up and pushed down.**

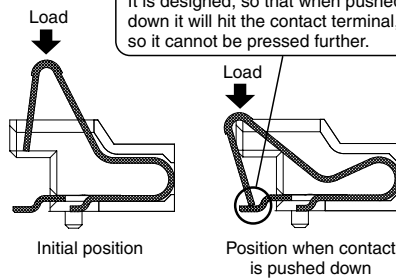
1) When contact is pulled up

Even when pulled up, the contact is caught by the body so it cannot be pulled up



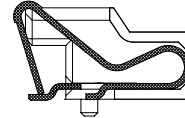
2) When contact is pushed down

It is designed, so that when pushed down it will hit the contact terminal, so it cannot be pressed further.



**2. Support for battery mounting from the top and by sliding it horizontally.**

Battery mounting direction ↓ ←



**3. Bellows contact construction for shock resistance and superior contact reliability.**

### APPLICATIONS

Power supply connector (battery connector of mobile phones, PDAs, DSCs and laptop PC, etc., and for the connection of all types of battery chargers)

### ORDERING INFORMATION

	AXB	7		1	2	3	5	P
7: Battery Socket								
<No. of contacts>								
4: 4 contacts								
6: 6 contacts								
<Contact portion pitch>								
1: 2.2 mm								
<Mounted height>								
2: 3.5 mm								
<Retention fitting/Positioning boss>								
3: Without retention fitting/with positioning boss								
<Plating (contact portion/terminal portion)>								
5: Au plating/Au plating								
<Packing>								
P: 1,000 pieces embossed tape packing × 2 reel								

PRODUCT TYPES

No. of signal contacts	Terminal shape	Positioning boss	Part number	Packing quantity	
				Inner carton (1 reel)	Outer carton
4 contacts	SMD terminal	With positioning boss	AXB741235P	1, 000 pieces	2, 000 pieces
6 contacts			AXB761235P		

SPECIFICATIONS

1. Characteristics

Item	Specifications	Conditions
Electrical characteristics	Rated current	2.0 A (Max. 6.0 A at total contacts)
	Insulation resistance	Min. 1, 000 MΩ (initial)
	Breakdown voltage	150 V AC for 1 minute
	Contact resistance	Max. 50 mΩ (initial)
Ambient temperature	-35 to +65°C	
Lifetime characteristics	5,000 times (battery insert and removal life)	Max. 200 times/hours
Soldering heat resistance	Reflow soldering peak temperature: Max. 245°C	Surface temperature of connector
Unit weight	AXB741235: 0.16 g, AXB761235: 0.23 g	

2. Material and surface treatment

Part name	Material	Surface treatment
Resin-molding portion	PA resin	—
Metal portion	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for thick of terminal)

DIMENSIONS (Unit: mm)

1. 4 contacts

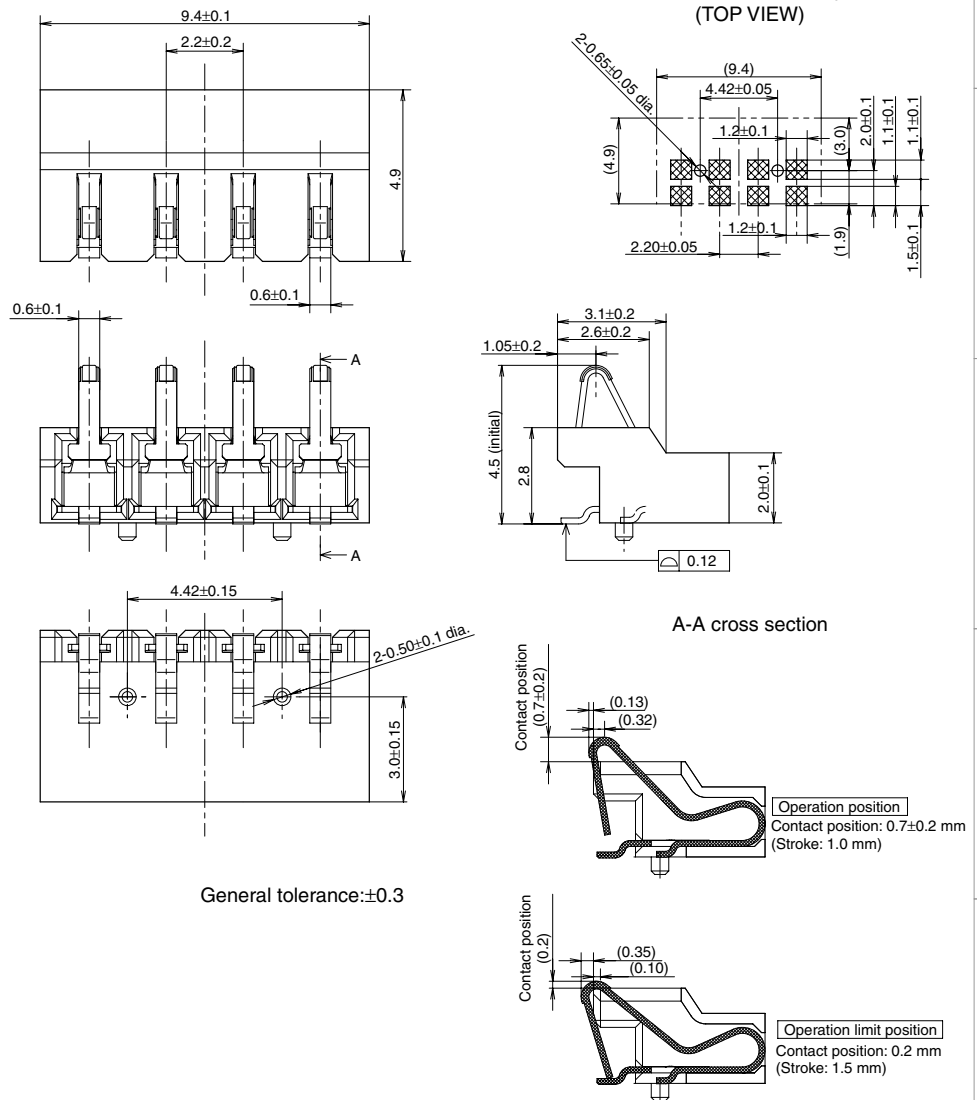
AXB741235P

CAD Data



The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

Recommended PC board pattern (TOP VIEW)

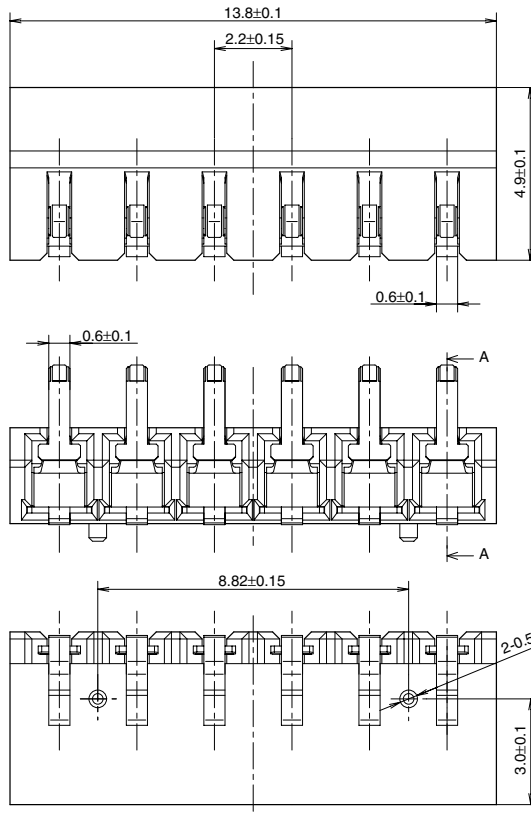




# AXB7

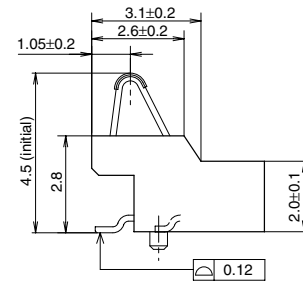
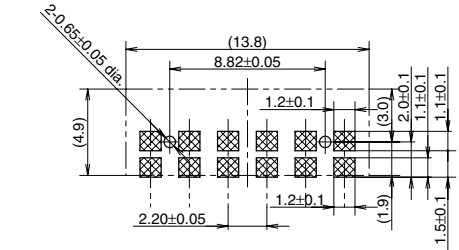
2.6 contacts  
AXB761235P

CAD Data

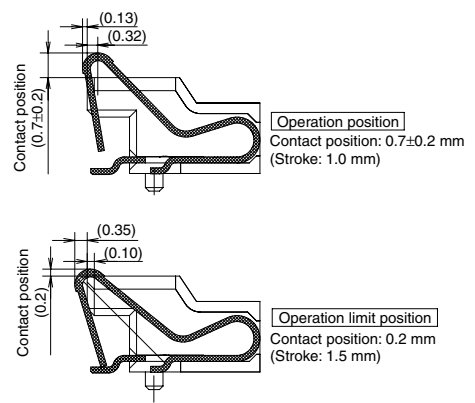


General tolerance: ±0.3

Recommended PC board pattern  
(TOP VIEW)



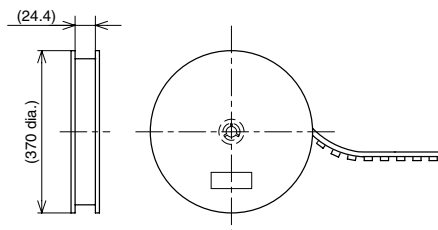
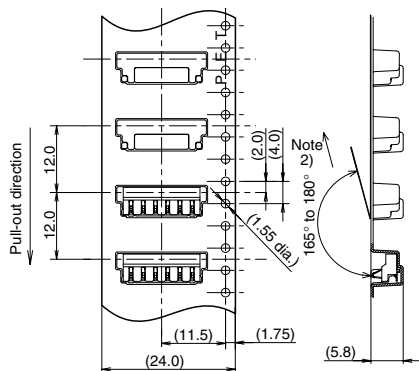
A-A cross section



## EMBOSED TAPE DIMENSIONS (mm)

• Tape dimensions (Conforming to JIS C 0806-1995)

• Reel dimensions (Conforming to JIS C 0806-1995)



## NOTES

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

New



### FEATURES

#### 1. Compatible with the Micro USB standards

Compatible with the new-generation USB connector standard, which was officially announced at the USB Implementers Forum in January 2007

#### 2. Resistant to twisting

These connectors have two metal clips added to the foot pattern recommended by the Micro USB connector standards to ensure secure fixing to PC boards. Also, the shell is made of stainless steel, and its seam has two dovetail joints, which provides higher resistance to the force applied for opening the seam.

#### 3. Resistant to forcible insertion of a plug

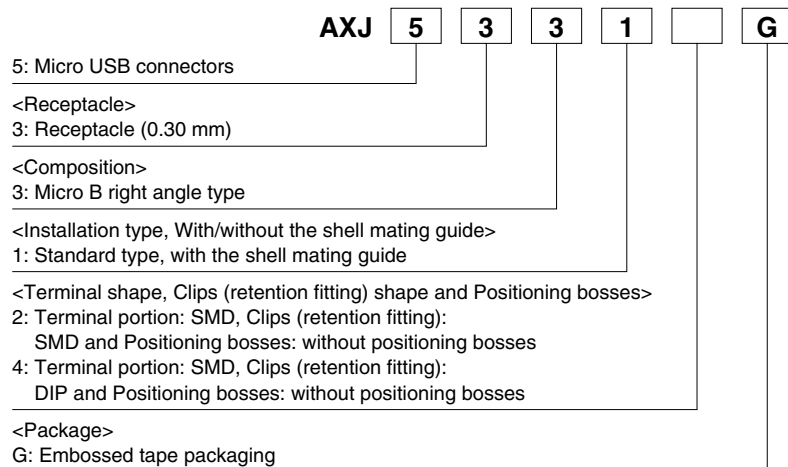
The large crimped parts at the rear of the receptacle shell securely hold the receptacle body, providing high resistance to the forcible insertion of a plug.

### APPLICATIONS

Interface portion of mobile phones and digital consumer products (e.g. DSC, DVC and Music players, etc.)

Compliance with RoHS Directive

### ORDERING INFORMATION



### PRODUCT TYPES

Type		Terminal shape	Clips (retention fitting)	Positioning bosses	Part number	Packing quantity	
						Inner carton (1 reel)	Outer carton (2 reels)
Receptacle (0.30 mm)	Micro B Right angle type	SMD terminal	SMD	Without positioning bosses	AXJ53312G	3,000 pcs.	6,000 pcs.
			DIP		AXJ53314G	2,500 pcs.	5,000 pcs.

**SPECIFICATIONS**

**1. Characteristics**

	Item	Specifications	Conditions
Electrical characteristics	Rated current	When applying current only to signal terminals: 1.0 A (for terminal No. 2, 3 and 4) When applying current to the power terminal: 1.8 A (for terminal No. 1 and 5), 0.5 A (for terminal No. 2, 3 and 4)	
	Rated voltage	30V DC/AC	
	Contact resistance	Max. 30mΩ	EIA-364-23 (Inductive resistance to wire is not included)
	Insulation resistance	Min. 100MΩ	EIA-364-21 Using 100V DC megger
	Breakdown voltage	100V AC (Dielectric breakdown must not occur during a 1 min. application)	EIA-364-20 Detection current: 1mA
Mechanical characteristics	Electrostatic capacity	Max. 2pF	EIA-364-30 (Measure it between the adjacent terminals of the unmated connector at a frequency of 1 kHz.)
	Composite insertion force (initial)	Max. 35N	EIA-364-13 Insert and remove a plug at a speed of 12.5 mm/min.
Lifetime characteristics	Insertion and removal life	10,000 times Contact resistance: Max. 40 mΩ Composite insertion force: Max. 35N Composite removal force: Min. 8 N Appearance: No abnormality	EIA-364-09 Repeated insertion and removal speed of max. 500 times/hours (Mechanical insertion and removal)
Environmental characteristics	Ambient temperature	-55°C to 85°C	No freezing or condensation in low temperatures
	Storage temperature	-55°C to 85°C (-40°C to 50°C for packaging materials)	No freezing or condensation in low temperatures
	Vibration resistance	Discontinuity: Max. 1μs Contact resistance: Max. 40mΩ Appearance: No abnormality	EIA-364-28 Apply vibration in three directions including the mating axis that are perpendicular to one another for 15 minutes respectively with a 100 mA DC current applied. Cord length: 100mm Fix the cord end.
	Impact resistance	Discontinuity: Max. 1μs Contact resistance: Max. 40mΩ Appearance: No abnormality	EIA-364-27 Acceleration: 294m/s <sup>2</sup> (30G) Duration: 11 ms, Application directions: 6 surfaces (X, Y, and Z directions) Number of applications: 3 times respectively (Total: 18 times) Cord length: 100mm Fix the cord end.
	Heat resistance (mated)	250 hours Contact resistance: Max. 40mΩ Breakdown voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-17 Temperature: 85±2°C
	Humidity resistance (mated)	7 cycles Contact resistance: Max. 40mΩ Breakdown voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-31 Method III
Soldering temperature resistance	Reflow soldering	Peak temperature: Max. 260°C	
	Manual soldering	300±10°C: Max. 5 s 350±10°C: Max. 3 s	

**2. Material and surface treatment**

	Part name	Material	Surface treatment
	Resin-molding portion	Heat-resistant resin (UL94V-0)	—
Metal parts	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (Except the cut ends)
	Shell	Stainless steel	Ni plating on base, Sn plating on surface (Except the cut ends)

Narrow-pitch connectors  
 I/O connectors  
 Interface connectors  
 Sockets for memory card  
 Connectors for industrial equipment  
 IC sockets  
 Information

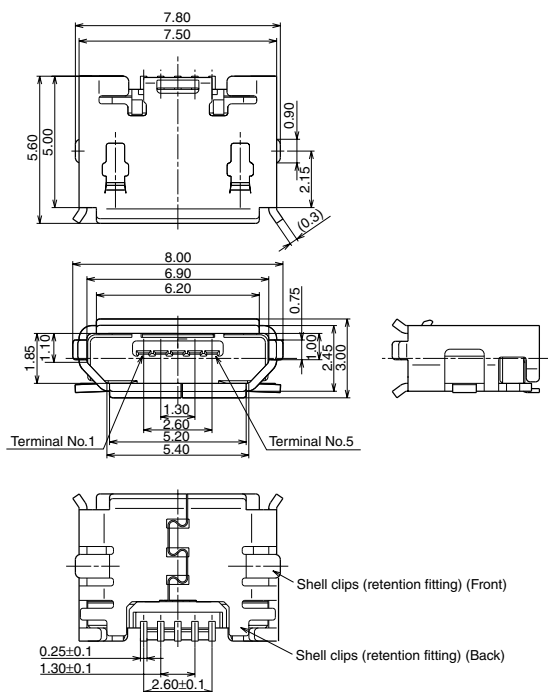
# DIMENSIONS (unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/>

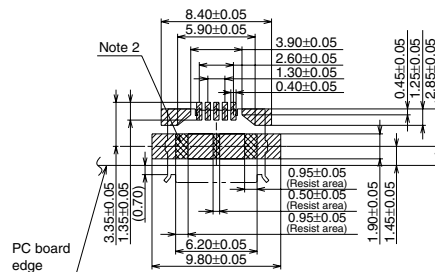
## 1. Clips (retention fitting): SMD type

Part number  
AXJ53312G

**CAD Data**



### Recommended PC board pattern (TOP VIEW)

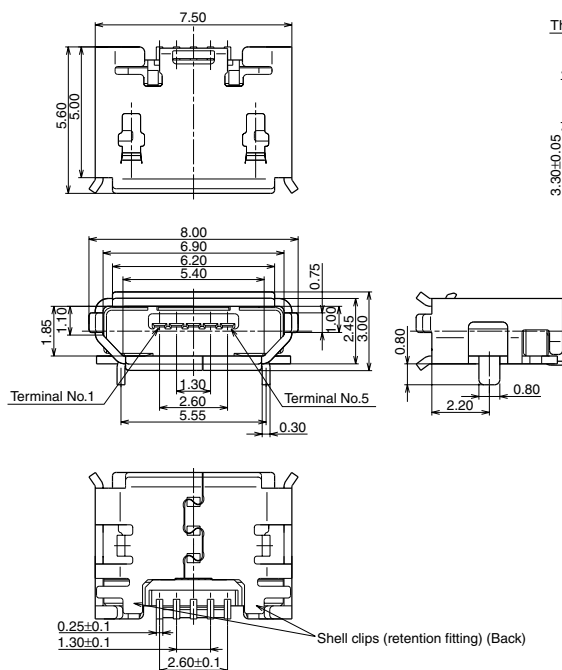


General tolerance: ±0.3

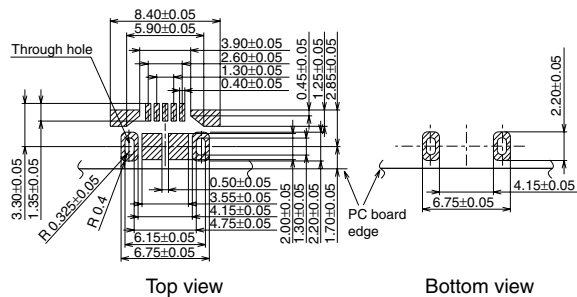
## 2. Clips (retention fitting): DIP type

Part number  
AXJ53314G

**CAD Data**



### Recommended PC board pattern (TOP VIEW)

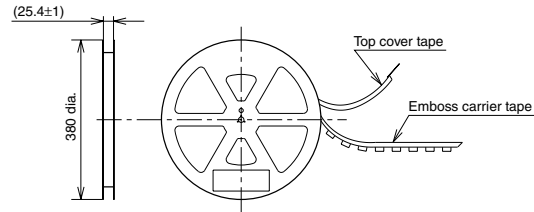
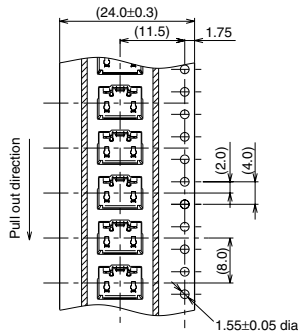


General tolerance: ±0.3

**EMBOSED TAPE DIMENSIONS** (unit: mm)

• Tape dimensions (Conforming to JIS C 0806-3 1990)

• Reel dimensions (Conforming to EIAJ ET-7200B)



**NOTES**

**1. Use of a cover is recommended when using this device in order to prevent scraps, dust, dirt, etc., from getting inside of the receptacle.**

**2. PC board design**

Please refer to the recommended PC board pattern to ensure the strength of soldered portion of terminals.

**3. Soldering**

1) Manual soldering

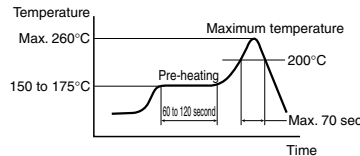
- Please set up temperature and applied time of soldering iron as indicated in specification sheet.
- Avoid an excessive amount of solder from being applied, or it may flow into the shell.
- Please use soldering iron after confirming removal of dispersed solder flux on the contact surface by use of magnifying glass after each soldering.
- Do not apply a load to the terminals during soldering, or the contacts may be displaced.
- Please properly clean soldeing iron.

2) Reflow soldering

- Screen printing is recommended for cream solder printing.
- Screen thickness of 0.12mm is recommended for cream solder printing.
- When applying different thickness of screen, please consult us.
- Depending upon size of connector, self alignments may not be expected. Please pay attention to align terminals and soldered pads.

• The following diagram shows the recommended reflow soldering temperature profile.

**Recommended reflow soldering temperature profile**



- The temperature measured on the PC board surface near connector terminals.
  - After reflow soldering, in case of PC board surface the reverse side using reflow soldering, for example an adhesive and so on connector of fixed disposition.
- 3) Rework of soldering portion
- Rework is one time.
  - Avoid an excessive amount of solder from being applied, or it may flow into the shell.
  - In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux.
  - Please use the soldering iron under specification's temperature

**4. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.**

**5. PC board warpage should be controlled less than 0.03mm to entire length of the connector.**

**6. Repeated bending of terminals and clips (retention fitting) can result in terminals breaking.**

**7. Regarding after soldering connectors on PC boards**

- After mounting connectors on PC boards, do not apply excessive loads to the connector by piling up the boards.
- Please do not add the force to the connector during assembled connector on PC board.

**8. This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered. Guide for plug entrance should be arranged in order to prevent distorted insertions. Provide a cover to reinforce the metal shell portions of the receptacle.**

**9. Others**

To prevent insulation deterioration of PC board after soldering, please avoid adhesion coating agent to terminals in case of coating.

**For other details, please verify with the product specification sheets.**



**MINIATURE INTERFACE CONNECTOR COMPLIANT WITH USB 2.0/ON-THE-GO**

**Mini USB (AXJ4) CONNECTORS**



**FEATURES**

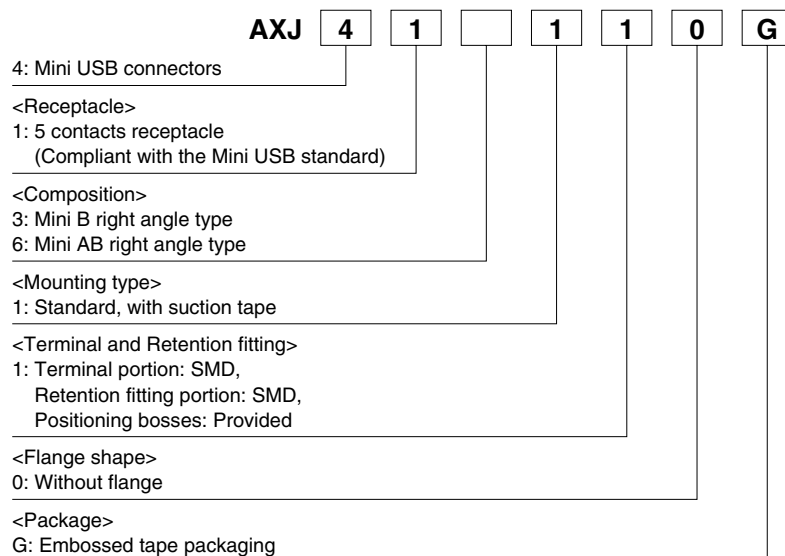
- 1. Compliant with USB 2.0-OTG (Transmission speed: 480 Mbps)**
- 2. 7.7 mm deep space-saving size**  
Since the depth is 7.7 mm, the occupied space is approx. 15% smaller than competing standard connectors (depth: approx 9.0 mm).
- 3. Reinforced fixing strength between the body and shell**  
The high strength allows for the forcible insertion of a plug.

**APPLICATIONS**

- 1. DSC, PMP, DVC, IC recorders
- 2. Mobile phones, PDA, smart phones
- 3. Compact PC peripherals (e.g. external HDD, memory card readers)
- 4. Game machines

Compliance with RoHS Directive

**ORDERING INFORMATION**



**PRODUCT TYPES**

Type		Terminal shape	Positioning bosses	Flange	Part number	Packing quantity	
						Inner carton (Embossed)	Outer carton
5 contacts receptacle (Compliant with the Mini USB standard)	Mini B Right angle type	Terminal position: SMD Clips (retention fitting): SMD	Provided	Without flange	AXJ413110G	1,200	6,000
	Mini AB Right angle type				AXJ416110G		

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

**SPECIFICATIONS**

**1. Characteristics**

	Item	Specifications	Conditions	
Narrow-pitch connectors	Electrical characteristics	Rated current	1.0A	
		Rated voltage	30V DC/AC	
		Contact resistance	Max. 50mΩ	EIA-364-23 (Inductive resistance to wire is not included)
		Insulation resistance	Min. 100MΩ	EIA-364-21 Using 100V DC megger
		Breakdown voltage	100V AC (Dielectric breakdown must not occur during a 1 min. application)	EIA-364-20 Detection current: 1mA
		Electrostatic capacity	Max. 2pF	EIA-364-30 (Measure it between the adjacent terminals of the unmated connector at a frequency of 1 kHz.)
I/O connectors	Mechanical characteristics	Composite insertion force (initial)	Max. 35N {3.57kgf}	
		Composite removal force (initial)	Min. 7N {0.714kgf}	
Interface connectors	Environmental characteristics	Ambient temperature	-55°C to 85°C	
		Storage temperature	-55°C to 85°C (-40°C to 50°C for packaging materials)	
		Vibration resistance	Discontinuity: Max. 1μs Contact resistance: Max. 50mΩ Appearance: No abnormality	EIA-364-28 Apply vibration in three directions including the mating axis that are perpendicular to one another for 15 minutes respectively with a 100 mA DC current applied. Cord length: 100mm Fix the cord end.
		Impact resistance	Discontinuity: Max. 1μs Contact resistance: Max. 50mΩ Appearance: No abnormality	EIA-364-27 Acceleration: 294m/s <sup>2</sup> (30G) Duration: 11 ms, Application directions: 6 surfaces (X, Y, and Z directions) Number of applications: 3 times respectively (Total: 18 times) Cord length: 100mm Fix the cord end.
		Heat resistance (mated)	250 hours Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-17 Temperature: 85±2°C
		Low temperature resistance (mated)	96 hours Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	Temperature: -55±2°C
		Humidity resistance (mated)	7 cycles Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	EIA-364-31 Method III
		Temperature cycle test (mated)	10 cycles Contact resistance: Max. 50mΩ Withstand voltage: 100V AC dielectric breakdown must not occur during a one-minute application. Insulation resistance: Min. 100MΩ Appearance: No abnormality	Sequence 1. -55±3°C, 30 minutes 2. ~, Max. 5 minutes 3. 85±2°C, 30 minutes 4. ~, Max. 5 minutes
		Saltwater spray resistance (mated)	48 hours Contact resistance: Max. 100mΩ Appearance: No abnormality	Bath temperature: 35±2°C Saltwater concentration: 5±1% Wash the connector with water at room temperature after the test, and then dry it at room temperature.
		Hydrogen sulfide	96 hours Contact resistance: Max. 100mΩ Appearance: No abnormality	Temperature :40±2°C Humidity: 75 to 80% Gas concentration: 3±1ppm
Sockets for memory card	Soldering temperature resistance	Reflow soldering	Peak temperature: Max. 260°C	
		Manual soldering	300±10°C: Max. 5 s 350±10°C: Max. 3 s	

**2. Material and surface treatment**

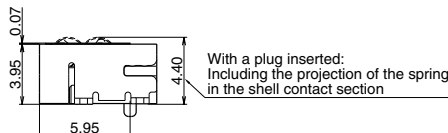
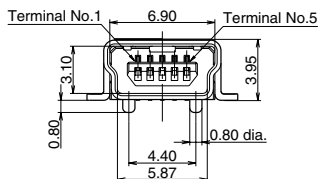
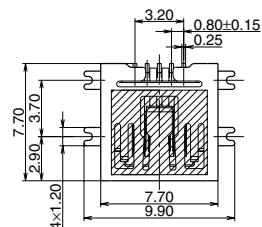
	Part name	Material	Surface treatment
IC sockets	Resin-molding portion		Heat-resistant resin (UL94V-0)
	Metal parts	Contact	Copper alloy
		Shell	Copper alloy
Information	Pickup tape	Heat-resistant resin	—

**DIMENSIONS**

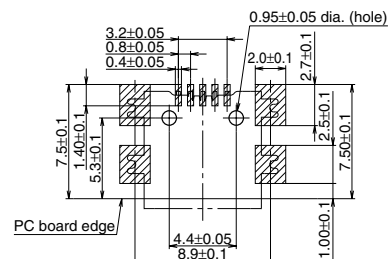
mm General tolerance:  $\pm 0.3$

**1. Mini B Right angle type**

AXJ413110G

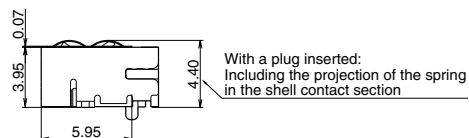
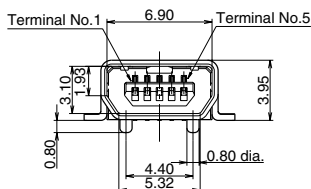
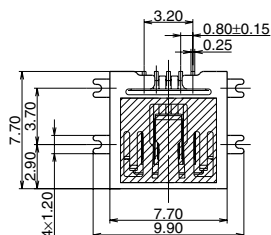


Recommended PC board pattern (TOP VIEW)

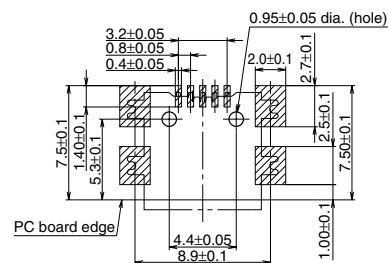


**2. Mini AB Right angle type**

AXJ416110G

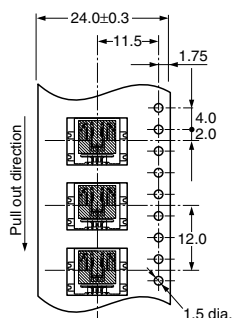


Recommended PC board pattern (TOP VIEW)

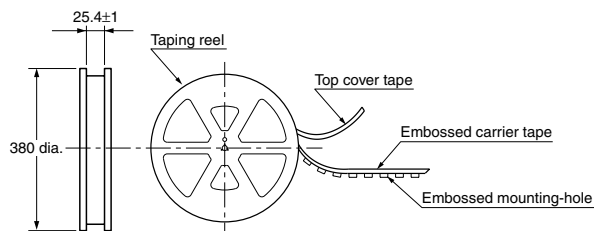


**EMBOSED TAPE DIMENSIONS** (unit: mm)

• Tape dimensions (Conforming to JIS C 0806-3 1999)



• Reel dimensions (Conforming to EIAJ ET-7200B)





## NOTES

**1. Use of a cover is recommended when using this device in order to prevent scraps, dust, dirt, etc., from getting inside of the receptacle.**

**2. PC board design**

Please refer to the recommended PC board pattern to ensure the strength of soldered portion of terminals.

**3. Soldering**

**1) Manual soldering**

- Please set up temperature and applied time of soldering iron as indicated in specification sheet.

- Please use soldering iron after confirming removal of dispersed solder flux on the contact surface by use of magnifying glass after each soldering.

- Please properly clean soldering iron.

**2) Reflow soldering**

- Screen printing is recommended for cream solder printing.

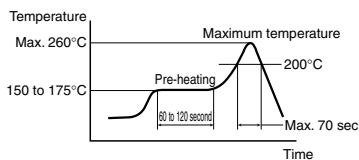
- Screen thickness of 0.15mm is recommended for cream solder printing.

- When applying different thickness of screen, please consult us.

- Depending upon size of connector, self alignments may not be expected.

Please pay attention to align terminals and soldered pads.

- The following diagram shows the recommended reflow soldering temperature profile.



- The temperature measured on the PC board surface near connector terminals.

- After reflow soldering, in case of PC board surface the reverse side using reflow soldering, for example an adhesive and so on connector of fixed disposition.

**3) Rework of soldering portion**

- Rework is one time.

- In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux.

- Please use the soldering iron under specification's temperature

**4. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.**

**5. PC board warpage should be controlled less than 0.03mm to entire length of the connector.**

**6. Repeated bending of terminals and holding parts can result in terminals breaking.**

**7. Regarding after soldering connectors on PC boards**

- After mounting connectors on PC boards, do not apply excessive loads to the connector by piling up the boards.

- Please do not add the force to the connector during assembled connector on PC board.

**8. This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered. Guide for plug entrance should be arranged in order to prevent distorted insertions. Provide a cover to reinforce the metal shell portions of the receptacle.**

**9. We recommend the use of a purified-water-based solution for cleaning the PC board. If you use an alcohol-based solution, the surface of the molded part may be whitened. In addition, please carefully monitor the contamination degree of the solution to prevent the solution from re-contaminating the connector contacts.**

**10. Others**

To prevent insulation deterioration of PC board after soldering, please avoid adhesion coating agent to terminals in case of coating.

**For other details, please verify with the product specification sheets.**



Receptacle:  
Horizontal type



Receptacle:  
Vertical type

Compliance with RoHS Directive

**FEATURES**

**1. High-level impedance matching performance based on HDMI Standards**

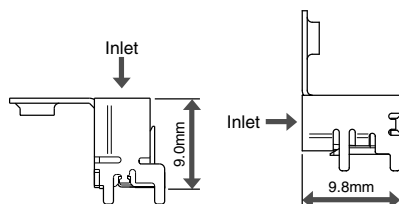
**2. Space-saving size**

Horizontal type: 9.8 mm in depth

Vertical type: 9.0 mm in height

Vertical type

Horizontal type

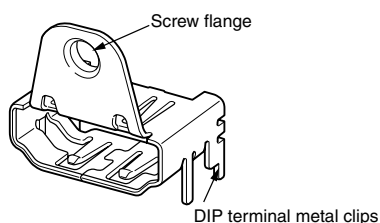


**3. Horizontal and vertical type receptacles are usable on the same foot pattern.**

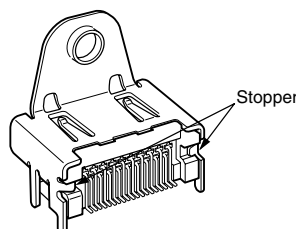
Either the horizontal or vertical type can be used on the same printed circuit board, reducing the design cost and the number of components to be controlled in the target equipment.

**4. Shell having a GND structure for EMI prevention**

The screw flange and the metal clips have enhanced grounding performance.

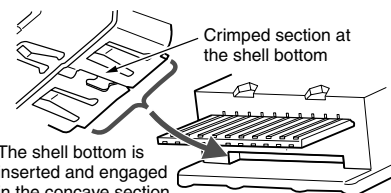


**5. Structure with high resistance to the excessive press-in force of a plug**



**6. Structure with high resistance to twisting forces**

The resistance has been increased by adopting a structure with a screw flange and DIP terminal metal clips fixed to the housing and circuit board, reducing the design cost and the number of components to be controlled in the target equipment.



**ORDERING INFORMATION**

AXJ 3 1 4 2 T

3: HDMI connectors

<Receptacle/Plug>

1: Receptacle

<Number of terminals/Inlet direction>

1: 19/Horizontal

2: 19/Vertical

<Metal clip shape/Positioning projections>

4: DIP metal clips/Without positioning projections

<Flange>

2: Center flange

<Package>

T: Tray packaging

**PRODUCT TYPES**

Number of terminals	Inlet direction	Part No.	Packing quantity	
			Inner carton (tray)	Outer carton
19 terminals	Horizontal type	AXJ31142T	100	1,000
	Vertical type	AXJ31242T		

**SPECIFICATIONS**

**1. Characteristics**

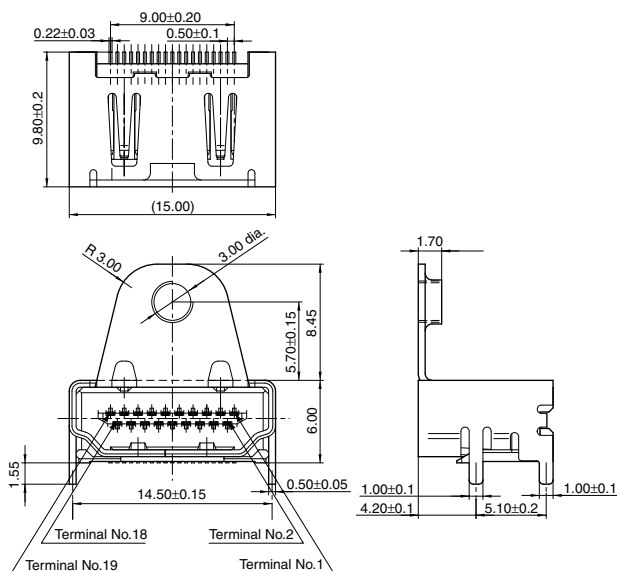
	Item	Specifications	Test conditions
Electrical characteristics	Rated current	0.5 A/terminal	
	Rated voltage	40V AC (rms.)	
	Contact resistance	Contact: Max. 50mΩ Shell: Max. 50mΩ	EIA-364-23 (Except wire conductor resistance) EIA-364-06A-83
	Dielectric withstanding voltage	Unmated: Apply 500V AC for 1minute between adjacent terminal or ground. No breakdown. Mated: Apply 300V AC for 1minute between adjacent terminal or ground. No breakdown.	EIA-364-20 Detection current: 1mA
	Insulation resistance	Unmated: Min. 100MΩ between adjacent terminal or ground. Mated: Min. 10MΩ between adjacent terminal or ground.	EIA-364-21 Unmated: Using 500V DC megger Mated: Using 150V DC megger
	Electrostatic discharge	No evidence of discharge to contacts at 8 kV	IEC-801-2 Test unmated connector from 1 kV to 8 kV in 1 kV steps using 8 mm probe.
	T.M.D.S Impedance	100Ω ±15%	EIA-364-108 Draft Proposal Rise time: 200 p sec. (10% to 90%) Differential measurement specimen environment impedance: 100Ω differential Source-side receptacle connector mounted on a controlled impedance PCB fixture.
	T.M.D.S Cross talk FEXT	Max. 5 % (Max. -26 dB)	EIA-364-90 Draft Proposal Rise time: 200 p sec. (10% to 90%) Differential measurement specimen environment impedance: 100Ω differential Source-side receptacle connector mounted on a controlled impedance PCB fixture. Driven pair and victim pair.
Mechanical characteristics	Insertion force (initial)	Max. 44.1N {4.5kg}	EIA-364-13 Mate and un-mate connector at maximum rate of 25mm per minute
	Removal force (initial)	Min. 9.8N {1.0kg}, Max. 39.2N {4.0kg}	EIA-364-13 Mate and un-mate connector at maximum rate of 25mm per minute
	Screw tightening torque	Use M3 screw Recommended torque: 0.294N-m {3.0kgf-cm} Max. permissible torque: 0.343N-m {3.5kgf-cm}	Put the connector to PC board, then tighten the screw at following torque.
	Durability	After 10,000 cycles Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	100±50 cycles per hour
Environmental characteristics	Ambient temperature	0°C to +50°C	No freezing or condensation
	Storage condition	-20°C to +60°C (-20°C to +50°C for packaging materials)	No freezing or condensation
	Vibration	Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ Discontinuity: Max. 1μsec	EIA-364-28 Method 5A Amplitude: 1.52 mm P-P or 147 m/s <sup>2</sup> (15G) Sweep time: 50-2000-50 Hz in 20 minutes Duration: 12 times in each (total of 36 times) X, Y, Z axes. Electrical load: 100 mA DC current shall be flowed during the test.
	Physical shock	Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ Discontinuity: Max. 1μsec	EIA-364-27 Condition A Pulse width: 11msec Wave form: half sine 490 m/s <sup>2</sup> (50 G) Direction: 6 sides (X, Y, Z direction) Number of impacts: 3 times each (total 18 times)
	Thermal shock (mating)	After 10 cycles Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-32 Condition I Order    Temperature    Time (min.) 1        -55±3°C            30 2        ~                        Max. 5 3        85±2°C              30 4        ~                        Max. 5
	Humidity resistance A (mating)	After 4 cycles (96 hours) Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-31 Mate connectors and expose to humidity at figure1. Temperature: +25°C to +85°C Relative humidity: 80 to 95% Upon completion of the test specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed.
	Humidity resistance B (unmating)	After 4 cycles (96 hours) Appearance: No breakdown Dielectric withstanding voltage: Must meet dielectric withstanding voltage of electrical characteristics Insulation resistance: Must meet contact resistance of electrical characteristics	EIA-364-31 Unmate connectors and expose to humidity at figure1. Temperature: +25°C to +85°C Relative humidity: 80 to 95% Upon completion of the test specimens shall be conditioned at ambient room conditions for 24 hours, after which the specified measurements shall be performed.
	Heat resistance (mating)	After 250 hours Appearance: No breakdown Contact resistance: Change from initial requirement Contact: Max. 30mΩ Shell: Max. 50mΩ	EIA-364-17 Under mating condition Temperature: 105°C±2°C Upon completion of the test specimens shall be conditioned at ambient room conditions for 1 to 2 hours, after which the specified measurements shall be performed.
Soldering temperature resistance	Reflow soldering	Peak temperature: Max. 260°C	
	Manual soldering	300±10°C: Max. 5 s 350±10°C: Max. 3 s	

2. Material and surface treatment

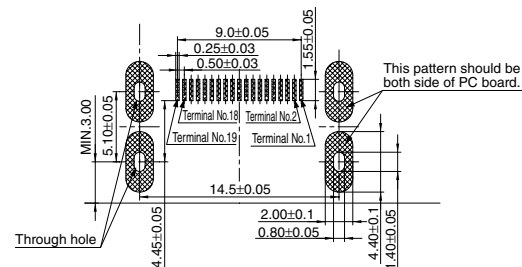
Part name	Material	Surface treatment
Receptacle	Molded portion	LCP resin (UL94V-0), Color: Black
	Post	Copper alloy
	Shell	Copper alloy
		Contact portion: Au flash plating on PdNi over Ni Terminal portion: Au flash plating over Ni (except for top of the terminal) Sn plating over Ni

**DIMENSIONS** (Unit: mm)

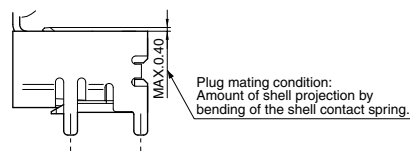
• Receptacle: Horizontal type  
AXJ31142T



Recommended board pattern (Reference)

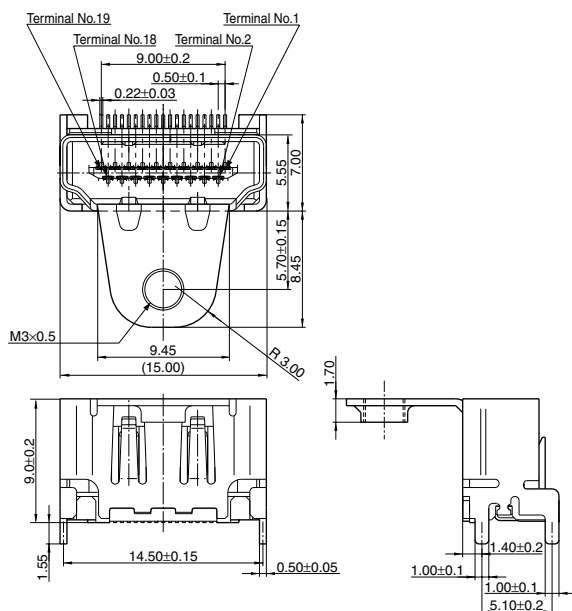


Amount of shell projection by bending of the shell contact spring

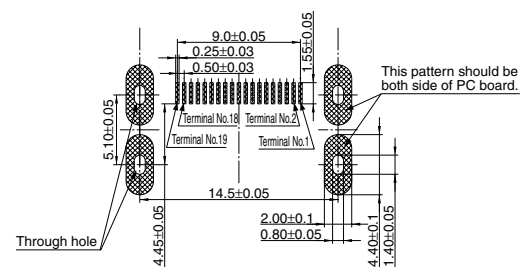


General tolerance: ±0.3

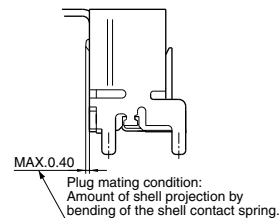
• Receptacle: Vertical type  
AXJ31242T



Recommended board pattern (Reference)



Amount of shell projection by bending of the shell contact spring



General tolerance: ±0.3

## NOTES

**1. A cover for receptacle is recommended to prevent dusts.**

**2. Regarding PC board design**  
Refer the recommended PC board pattern for keeping the strength of soldering.

**3. Regarding soldering**

1) Manual soldering

- Please use the soldering iron under specification's temperature and times.
- In case of exercise care not to contaminate the contacts with solder flux from the soldering iron tip. And make sure that the contacts are not contaminated to dispersed solder flux with a magnifying glass and so on. Please pay attentions. Not to deform terminals when apply an excessive force to terminals, or the posts.

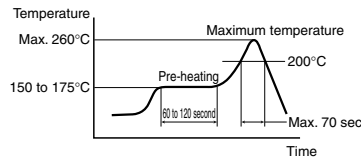
• Please soldering iron is cleaning.

2) Reflow soldering

- Please use screen soldering regarding cream solder printing.
- A screen thickness of 0.15 mm is recommended during cream solder printing.
- When applying the different thickness of a screen, please consult us.
- There may be a case of difficult self-alignment depending on the connector size. In that case, please pay attentions to align terminals and solder pads.

- The following diagram shows the recommended reflow soldering temperature profile.

**The recommended conditions for the reflow temperature profile**



- The temperature measured on the PC board surface near connector terminals.
- After reflow soldering, in case of PC board surface the reverse side using reflow soldering, for example an adhesive and so on connector of fixed disposition.
- After soldering, we recommend the solder of the addition to the terminal dip of the shell for the strength securing.

**4. Rework of soldering portion**

- 1) Rework is one time.
- 2) In case of soldering rework of bridges. Please use a flat-head soldering iron and don't use supplementary solder flux.
- 3) Please use the soldering iron under specification's temperature.

**5. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.**

**6. PC board warpage should be controlled to 0.03 mm max. after soldering to a PC board.**

**7. Repeated bending of terminals and holding parts can result in terminals breaking.**

**8. Please do the screw tightening of the flange by the tightening torque below recommended torque.**

**Please note that tightening more than the permissible limit torque has danger of causing the transformation of the shell.**

**9. Regarding after soldering connectors on PC boards**

- 1) After mounting connectors on PC boards, do not apply excessive loads to the connector by piling up the boards.
- 2) Please do not add the force to the connector during assembled connector on PC board.

**10. This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered. Guide for plug entrance should be arranged in order to prevent distorted insertions. Provide a cover to reinforce the metal shell portions of the receptacle.**

**11. Other notes**

After soldering is no coating. In case of using coating, please do not stick to the terminal.

**For other details, please verify with the product specification sheets.**



**COMPLIANCE WITH THE USB STANDARD**      **USB (AXJ1) CONNECTORS**

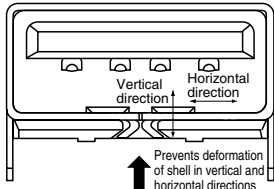


USB: Universal Serial Bus serial interface for connecting a telephone, board and other peripheral units to a personal computer.

**Compliance with RoHS Directive**

**FEATURES**

1. Permits connection/disconnection while the power is on.
2. Resistant structure for mating stress
3. Low insertion force/Insertion and removal life 1,500 times



A construction which protects the connector from cable stretching and other external forces is achieved by interfitting the metal shell cover into the molding.

**APPLICATIONS**

- Receptacle
- Series A: Personal Computers and USB hubs.

**ORDERING INFORMATION**

AXJ    1    1                2    T

1: USB connector

<Receptacle>  
1: Receptacle

<Composition>  
1: Series A, 1 port  
2: Series A, 2 port

<Terminal and Retention fitting>

Terminal portion	Retention fitting portion
2    DIP	Clinching type board thickness 0.8 to 1.2mm
3	Clinching type board thickness 1.6 mm
5    SMD	Straight type

<Flange shape>  
0: Without flange  
1: Side flange  
2: Center flange

<Surface treatment (Contact portion/Terminal portion)>  
2: Contact portion: Ni plating on base, PdNi + Au flash plating on surface  
Terminal portion: Ni plating on base, Au plating on surface (except for top of the terminal)

<Packing>  
T: Tray packaging

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

Downloaded from [Elcodis.com](http://Elcodis.com) electronic components distributor

# AXJ(1)

## PRODUCT TYPES

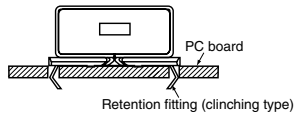
Series	No. of port	Terminal shape	Holding parts shape	Flange	Part no.	Packing quantity	
						Inner carton	Outer carton
A	1 port (4 contacts)	DIP terminal	Clinching type Applicable board thickness 0.8mm to 1.2mm	Side flange	AXJ111212T	90	900
				Center flange	AXJ111222T	90	900
		SMD terminal	Straight type	Without flange	AXJ111202T	90	900
				Side flange	AXJ111512T	90	900
	2 ports (4 contacts × 2-layer)	DIP terminal	Clinching type Applicable board thickness 0.8mm to 1.2mm	Without flange	AXJ112202T	60	600
				Clinching type Applicable board thickness 1.6mm	Without flange	AXJ112302T	60

Note: The "clinching type" refers to a connector whose retention fittings are clinched as shown in the figure below so that the connector can support itself.

Remark: T: Tray packaging

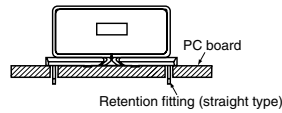
### Clinching type

Applicable to DIP terminal



### Straight type

Applicable to SMD terminal



## SPECIFICATIONS

### 1. Characteristics

Item	Specifications		Conditions	
Electrical characteristics	Rated current	1.0A		
	Rated voltage	30V DC/AC		
	Contact resistance	1 Port (receptacle)	Max. 30mΩ	EIA-364-23 (Inductive resistance for wire is not included)
		2 Ports (receptacle)	Max. 40mΩ	
	Insulation resistance	Min. 1000MΩ	EIA-364-21 Using 500V DC megger	
	Breakdown voltage	Breaking voltage 750V AC for 1min.	EIA-364-20 Detection current: 1mA	
Electrostatic capacity	Max. 2pF	EIA-364-30 Measured at 1 kHz between connectors which are not connected.		
Mechanical characteristics	Composite insertion force	Max. 35N {3.57kgf} (initial)	EIA-364-13 Measures the insertion and removal force for a plug at the speed of 12.5mm/min.	
	Composite removal force	Min. 10N {1.02kgf}		
Environmental characteristics	Ambient temperature	0°C to +40°C (carrying current)	No freezing at low temperatures	
	Soldering heat resistance	260°C within 10sec.	Soldering bath	
		Tip temperature of soldering iron: 300°C within 5sec., 350°C within 3sec.	Soldering iron	
Storage condition	-40°C to +60°C	No freezing at low temperatures		
Lifetime characteristics	Mechanical life	1500 times	EIA-364-09 Repeated insertion and removal speed of max. 200 times/hours	
Unit weight	1 port type: 2.0 g, 2 parts type: 5.5 g			

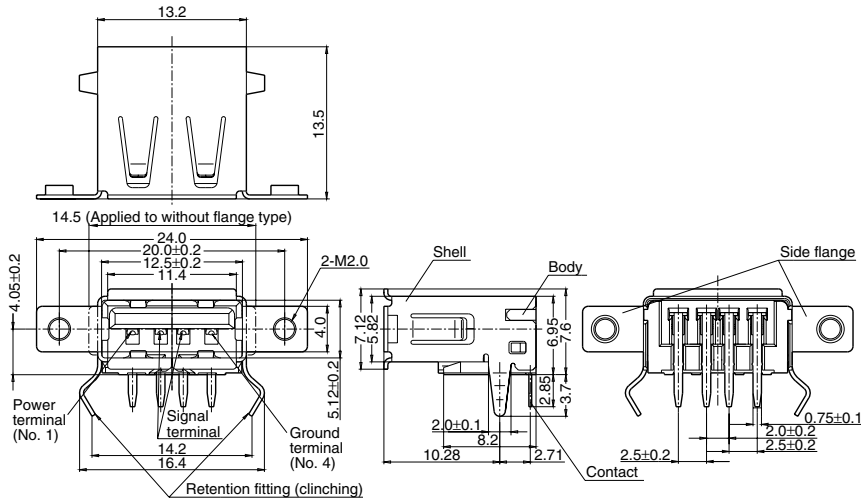
### 2. Material and surface treatment

#### Series A

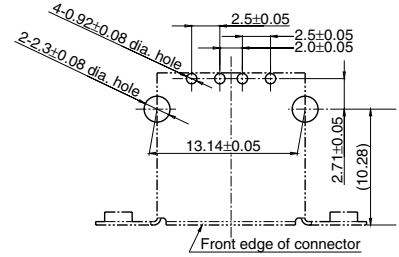
Part name	Material	Surface treatment
Resin-molding portion	Heat-resistant resin (UL94V-0)	—
Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for top of the terminal)
Shell	Copper alloy	Cu plating on base, Sn plating on surface (except for thick of the terminal)
Center clip	Copper alloy	Cu plating on base, Sn plating on surface (except for thick of the terminal)

**DIMENSIONS**

1. Series A 1 port DIP terminal with side flange



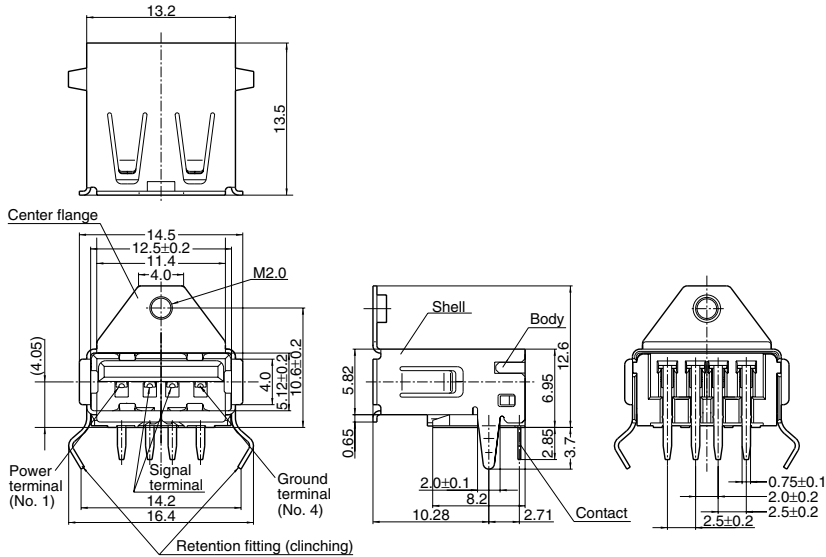
Recommended PC board pattern (TOP VIEW)



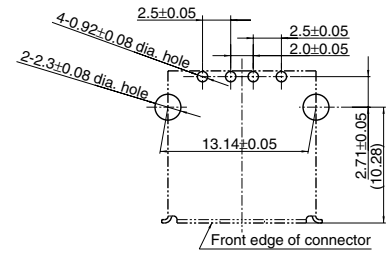
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

Part no.	Flange shape
AXJ111202	Without flange
AXJ111212	With side flange

2. Series A 1 port DIP terminal with center flange

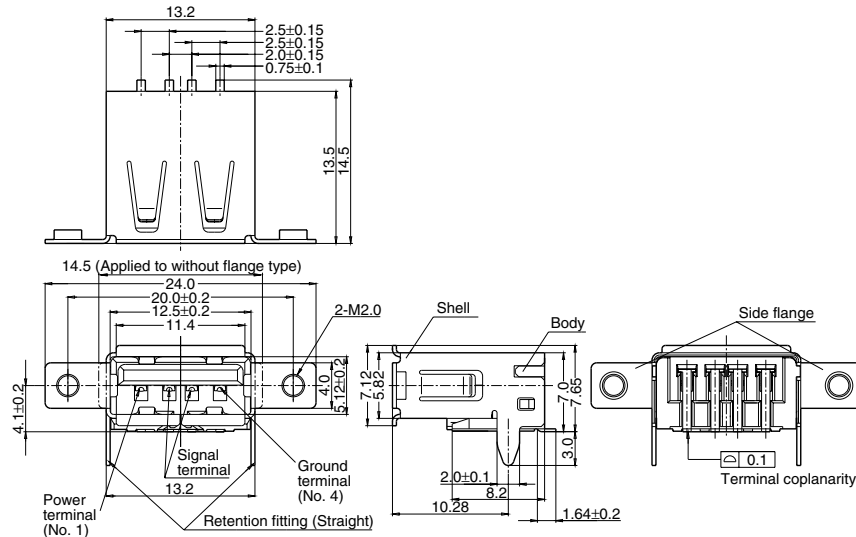


Recommended PC board pattern (TOP VIEW)

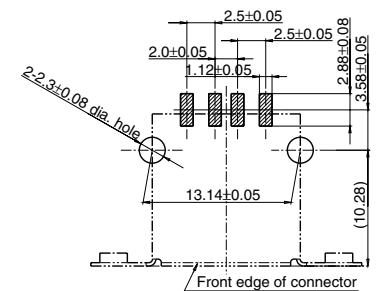


Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

3. Series A 1 port SMD terminal with side flange



Recommended PC board pattern (TOP VIEW)



Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

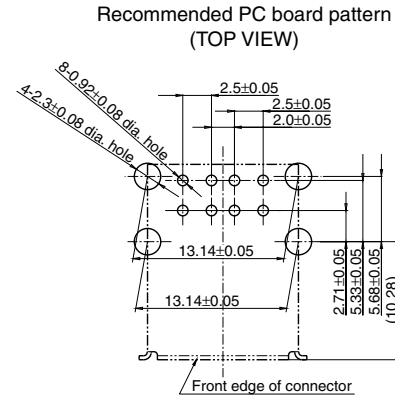
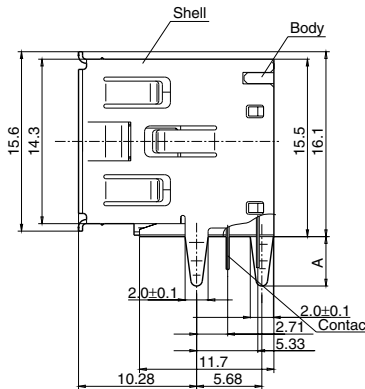
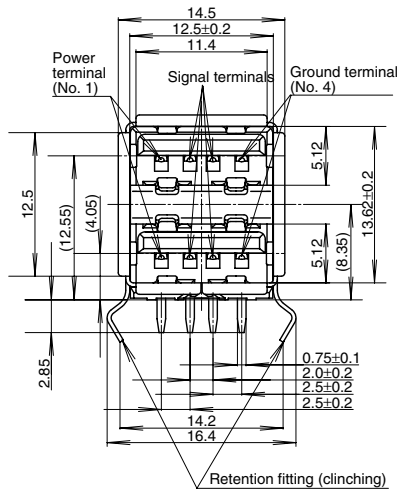
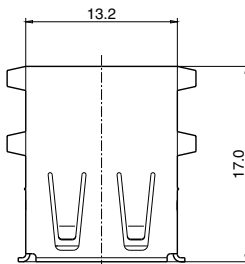
Part no.	Flange shape
AXJ111502	Without flange
AXJ111512	With side flange



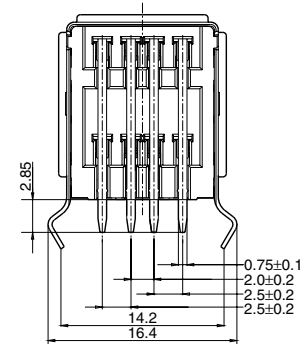
# AXJ(1)

## 4. Series A 2 ports DIP terminal without flange

mm General tolerance:  $\pm 0.3$



Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



Part no.	A	Applicable PC board thickness
AXJ112202	3.7	0.8mm to 1.2mm
AXJ112302	4.3	1.6mm

## NOTES

1. Use of a cover is recommended when using this device in order to prevent scraps, dust, dirt, etc., from getting inside the receptacle.
2. Since these products come with metal retainers, the foot patterns for two retainers (in the case of 1 port) or for 4 retainers (in the case of 2 ports) must be fabricated. (Refer to the diagram for the recommended PCB processing.) Furthermore, the retainers must be soldered to the PCB to anchor them in place.
3. In the case of automatic soldering, ensure that the solder bath temperature is less than 260°C and that the immersion time does not exceed 10 seconds.
4. Since excessive force on the terminals will cause deformation and the integrity of the soldering will be lost during reflow soldering, avoid dropping or rough handling of the product.

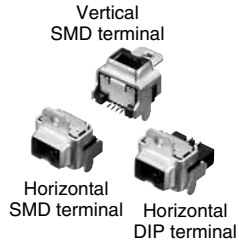
5. This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered. Guide for plug entrance should be arranged in order to prevent distorted insertions. Provide a cover to reinforce the metal shell portions of the receptacle.
6. Repeated bending of terminals and holding parts can result in terminals breaking.
7. The compatible PCB thickness is either 0.8mm to 1.2mm or 1.6mm for the DIP type of mounting.  
In regard to the compatible PCB thickness range from 0.8mm to 1.2mm, it should be added that the only trouble when using the connector with a PCB which is less than 0.8mm thick is that play may develop between the PCB and metal retainers. The connector can therefore be used if it is clamped or some other measure is taken to secure it. The same applies when the 1.6mm type connector is used with a PCB which is less than 1.6mm thick.

8. Please take care of excessive force to flange. (Recommended torque tension: 0.05 to 0.07 N·m)  
Tightening too much may deform the contacts and damage the threads or screw head. Please be careful.

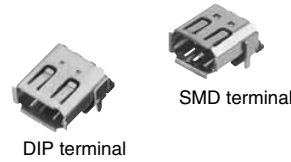
Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**4 contacts**



**6 contacts**



**PRODUCT LINEUP**

	No. of contacts	Receptacle		
			Horizontal	Vertical
IEEE1394	4	SMD terminal	Horizontal	With positioning boss Without positioning boss
			DIP terminal	Horizontal
		SMD terminal		Vertical
			DIP terminal	
	6	SMD terminal		—
		DIP terminal	—	

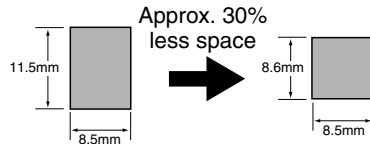
IEEE: The Institute Electrical and Electronics Engineers

**Compliance with RoHS Directive**

**FEATURES**

**4 contacts**

**1. Compact for space saving**  
The SMD contacts requires 30% less space when compared with typical products from other manufacturers.

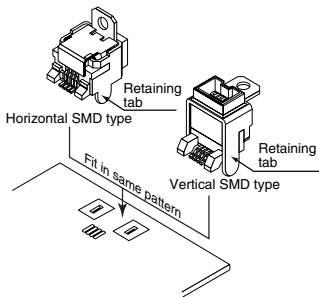


Typical products from other manufacturers

Our manufactures

**2. Both vertical and horizontal-types are available**

The vertical and horizontal SMD types can share the same foot pattern, allowing for a variety of component layouts without changing the foot pattern on the PC board.



**3. Improved EMI resistance characteristics**

The horizontal type has a metal shell on the lower and back surfaces for improved resistance to EMI interference.

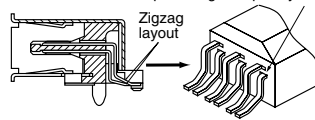
**4. Insertion and removal life of 3,000 times**

**6 contacts**

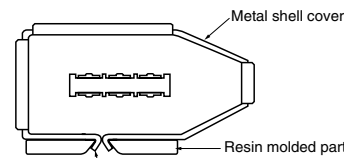
**1. Excellent high frequency characteristics**

**SMD type**  
The pin-to-pin distance has been extended by placing the pins in zigzag layout instead of the straight line configuration used by our competitors in general.

The greater the pin-to-pin distance, the less interference is generated by high frequencies between the pins, resulting in superior high-frequency characteristics.

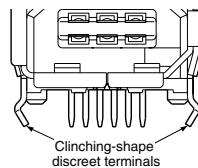


**2. Durability ensured against plug mating stress**



The metal shell cover is securely locked in place by the molding; this is a construction that protects the connector from external forces such as that which is exerted when the cable is pulled.

**3. Save energy during soldering with the DIP-type discreet terminal construction.**



**APPLICATIONS**

1. Personal computers
2. Peripheral units of personal computers
3. Consumer products:  
DVC, DSC, DVD recorder, STB, VTR, MD recorder

# AXJ(2)

## ORDERING INFORMATION

AXJ 2 1 [ ] [ ] [ ] [ ] 2 [ ]

2: IEEE1394 connector

<Receptacle>  
1: Receptacle

<Composition>  
1: 6 contacts, with positioning boss  
5: 4 contacts, with positioning boss  
6: 4 contacts, without positioning boss

<Mounting direction>  
1: Flat type (applies to 6 contacts)  
7: Horizontal (applies to 4 contacts)  
8: Vertical (applies to 4 contacts)

<Terminal and Retention fitting>

	Terminal portion	Retention fitting portion
1	DIP	Straight type
3		Clinching type board thickness 1.6 mm
5	SMD	Straight type

<Flange shape>  
0: Without flange  
1: Screw with fixed flange

<Surface treatment (Contact portion/Terminal portion)>  
2: Ni plating on base, Au plating on surface/Au plating

<Packing>  
T: Tray packaging  
P: Embossed tape and paper reel × 8

## PRODUCT TYPES

### 1. 4 contacts

Contacts	Type	Terminal shape	Positioning bosses	Part No.	Packing quantity	
					Inner carton	Outer carton
4 contacts	Horizontal	SMD terminal	With	AXJ2157512P	450 pcs./reel	3,600 pcs.
			Without	AXJ2167512P	450 pcs./reel	3,600 pcs.
	Vertical	DIP terminal	Without	AXJ2167112T	180 pcs./tray	3,600 pcs.
			With	AXJ2158512P	450 pcs./reel	3,600 pcs.
		DIP terminal	With	AXJ2158112T	180 pcs./tray	3,600 pcs.
			Without	AXJ2168112T	180 pcs./tray	3,600 pcs.

Note) P: Embossed tape packing, T: Tray packing

### 2. 6 contacts

Contacts	Terminal shape	Holding metal shape	Part No.	Packing quantity	
				Inner carton (Tray)	Outer carton
6 contacts	SMD terminal	Straight type	AXJ2111502T	90 pcs.	900 pcs.
	DIP terminal	Clinching type	AXJ211302T		

## SPECIFICATIONS

### 1. Characteristics

#### 1) 4 contacts

	Item	Specifications	Conditions
Electrical characteristics	Rated current	0.5A	
	Rated voltage	5V DC	
	Contact resistance	Max. 50mΩ (initial)	EIA-364-23A-85, EIA-364-06A-83
	Insulation resistance	Min. 1,000MΩ	EIA-364-21B-95 500V DC megger
	Breakdown voltage	100V AC for 1 min. (Breakdown voltage)	EIA-364-20A-83 Detection current 2mA
Mechanical characteristics	Composite removal force	Min. 4.9N (500gf) to Max. 39.2N (4kgf) (initial)	EIA-364-13A-83 Required force for removing a plug is measured at a speed of 25 mm/min.
Environment characteristics	Ambient temperature	-20 to +80°C	No freezing nor condensing at low temperature
	Soldering heat resistance	Infrared reflow soldering: peak temperature of Max. 245°C	
Lifetime characteristics	Storage temperature	-25 to +85°C (The allowable storage temperature is -25°C to +50°C if unopened from original packaging)	No freezing nor condensing at low temperature
	Mechanical life	3,000 times	EIA-364-09B-91 Repeated insertion and removal speed of 10 to 20 times/hour
Unit weight		0.8g (SMD) 0.9g (DIP)	

#### 2) 6 contacts

	Item	Specifications	Conditions
Electrical characteristics	Rated current	1.5A	
	Rated voltage	40V DC	
	Contact resistance	Between terminals: Max. 30mΩ	EIA-364-23A-85, EIA-364-06A-83
	Insulation resistance	Min. 1,000MΩ	EIA-364-21B-95 500V DC megger
	Breakdown voltage	Breakdown insulation 500V DC for 1 min. (Breakdown voltage)	EIA-364-20A-83 Detection current 0.5mA
Mechanical characteristics	Composite removal force	Min. 9.8N (1kgf) to Max. 39.2N (4kgf)	EIA-364-13A-83 Required force for removing a plug is measured at a speed of 25 mm/min.
Environment characteristics	Ambient temperature	0 to +45°C	No freezing nor condensing at low temperature
	Soldering heat resistance	Infrared reflow soldering: peak temperature of Max. 245°C	
Lifetime characteristics	Storage temperature	-55 to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)	No freezing nor condensing at low temperature
	Mechanical life	1,500 times	EIA-364-09B-91 Repeated insertion and removal speed of 500 ± 50 times/hour
Unit weight		2.5 g (Receptacle)	

### 2. Material and surface treatment

#### 1) 4 contacts

Part name		Material	Surface treatment
Molded portion		Excluding horizontal DIP type: LCP resin (UL94V-0) Horizontal DIP type: PBT resin (UL94V-0)	—
Metal portion	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for top of the terminal)
	Shell	Steel or Copper alloy	Ni plating on base, Sn plating on surface
	Locking bracket	Copper alloy	Ni plating

#### 2) 6 contacts

Part name		Material	Surface treatment
Molded portion		SMD type: LCP resin (UL94V-0) DIP type: PBT resin (UL94V-0)	—
Metal portion	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for top of the terminal)
	Shell	Copper alloy	Ni plating on base, Sn plating on surface

# AXJ(2)

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

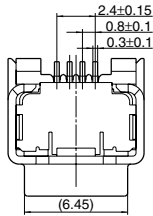
### 1. Receptacle (4 contacts)

- Horizontal SMD type

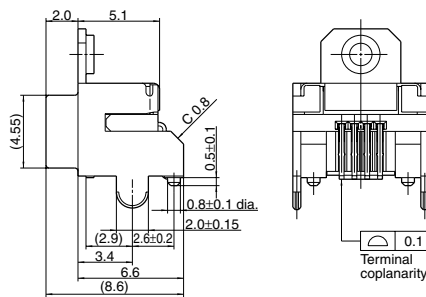
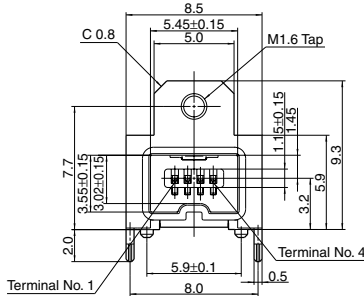
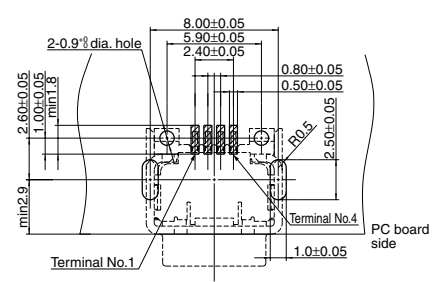
AXJ2157512P

AXJ2167512P

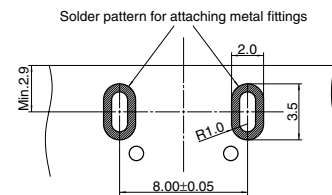
**CAD Data**



Recommended PC board pattern (TOP VIEW)



Recommended PC board pattern (BOTTOM VIEW)



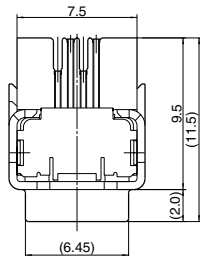
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

General tolerance: ±0.3

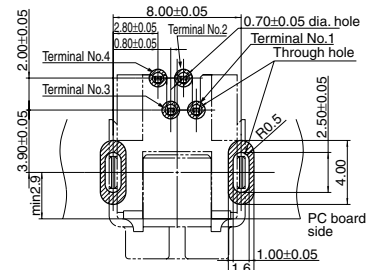
- Horizontal DIP type

AXJ2167112T

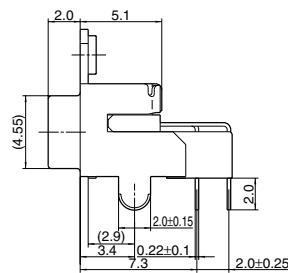
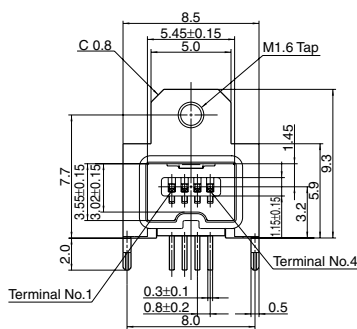
**CAD Data**



Recommended PC board pattern (BOTTOM VIEW)



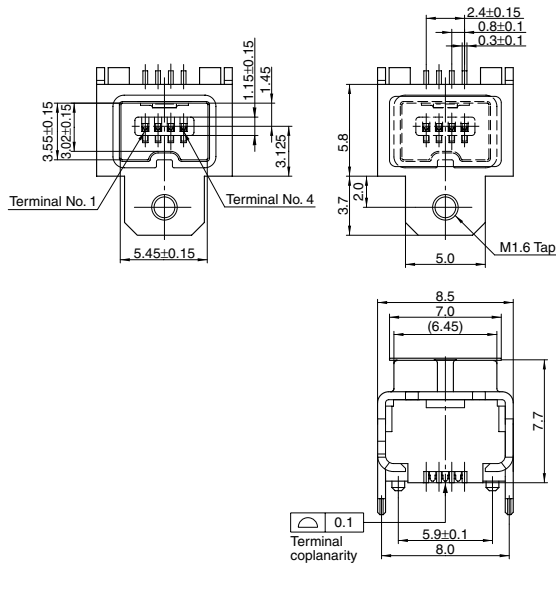
Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).



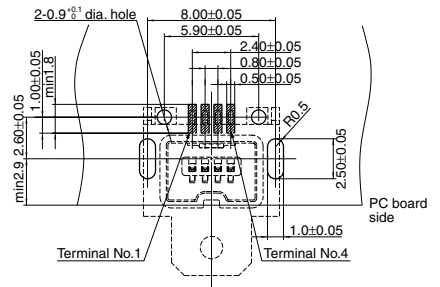
General tolerance: ±0.3

• Vertical SMD type  
AXJ2158512P

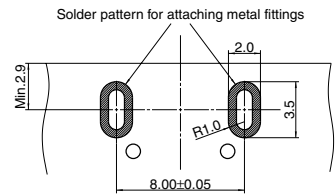
CAD Data



Recommended PC board pattern  
(TOP VIEW)

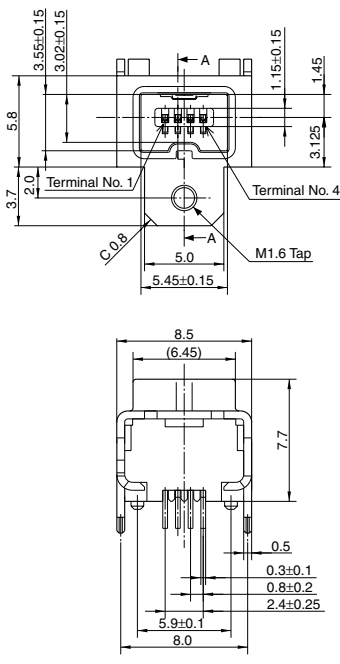


Recommended PC board pattern  
(BOTTOM VIEW)

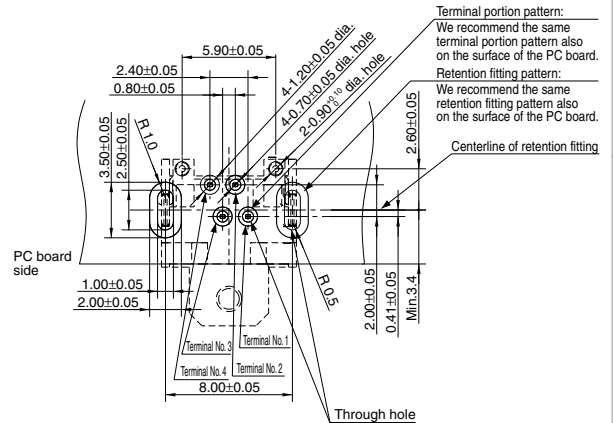


General tolerance: ±0.3

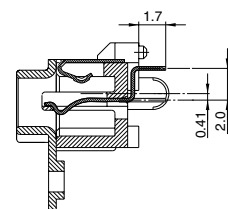
• Vertical DIP type  
AXJ2158112T  
AXJ2168112T



Recommended PC board pattern  
(BOTTOM VIEW)



A-A cross section



General tolerance: ±0.3

The specifications and appearance of this product are subject to change for improvement. Please contact us for details.

# AXJ(2)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

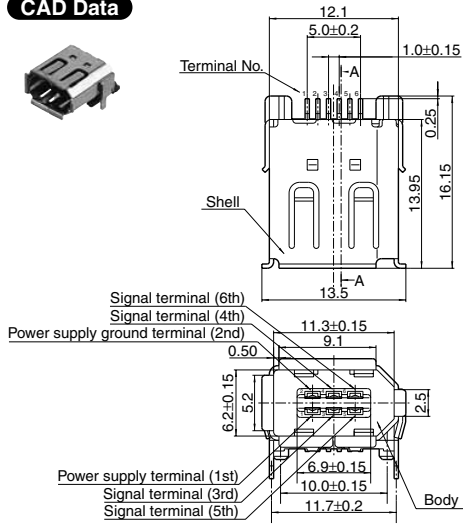
IC sockets

Information

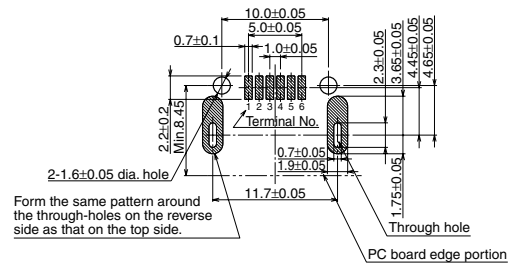
## 2. Receptacle (6 contacts)

- SMD type
- AXJ2111502T

**CAD Data**



### Recommended PC board pattern (TOP VIEW)

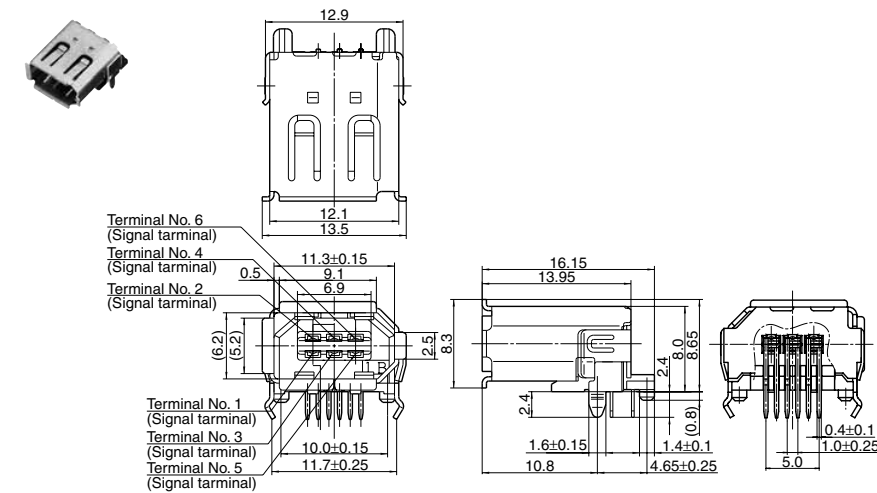


Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

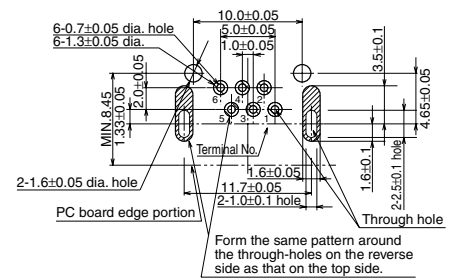
General tolerance: ±0.3

- DIP type
- AXJ2111302T

**CAD Data**



### Recommended PC board pattern (BOTTOM VIEW)



Note) Since product bottom is a metal shell, do not make pattern circuits (to prevent shorting).

General tolerance: ±0.3

## NOTES

### • Receptacle

This connector has metal shell for preventing EMI, when designing an enclosure the followings should be considered.

Guide for plug entrance should be arranged in order to prevent distorted insertions. When using 1.6mm screw, the mounting torque should be 0.15 N·m to 0.2 N·m {1.5 kgf·cm to 2.0 kgf·cm} regarding with flange type. Also, avoid forcibly twisting the plug when it is plugged in. This could cause such things as solder cracking.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

The specifications and appearance of this product are subject to change for improvement. Please contact us for details.

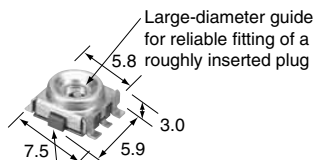


Plug



Receptacle

One-touch-installable to product enclosures (hands-free goods or inspection jigs)



Directionally-distinguishable shape (Protection from mounting in the wrong direction)

### Compliance with RoHS Directive

## FEATURES

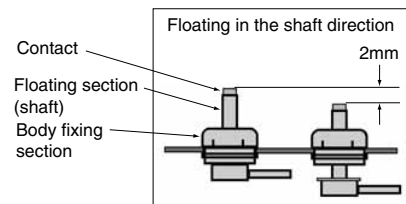
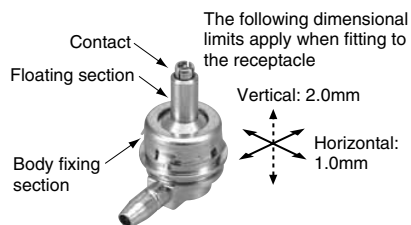
### 1. Space-saving receptacle with low profile

The connector is provided with a large-diameter guide that can absorb up to  $\pm 1$ mm horizontal mating deviation while having the compact dimensions of 7.5mm (W) x 5.9mm (L) x 3.0mm (H).

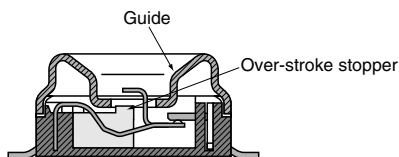
- ### 2. Excellent frequency characteristics
- Suitable for 2GHz operation and for use in next-generation mobile phones.
- VSWR: Max. 1.30 (1 to 2 GHz)
  - Insertion loss: Max. 0.35dB (1 to 2 GHz)
  - Isolation: Min. 26.2dB (1 to 2 GHz)

### 3. Floating mechanism absorbs mating deviation

The floating mechanism absorbs mating deviation in the horizontal and vertical directions of  $\pm 1$ mm and  $-2$ mm respectively on the plug side. The receptacle is equipped with an over-stroke stopper and guides to facilitate equipment design.

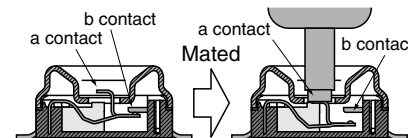


Receptacle

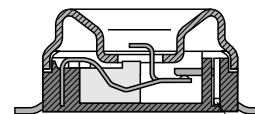


### 4. Switching function

Includes a switching function that can be used to switch the hands-free goods to the vehicle antenna, and for switching circuits with automatic inspection equipment.



### 5. Design prevents solder flux from creeping up.



Bottom surface has a molded cover construction.

Terminal holder is equipped with a flux hold.

## APPLICATIONS

1. Connecting mobile phones to hands-free goods.
2. Automatic inspection equipment used in mobile phone assembly processes.

## PRODUCT TYPES

Product	Part No.	Packing quantity	
		Inner carton	Outer carton
Receptacle	AXR111221V	3,000 pcs. (1 reel)	15,000 pcs.
Plug (set)	AXR112225	—	2,000 pcs.



(AXR1)

# SPECIFICATIONS

## 1. Characteristics

Item		Specifications	Conditions	
Electrical characteristics	Insulation resistance (initial)	Min. 1,000MΩ	Using 500V DC megger (applied for 1min.)	
	Initial breakdown voltage	250 V AC for 1min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.	
	Contact resistance (initial)	Common to N.C.	Max. 50mΩ	Measured based on the HP4338B measurement method of JIS C 5402.
		Shield to shield	Max. 10mΩ	
High frequency characteristics	Nominal impedance	50Ω		
	VSWR (initial)	Common to N.C.	Max. 1.30 (to 2GHz)	Measurement method in accordance with Matsushita Electric Works standards.
		Common to N.O.	Max. 1.30 (to 2GHz)	Measurement method in accordance with Matsushita Electric Works standards.
	Insertion loss (initial)	Common to N.C.	Max. 0.35dB (to 2GHz)	Measurement method in accordance with Matsushita Electric Works standards.
		Common to N.O.	Max. 0.45dB (to 2GHz)	Measurement method in accordance with Matsushita Electric Works standards.
Isolation (initial)		Min. 26.2dB (to 2GHz)	Measurement method in accordance with Matsushita Electric Works standards.	
Environmental characteristics	Ambient temperature	-40 to +85°C	No freezing at low temperature	
Lifetime characteristics	Insertion and removal life	Mechanical: 30,000 times		
Applicable wire		RG174 or equivalent		

## 2. Material and surface treatment

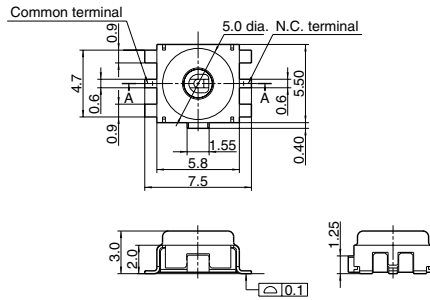
Portion		Material	Surface	
Receptacle	Resin-molding portion	Heat resistant resin (UL94V-0) Black	—	
	Metallic parts	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Au plating on surface (except for cut surface of the terminal)	
Plug	Body	Plug case	Heat resistant resin (UL94V-0) Black	
		Plug metal case	Copper alloy	Ni plating on base, Au plating on surface
		Plug post	Copper alloy	Ni plating on base, Au plating on surface
		Centering guide	Copper alloy	Ni plating
		Case	Copper or zinc alloy	Ni plating
	Coil spring	Stainless steel	—	
	Ring	Copper alloy	Ni plating	
Cover	Stainless steel	—		

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

Receptacle  
AXR111221V

**CAD Data**

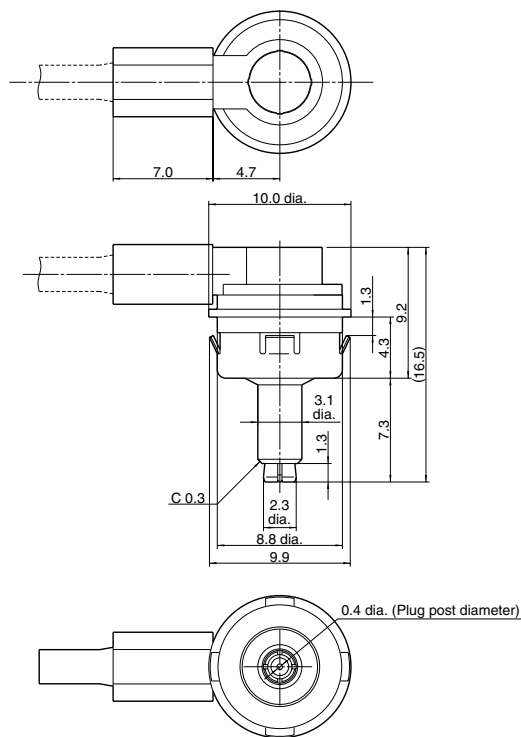


General tolerance: ±0.3

**Plug**  
**(assembled condition)**

AXR112225

**CAD Data**

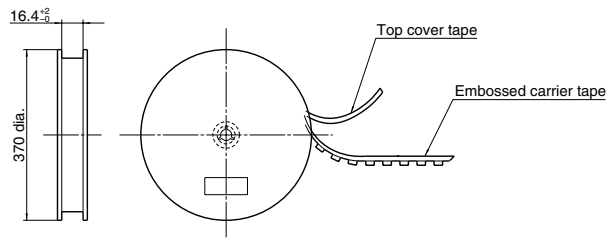
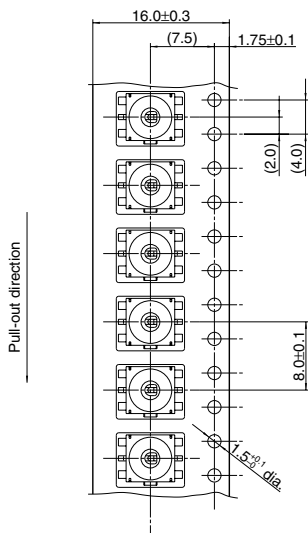


General tolerance: ±0.3

**EMBOSSED TAPE DIMENSIONS** (unit: mm)

• Tape dimensions (Conforming to JIS C 0806-1995)

• Reel dimensions (Conforming to JIS C 0806-1995)



• Connector orientation with respect to direction of progress of embossed tape

Type	Receptacle
Direction of tape progress ↓	

## NOTES

### 1. Receptacle

1) About attaching the cover

The construction of this product is not drip proof or dustproof. We recommend that you cover the receptacle to prevent entry of foreign matter such as dust and dirt, and liquids such as perspiration. The cover should be durable enough to withstand repeated, long-term use, and should not detach readily from the unit.

2) PCB design

Use the recommended design to ensure that the mechanical strength of the soldered section of the receptacle terminal is maintained.

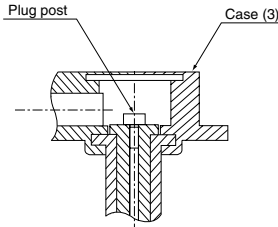
### 2. Plug

1) The amount of floating on the plug side of the product is  $\pm 1.0\text{mm}$  in the radial direction, and  $0.4\text{mm}$  to  $2.0\text{mm}$  in the axial direction. When designing the bodies of hands-free goods or inspection jigs, the clearance with the receptacle on the body of the mobile phone must be within these limits. Also, use a construction for the body that prevents over stroke in the axial direction.

2) When designing hands-free goods and inspection jigs, provide a means of securing the cord so that stress does not act on the plug body if the cord is pulled.  
3) The construction is such that the edge section of the plug is exposed when the plug is fixed to the hands-free goods. Provide warnings in the instruction manual to alert users to the fact that excessive force applied to the edge section of the plug can cause damage.

### 4) Soldering

- Take care to ensure that solder flux does not adhere to the contacts. This can result in a poor electrical connection.
- Take care not to melt the resin sections with the soldering iron.
- Take care to avoid formation of solder bulbs, and to avoid shorting the plug post to the case (3) with solder.



5) Before soldering the coaxial cable, crimp the cable to the case using the ring to secure it and ensure that no load is applied to the soldered parts of the coaxial cable.

6) This product is designed so that it can be secured to either hands-free goods or an inspection jig with a one-touch operation. When it is installed to the body of such a unit, ensure that it is secured firmly.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

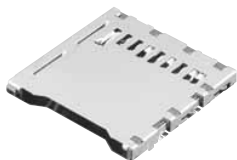
Enhanced robustness and EMI resistance achieved by the laser-welded double-sided metal shell (SDHC card compatible, with card jump-out and wrong insertion prevention functions)

**SOCKETS FOR  
SD MEMORY CARD (R TYPE)**

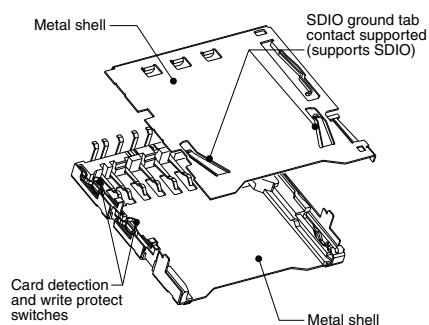
New



Standard type



Reverse type



**Compliance with RoHS Directive**

**FEATURES**

**1. Superior EMI resistance and terminal coplanarity achieved by the double-sided metal shell**

The laser-welded double-sided shell has high robustness and shielding performance. Providing a ground pattern when mounting the socket is effective for EMI protection.

The high resistance to reflow heat prevents the reflow process from degrading the terminal coplanarity.

**2. The structures of the card detection and write protection switches prevent the card thickness from affecting the detection accuracy.**

The side detection system and the highly dust-resistant V notch contact structure ensure high contact reliability.

**3. Equipped with the card jump-out prevention function existence**

**4. Card locking structure for forced ejection protection**

The lock pin in the metal shell prevents unwanted ejection of the card.

**5. Compatible with the SDIO standard (with ground tab)**

Compatible with the SDIO standard, allowing use for expansion modules with an interface function

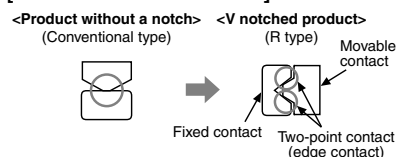
**APPLICATIONS**

• DSCs, DVCs, PDAs, handheld terminals, notebook PCs, gaming consoles, car navigation systems, portable audio devices, etc. that use an SD card

**• What is V notch construction?**

By making contact with the edges and thus increasing the contact pressure, this product can eliminate foreign matters more effectively than conventional products.

**[Cross Section of Contacts]**



**ORDERING INFORMATION**

AXA **2** **R** **3** **1**

2R: Sockets for SD memory card (R type)

<Board mounting direction>

6: On board mounting reverse type (outside terminal)

7: On board mounting standard type (outside terminal)

<Eject type>

3: Push-push type

<Standoff height>

0: Without standoff

3: Stand off 1.5 mm

<Function>

2: Without card jump-out prevention function, with card detection switch and with write protect switch

6: With card jump-out prevention function, with card detection switch and with write protect switch

<Terminal/Positioning boss>

1: SMD terminal/With positioning boss

<Packing>

T: 35 pcs. tray package × 20 trays

P: 350 pcs. embossed tape and paper reel package × 2 reels

**PRODUCT TYPES**

Product name	Eject type	Card detection switch	Card jump-out prevention function	Mounting type	Standoff height (mm)	Part No.	Packing quantity	
							Inner carton	Outer carton
Sockets for SD memory card (R type)	Push-push type	Available	Available	Standard mounting type	0	AXA2R73061*	Asterisk "*" mark on end of Part No.; P: 350 pieces (1 reel) (Embossed tape package) T: 35 pieces (1 tray) (Tray package)	Asterisk "*" mark on end of Part No.; P: 700 pieces (2 reels) (Embossed tape package) T: 700 pieces (20 trays) (Tray package)
					1.5	AXA2R73361*		
				Reverse mounting type	0	AXA2R63061*		
					1.5	AXA2R63361*		
			Not available	Standard mounting type	0	AXA2R73021*		
					1.5	AXA2R73321*		
				Reverse mounting type	0	AXA2R63021*		
					1.5	AXA2R63321*		

**SPECIFICATIONS**

**1. Characteristics**

Item	Specifications	Condition	
Electrical characteristics	Rated Current	0.5 A/1 terminal	
	Contact resistance	Signal contact portion: Max. 100mΩ (Initial) Detection contact portion: Max. 150mΩ (Initial) (Card detection and write protection detection)	Measured based on the HP4338B measurement method of JIS C5402
	Insulation resistance	Min. 1,000MΩ (Initial)	Using 500V DC megger (applied for 1 min.)
	Breakdown voltage	500V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Mechanical characteristics	Vibration resistance	Frequency: 10 to 55 Hz Acceleration: 20.0 m/s <sup>2</sup> (2.0G) No current interruption for more than 0.1 μs	
	Card insertion force	Max. 40N	
	Card removal force	Min. 1N, Max. 40N	
Lifetime characteristics	Insertion and removal life: 10,000 times Contact resistance after testing: Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ (Card detection and write protection detection)	Insertion and removal speed are at a rate of 600 times/hour or less.	
Environmental characteristics	Ambient temperature	-25°C to +90°C	No freezing or condensation in low temperatures
	Storage temperature	-40°C to +90°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)	No freezing or condensation in low temperatures
	Resistance to soldering heat	Reflow soldering: peak temperature 250°C or less Hand soldering: Soldering iron temperature 300°C, 5 sec. or less	Sockets (shell) surface temperature for using infrared reflow soldering machine
	Humidity tolerance (mated condition)	Contact resistance: Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ (Card detection and write protection detection) Insulation resistance: Min. 100 MΩ	MIL-STD-1344A, METHOD 1002 Temperature: 40±2°C, Humidity: 90 to 95%RH, Test time: 500 hours
Applicable memory card	SD memory card and Multi-media card <sup>*1</sup>		
Unit weight	2.9g		

Note: \*1. The above characteristics cannot be guaranteed when a card other than the specified ones is used.

**2. Material and surface treatment**

Portion	Material	Surface
Signal contact	Copper alloy	Contact portion: Ni plating on base, PdNi plating + Au flash plating Soldering portion: Ni plating on base, Au plating on surface
Detection contact		Contact/Soldering portion: Ni plating on base, Au plating on surface
Retention solder tab	Stainless steel	Soldering portion: Ni strike, Partial Au plating

**DIMENSIONS** (Unit: mm)

**1. On board mounting standard type (Without standoff)**

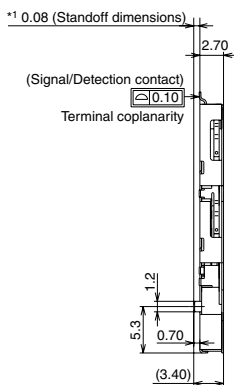
Part No.

AXA2R73061\*

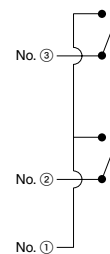
(With card jump-out prevention function)

AXA2R73021\*

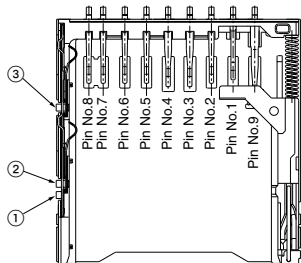
(Without card jump-out prevention function)



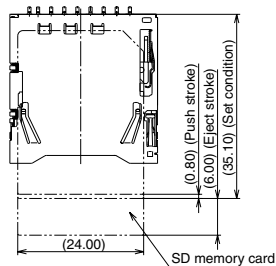
Circuit schematic



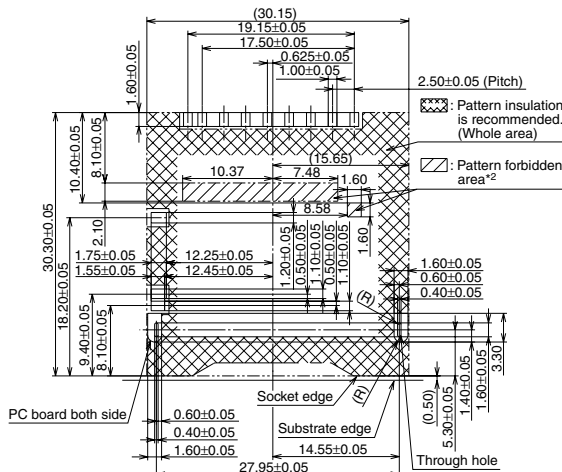
Detailed internal view



View of set card



Recommended PC board pattern (TOP VIEW)



Contact status of the card detection and write protect switches

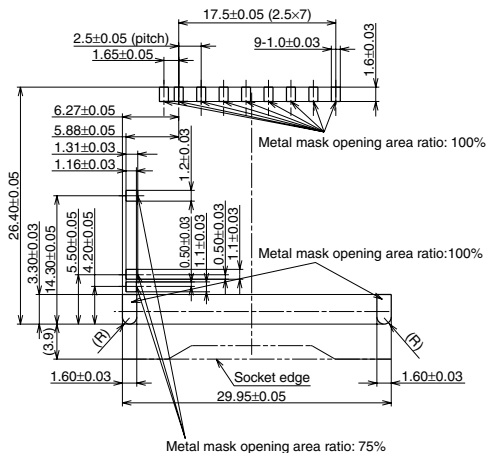
Card attachment condition	Write protect switch		Card detection switch
	Write unable	Write enable	
Card not attached	Open	Open	Open
Card attached	Open	Closed	Closed
Terminal number	①-②		①-③

\*1 Standoff dimension is the dimension that takes into account the solder resist or silk screen printing thickness on the PC board in order to preserve the dimension from the surface of the PC board to the bottom of the socket.

\*2 This is the pattern forbidden area. It is provided to prevent the signal contact tips from contacting the substrate surface.

Recommended metal mask pattern

Metal mask thickness: 120µm



# AXA2R

## 2. On board mounting standard type (Standoff 1.5mm)

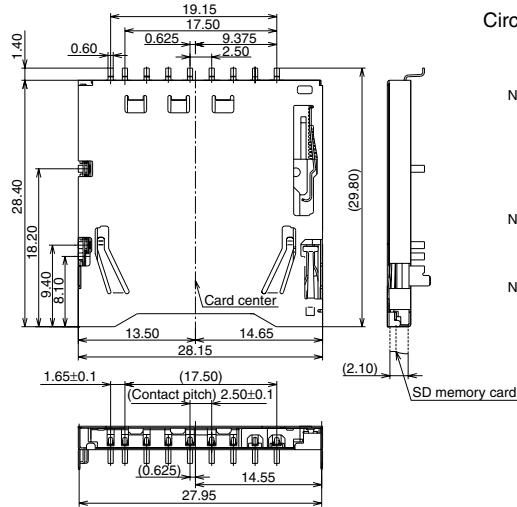
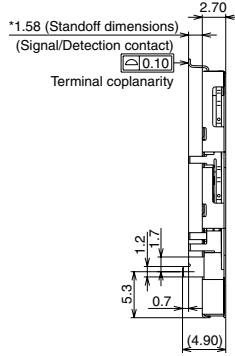
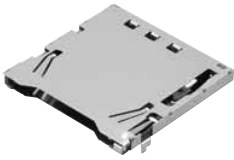
Part No.

AXA2R73361\*

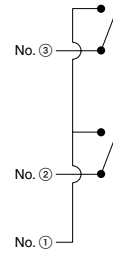
(With card jump-out prevention function)

AXA2R73321\*

(Without card jump-out prevention function)



Circuit schematic



Narrow-pitch connectors

I/O connectors

Interface connectors

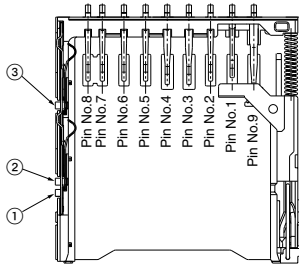
Sockets for memory card

Connectors for industrial equipment

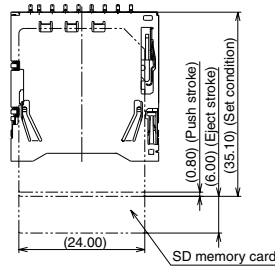
IC sockets

Information

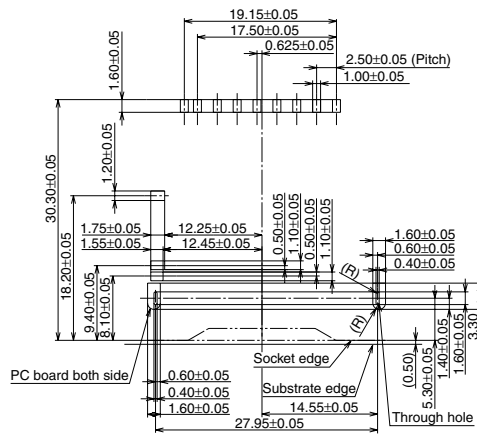
Detailed internal view



View of set card



Recommended PC board pattern (TOP VIEW)

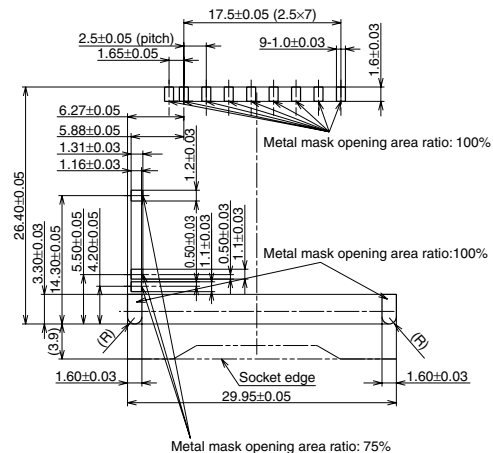


Contact status of the card detection and write protect switches

Card attachment condition	Write protect switch		Card detection switch
	Write unable	Write enable	
Card not attached	Open	Open	Open
Card attached	Open	Closed	Closed
Terminal number	①-②		①-③

\* Standoff dimension is the dimension that takes into account the solder resist or silk screen printing thickness on the PC board in order to preserve the dimension from the surface of the PC board to the bottom of the socket.

Recommended metal mask pattern  
Metal mask thickness: 120μm



3. On board mounting type (Without standoff)

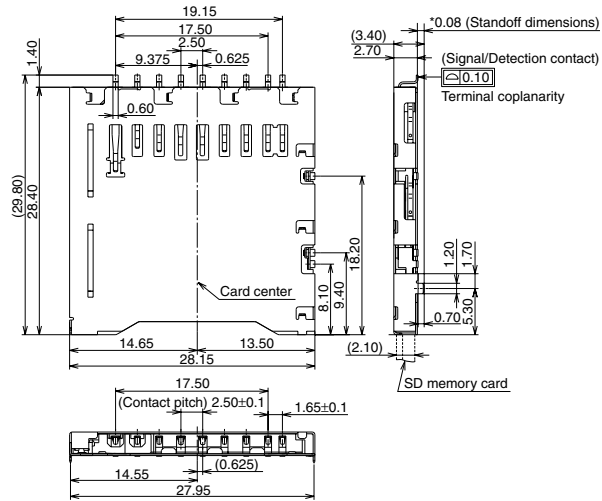
Part No.

AXA2R63061\*

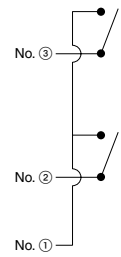
(With card jump-out prevention function)

AXA2R63021\*

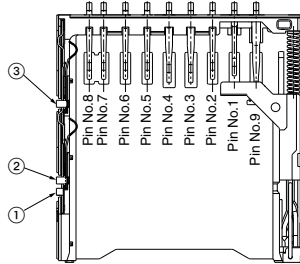
(Without card jump-out prevention function)



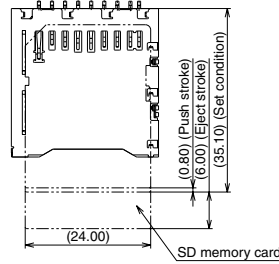
Circuit schematic



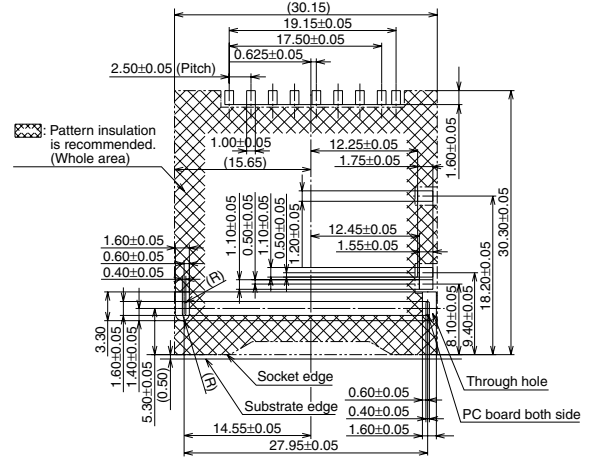
Detailed internal view



View of set card



Recommended PC board pattern (TOP VIEW)



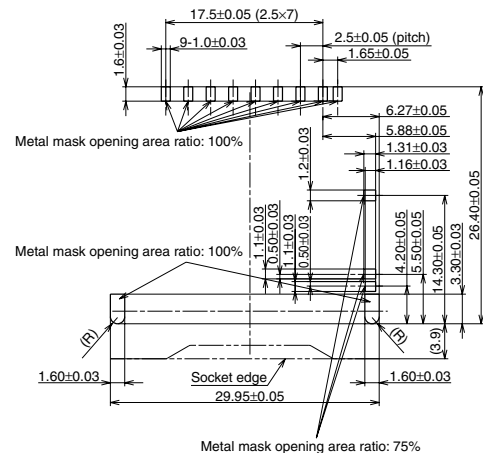
Contact status of the card detection and write protect switches

Card attachment condition	Write protect switch		Card detection switch
	Write unable	Write enable	
Card not attached	Open	Open	Open
Card attached	Open	Closed	Closed
Terminal number	①-②		①-③

\* Standoff dimension is the dimension that takes into account the solder resist or silk screen printing thickness on the PC board in order to preserve the dimension from the surface of the PC board to the bottom of the socket.

Recommended metal mask pattern

Metal mask thickness: 120µm

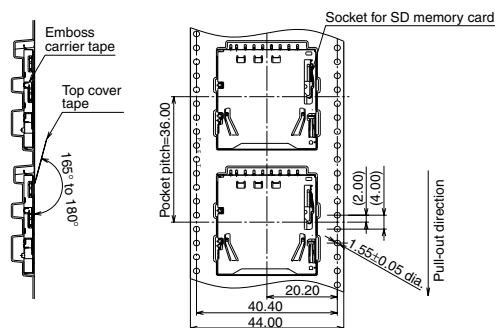




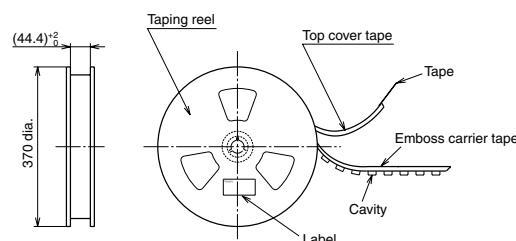


## EMBOSSED TAPE AND REEL (Unit: mm)

### • Tape dimensions



### • Reel dimensions (Conforming to EIAJ ET-7200B)



## NOTES

### 1.Regarding the design of PC board patterns

Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

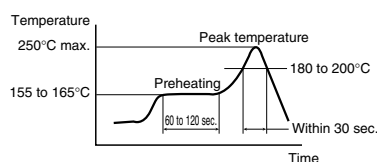
### 2. Regarding the socket mounting

- 1) When reflow soldering when the slider is locked, heat will cause the slider to deform and not work. Therefore, please confirm that the slider lock is released before mounting if you have inserted and removed a card before soldering.
- 2) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.

### 3. Soldering

- 1) Reflow soldering
  - (1) Screen-printing method is recommended for cream solder printing.
  - (2) Use the recommended foot pattern for cream solder printing (screen thickness: 0.12 mm).
  - (3) The metal mask opening ratio for the COM contact (one) and NO contacts (two) must be 75%.
  - (4) When applying the different thickness of a screen, please consult us.
  - (5) The following diagram shows the recommended reflow soldering temperature profile.

The recommended conditions for the reflow temperature profile



(6) Measure the temperature at the connector surface.

(7) If the reverse side of the board undergoes reflow soldering after the socket is reflow-soldered, fix the socket with tape or adhesive; otherwise, the socket may drop. The socket can withstand two iterations of reflow soldering.

### 2) Hand soldering

- Set the soldering tip to 300°C, and solder for no more than 5 seconds.
- Be aware that for the 0 mm standoff type, solder creeping at the retention solder tab sections may occur if soldering is conducted for long periods or if too much solder is used.

### 4. Cleaning after soldering

Inside the socket there is a slider section and card detection contact/write protection mechanism. If anything such as flux remains inside after washing, insertion and removal will be hampered and contact will be faulty. Therefore, do not use methods that involve submersion when cleaning. (Partial cleaning of the PC board and soldered terminals is possible.)

### 5. After PC board mounting

- 1) Warping of the PC board should be no more than 0.03 mm for the entire connector length.
- 2) When assembling PC boards or storing them in block assemblies, make sure that undue weight is not exerted on a stacked socket.

3) Be sure not to allow external pressure to act on sockets when assembling PC boards or moving in block assemblies.

### 6. Handling single components

- 1) Make sure not to drop or allow parts to fall from work bench

2) Be cautious when handling because excessive force applied to the terminals will cause deformation and loss of terminal coplanarity.

3) Repeated bending of the terminals may break them.

### 7. Card fitting

1) These products are made for the design of compact and lightweight devices and therefore the molded part is very thin. For this reason, design the device to prevent undue wrenching forces from being applied to the product during use.

2) The sockets are constructed to prevent reverse card insertion. Caution is required because repeated, mistaken reverse insertion may damage the socket and card.

3) When not soldered, be careful not to insert and remove the socket's card. Doing so will cause a decrease in anchoring ability of the molded part and loss of coplanarity.

4) Forcibly removing a fitted card may degrade the card removal prevention lock. To remove a card, be sure to push the card in the insertion direction to release the slider lock before pulling out the card.

5) Please include notes to the following effect in your user manuals.

6) The card ejection protection lock does not work for MMC.

7) The socket does not have a wrong insertion protection structure for MMC.

Be careful about the insertion direction.

8) If an MMC is inserted, it is possible that a short circuit between the socket's signal contacts No. 7 and 8 and the MMC's contact No. 7 may be caused.

Narrow-pitch connectors	<p><b>8. Device design</b></p> <p>1) Contact failure may result if dust or dirt enters the contact section. Please take appropriate measures when designing the device to prevent this from happening, for example by adding a cover.</p> <p>2) To ensure smooth insertion and removal of cards, please design the chassis so that no force is applied to the metal shell on top of the socket. If a force is present that pushes down on the metal shell, the card will be pressed, which might prevent ejection.</p> <p>3) Please provide a guide or similar to keep the socket from having force applied to it when inserting and removing.</p>	<p><b>9. Card jump-out prevention function</b></p> <p>1) This socket has a card jump-out prevention function that works under defined conditions. However, we strongly recommend that you instruct users to carefully handle the product to avoid accidents due to improper use or product liability risks.</p> <p>2) The life of the card jump-out prevention function is not guaranteed under the following conditions: (1) while the card is inserted incompletely, (2) while the card is inserted in the wrong direction, and (3) after the card is inserted in the wrong direction</p> <p>3) In order to prevent card jump-out, resistance has been added that affects card insertion and removal. Therefore, you will feel resistance when inserting and removing the card. This is normal.</p>	<p><b>10. Others</b></p> <p>If you coat the PC board after soldering for insulation and to prevent wear, make sure that the coating does not adhere to the connector.</p>
I/O connectors			
Interface connectors			
<b>Sockets for memory card</b>			
Connectors for industrial equipment			
IC sockets			
Information			

## TRIPLE CONTACT CONSTRUCTION OF POWER TERMINAL FOR SUPERIOR PREVENTION OF MINUTE CIRCUIT CUTOFF FROM DROPPING

## SOCKETS FOR miniSD™ CARD

### FEATURES

#### 1. Triple contact construction for improved prevention of minute circuit cutoff from dropping.

The terminals in the power supply section have been made with triple contacts. This construction means that there will be no circuit cutoff over 0.1 μs even if the device is dropped.

#### 2. Robustness and resistance to ESD and EMI have been fortified using upper and lower metal shells.

The socket is effective against ESD and EMI, since both the front and back of the card are covered with metal when inserted.

Also, since a more robust design is possible compared to single-sided plastic molding, the influence of reflow heat is reduced.

#### 3. Constructed with double spring and horseshoe shaped slider

Since a horseshoe shaped slider and double spring system is used and since the entire bottom of the card pushes the slider, the right-to-left balance is good, which allows smooth insertion and removal.

#### 4. Better contact reliability through use of V notch construction in detection contact.

V notch construction, a design proven in our narrow-pitch connectors, is used in the detection contact. This increases resistance to the environment and to dust.

#### 5. 2.3 mm ultra-thin socket thickness contributes to device compactness

Space savings realized. Width: 24.3 mm (incl. solder terminal) × Depth: 21.5 mm (incl. lead terminal) × Thickness: 2.3 mm

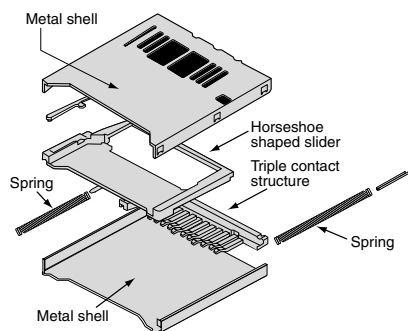
#### 6. Simple card lock mechanism (prevents card from falling out)



Standard mounting type



Reverse mounting type

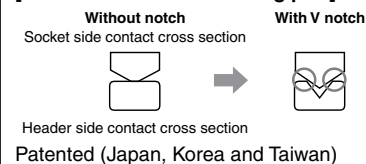


Compliance with RoHS Directive

#### ● What is V notch construction?

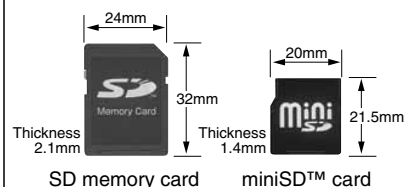
By having the contacting portion of the detection contact make contact with the edges and by increasing the per-unit-area contact pressure, this product is more effective at the removal of foreign matter. This also helps to prevent foreign matter from getting inside.

#### [Cross section of contacting part]



#### What is a miniSD™ card?

To satisfy the trend toward applications that are getting thinner and more compact, the miniSD card, at 40% the volume, is an even more compact version of the SD memory card that is now enjoying a solid reputation in the market.



### APPLICATIONS

Use in applications (mobile phones and voice recorders, etc.) that employ a miniSD™ card.

- 1) Mobile phones
- 2) Voice recorders



## ORDERING INFORMATION

AXA 1   3 0   1  

1: Sockets for miniSD™ card

<Board mounting direction>

6: On board mounting reverse type (outside terminal)

7: On board mounting standard type (outside terminal)

<Eject type>

3: Push-push type

<Stand off height>

0: Not available (0 mm)

<Function>

1: Without card jump-out prevention function      5: With card jump-out prevention function  
With card presence detection SW                      With card presence detection SW

<Terminal/Positioning boss>

1: SMD terminal/with positioning boss

<Packing>

T: 40 pcs., tray package × 20 trays

P: 350 pcs. embossed tape and paper reel package × 2 reels

## PRODUCT TYPES

Product name	Eject type	Card detection	Card jump-out prevention function	Mounting type	Standoff height (mm)	Part No.	Packing quantity	
							Inner carton	Outer carton
Sockets for miniSD™ card	Push-push type	Available	Not available	On board mounting standard type	0	AXA173011*	Asterisk "*" mark on end of Part No.; P: 350 pieces (1 reel) (Embossed tape package) T: 40 pieces (1 tray) (Tray package)	Asterisk "*" mark on end of Part No.; P: 700 pieces (2 reels) (Embossed tape package) T: 800 pieces (20 trays) (Tray package)
				On board mounting reverse type		AXA163011*		
			Available	On board mounting standard type		AXA173051*		
				On board mounting reverse type		AXA163051*		

## SPECIFICATIONS

### 1. Characteristics (Performance when miniSD™ card is mated. Based on miniSD™ card specification Ver. 1.02.)

Item		Specifications	Condition
Electrical characteristics	Rated voltage	7.0V DC	
	Rated current	0.5A DC/1 terminal	
	Contact resistance	Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ	Measured with the HP4338B
	Insulation resistance	Min. 1,000MΩ	Using 500V DC megger (applied for 1 min.)
	Breakdown voltage	500V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Mechanical characteristics	Vibration resistance	Frequency: 10 to 55 Hz Acceleration: 20.0 m/s <sup>2</sup> {2.0G} No current interruption for more than 0.1 μs (signal contact)	
	Card locking force	Max. 40N {4.08kgf}	
Lifetime characteristics	Insertion and removal life of card	Insertion and removal life: 10,000 times Contact resistance after testing: Signal contact portion: Max. 100mΩ Detection contact portion: Max. 150mΩ	Insertion and removal speed are at a rate of 500 times/hour or less.
Environment characteristics	Ambient temperature	-25°C to +85°C	No freezing or condensation in low temperatures
	Storage temperature	-40°C to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)	No freezing or condensation in low temperatures
	Resistance to soldering heat	Reflow soldering: peak temperature 250°C or less manual soldering: Soldering iron tip temperature 300°C, 5 sec. or less	Sockets (shell) surface temperature for using infrared reflow soldering machine
Applicable memory card		miniSD™ card (based on specification Ver. 1.02)	
Unit weight		1.62g	

Note: Please consult us for card falling out prevention mechanism.

### 2. Material and surface treatment

Portion	Material	Surface
Signal contact	Copper alloy	Contact portion: Ni plating on base, PdNi plating + Au plating on surface Soldering portion: Ni plating on base, Au plating on surface
Detection contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Soldering portion: Ni plating on base, Au plating on surface
Retention fittings	Stainless steel	Soldering portion: Ni plating on base, Au + Pd plating on surface

**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/>

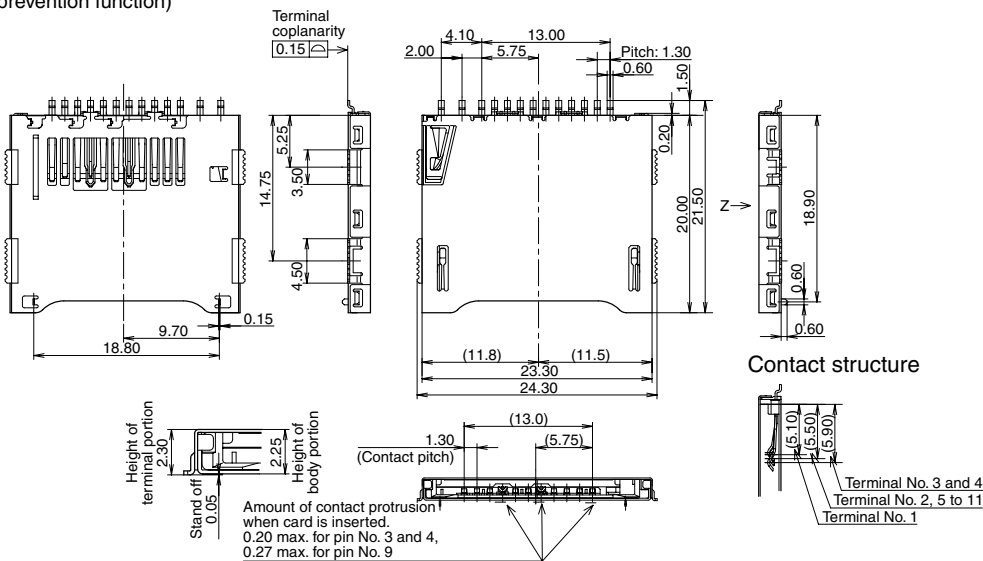
**1. On board mounting standard type (outside terminal)**

Part No.

AXA173011\*

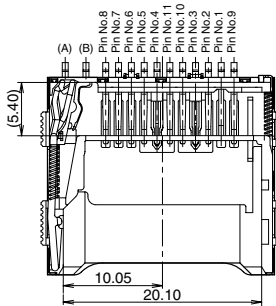
AXA173051\* (with card jump-out prevention function)

**CAD Data**

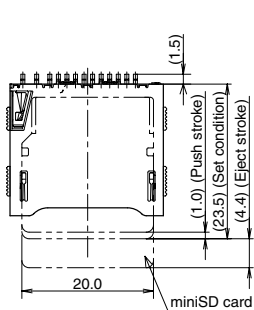


Detailed internal view

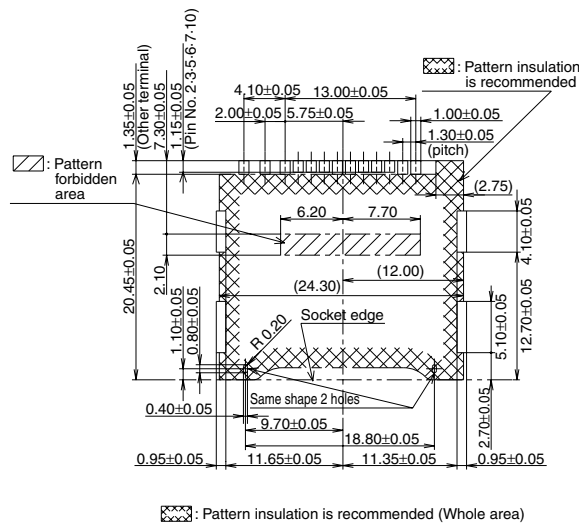
(as seen from Z direction with the cover shell removed)



View of set card



Recommended PC board pattern (TOP VIEW)



Card detection switch contact condition chart

Card attachment condition	Card detection switch
Card not attached	Open
Card attached	Closed
Terminal number	(A)-(B)

# (AXA1)

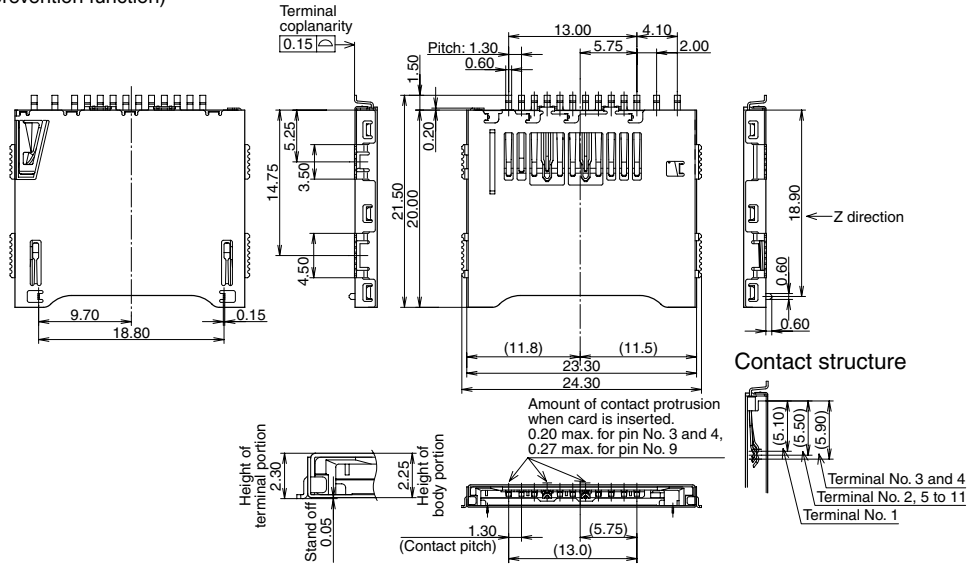
## 2. On board mounting reverse type (outside terminal)

Part No.

AXA163011\*

AXA163051\* (with card jump-out prevention function)

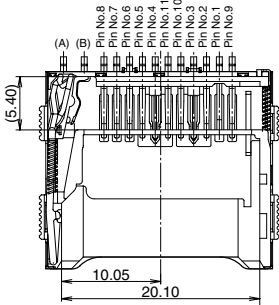
### CAD Data



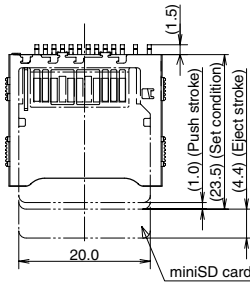
General tolerance:  $\pm 0.2$

Detailed internal view

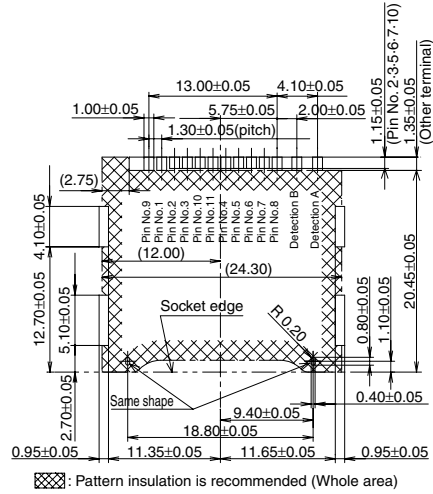
(as seen from Z direction with the cover shell removed)



View of set card



Recommended PC board pattern (TOP VIEW)

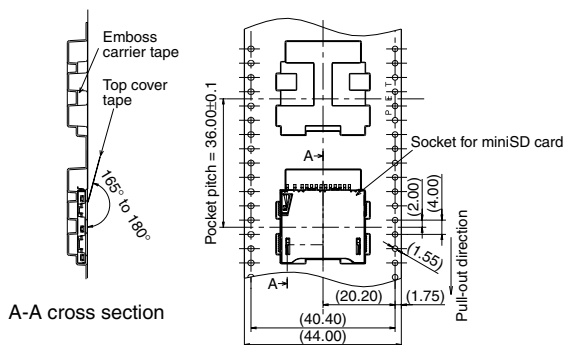


### Card detection switch contact condition chart

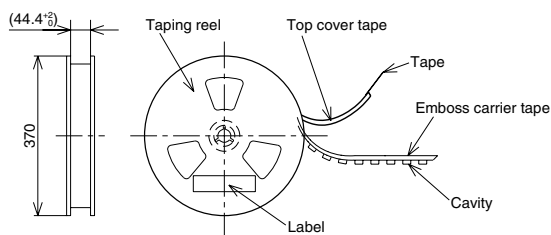
Card attachment condition	Card detection switch
Card not attached	Open
Card attached	Closed
Terminal number	(A)-(B)

**EMBOSSED TAPE AND REEL** (Unit: mm)

## • Tape dimensions



## • Reel dimensions (Conforming to JIS C 0806-1995)

**NOTES****1. Regarding the design of PC board patterns**

Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

**2. Regarding the socket mounting**

1) When reflow soldering when the slider is locked, heat will cause the slider to deform and not work. Therefore, please confirm that the slider lock is released before mounting if you have inserted and removed a card before soldering.

2) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.

**3. Soldering**

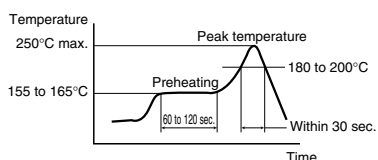
1) Reflow soldering

(1) Screen-printing method is recommended for cream solder printing.

(2) Use the recommended foot pattern for cream solder printing (screen thickness: 0.15 mm).

(3) When applying the different thickness of a screen, please consult us.

(4) Use the recommended reflow temperature profile conditions shown on the right for infrared reflow soldering.



(5) Measure the temperature at the connector surface.

2) Hand soldering

Set the soldering tip to 300°C, and solder for no more than 5 seconds.

**4. Cleaning after soldering**

Inside the socket there is a slider section and card detection contact/write protection mechanism. If anything such as flux remains inside after washing, insertion and removal will be hampered and contact will be faulty. Therefore, do not use methods that involve submersion when cleaning. (Partial cleaning of the PCB and soldered terminals is possible.)

**5. After PC board mounting**

1) Warping of the PC board should be no more than 0.03 mm for the entire connector length.

2) When assembling PCBs or storing them in block assemblies, make sure that undue weight is not exerted on a stacked connector.

3) Be sure not to allow external pressure to act on connectors when assembling PCBs or moving in block assemblies.

**6. Handling single components**

1) Make sure not to drop or allow parts to fall from work bench

2) Be cautious when handling because excessive force applied to the terminals will cause deformation and loss of terminal coplanarity.

3) Repeated bending of the terminals may break them.

**7. Card fitting**

1) These products are made for the design of compact and lightweight devices and therefore the molded part is very thin. For this reason, design the device to prevent undue wrenching forces from being applied to the product during use.

2) The sockets are constructed to prevent reverse card insertion. Caution is required because repeated, mistaken reverse insertion may damage the socket and card.

3) When not soldered, be careful not to insert and remove the socket's card. Doing so will cause a decrease in anchoring ability of the mated part and loss of coplanarity.

4) Forcibly removing a fitted card may degrade the card removal prevention lock. To remove a card, be sure to push the card in the insertion direction to release the slider lock before pulling out the card.

**8. Device design**

1) Contact failure may result if dust or dirt enters the contact section. Please take appropriate measures when designing the device to prevent this from happening, for example by adding a cover.

2) To ensure smooth insertion and removal of cards, please design the chassis so that no force is applied to the metal shell on top of the socket. If a force is present that pushes down on the metal shell, the card will be pressed, which might prevent ejection.

3) Please provide a guide or similar to keep the socket from having force applied to it when inserting and removing.

**9. Others**

If you coat the PCB after soldering for insulation and to prevent wear, make sure that the coating does not adhere to the socket.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.



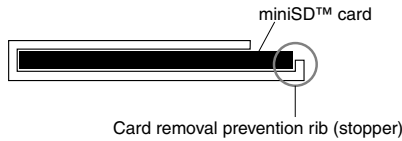
**PUSH-IN, LIFT-OUT  
CONSTRUCTION REALIZED  
FOR STABLE miniSD™ CARD  
INSERTION AND REMOVAL**

**ADAPTER FOR  
miniSD™ CARD**

**FEATURES**

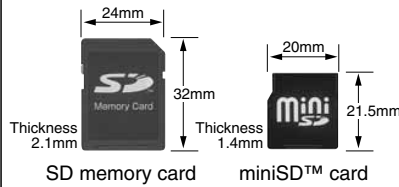
**1. Push-in, lift-out construction realized for stable miniSD™ card insertion and removal**

The structure is designed so that when removing the adapter from an SD socket, a card removal prevention rib at the rear of the adapter will prevent only the miniSD™ card from being removed.



**What is a miniSD™ card?**

To satisfy the trend toward applications that are getting thinner and more compact, the miniSD™ card, at 40% the volume, is an even more compact version of the SD memory card that is now enjoying a solid reputation in the market.



**APPLICATIONS**

Inserting a miniSD™ card inside this adapter allows you to use it in devices that use SD memory cards such as photo printers and PCs.

1. Mobile phone



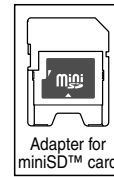
1. TV



2. DSC



2. PC

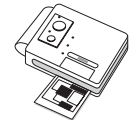


3. PDA



\*Devices that use miniSD™ cards.

4. Photo printer



Compliance with RoHS Directive

**PRODUCT TYPES**

Product name	Insertion and removal type	Logo printing area characteristics	Part No.	Packing quantity	
				Inner carton	Outer carton
Adapter for miniSD™ card	Push-in, lift-out type	Logo seal printing	AXA1A100	40 pieces (1 tray)	1,000 pieces (25 trays)

Note: This part number is for the customer evaluation sample. We will manufacture according to special order with specifications being met such as the inclusion of customer-specified logos in the logo printing area.

## SPECIFICATIONS

### 1. Characteristics (Complies with miniSD™ card and application note specification Ver. 1.0.)

Item	Specifications	Condition
Electrical characteristics	Rated current	0.5A/1 terminal
	Contact resistance	Max. 100mΩ
	Insulation resistance	Min. 1,000MΩ (Initial)
	Breakdown voltage	500V AC for 1 min. (Initial)
Mechanical characteristics	Vibration resistance	No current interruption for more than 0.1 μs
	Insertion and removal force of miniSD™ card	Insertion force: Max. 40N {4.08kgf} Removal force: Min. 1N {0.10kgf}, Max. 40N {4.08kgf}
	Insertion and removal force of adapter	Insertion force: Max. 40N {4.08kgf} Removal force: Min. 1N {0.10kgf}, Max. 40N {4.08kgf}
Lifetime characteristics	Insertion and removal life: 10,000 times Contact resistance after testing: Max. 100mΩ	Measured based on the HP4338B measurement method of JIS C 5402 Using 500V DC megger (applied for 1 min.) Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA. Frequency: 10 to 2,000 Hz Acceleration: 20.0 m/s <sup>2</sup> {2.0G} Measured while mated with SD memory card socket mounted on evaluation board. Force required for insertion and removal of miniSD™ card to and from miniSD™ adapter. Force required for insertion and removal into and out of SD memory card socket with a miniSD™ card mated.
Environment characteristics	Ambient temperature	-25°C to +85°C
	Storage temperature	-40°C to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)
	Humidity tolerance (mated condition)	Contact resistance: Max. 100mΩ Insulation resistance: Min. 100MΩ
Unit weight	1.40g	No freezing or condensation in low temperatures No freezing or condensation in low temperatures MIL-STD-1344A, METHOD 1002 Temperature: 40±2°C, Humidity: 90 to 95%RH, Test time: 500 hours

### 2. Material and surface treatment

Portion	Material	Surface
Signal contact	Copper alloy	Contact portion: Ni plating on base, PdNi + Au plating on surface

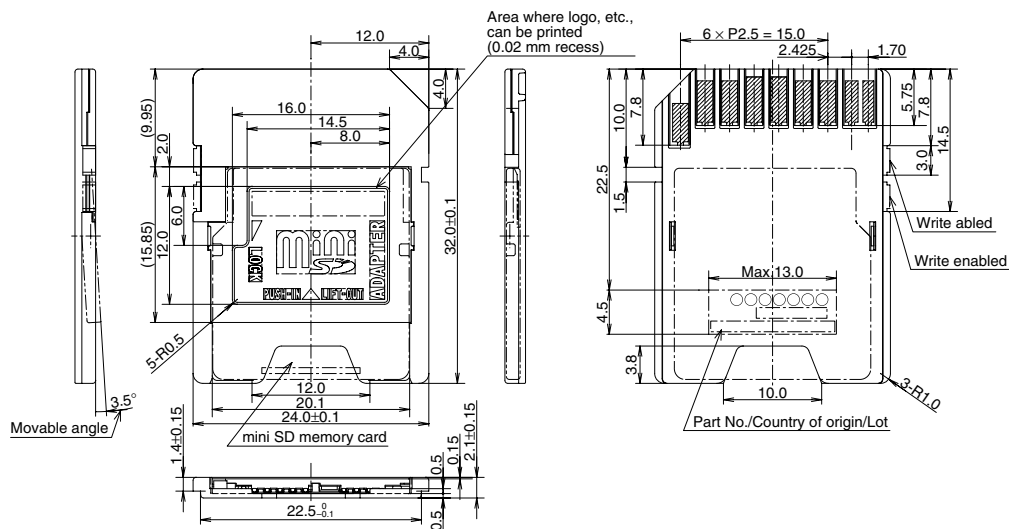
### 3. Applicable memory card and socket

Memory card	Socket
Cards complying with miniSD™ card specification Ver. 1.02.	Sockets complying with SD memory card specification Ver. 2.0.

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

### CAD Data

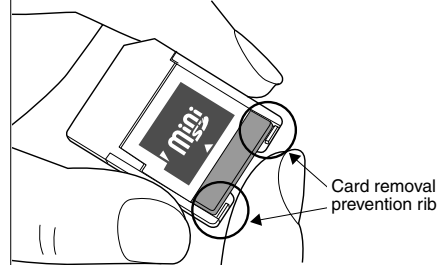
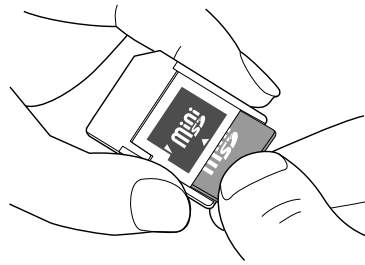
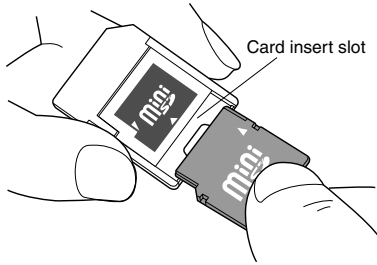


Note: An indication, such as a logo, specified by the customer can be marked on the SD logo-printed surface through a separate agreement on the specifications.

# (AXA1)

## How to insert and remove card

### Card insertion

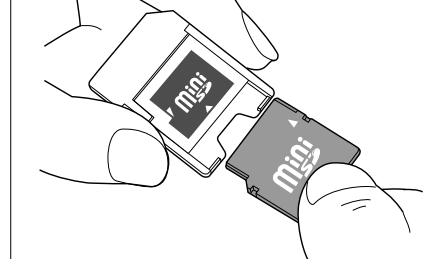
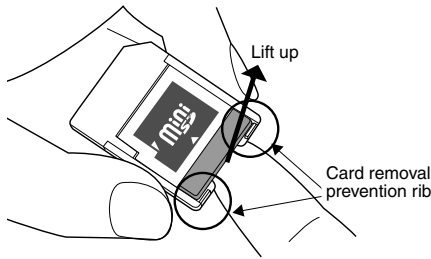


1) Gently holding both sides of the adapter, hold the rear of the card with your thumb and index finger and line up the front edge of the card with the card insertion slot of the adapter.

2) Insert the card into the card insertion slot while diagonally positioning the front edge of the card slightly down. The metal part should rise up slightly.

3) Lightly press the rear edge of the card with your index finger. The card is inserted when it can be pressed in no further.

### Card removal



1) Holding the adapter on both sides, use your other index finger to raise the rear edge of the card slightly up (about 0.5 mm).

2) With the card slightly raised, hold the rear edge of the card with your thumb and index finger and pull the card out of the adapter.

3) Removal is complete once the card has been completely pulled out of the adapter.

## NOTES

### 1. Handling

- 1) Do not disassemble or renovate.
- 2) Do not apply strong impact, bend, drop, or allow the adapter to get wet.
- 3) Do not allow fingers or metal to contact the terminals.
- 4) Do not leave in places such as the following.
  - (1) Places of high temperature such as the inside of a car, when it might get hot, or places subject to direct sunlight.
  - (2) Places of high humidity and high dust content.
  - (3) Places where corrosive gas is present.
- 5) Be careful not to allow dust or foreign objects from entering the card insertion slot of the adapter.
- 6) Do not affix a label or sticker onto the adapter.
- 7) To write something on the adapter, please use an oil-based felt pen. Do not use a pencil or ballpoint pen, which can damage the adapter.

- 8) Do not use a deformed adapter or card. Doing so may prevent being able to remove an adapter from a SD memory card supporting device.
- 9) When using a SD memory card supporting device with an adapter that has a card inside it, never remove the card only. When removing the card from a device, always remove it together with the adapter.
- 10) Do not insert an adapter without card inserted into a SD memory card supporting device.
- 11) For instructions on how to install the adapter into a SD memory card supporting device and for other instructions on how to use it, please see the instruction manual for that device.
- 12) Incorrect use is a cause of device and card malfunction, and a cause of data corruption.

### 2. Data reading and writing

- 1) When using an adapter with a card inside, do not remove it or the card from the device and do not turn off the device power during data reading or writing. This can cause data corruption.
- 2) Matsushita Electric Works, Ltd., will bear absolutely no responsibility for loss of customer data or any other direct or indirect damage.
- 3) When using an adapter with a card inside it, switching the adapter's write protect button to the "LOCK" side will prevent data from being erased and saved. This can be used to prevent the accidental deletion of data.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

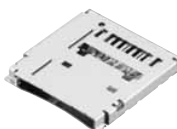
**Panasonic**  
ideas for life

1.78-mm thick sockets with superior robustness and EMI resistance achieved by the double-sided metal shell  
Ultra-low-profile high-reliability socket

**SOCKET FOR  
microSD™ CARD**



PCB cut-off reverse type



On board mounting reverse type

Compliance with RoHS Directive

## FEATURES

### 1. The double-sided metal shell and laser welding provides superior robustness and EMI resistance.

When a card is inserted, both sides of the card are covered with the metal shield, which offers superior EMI resistance. The shell also allows for more robust design than that with the single-sided resin-molded shell, reducing effects of the reflow heat.

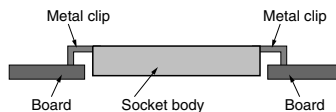
### 2. The twin contact power terminals offer superior contact reliability.

Compared to single contact terminals, the twin contact structure used in the power terminals reduces the possibility of sudden power cut-down.

### 3. The PCB cut-off reverse type has achieved the ultra-low height from the board surface of 0.83 mm.

**Contributes to the reduction of the target equipment's thickness.**

\* Possible only with the PCB cut-off reverse type.  
The PCB cut-off reverse type is the type in which the socket fits into an area cut out from the PC board. Including the PC board, the reduced overall thickness allows for the lowest possible profile.



### 4. The detection accuracy shall not be affected by the card thickness.

The detection switch detects a card in the card insertion direction.

Highly reliable detection is possible regardless of variations in card dimension, material, and manufacturing method. (NC contact)

### 5. Jump-out protection mechanisms

### 6. Fully compatible with T-Flash card

### What's a microSD™ card?

The microSD™ card is an ultra-miniature memory card that is completely compatible with the TransFlash card, which is increasingly adopted mainly by mobile phones. The microSD™ card is a new-generation memory card certified by the SD Card Association, which is an organization for standardizing SD cards, in July 2005 as a successor to the TransFlash card.

SD memory card  
miniSD™ card

Dimensions of the microSD™ card:  
11.0 (W) × 15.0 (H) × 1.0 (D) mm  
Approx. 7% by volume  
of the SD memory card  
Approx. 20% of the miniSD™ card

## APPLICATIONS

Mobile phones, etc. that uses microSD™ card.

Mobile phones



# (AXA4)

## ORDERING INFORMATION

AXA 4 6 3       P

4: Sockets for microSD™ card

<Board mounting direction>

6: Reverse type (outside terminal)

<Eject type>

3: Push-push type

<Stand off height>

0: Not available (0.05 mm)

7: -0.95 mm (for PCB cut-off type)

<Function>

(Card jump-out prevention function/Card presence detection switch/ RF terminal)

	Card jump-out prevention function	Card presence detection switch	RF terminal
5	Available	Available	Available
6	Available	Available	Not available

<Terminal/Retention fitting/Positioning boss>

	Signal terminal	Retention fitting	Positioning bosses
1	SMD	SMD	With positioning bosses
2	SMD	SMD	Without positioning bosses
4	SMD	DIP	Without positioning bosses

<Packing>

P: Embossed tape

## PRODUCT TYPES

Product name	Eject type	Card detection	Card jump-out prevention function	Positioning bosses	RF terminal	Mounting type	Part No.	Packing quantity	
								Inner carton	Outer carton
Sockets for microSD™ card	Push-push type	Available	Available	—	Available	PCB cut-off reverse type	AXA463754P	1,000 pieces (1 reel)	2,000 pieces (2 reels)
				With positioning bosses					
				Without positioning bosses	Not available	AXA463061P			
							AXA463062P		

## SPECIFICATIONS

### 1. Characteristics (Performance when microSD™ card is mated. Based on microSD™ card specification Ver. 1.0.)

Item		Specifications	Condition
Electrical characteristics	Rated voltage	3.6V DC	
	Rated current	0.5A DC/1 terminal	
	Contact resistance	Signal contact portion: Max. 100mΩ Detection contact portion: Max. 500mΩ	Measured based on the HP4338B measurement method of JIS C 5402
	Insulation resistance	Min. 1,000MΩ	Using 500V DC megger (applied for 1 min.)
	Breakdown voltage	500V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1 mA.
Mechanical characteristics	Vibration resistance	Frequency: 10 to 55 Hz Acceleration: 20.0 m/s <sup>2</sup> (2.0G) No current interruption for more than 0.1 μs	
	Card locking force	Max. 40N {4.08kgf}	
Lifetime characteristics	Insertion and removal life of card	Mechanical life: 10,000 times After testing: Contact resistance: Max. 40mΩ Insulation resistance: Max. 100MΩ	Insertion and removal speed are at a rate of 500 times/hour or less.
Environment characteristics	Ambient temperature	-25°C to +85°C	No freezing or condensation in low temperatures
	Storage temperature	-40°C to +85°C (The allowable storage temperature is -40°C to +50°C if unopened from original packaging)	No freezing or condensation in low temperatures
	Resistance to soldering heat	Reflow soldering: peak temperature 260°C or less Manual soldering: soldering iron tip temperature 300°C, 5 sec. or less	Sockets (shell) surface temperature for using infrared reflow soldering machine
Applicable memory card		microSD™ card (based on specification Ver. 1.10) and Trans Flash card	
Unit weight		0.65g	

2. Material and surface treatment

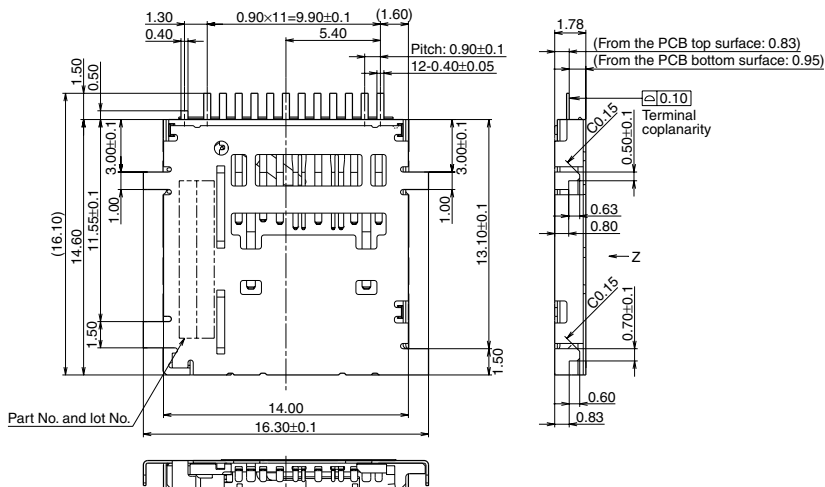
Portion	Material	Surface
Signal contact	Copper alloy	Contact portion: Ni plating on base, PdNi plating + Au flash plating on surface Soldering portion: Ni plating on base, Au plating on surface
Detection contact	Copper alloy	Contact portion: Ni plating on base, PdNi plating on surface Soldering portion: Ni plating on base, Au plating on surface
Retention fittings	Stainless steel	Soldering portion: Au + Pd plating on surface

DIMENSIONS

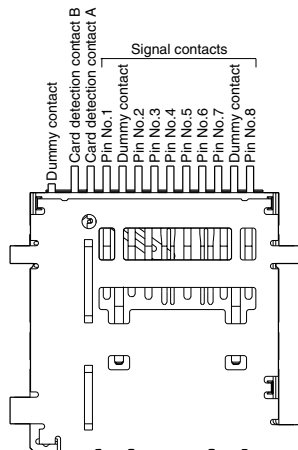
mm General tolerance: ±0.2

1. PCB cut-off reverse type (outside terminal) With RF terminal

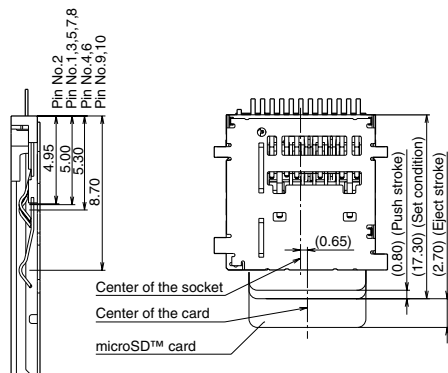
Part No.  
AXA463754P



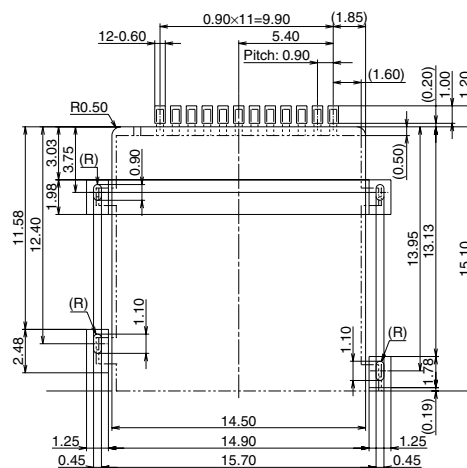
Pin arrangement



View of set card



Recommended PC board pattern (TOP VIEW)



Card detection switch contact condition chart

Card attachment condition	Card detection switch
Card not attached	Closed
Card attached	Open
Terminal number	(A)-(B)

# (AXA4)

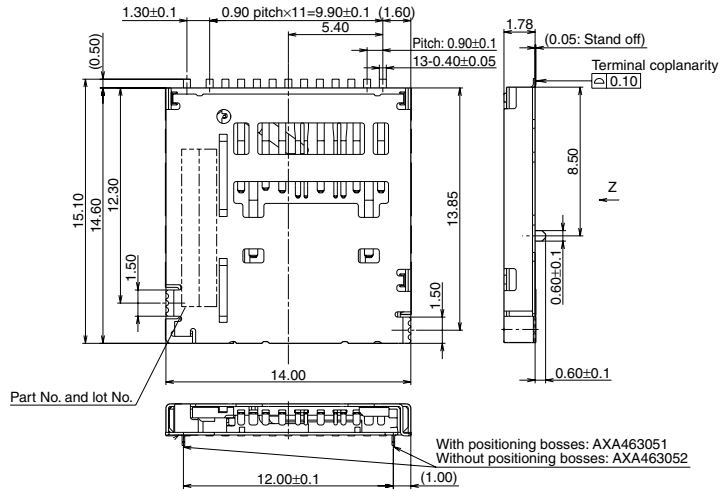
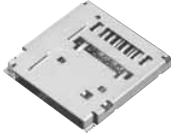
2. On board mounting reverse type (outside terminal) With RF terminal

mm General tolerance:  $\pm 0.2$

Part No.

AXA463051P (With positioning bosses)

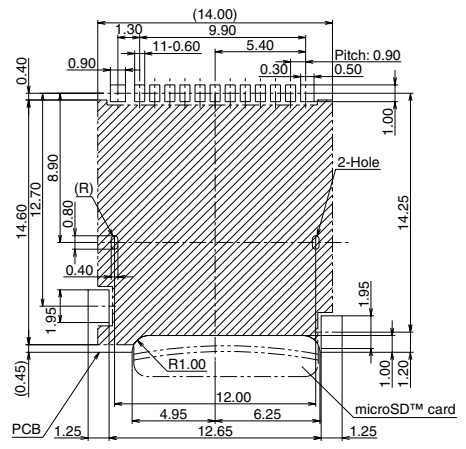
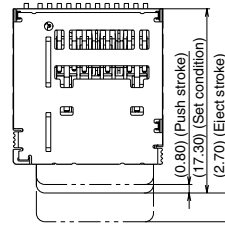
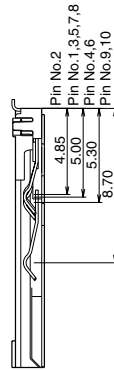
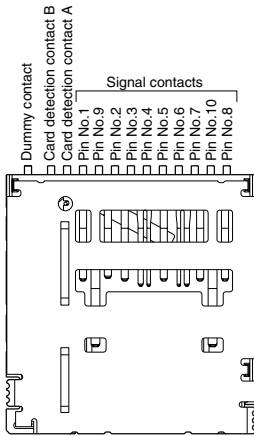
AXA463052P (Without positioning bosses)



Pin arrangement

View of set card

Recommended PC board pattern (TOP VIEW)



Pattern forbidden area.  
(Because part of the earth shell is close to the substrate, we recommended that you avoid the pattern arrangement.)

Card detection switch contact condition chart

Card attachment condition	Card detection switch
Card not attached	Closed
Card attached	Open
Terminal number	(A)-(B)

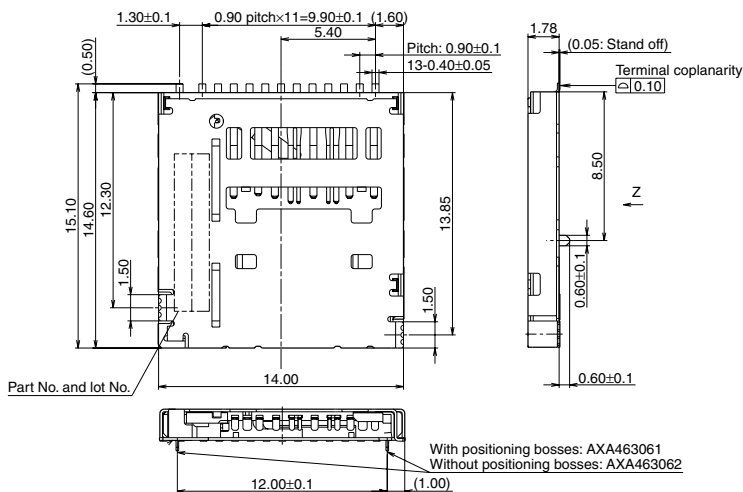
3. On board mounting reverse type (outside terminal) Without RF terminal

mm General tolerance: ±0.2

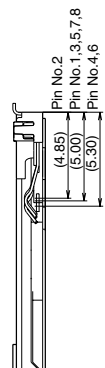
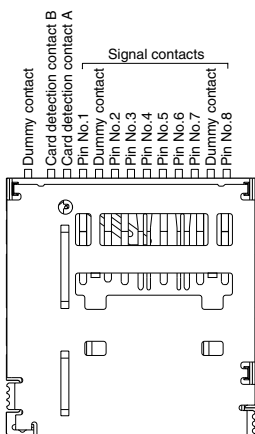
Part No.

AXA463061P (With positioning bosses)

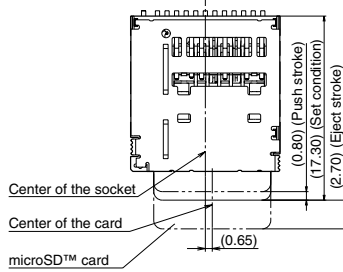
AXA463062P (Without positioning bosses)



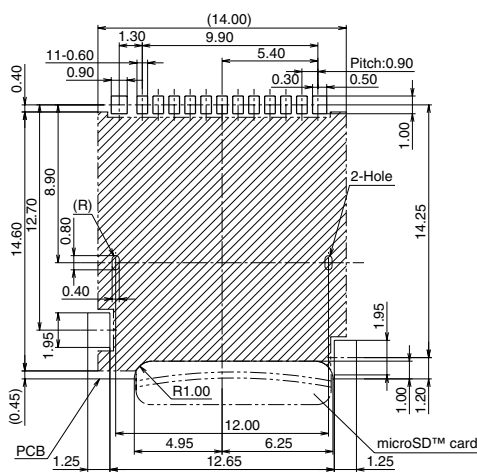
Pin arrangement



View of set card



Recommended PC board pattern (TOP VIEW)



Pattern forbidden area.  
(Because part of the earth shell is close to the substrate, we recommended that you avoid the pattern arrangement.)

Card detection switch contact condition chart

Card attachment condition	Card detection switch
Card not attached	Closed
Card attached	Open
Terminal number	(A)-(B)

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

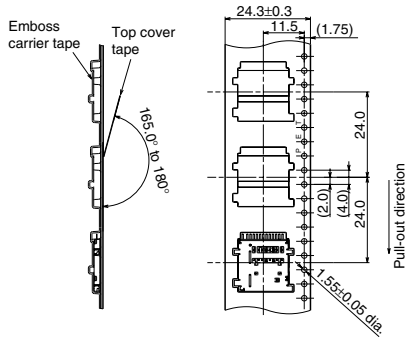
IC sockets

Information

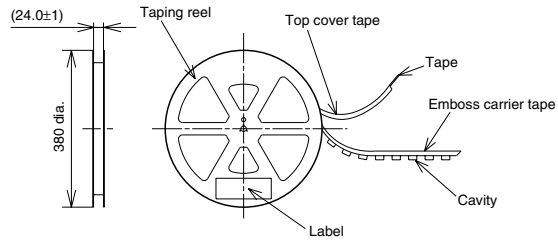


# EMBOSSED TAPE AND REEL (Unit: mm)

• Tape dimensions



• Reel dimensions (Conforming to EIAJ ET-7200B)



## NOTES

### 1. Regarding the design of PC board patterns

Conduct the recommended foot pattern design, in order to preserve the mechanical strength of terminal solder areas.

### 2. Regarding the socket mounting

1) When reflow soldering when the slider is locked, heat will cause the slider to deform and not work. Therefore, please confirm that the slider lock is released before mounting if you have inserted and removed a card before soldering.

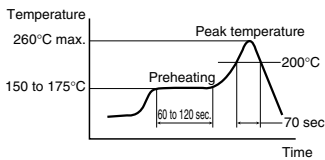
2) Be aware that during mounting, external forces may be applied to the connector contact surfaces and terminals and cause deformations.

### 3. Soldering

1) Reflow soldering

- Screen-printing method is recommended for cream solder printing.
- Use the recommended foot pattern for cream solder printing (screen thickness: 0.12 mm).
- When applying the different thickness of a screen, please consult us.
- Use the recommended reflow temperature profile conditions shown on the below.

#### Recommended reflow temperature profile conditions



• The temperature must be measured on the surface of the PC board around the connector terminals.

2) Hand soldering

Set the soldering tip to 300°C, and solder for no more than 5 seconds.

### 4. Cleaning after soldering

Inside the socket there is a slider section and card detection contact/write protection mechanism. If anything such as flux remains inside after washing, insertion and removal will be hampered and contact will be faulty. Therefore, do not use methods that involve submersion when cleaning. (Partial cleaning of the PCB and soldered terminals is possible.)

### 5. After PC board mounting

- 1) Warping of the PC board should be no more than 0.03 mm for the entire connector length.
- 2) When assembling PCBs or storing them in block assemblies, make sure that undue weight is not exerted on a stacked socket.
- 3) Be sure not to allow external pressure to act on sockets when assembling PCBs or moving in block assemblies.

### 6. Handling single components

- 1) Make sure not to drop or allow parts to fall from work bench
- 2) Be cautious when handling because excessive force applied to the terminals will cause deformation and loss of terminal coplanarity.
- 3) Repeated bending of the terminals may break them.

### 7. Card fitting

1) The socket's molded part is partly thinned to achieve the smaller and lighter design. Therefore, carefully design the target device's housing to prevent the excessively twisted card insertion/removal and insertion in a slanted direction.

2) The sockets are constructed to prevent reverse card insertion. Caution is required because repeated, mistaken reverse insertion may damage the socket and card.

3) When not soldered, be careful not to insert and remove the socket's card. Doing so will cause a decrease in anchoring ability of the mated part and loss of coplanarity.

4) Forcibly removing a fitted card may degrade the card removal prevention lock. To remove a card, be sure to push the card in the insertion direction to release the lock before pulling out the card.

### 8. Device design

1) Contact failure may result if dust or dirt enters the contact section. Please take appropriate measures when designing the device to prevent this from happening, for example by adding a cover.

2) To ensure smooth insertion and removal of cards, please design the chassis so that no force is applied to the metal shell on top of the socket. If a force is present that pushes down on the metal shell, the card will be pressed, which might prevent ejection.

3) Please provide a guide or similar to keep the socket from having force applied to it when inserting and removing.

### 9. Others

If you coat the PCB after soldering for insulation and to prevent wear, make sure that the coating does not adhere to the socket.

Regarding general notes, please refer to "NOTES FOR USING SMD TYPE CONNECTORS".

For other details, please verify with the product specification sheets.

**SIMPLE CARD LOCK MECHANISM**      **ADAPTER FOR microSD™ card**



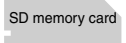

Compliance with RoHS Directive

**FEATURES**

1. Simple lock mechanism that prevents the unwanted ejection of a microSD™ card
2. Fully compatible with T-Flash card
3. Insertion and removal life: 10,000 times

**What's a microSD™ card?**

The microSD™ card is an ultra-miniature memory card that is completely compatible with the TransFlash card, which is increasingly adopted mainly by mobile phones. The microSD™ card is a new-generation memory card certified by the SD Card Association, which is an organization for standardizing SD cards, in July 2005 as a successor to the TransFlash card.

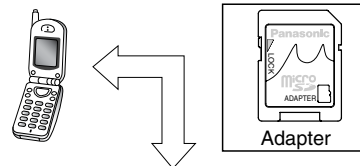
	Dimensions of the microSD™ card: 11.0 (W) × 15.0 (H) × 1.0 (D) mm
	Approx. 7% by volume of the SD memory card
	Approx. 20% of the miniSD™ card

**APPLICATIONS**

Inserting a microSD™ card in this adapter allows you to use the card in existing devices designed to use SD memory cards.

Equipment that uses a microSD™ card

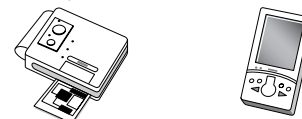
1. Mobiles phones and music players



2. TV
3. PC



4. Photo printer
5. PDA



Other devices equipped with an SD memory card slot.

**PRODUCT TYPES**

Product name	Insertion and removal type	Part number	Quantity	
			Inner carton	Outer carton
Adapter for microSD™ card	Push in pull removal type	AXA4A100J	100 pieces (1 tray)	1,000 pieces (10 trays)

Note: This part number is for the customer evaluation sample. We will manufacture according to special order with specifications being met such as the inclusion of customer-specified logos in the logo printing area.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

**SPECIFICATIONS**

**1. Characteristics (The followings show specifications, when mated microSD™ Adapter based on microSD™ Memory Card Application Notes – specification ver. 1.10)**

	Item	Specification	Test condition
Electrical characteristics	Rated current	Max. 0.5 A/1 terminal	
	Contact resistance	Max. 100 mΩ	Measured based on the HP4338B measurement method of JIS C 5402
	Insulation resistance	Min. 1,000 MΩ (Initial stage)	Using 500 V DC megger (1 minute)
	Breakdown voltage	500 V AC for 1 minute (Initial stage)	Detection current: 1 mA Max. (No short non damage)
Mechanical characteristics	Vibration resistance	No contact opening: more than 0.1 μs	Frequency: 10 Hz to 2,000 Hz Acceleration: 20.0 m/s <sup>2</sup> (2.0 G) It is measured in state of mounting board and inserting microSD™ Memory Card
	Shock resistance	No contact opening: more than 0.1 μs	Applied shock: 490 m/s <sup>2</sup>
	Insertion and removal force to microSD™ Adapter	Insertion force: Max. 40 N {4.08kgf} Removal force: Min. 1.0 N {0.10kgf} and Max. 40 N {4.08kgf}	Insertion and removal force to microSD™ Adapter with microSD™ Memory Card
	Insertion and removal force to SD memory card socket	Insertion force: Max. 40 N {4.08kgf} Removal force: Min. 1.0 N {0.10kgf} and Max. 40 N {4.08kgf}	Insertion and removal force to SD memory card socket with microSD™ Adapter
Life characteristics	Insertion and removal life of microSD™ memory card	Mechanical life: 10,000 times After test contact resistance: Max. 40 mΩ	Repeated insertion and removal frequency: 600 operations per 1 hour
	Insertion and removal life of adapter	Mechanical life: 10,000 times After test contact resistance: Max. 100mΩ	Repeated insertion and removal frequency: 600 operations per 1 hour
Environmental characteristics	Ambient temperature	-25°C to +85°C	No freezing or condensation
	Storage temperature	-40°C to +85°C (Guaranteed temperature under packaging condition: -40°C to +50°C)	No freezing or condensation
	Humidity resistance (Connected condition)	Contact resistance: Max. 40 mΩ Insulation resistance: Min 100 MΩ	MIL-STD-1344A, METHOD1002 Temperature: 40±2°C Humidity: 90 to 95%R.H. Test time: 500 hours
Unit weight		1.60g	

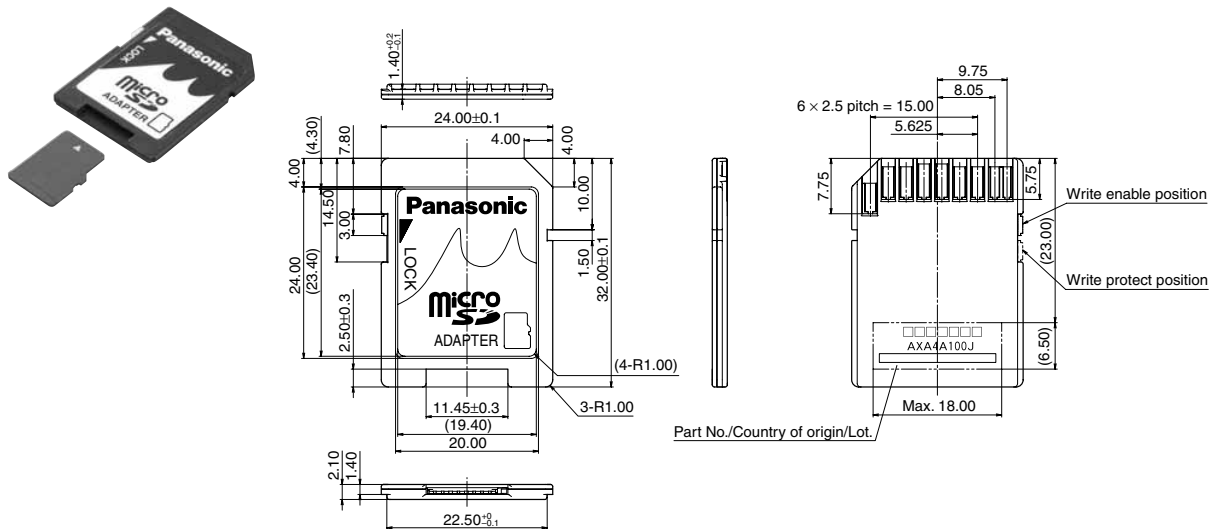
**2. Material and surface treatment**

Portion	Material	Surface treatment
Signal contact area	Copper alloy	Contact portion: Ni base, PdNi plating with Au plating

**3. Conformity memory card and sockets**

microSD™ Memory Card	SD Memory Card Socket
Based on microSD™ Memory Card specification Ver. 1.10	Based on SD Memory Card specification Ver. 2.00

**DIMENSIONS (unit: mm)**



Note: This product is for the customer evaluation sample.  
We will manufacture according to special order with specifications being met such as the inclusion of customer-specified logos in the logo printing area.

## NOTES ON USE

### 1. About handling

- 1) Please do not carry out decomposition and reconstruction.
- 2) Please do not give a strong shock, do not bend, do not drop, or do not soak in water.
- 3) Please touch a contact part neither with a hand nor metal.
- 4) Please do not keep an adapter at the following places.
  - (1) The place which becomes high temperature
  - (2) A humid place and a dusty place
  - (3) The place which corrosive gas generates
- 5) Dust etc. should be careful not to go into the insertion part of a card.
- 6) Please stick neither a label nor a seal on an adapter newly.
- 7) When you write a character, please use a marker pen (oiliness). Please use neither a pencil nor a ball point pen not to do damage to an adapter.
- 8) Please do not use the adapter or card which deformed. There is a possibility that it may become impossible to take out from SD memory card enabled device.
- 9) While you are using the adapter equipped with the card by SD memory card enabled device, please do not carry out extraction and insertion of only a card. Please be sure to perform remove and insertion from device simultaneously with an adapter.
- 10) Please do not insert into device the adapter which has not equipped microSD™ memory card.
- 11) Please refer to the handling description of the devices about the usage to appliance for SD memory card enable devices.
- 12) The mistaken usage causes incorrect operation of apparatus or a card, and data destruction.

### 2. About readout of data and writing of data

- 1) Since data may be destroyed, under readout of data or writing of data, please do not remove an adapter and a card from devices, or do not turn off devices.
- 2) Please understand beforehand that our company can take no responsibility about the obstacle resulting from loss and above-mentioned operation of data in which the visitor was recorded.
- 3) By using it by making the write-protection button of an adapter into the "LOCK" side, elimination and preservation of data become impossible. It is possible to prevent incorrect elimination of data by this method.

### 3. We declare the following;

- Our product is already meet to RoHS standard. In the manufacturing process for the products being provided to your company, the following materials are not used at all.
- 1) Ozone-depleting materials;  
CFC-11, 12, 13, 111, 112, 113, 114, 115, 211, 212, 213, 214, 215, 216, 217  
Carbon tetrachloride  
Methyl chloroform
  - 2) Polybrominated flame retardans;  
PBBOs, PBDO, PBDPO, PBDPE, DBDO, OBDO, TBDO, PBBs, PBDE
  - 3) Specified chemical substances (Impurities are excepted);  
Mercury, Cadmium, Hexahydric chromium, Lead
  - 4) Other toxic substances  
Asbestos, Organic tin compounds (Tributyl tin compounds, Triphenyl tin compounds), Polychlorinated biphenyls, Polychlorinated naphthalenes, Azo compounds

# Panasonic

## ideas for life

New



Compliance with RoHS Directive

**HIGHLY RELIABLE  
ADAPTER WITH A SIMPLE  
CARD LOCK MECHANISM**

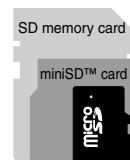
**ADAPTER FOR microSD™ CARD  
(miniSD™ CONVERSION TYPE)**

## FEATURES

1. Simple lock mechanism that prevents unwanted ejection of card
2. Fully compatible with T-Flash card
3. Insertion and removal life: 10,000 times

### What's a microSD™ card?

The microSD™ card is an ultra-miniature memory card that is completely compatible with the T-Flash card, which is increasingly adopted mainly by mobile phones. The microSD™ card is a new-generation memory card certified by the SD Card Association, which is an organization for standardizing SD cards, in July 2005 as a successor to the T-Flash card.



Dimensions of the microSD™ card:  
11.0 (W) × 15.0 (H) × 1.0 (D) mm  
Approx. 7% by volume  
of the SD memory card  
Approx. 20%  
of the miniSD™ card

## APPLICATIONS

By inserting a microSD™ or T-FLASH card into a miniSD™ conversion adapter, you can exchange data with devices such as a cellular phone or PDA that are equipped with a miniSD™ card slot.

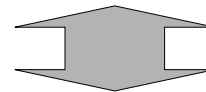
### <How to use>

The image and the music data can be exchanged by the adaptor.

1. Equipment that uses a microSD™ card



Mobile device such cellular phone



2. Equipment that uses a miniSD™ card



① Cellular phone



② PDA etc.

## PRODUCT TYPES

Product name	Insertion and removal type	Part number	Quantity	
			Inner carton	Outer carton
Adapter for microSD™ card (miniSD™ conversion type)	Push in pull removal type	AXA4B100J	50 pieces (1 tray)	1,000 pieces (20 trays)

Note: This product is for the customer evaluation sample. We will manufacture according to special order with specifications being met such as the inclusion of customer-specified logos in the logo printing area.

# SPECIFICATIONS

## 1. Characteristics (The followings show specifications, when mated with microSD™ Adapter based on microSD™ Memory Card Application Notes – specification ver. 1.10)

Item	Specification	Test condition	
Electrical characteristics	Rated current	Max. 0.5 A/1 terminal	
	Contact resistance	Max.100 mΩ (Initial stage)	Measured based on the HP4338B measurement method of JIS C 5402
	Insulation resistance	Min.1,000 MΩ (Initial stage)	Using 500 V DC megger (1 minute)
	Breakdown voltage	500 V AC for 1 minute (Initial stage)	Detection current: 1 mA Max. (No short non damage)
Mechanical characteristics	Vibration resistance	No contact opening: more than 0.1 μs After test contact resistance: Max. 40 mΩ	Frequency: 10 Hz to 2,000 Hz Acceleration: 20.0 m/s <sup>2</sup> (2.0 G) It is measured in state of mounting board and inserting socket for miniSD™ memory card
	Shock resistance	No contact opening: more than 0.1 μs After test contact resistance: Max. 40 mΩ	Applied shock: 490 m/s <sup>2</sup>
	Insertion and removal force to microSD™ memory card	Insertion force: Max. 40 N {4.08kgf} Removal force: Min. 1.0 N {0.10kgf} and Max. 40 N {4.08kgf}	Insertion and removal force to microSD™ card with microSD™ memory card adapter
	Insertion and removal force to microSD™ adapter	Insertion force: Max. 40 N {4.08kgf} Removal force: Min. 1.0 N {0.10kgf} and Max. 40 N {4.08kgf}	Insertion and removal force to miniSD™ memory card socket with microSD™ memory card adapter
Life characteristics	Insertion and removal life of microSD™ memory card and adapter	Mechanical life: 10,000 times After test contact resistance: Max. 40 mΩ	Repeated insertion and removal Frequency: 600 operations per 1 hour
	Insertion and removal life of microSD™ adapter and socket for miniSD™ card	Mechanical life: 10,000 times Contact resistance: Max. 100mΩ	Repeated insertion and removal Frequency: 600 operations per 1 hour
Environmental characteristics	Ambient temperature	-25°C to +85°C	No freezing or condensation
	Storage temperature	-40°C to +85°C (Guaranteed temperature under packaging condition: -40°C to +50°C)	No freezing or condensation
	Humidity resistance (Connected condition)	After test contact resistance: Max. 40 mΩ Insulation resistance: Min 100 MΩ	MIL-STD-1344A, METHOD1002 Temperature: 40±2°C Humidity: 90 to 95%R.H. Test time: 500 hours
Unit weight	0.51g		

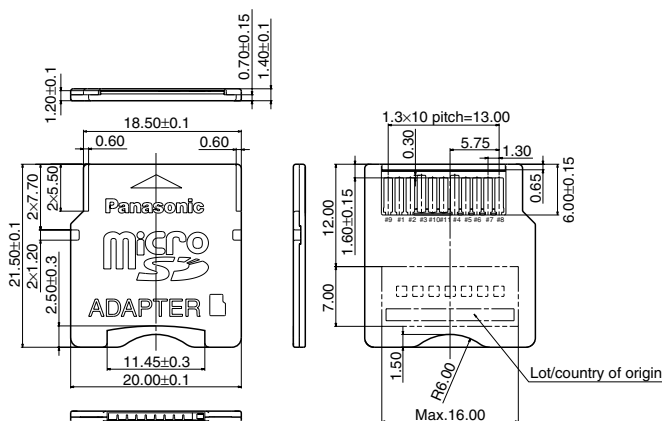
## 2. Material and surface treatment

Portion	Material	Surface treatment
Contact	Copper alloy	Contact portion: Ni base, PdNi plating with Au plating

## 3. Conformity memory card and sockets

Memory Card	Socket
Based on microSD™ Memory Card specification Ver. 1.10	Based on miniSD™ memory card specification Ver. 1.02

## DIMENSIONS (unit: mm)



Note: This product is for the customer evaluation sample.

We will manufacture according to special order with specifications being met such as the inclusion of customer-specified logos in the logo printing area.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

## NOTES ON USE

### 1. About handling

- 1) Please do not carry out decomposition and reconstruction.
- 2) Please do not give a strong shock, do not bend, do not drop, or do not soak in water.
- 3) Please touch a contact part neither with a hand nor metal.
- 4) Please do not keep an adapter at the following places.
  - (1) The place which becomes high temperature
  - (2) A humid place and a dusty place
  - (3) The place which corrosive gas generates
  - (4) Dust etc. should be careful not to go into the insertion part of a card.
- 5) Please stick neither a label nor a seal on an adapter newly.
- 6) Please do not use the adapter or card which deformed. There is a possibility that it may become impossible to take out from miniSD™ memory card enabled device.
- 7) While you are using the adapter equipped with the card by miniSD™ memory card enabled device, please do not carry out extraction and insertion of only a card. Please be sure to perform remove and insertion form device simultaneously with an adapter.
- 8) Please do not insert into device the adapter which has not equipped miniSD™ memory card.
- 9) Installing an adapter which a card has been installed in an SD memory card converting (transforming). Adapter does not conform to the standard, therefore please do not use it.
- 10) The mistaken usage causes incorrect operation of apparatus or a card, and data destruction.

### 2. About readout of data and writing of data

Since data may be destroyed, under readout of data or writing of data, please do not remove an adapter and a card from devices, or do not turn off devices. Please understand beforehand that our company can take no responsibility about the obstacle resulting from loss and above-mentioned operation of data in which the visitor was recorded.

### 3. We declare the following;

Our product is already meet to RoHS standard. In the manufacturing process for the products being provided to your company, the following materials are not used at all.

- 1) Ozone-depleting materials;  
CFC-11, 12, 13, 111, 112, 113, 114, 115, 211, 212, 213, 214, 215, 216, 217  
Halon 1211, 1301, 2402  
Carbon tetrachloride  
Methyl chloroform
- 2) Polybrominated flame retardans;  
PBBOs, PBDO, PBDPO, PBDPE, DBDO, OBDO, TBDO, PBBs, PBDE
- 3) Specified chemical substances (Impurities are excepted);  
Mercury, Cadmium, Hexahydric chromium, Lead

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

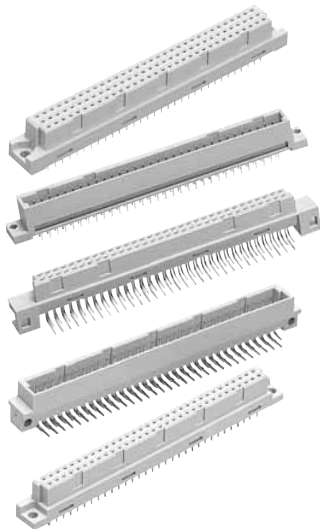
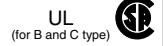
Connectors for industrial equipment

IC sockets

Information

CONNECTORS FOR PC BOARD TO PC BOARD  
DIN CONNECTORS (AXD)

DIN Connector conforming to DIN/IEC standards



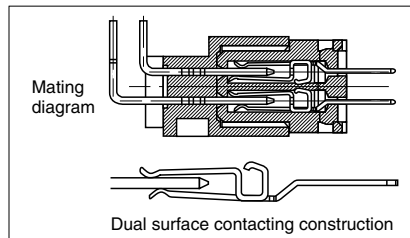
Compliance with RoHS Directive

**FEATURES**

**1. 2 pieces connectors conforming to DIN 41612 and IEC 603-2.**

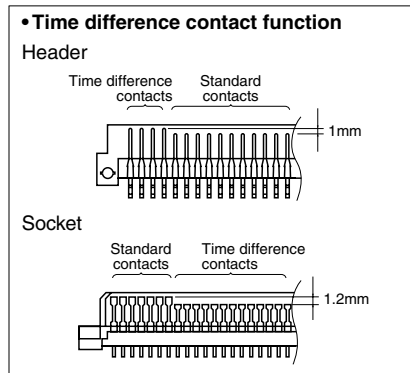
**2. Clip contact with reliable construction on both sides for highly reliable contact.**

- 1) Withstands vibration and shock.
- 2) Long insertion/removal life and insertion/removal force is stable.
- 3) Construction able to withstand unreasonable twisting when inserting and removing.



**3. Supports time difference contact function.**

- 1) ICs are protected from damage at connection even if the PC board is inserted or removed without power connected during maintenance or inspection. This simplifies circuit design.
- 2) Time difference contacts can be arranged as desired.
- 3) Possible for either header or socket.



**4. Plenty of products with improved functions**

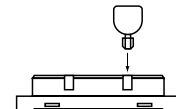
The following types are available in addition to ones with the time difference contact function.

- Flux-tight type that prevents flux from creeping up from the connector bottom and terminals.
- Self-clinching bracket, PC board top mounting type.

**5. Constructed to prevent incorrect insertion.**

The construction is designed to prevent reverse insertion of the connector according to the DIN standard. We have taken further measures with a dedicated key that enables the easy prevention of incorrect insertion of connectors with identical poles.

Incorrect insertion prevention key



**APPLICATIONS**

PBX, Factory Automation Equipment

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



# DIN CONNECTORS (AXD)

## ORDERING INFORMATION

AXD       **1**

DIN connectors  
1: Socket  
2: Header

<No. of contacts (2 digits)>  
20: 20 contacts    32: 32 contacts    44: 44 contacts  
50: 50 contacts    64: 64 contacts    90: 90 contacts  
96: 96 contacts    00: 100 contacts

<Type and contacts layout>  
2: B type (2 rows terminal pitch: 2.54 mm)  
3: C type (The middle row is removed terminal pitch: 5.08 mm)  
4: C type (3 rows terminal pitch: 2.54 mm)  
6: R type (The middle row is removed terminal pitch: 5.08 mm)  
7: R type (3 rows terminal pitch: 2.54 mm)  
8: Q type (2 rows terminal pitch: 2.54 mm)

<Terminal shape and product types>

No.	PC board mounting form	Self-clinching bracket	Flux resistant	Terminal shape
0	PC board top mounting type	Not available	Not available	DIP terminal
2			Available	
5		Available	Not available	
7			Available	
1	PC board edge mounting type	Not available	Not available	

<Surface treatment (Contact portion/Terminal portion)>  
1: Au plating/Sn plating

## SPECIFICATIONS

### 1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	2A	
	Rated voltage	300V AC	
	Breakdown voltage	1,000 V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	at 500V DC megger
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402.
Mechanical characteristics	Composite insertion force	Max. 0.843N {86gf} × no. of contact	
	Unit removal force	Min. 0.15N {15.3gf}	Measured by steel gauge with 0.56(t)×0.8(W)mm and smoothness 0.1s.
	Post holding force	Min. 19.6N {2kgf} (header side)	
Lifetime characteristics	Insertion and removal life	1,000 times	
Environmental characteristics	Ambient temperature	-55°C to +125°C	At less than 85% R.H. (No freezing at low temperature)
	Soldering temperature resistance	260°C: within 10 sec. 300°C: within 5 sec. 350°C: within 3 sec.	

### 2. Material and surface treatment

Part name	Material	Surface
Molded portion	Glass reinforced PBT (UL94V-0)	—
Socket contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface
Header post	Brass	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

Note) Please consult us for different plating requirements.

### 3. Applicable PC board

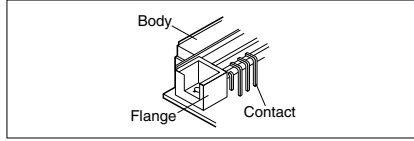
PC board thickness	Applicable connector type	Thickness
1.6 to 2.4mm	B, C type socket Q, R type header	1.6mm
	B, C type header Q, R type socket	

## INTRODUCTION OF OTHER TYPES

### 1. FEATURES OF REVERSE TYPE DIN CONNECTOR

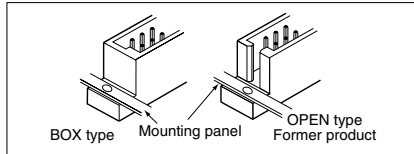
New series of reverse types popular in the U.S.A.

1) Shock resistant socket construction  
Integrated construction of the flange and housing prevent damage to the terminals from shock.



2) Box-shaped header provides excellent electrical performance

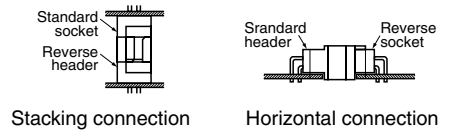
Box-shaped headers feature long insulation distance between the connector and mounting panel and low capacitance.



### Standard type and reverse type

Types	Header/ socket	Terminal shape	Form	
Standard type	Header	Angle		The contacts of the socket mounted on the mother board (power supply side) are covered to prevent electrical shock and entry of foreign matter.
	Socket	Straight		
Reverse type	Header	Straight		1. Reduction of total cost Since the cost of the header is low, it is more economical to use the header for mother boards which require multiple pins for expansion. 2. Matches the designer's requirements for maximum simplicity in the mother board design.
	Socket	Angle		

The header and socket for the standard type and reverse type fit each other, this permits the connections shown in the figure on the right.



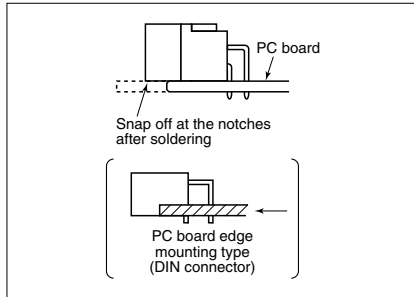
### 2. FEATURES AND CONSTRUCTION OF DIN CONNECTOR WITH HIGHER FUNCTION

DIN connector enhancement products which support user circuit designs and solve problems that occur during connector mounting.

- PC board top mounting type
- Self-clinching bracket (with temporary fastening function)
- Flux resistant construction
- Time difference contacts

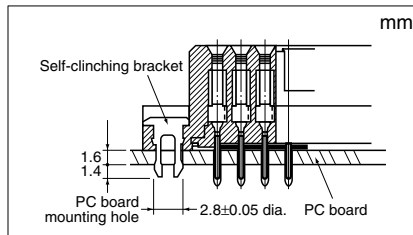
#### 1) PC board top mounting type

- Prevents the entry of flux during automatic soldering.
- Large position tolerance when mounting the connector to the PC board permits the use of automatic mounting.



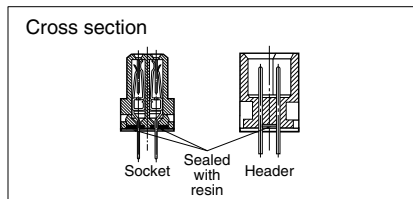
#### 2) Self-clinching brackets (with temporary function)

- Prevents the connector from shifting due to vibration and shock.
- Uses the same mounting hole as the mounting screw.



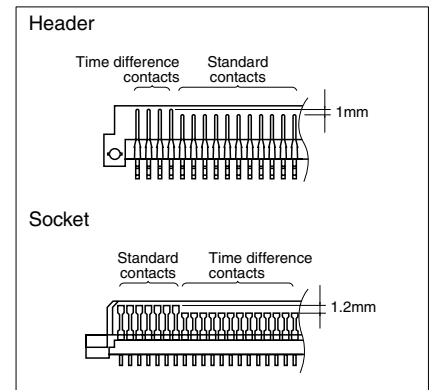
#### 3) Flux resistant construction

The terminals are sealed with resin to prevent seepage of flux through the terminals or entry of flux from the bottom of the connector.



#### 4) Time difference contacts

- ICs are protected from damage at connection even if the PC board is inserted or removed without power connected during maintenance or inspection. This simplifies circuit design.
- A contact time difference of 1mm for headers and 1.2mm for sockets is obtained.
- Time difference contacts can be arranged as desired.



# DIN CONNECTORS (AXD)

## PRODUCT TABLE

Type	Socket				Header				
	Standard types		Reverse types		Standard types		Reverse types		
	B type 2 rows	C type 3 rows	Q type 2 rows	R type 3 rows	B type 2 rows	C type 3 rows	Q type 2 rows	R type 3 rows	
No. of contacts	100		100		100		100		
		96		96		96		96	
	90				90				
	64	64 (The middle row is removed)	64	64 (The middle row is removed)	64	64 (The middle row is removed)	64	64 (The middle row is removed)	
	50		50		50		50		
	44				44				
	32		32		32		32		
20					20				
Terminal shape									
Higher functional products availability	PC board top mounting type	—	—	Available	Available	Available	Available	—	—
	Self-clinching bracket (temporary fastening)	Available	Available	Available	Available	Available	Available	Available	Available
	Flux-resistant construction	Available	Available	—	—	—	—	Available	Available
	Time difference contacts	Available	Available	—	—	Available	Available	Available	Available

## PRODUCT TYPES (STANDARD)

### 1) B type (standard 2 rows)

No. of contacts	Shape	
	Socket	Header
	Solder-dip straight terminals Part No.	Solder-dip angle terminals Part No.
20	AXD120201	AXD220211
32	AXD132201	AXD232211
44	AXD144201	AXD244211
50	AXD150201	AXD250211
64	AXD164201	AXD264211
90	AXD190201	AXD290211
100	AXD100201	AXD200211

### 2) C type (standard 3 rows)

No. of contacts	Shape	
	Socket	Header
	Solder-dip straight terminals Part No.	Solder-dip angle terminals Part No.
64 (The middle row is removed)	AXD164301	AXD264311
96	AXD196401	AXD296411

Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

### 3) Q type (reverse 2 rows)

No. of contacts	Shape	
	Socket	Header
	Solder-dip angle terminals Part No.	Solder-dip straight terminals Part No.
32	AXD132811	AXD232801
50	AXD150811	AXD250801
64	AXD164811	AXD264801
100	AXD100811	AXD200801

Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. Adopting box shape, Q types differ from DIN international standards (open shape) on the mounting spacing.

### 4) R type (reverse 3 rows)


No. of contacts	Shape	
	Socket	Header
	Solder-dip angle terminals Part No.	Solder-dip straight terminals Part No.
64 (The middle row is removed)	AXD164611	AXD264601
96	AXD196711	AXD296701

Note: All are tray packaged. Packing quantity for outer carton is 200 pcs.


## PRODUCT TYPE (HIGHER FUNCTIONAL products)

### 1. Top mounting types


#### 1) B type (standard 2 rows)

Shape	Header 	
	Solder-dip angle terminals	
No. of contacts	Part No.	
20	AXD220201	
32	AXD232201	
44	AXD244201	
50	AXD250201	
64	AXD264201	
90	AXD290201	
100	AXD200201	


#### 2) C type (standard 3 rows)

Shape	Header 	
	Solder-dip angle terminals	
No. of contacts	Part No.	
64 (The middle row is removed)	AXD264301	
96	AXD296401	

#### 3) Q type (reverse 2 rows)

Shape	Socket 	
	Solder-dip angle terminals	
No. of contacts	Part No.	
32	AXD132801	
50	AXD150801	
64	AXD164801	
100	AXD100801	



#### 4) R type (reverse 3 rows)

Shape	Socket 	
	Solder-dip angle terminals	
No. of contacts	Part No.	
64 (The middle row is removed)	AXD164601	
96	AXD196701	



Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

### 2. Type with self-clinching bracket



#### 1) B type (standard 2 rows)

Shape	Socket 	Header  (PC board top mounting type)
	Solder-dip straight terminals	Solder-dip angle terminals
No. of contacts	Part No.	Part No.
20	AXD120251	AXD220251
32	AXD132251	AXD232251
44	AXD144251	AXD244251
50	AXD150251	AXD250251
64	AXD164251	AXD264251
90	AXD190251	AXD290251
100	AXD100251	AXD200251



#### 2) C type (standard 3 rows)

Shape	Socket 	Header  (PC board top mounting type)
	Solder-dip straight terminals	Solder-dip angle terminals
No. of contacts	Part No.	Part No.
64 (The middle row is removed)	AXD164351	AXD264351
96	AXD196451	AXD296451

#### 3) Q type (reverse 2 rows)

Shape	Socket  (PC board top mounting type)	Header 
	Solder-dip angle terminals	Solder-dip straight terminals
No. of contacts	Part No.	Part No.
32	AXD132851	AXD232851
50	AXD150851	AXD250851
64	AXD164851	AXD264851
100	AXD100851	AXD200851

#### 4) R type (reverse 3 rows)

Shape	Socket  (PC board top mounting type)	Header 
	Solder-dip angle terminals	Solder-dip straight terminals
No. of contacts	Part No.	Part No.
64 (The middle row is removed)	AXD164651	AXD264651
96	AXD196751	AXD296751

Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

# DIN CONNECTORS (AXD)

## 3. Flux resistance types

### 1) B type (standard 2 rows)

No. of contacts	Solder-dip straight terminals	
	Without self-clinching bracket	With self-clinching bracket
	Part No.	Part No.
20	AXD120221	AXD120271
32	AXD132221	AXD132271
44	AXD144221	AXD144271
50	AXD150221	AXD150271
64	AXD164221	AXD164271
90	AXD190221	AXD190271
100	AXD100221	AXD100271

### 2) C type (standard 3 rows)

No. of contacts	Solder-dip straight terminals	
	Without self-clinching bracket	With self-clinching bracket
	Part No.	Part No.
64 (The middle row is removed)	AXD164321	AXD164371
96	AXD196421	AXD196471

### 3) Q type (reverse 2 rows)

No. of contacts	Solder-dip straight terminals	
	Without self-clinching bracket	With self-clinching bracket
	Part No.	Part No.
32	AXD232821	AXD232871
50	AXD250821	AXD250871
64	AXD264821	AXD264871
100	AXD200821	AXD200871

### 4) R type (reverse 3 rows)

No. of contacts	Solder-dip straight terminals	
	Without self-clinching bracket	With self-clinching bracket
	Part No.	Part No.
64 (The middle row is removed)	AXD264621	AXD264671
96	AXD296721	AXD296771

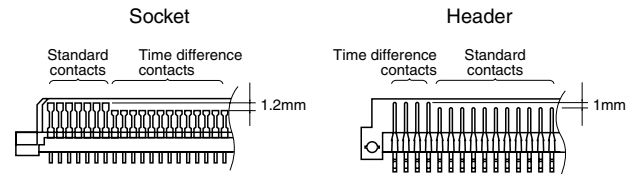
Notes: 1. All are tray packaged. Packing quantity for outer carton is 200 pcs.  
2. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

## 4. Accessory

Name	Part No.	Packaging	
		Inner carton	Outer carton
Incorrect insertion prevention key	AXD8001	50 pcs.	200 pcs.

## 5. Time difference contacts

Time difference contacts can be arranged as desired. Please consult us.



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

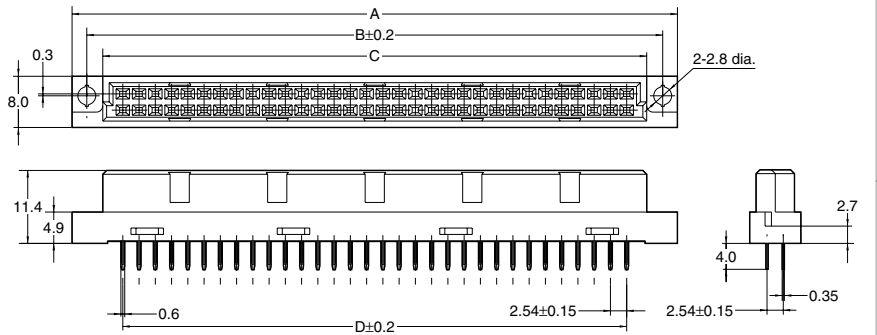
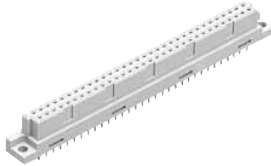
# DIN CONNECTORS (AXD)

**DIMENSIONS of 2 Rows type** (Unit: mm) The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

**• B type socket (20, 32, 44, 50, 64, 90 and 100 contacts)**

Solder-dip straight terminals

**CAD Data**

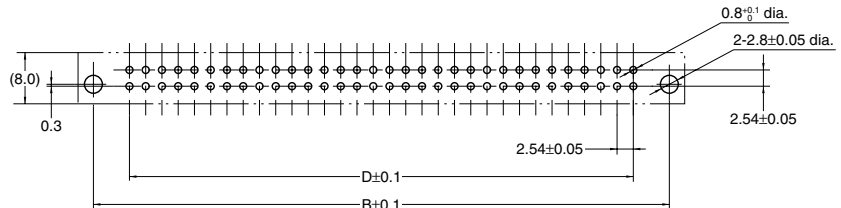


General tolerance: ±0.3

Dimension table (mm)

No. of contacts	A	B	C	D
20	38.72	34.12	29.12	22.86
32	53.96	49.36	44.36	38.1
44	69.2	64.6	59.6	53.34
50	76.82	72.22	67.22	60.96
64	94.6	90.0	85.0	78.74
90	127.62	123.02	118.02	111.76
100	140.32	135.72	130.72	124.46

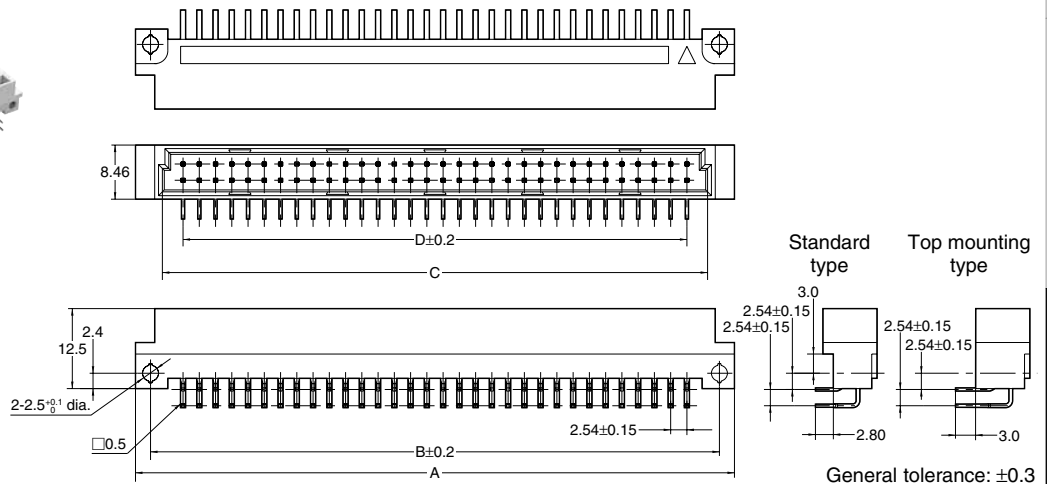
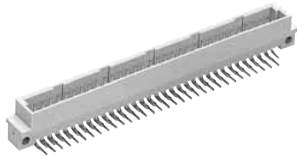
Recommended PC board pattern (Bottom view)



**• B type header (20, 32, 44, 50, 64, 90 and 100 contacts)**

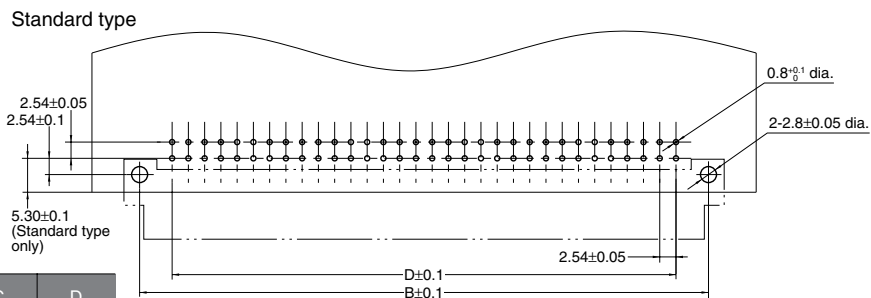
Solder-dip angle terminals

**CAD Data**



General tolerance: ±0.3

Recommended PC board pattern (Bottom view)



Dimension table (mm)

No. of contacts	A	B	C	D
20	37.72	33.02	29.32	22.86
32	52.96	48.26	44.56	38.1
44	68.2	63.5	59.8	53.34
50	75.82	71.12	67.42	60.96
64	93.6	88.9	85.2	78.74
90	126.62	121.92	118.22	111.76
100	139.32	134.62	130.92	124.46

# DIN CONNECTORS (AXD)

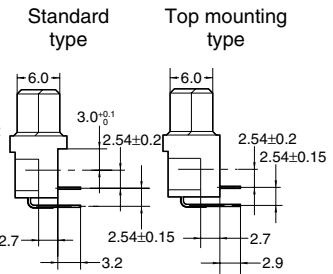
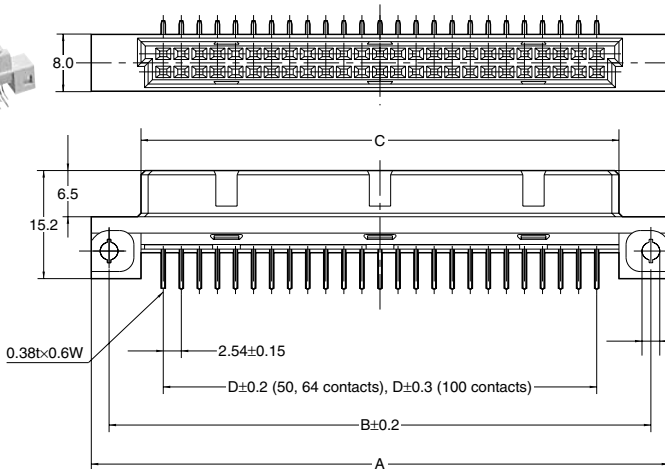
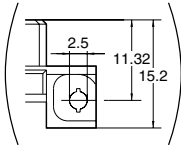
## • Q type socket (32, 50, 64 and 100 contacts)

Solder-dip angle terminals

**CAD Data**

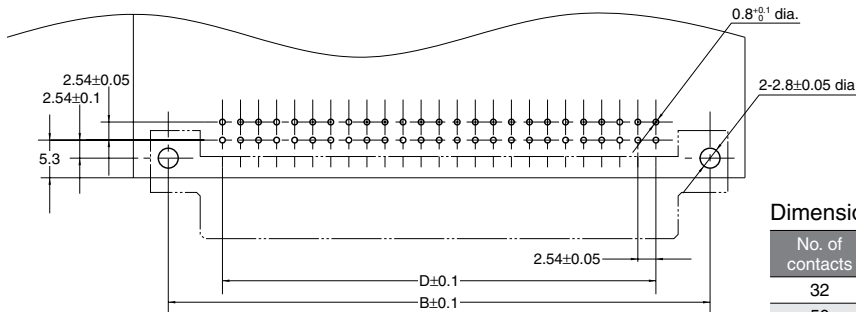


64 contacts



General tolerance:  $\pm 0.3$

Recommended PC board pattern (Bottom view)



Dimension table (mm)

No. of contacts	A	B	C	D
32	58.34	53.34	44.36	38.1
50	81.2	76.2	67.22	60.96
64	98.98	93.98	85.0	78.74
100	144.9	139.7	130.72	124.46

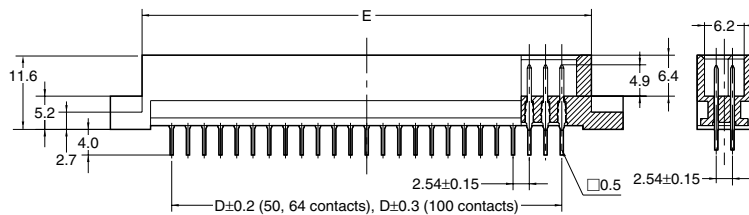
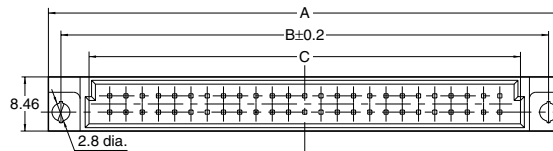
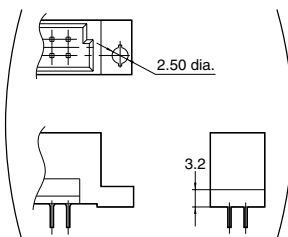
## • Q type header (32, 50, 64 and 100 contacts)

Solder-dip straight terminals

**CAD Data**

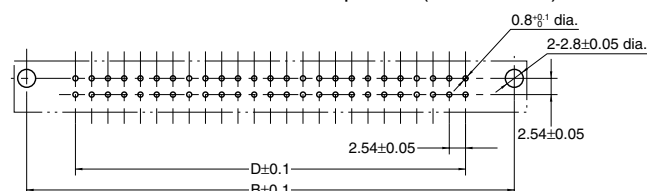


64 contacts



General tolerance:  $\pm 0.3$

Recommended PC board pattern (Bottom view)



Dimension table (mm)

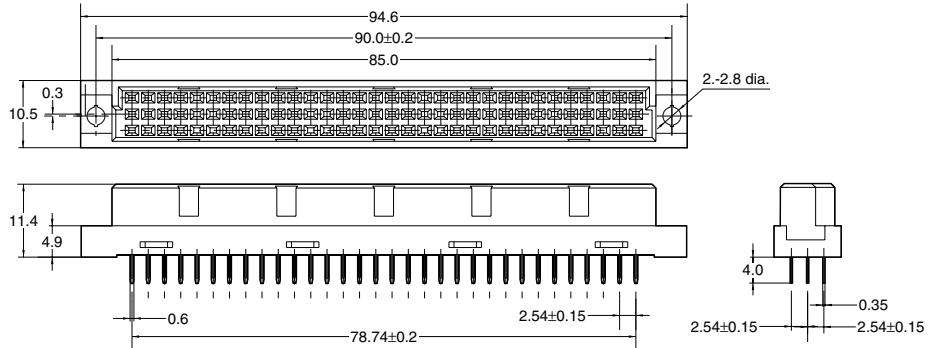
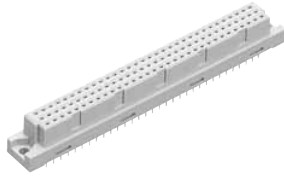
No. of contacts	A	B	C	D	E
32	57.26	53.34	44.56	38.1	47.36
50	80.12	76.2	67.42	60.96	70.22
64	97.6	93.98	85.35	78.74	87.87
100	143.62	139.7	130.92	124.46	133.72

## DIMENSIONS of 3 Rows type (Unit: mm)

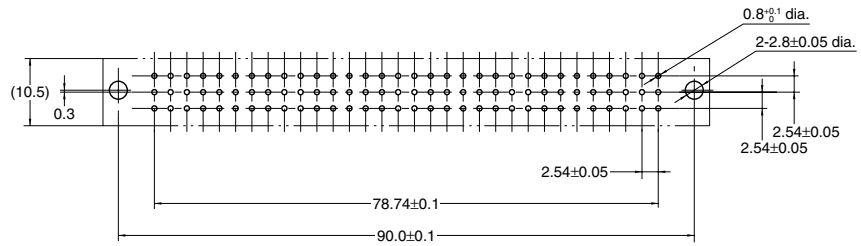
### • C type socket (64 and 96 contacts)

Solder-dip straight terminals

**CAD Data**



### Recommended PC board pattern (Bottom view)

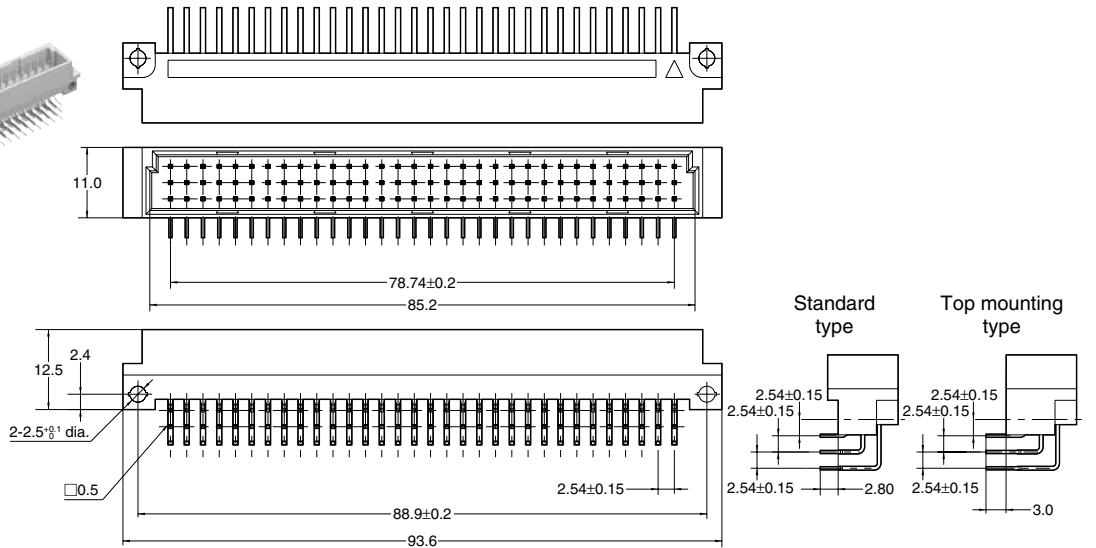
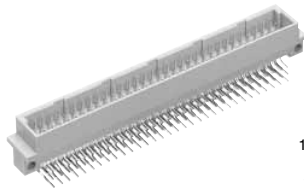


Note: For 64 contacts type, the middle row is removed.

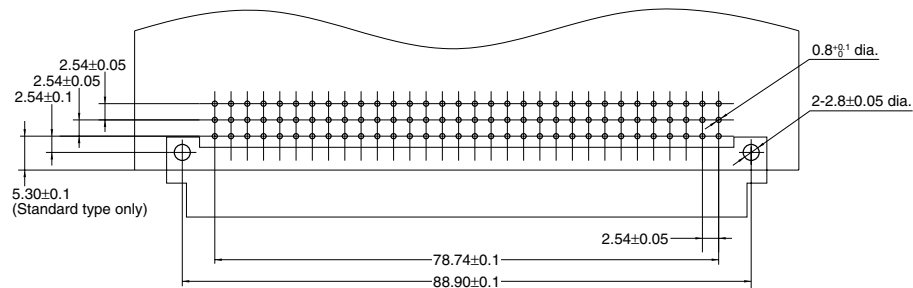
### • C type header (64 and 96 contacts)

Solder-dip angle terminals

**CAD Data**



### Recommended PC board pattern (Bottom view)



Note: For 64 contacts type, the middle row is removed.



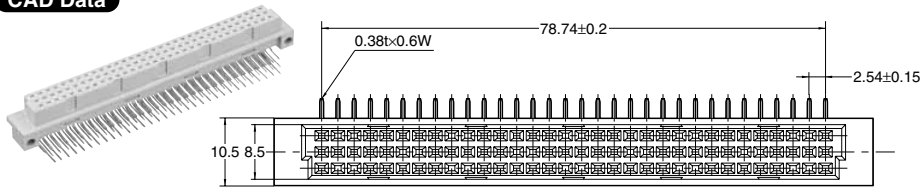
# DIN CONNECTORS (AXD)

Narrow-pitch connectors

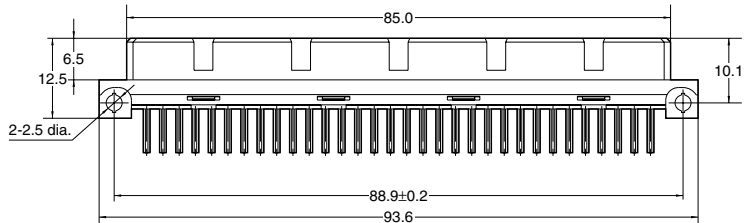
## • R type socket (64 and 96 contacts)

Solder-dip angle terminals

**CAD Data**

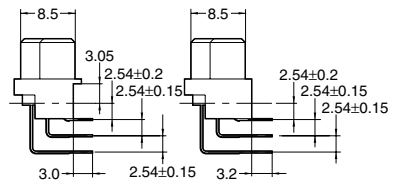


I/O connectors



Standard type

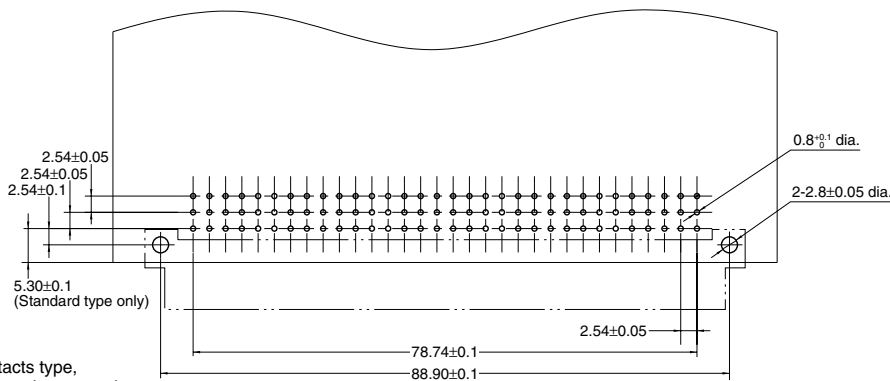
Top mounting type



General tolerance: ±0.3

Interface connectors

Recommended PC board pattern (Bottom view)



Note: For 64 contacts type, the middle row is removed.

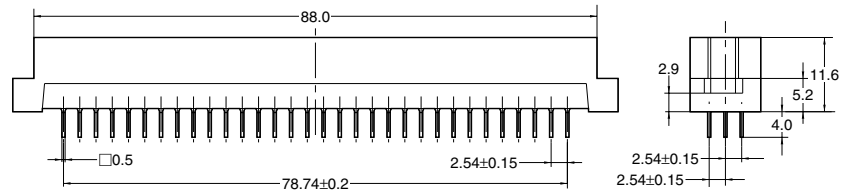
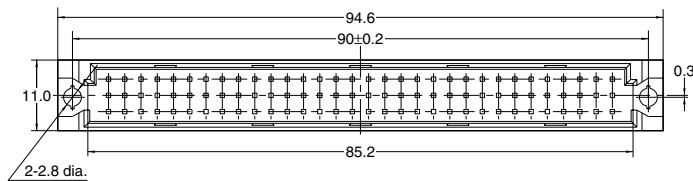
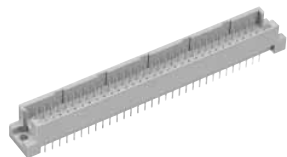
Sockets for memory card

Connectors for industrial equipment

## • R type header (64 and 96 contacts)

Solder-dip straight terminals

**CAD Data**

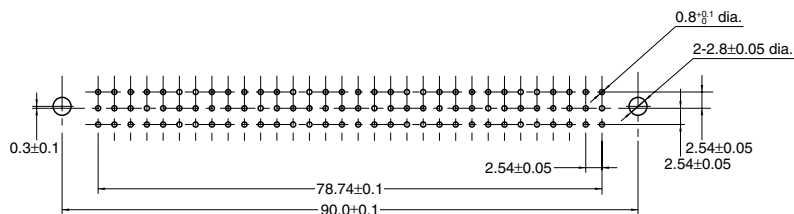


General tolerance: ±0.3

IC sockets

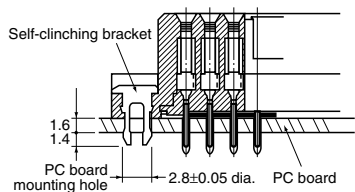
## Self-clinching bracket type (Unit: mm)

Recommended PC board pattern (Bottom view)



Note: For 64 contacts type, the middle row is removed.

Information



# DIN CONNECTORS (AXD)

## COMBINATION FORM (mm)

Types	Header	Vertical fixing		Stacking fixing	Horizontal fixing
		Standard	Reverse		
2 rows type	PC board edge mounting type (DIN standards)				
	PC board top mounting type				
3 rows type	PC board edge mounting type (DIN standards)				
	PC board top mounting type				

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# DIN CONNECTORS (AXD)

## NOTES

### 1. Regarding printed circuit board design

As the terminal numbers are marked on the connector, the printed circuit board design can be carried out based on the terminal numbers.

### 2. Regarding soldering for header and socket

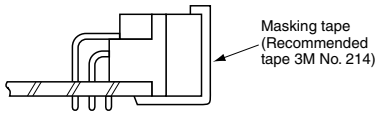
Soldering should be carried out under the following conditions.

260°C: within 10 seconds

300°C: within 5 seconds

350°C: within 3 seconds

The automatic soldering operation should be carried out for the header after masking tape is applied as shown below.



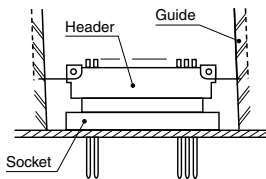
### 3. Regarding handling of header and socket terminals

Repeated bending of the terminals can cause breakage. Care should be taken.

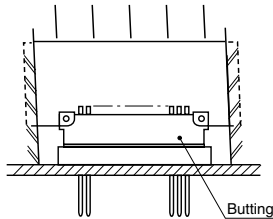
### 4. Insertion and removal of socket and header should be carried out with the following procedure.

#### a) Insertion

• After checking to be sure the polarity of socket and header are correct, the header side is inserted following the guide, gently combining with the top of the socket.

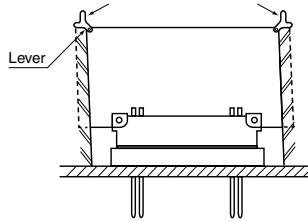


• Uniformly push the upper edge of the printed circuit board of the header side so that the header enters the socket until it butts against the socket flange.



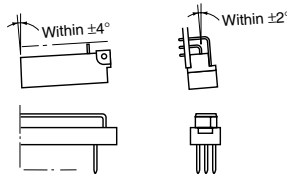
#### b) Removal

• Apply uniform force with the lever and carry out the separation.

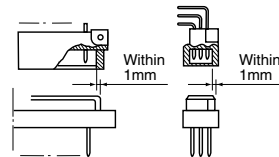


### 5. Determination of the position of the header and socket should be done as shown in the following drawings.

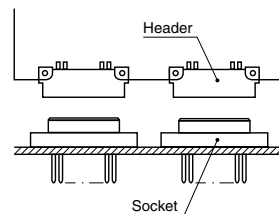
#### a) Tilt



#### b) Offset



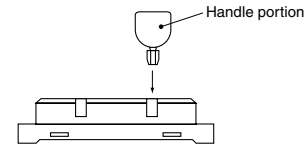
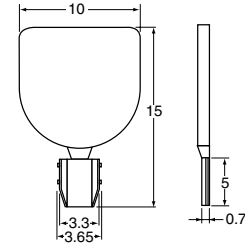
### 6. For multiple use of connectors on identical boards, sufficient care must be taken with the mounting dimensions and the strength of the socket side (board and holder).



### 7. By using max. 34.3N {3.5kgf} torque, tighten the screws with flat washer.

### 8. Method for preventing incorrect insertion

1) After the incorrect insertion prevention key is inserted in the designated groove position, the handle portion should be broken away.

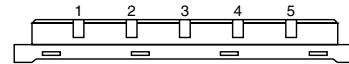


2) When DIN connectors with the identical number of contacts are used, for preventing incorrect insertion between boards, use the following example as a reference for the incorrect insertion prevention keys.

Example:

Incorrect insertion is to be prevented for the 3 connectors A, B, and C.

1 to 5: Key way position



Header			Key way positions	Socket		
C	B	A		A	B	C
*		*	1	*	*	
	*		2	*		*
		*	3			*
*			4	*		
			5			

\*: Locations for inserting the incorrect insertion preventing key

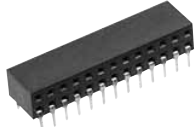
9. In case where external shock or vibration can be applied to PC boards, there is the possibility that the header and socket of the connector can be separated. Therefore it is recommended that the shock or vibration prevention method such as guide rail should be provided.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.



Stacking type  
(Solder-DIP terminals)



Angle type  
(Solder-DIP terminals)

### FEATURES

#### 1. Low profile type

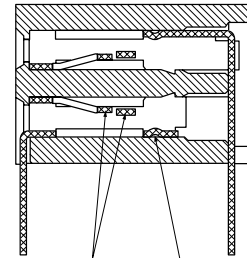
By means of the straight type and AXL low-profile header (open type) 2.54mm combination as a stacking type with a height of 10.1mm, the lowest profile is possible for a dense piling.

### APPLICATIONS

- Communication equipment
- Measuring equipment
- Factory automation related equipment



### CONSTRUCTION



Unique 2-point contacting construction

Post collapse preventing contact blade construction

Compliance with RoHS Directive

### ORDERING INFORMATION

AXB 1       0 1

1: BB socket

<No. of contacts (2 digits)>

10: 10 contacts	14: 14 contacts	16: 16 contacts
20: 20 contacts	26: 26 contacts	30: 30 contacts
34: 34 contacts	40: 40 contacts	50: 50 contacts
60: 60 contacts	64: 64 contacts	

<Type>

0: Straight type  
1: Angle type

<Terminal shape>

0: DIP terminal

<Surface treatment (Contact portion/Terminal portion)>

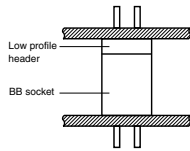
1: Au plating/Sn plating

# (AXB1)

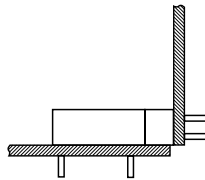
## HOW TO USE

- **Socket combination**  
Low-profile header (Open type)

- **Mating condition**



Stacking type  
(Solder-DIP terminals)



Angle type  
(Solder-DIP terminals)

## PRODUCT TYPES

### 1. Stacking type (Straight type)

No. of contacts	Solder-dip terminals		Packing	
	Part No.		Inner carton	Outer carton
10	AXB110001		—	200 pcs
14	AXB114001			
16	AXB116001			
20	AXB120001			
26	AXB126001			
30	AXB130001			
34	AXB134001			
40	AXB140001			
50	AXB150001			
60	AXB160001			
64	AXB164001			

### 2. Angle type

No. of contacts	Solder-dip terminals		Packing	
	Part No.		Inner carton	Outer carton
10	AXB110101		—	200 pcs
14	AXB114101			
16	AXB116101			
20	AXB120101			
26	AXB126101			
30	AXB130101			
34	AXB134101			
40	AXB140101			
50	AXB150101			
60	AXB160101			
64	AXB164101			

### Special Order

In addition to standard number of contacts, 6 to 62 contacts compatibility is possible.  
Note) For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

### 2. Accessory

Name	Part No.	Packing	
		Inner carton	Outer carton
Incorrect insertion prevention key	AXB8001	50 pcs	200 pcs

## SPECIFICATIONS

### 1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	2A	
	Rated voltage	250V AC	
	Breakdown voltage	1,000 V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	At 500V DC megger
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Unit insertion force	Max. 5.88N (600gf)/2 contacts	Measured by steel gauge: 0.64±0.01mm square
	Unit removal force	Min. 0.392N (40gf)/2 contacts	Measured by steel gauge: 0.64±0.01mm square
Lifetime characteristics	Insertion and removal life	500 times	
Environmental characteristics	Ambient temperature	-55°C to +105°C	Max. 85% R.H. Not freezing at low temperature

### 2. Material and surface treatment

Part name	Material	Surface
Molded portion	Glass reinforced PET (UL94V-0)	—
Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

Note: Please consult us for different plating requirements.

### 3. Applicable PC board

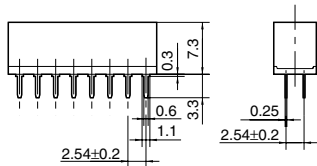
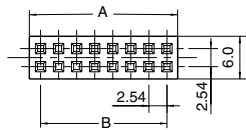
Thickness	1.6mm for Solder-dip type
-----------	---------------------------

**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

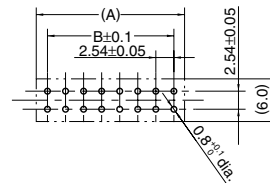
- Stacking type
- Solder-dip terminals

**CAD Data**



General tolerance: ±0.3

Recommended PC board pattern (Bottom view)

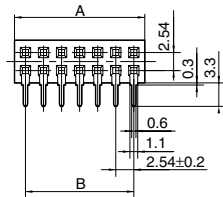
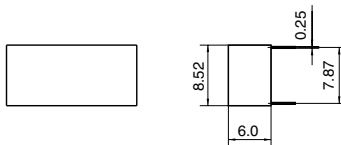
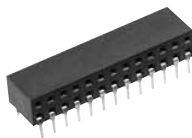


**Dimension table** (mm)

No. of contacts	A	B
10	13.24	10.16
14	18.32	15.24
16	20.86	17.78
20	25.86	22.86
26	33.56	30.48
30	38.64	35.56
34	43.64	40.64
40	51.34	48.26
50	63.96	60.96
60	76.74	73.66
64	81.74	78.74

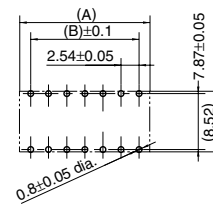
- Angle type
- Solder-dip terminals

**CAD Data**



General tolerance: ±0.3

Recommended PC board pattern (Bottom view)



**Dimension table** (mm)

No. of contacts	A	A
10	13.24	10.16
14	18.32	15.24
16	20.86	17.78
20	25.86	22.86
26	33.56	30.48
30	38.64	35.56
34	43.64	40.64
40	51.34	48.26
50	63.96	60.96
60	76.74	73.66
64	81.74	78.74

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

**NOTES****1. Regarding printed circuit board design**

Terminal numbers are not indicated on the connector. Confirm the socket terminal direction when carrying out the printed circuit board design.

**2. Regarding handling of terminals**

Repeated bending of the terminals can cause breakage. Take extra care when handling.

**3. Regarding soldering operations**

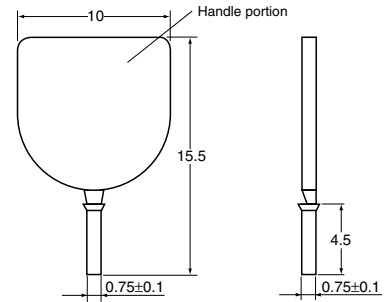
Rosin type flux should be used. For the dip method of soldering, the following conditions should be used.

- 260°C Within 10 seconds
- 300°C Within 5 seconds
- 350°C Within 3 seconds

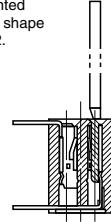
**4. Regarding prevention of incorrect insertion**

For the prevention of incorrect insertion of similarly appearing printed circuit board blocks, the following procedure should be carried out.

- 1) Insert the incorrect insertion prevention key (AXB8001) in a black terminal of the socket, and break away the handle portion.
  - 2) Remove the post corresponding to that terminal from the socket of the header.
- When the multiple contacts connectors such as 34 contacts type are used, it is recommended that one incorrect insertion prevention key be placed near the end of each side for improving the safety of the circuit protection against incorrect insertion.



Note: Although AXM8002 is printed on the handle-portion, the shape is different from AXM8002.



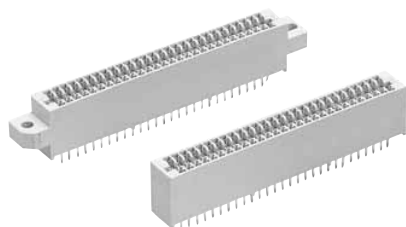
Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

**FOR PC BOARD  
TO PC BOARD**

**CARD-EDGE  
CONNECTORS (AXC)**

Solder-dip type with flange



Solder-dip type without flange

Compliance with RoHS Directive

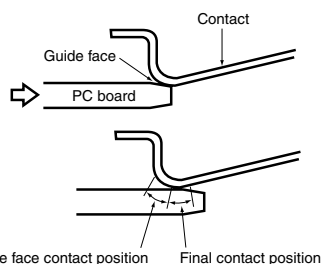
**FEATURES**

**1. Long insertion and removal life.**

Thanks to our original contact shape, low insertion force is required and it is designed so that the contact position shifts at the start and end of card insertion. This reduces metal abrasion.

- Standard type: 10,000 times
- Low-insertion-force, long life type: 30,000 times

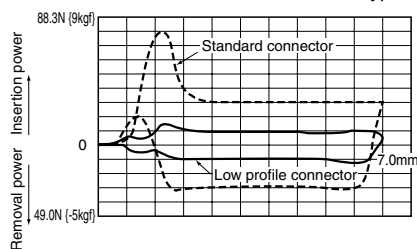
Contact shape



**2. Low insertion types are also available.**

Among solder-dip types, low insertion types are available with approximately 0.490N, 50gf/ contact and less than 1/4 of the standard connector with a good fit feel.

Insertion/removal force comparison between low insertion and standard types



**3. Incorrect or reverse insertion can be prevented.**

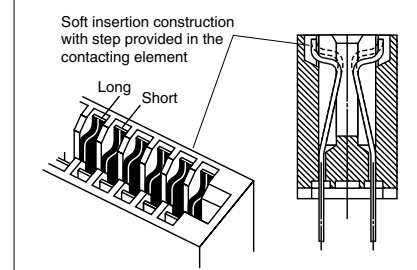
By means of the key to prevent incorrect insertion and the slit fabrication of the printed circuit board, reverse insertion into a printed circuit board block or incorrect insertion into a similarly appearing printed circuit board block can be prevented.

**APPLICATIONS**

- Communication equipment
- Measuring equipment
- Factory automation related equipment

**• What is the low-insertion/long-life type?**

This connector employs a unique soft-insertion construction with a step provided in the contact. Low insertion power (less than 30% of standard connector) and long life (over 30,000 insertion/removal times) is realized.



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



## ORDERING INFORMATION

AXC 4       0  

4: Card-edge connectors

<No. of contacts (2 digits)>

34: 34 contacts    36: 36 contacts    44: 44 contacts  
 56: 56 contacts    60: 60 contacts    62: 62 contacts  
 72: 72 contacts    86: 86 contacts    00: 100 contacts

<Mounting flange shape and type>

1: Without flange (Standard type)  
 2: With flange (Standard type)  
 4: Without flange (Low insertion force/Long life type)  
 5: With flange (Low insertion force/Long life type)



<Terminal shape>

0: DIP straight terminal

<Surface treatment (Contact portion/Terminal portion)>

1: Au plating 0.2 μm/Sn plating (Standard type)  
 3: Au plating 0.76 μm/Sn plating (Low insertion force/Long life type)

## PRODUCT TABLE

Type	Standard type	Low insertion force/Long life type
	Solder-dip straight terminals	Solder-dip straight terminals
Contact pitches	2.54mm	2.54mm
Spaces between rows	5.08mm	5.43mm
No. of contacts	100	100
	86	86
	72	72
	60, 62	60, 62
	56	56
	44	44
	34, 36	34, 36
Terminal shape	 Solder-dip straight terminal	 Solder-dip straight terminal

Note) Each connector is available with or without flanges.

## PRODUCT TYPES

### 1. Connector

#### • Standard type (solder-dip straight terminal)

No. of contacts	No flange type	Flange type	Packing quantity	
	Part No.	Part No.	Inner carton	Outer carton
34	AXC434101	AXC434201	—	200 pcs.
36	AXC436101	AXC436201		
44	AXC444101	AXC444201		
56	AXC456101	AXC456201		
60	AXC460101	AXC460201		
62	AXC462101	AXC462201		
72	AXC472101	AXC472201		
86	AXC486101	AXC486201		
100	AXC400101	AXC400201		

Note) The row pitch between solder-dip straight terminals of the low-insertion-power/long-life type is different from the card edge connector standard type.

#### • Low insertion force/Long life type (solder-dip straight terminal)

No. of contacts	No flange type	Flange type	Packing quantity	
	Part No.	Part No.	Inner carton	Outer carton
34	AXC434403	AXC434503	—	200 pcs.
36	AXC436403	AXC436503		
44	AXC444403	AXC444503		
56	AXC456403	AXC456503		
60	AXC460403	AXC460503		
62	AXC462403	AXC462503		
72	AXC472403	AXC472503		
86	AXC486403	AXC486503		
100	AXC400403	AXC400503		

Low insertion force/Long life type: 5.43mm  
 Standard type: 5.08mm



**2. Keys (Standard type, low insertion force and long life type)**

Name	Part No.	Packing quantity	
		Inner carton	Outer carton
Incorrect insertion prevention key	AXC8001	50 pcs.	200 pcs.

**SPECIFICATIONS**

**1. Characteristics (Standard type)**

Item		Specifications	Conditions
Electrical characteristics	Rated current	3A	
	Rated voltage	250V AC	
	Breakdown voltage	1,000 V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	at 500V DC
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Insertion force (unit)	Max. 4.45N {453.6gf}	Measured by steel gauge with 1.78mm thickness and smoothness 0.1s.
	Removal force (unit)	Min. 0.279N {28.4gf}	Measured by steel gauge with 1.37mm thickness and smoothness 0.1s after 3 times insertion of 1.78mm thickness gauge
	Holding force for contact	Min. 9.81N {1kgf}	
Life time characteristics	Insertion and removal life	10,000 times	Replace the PCB board within 2,000 times.
Environmental characteristics	Ambient temperature	-55°C to +105°C	No freezing at low temperatures
	Soldering temperature resistance	260°C: Within 10 sec.; 300°C: Within 5 sec. 350°C: Within 3 sec.	

**2. Characteristics (Low insertion force/Long life type)**

Item		Specifications	Conditions
Electrical characteristics	Rated current	2A	
	Rated voltage	250V AC	
	Breakdown voltage	1,000 V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	at 500V DC
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Insertion force (Composite)	Max. 39.2N {4.0kgf} (100 contacts) Max. 28.4N {2.9kgf} (72 contacts) Max. 13.7N {1.4kgf} (34 contacts)	The contact face of the 1.6±0.15 mm PC board is gold plated. Guide portion of PC board is chamfered 15°.
	Removal force (Composite)	Min. 5.88N {0.6kgf} (100 contacts) Min. 4.21N {0.43kgf} (72 contacts) Min. 1.96N {0.2kgf} (34 contacts)	
Life time characteristics	Insertion and removal life	30,000 times	Replace the PCB board within 2,000 times.
Environmental characteristics	Ambient temperature	-55°C to +105°C	No freezing at low temperatures
	Soldering temperature resistance	260°C: Within 10 sec.; 300°C: Within 5 sec. 350°C: Within 3 sec.	

**3. Material and surface treatment**

Part name	Material		Surface treatment	
	Standard type	Low insertion force/Long life type	Standard type	Low insertion force/Long life type
Molded portion	Glass reinforced PBT (UL94V-0)		—	
Contact	Copper alloy		Contact portion: Ni plating on base, Au plating (0.2μm) on surface Terminal portion: Ni plating on base, Sn plating on surface	Contact portion: Ni plating on base, Au plating (0.76μm) on surface Terminal portion: Ni plating on base, Sn plating on surface

**4. Applicable PC board**

Standard type, low insertion force and long life type
<ul style="list-style-type: none"> <li>• Inserting PC board thickness: 1.6±0.15mm</li> <li>• Mounting PC board thickness: 1.6 to 2.4mm</li> <li>• Pattern pitch: 2.54±0.05mm</li> <li>• Pattern width: 1.4mm</li> <li>• Contact portion: Au plating</li> </ul>

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

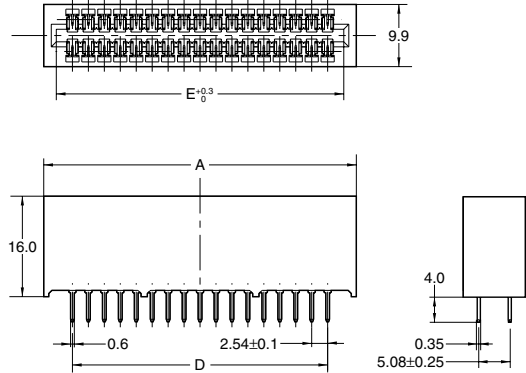
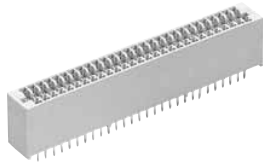
## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

### 1. Standard type

- Without flange

**CAD Data**

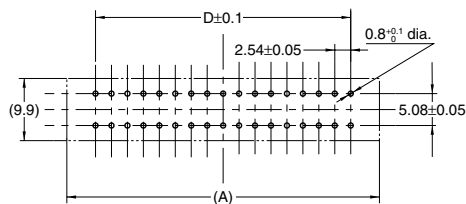


General tolerance: ±0.3

Dimension table (mm)

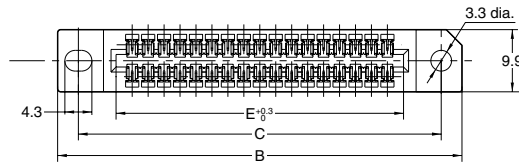
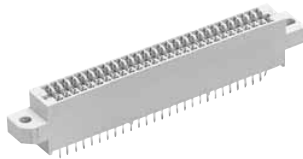
No. of contacts	A	D	E
34	49.78	40.64	45.78
36	52.32	43.18	48.32
44	62.48	53.34	58.48
56	77.72	68.58	73.72
60	82.8	73.66	78.8
62	85.34	76.2	81.34
72	98.04	88.9	94.04
86	115.82	106.68	111.82
100	133.6	124.46	129.6

Recommended PC board pattern (Bottom view)



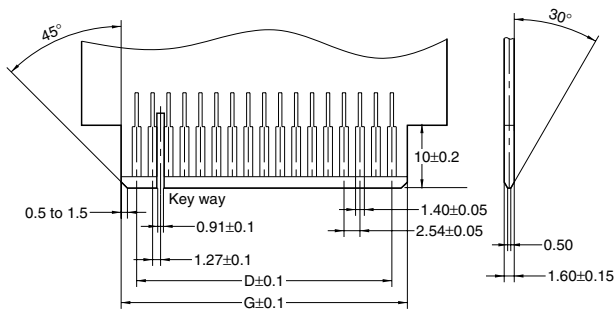
- With flange

**CAD Data**

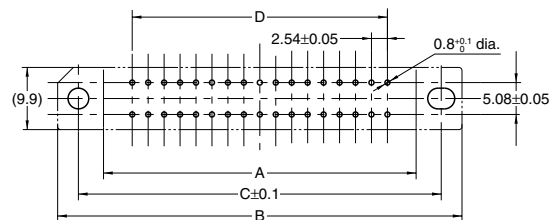


General tolerance: ±0.3

Applicable PC board dimensions



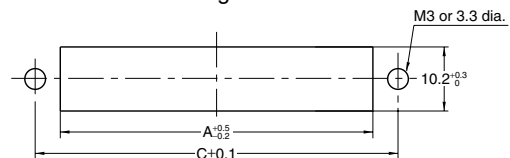
Recommended PC board pattern (Bottom view)



Dimension table (mm)

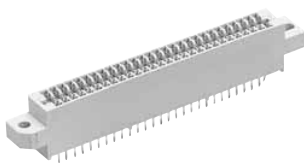
No. of contacts	A	B	C	D	E	G
34	49.78	64.39	57.78	40.64	45.78	45.58
36	52.32	66.93	60.32	43.18	48.32	48.12
44	62.48	77.09	70.48	53.34	58.48	58.28
56	77.72	92.33	85.72	68.58	73.72	73.52
60	82.8	97.41	90.8	73.66	78.8	78.6
62	85.34	99.95	93.34	76.2	81.34	81.14
72	98.04	112.65	106.04	88.9	94.04	93.84
86	115.82	130.43	123.82	106.68	111.82	111.62
100	133.6	148.21	141.6	124.46	129.6	129.4

Mounting hole cut-out



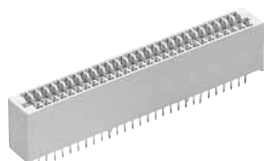
2. Low insertion force/Long life type

A) With flange type

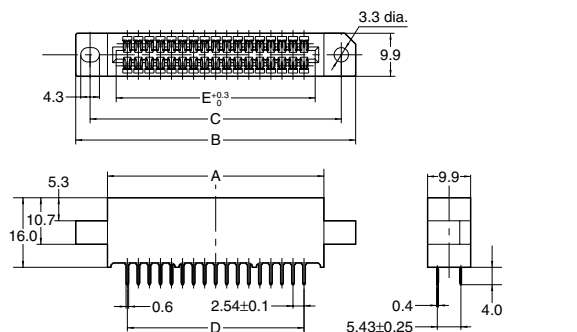


B) Without flange type

**CAD Data**

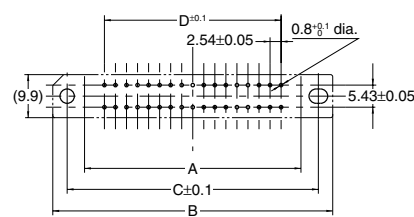


Terminal pitches are different from standard type.  
 Low insertion force/Long life type : 5.43mm  
 Standard type : 5.08mm

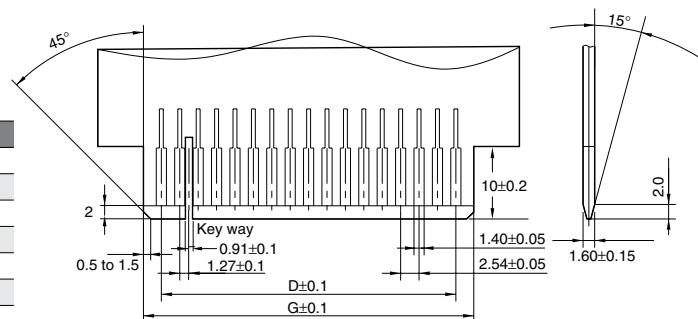


General tolerance:  $\pm 0.3$

Recommended PC board pattern (Bottom view)



Applicable PC board dimensions



Dimension table (mm)

No. of contacts	A	B	C	D	E	G
34	49.78	64.39	57.78	40.64	45.78	45.58
36	52.32	66.93	60.32	43.18	48.32	48.12
44	62.48	77.09	70.48	53.34	58.48	58.28
56	77.72	92.33	85.72	68.58	73.72	73.52
60	82.8	97.41	90.8	73.66	78.8	78.6
62	85.34	99.95	93.34	76.2	81.34	81.14
72	98.04	112.65	106.04	88.9	94.04	93.84
86	115.82	130.43	123.82	106.68	111.82	111.62
100	133.6	148.21	141.6	124.46	129.6	129.4

Note) Dimensions of A, D, E and G are common for both types.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

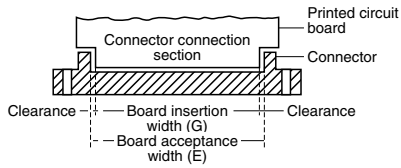
IC sockets

Information

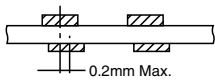
**NOTES**

**1. Cautions regarding printed circuit board fabrication**

1) Appropriate dimensions for the board insertion width should be provided for the connector connection section of the printed circuit board. If the clearance between the printed circuit board insertion width and that of the connector is large, defective contact or short circuit can be caused. The drawing for the printed circuit board pattern design should provide reference to the clearance as being small.

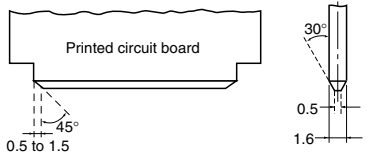


2) The pattern shift of the front and back connector connection section of the printed circuit board should be within 0.2mm.

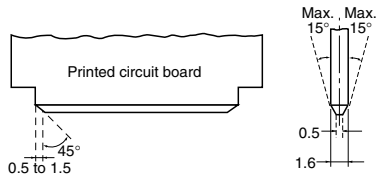


3) Bevelling should be provided without fail for the insertion width of the connector connection section. When the printed circuit board is inserted in the connector, the bevelling will keep distortion of the contacts and insertion force small, improving the insertion capability along with preventing defective contact due to dropping out of the printed circuit board end surface.

• Standard type



• Low insertion force/Long life type

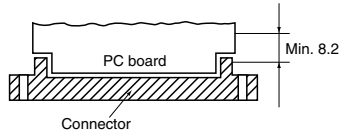


4) The proper thickness of printed circuit board should be used.

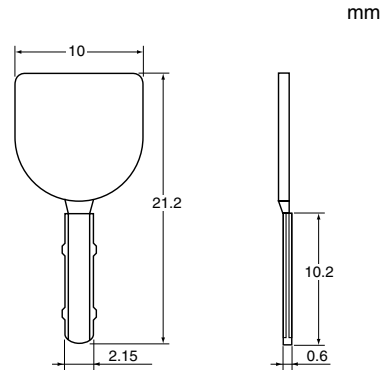
5) Care must be taken with printed circuit board "warp." The extent of the warpage may be exacerbated when the electronic components are mounted on the printed circuit board due to the contraction of the solder on the board. For this reason, ensure that the maximum warp of the area where the connector is mated is 0.1mm.

**2. Regarding insertion of printed circuit board**

1) Care should be taken to avoid having any oil, flux, or other foreign matter adhere to the insertion section contact surface of the printed circuit board. Foreign matter can lead to defective contact. If such a condition exists, the adhering matter should be removed with alcohol, freon, or other suitable solvent.  
 2) Insert into connector at least 8.2 mm from the insertion edge of the PC board.



3) By means of a groove fabricated at a designated position, a key (special accessory part) is inserted for the prevention of reverse insertion or incorrect insertion of a similarly appearing printed circuit board.



**3. Regarding the operations for dip type soldering**

The dip type soldering operations should be carried out under the following conditions.

- 260°C Within 10 seconds
- 300°C Within 5 seconds
- 350°C Within 3 seconds

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

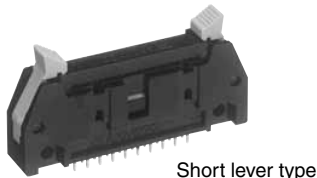
Connectors for industrial equipment

IC sockets

Information

**FOR PC BOARD TO FLAT CABLE** **MIL CONNECTORS (AXM)**

Density mounting



Compliance with RoHS Directive

**FEATURES**

**1. High density mounting is possible.**  
Even with mounting right next to another connector, insertion into and removal from the socket can be done, providing a saving in the surface mounting space.



**2. Lever with original stopper construction for great strength**  
The original stopper construction reduces the possibility of lever damage even when excess load is applied to the lever during socket insertion and removal, and during transportation.

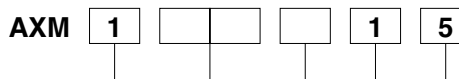
**3. Metal pin-less lever construction**  
Noise prevention is considered in this construction by not using metal pins, which, if present, act as noise absorbing antennas.

**4. Incorrect insertion prevention mechanism.**  
Because of the box type construction of the header and the special key that is used, incorrect insertion can be prevented. Also, by means of the special key that is used, incorrect insertion into an adjacent connector is prevented.



**ORDERING INFORMATION**

**1. Socket**



1: MIL connectors (Socket)

<No. of contacts (2 digits)>

10: 10 contacts    14: 14 contacts    16: 16 contacts    20: 20 contacts    26: 26 contacts    30: 30 contacts  
34: 34 contacts    40: 40 contacts    50: 50 contacts    60: 60 contacts    64: 64 contacts

<Strain relief/Polarity guide>

0: Without strain relief/10 contacts: with polarity guide  
2: Without strain relief/Min. 14 contacts with polarity guide, 10 contacts without polarity guide  
4: With strain relief/14 contacts with polarity guide, 10 contacts without polarity guide  
9: With strain relief/10 contacts: with polarity guide

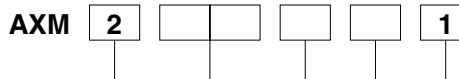
<Pitch of flat cable>

1: 1.27 mm

<Surface treatment (Contact portion/Terminal portion)>

5: Au plating/Au plating

**2. Header**



2: MIL connectors (Header)

<No. of contacts (2 digits)>

10: 10 contacts    14: 14 contacts    16: 16 contacts    20: 20 contacts    26: 26 contacts    30: 30 contacts  
34: 34 contacts    40: 40 contacts    50: 50 contacts    60: 60 contacts    64: 64 contacts

<Lever shape>

0: Long lever  
1: Short lever  
2: Without lever

<Terminal shape/Polarity slot>

0: Straight (Min. 14 contacts with polarity slot, 10 contacts without polarity slot)  
1: Angle (Min. 14 contacts with polarity slot, 10 contacts without polarity slot)  
8: Straight (10 contacts with polarity slot)  
9: Angle (10 contacts with polarity slot)

<Surface treatment (Contact portion/Terminal portion)>

1: Au plating/Sn plating

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXM

## 3. Strain relief

AXM 3

3: MIL connectors (Strain relief)

<No. of contacts (2 digits)>

10: 10 contacts    14: 14 contacts    16: 16 contacts    20: 20 contacts    26: 26 contacts    30: 30 contacts  
 34: 34 contacts    40: 40 contacts    50: 50 contacts    60: 60 contacts    64: 64 contacts

## SPECIFICATIONS

### 1. Characteristics

Item		Specifications	Conditions
Electrical characteristics	Rated current	1 A When the header is connected to our wire-press socket, the rated current varies depending on the wire used as shown below. (AWG#23/#24: 3 A, AWG#26: 2 A, AWG#28: 1 A)	
	Breakdown voltage	750 V AC for 1 min.	Detection current: 1 mA
	Insulation resistance	Min. 1000MΩ	at 500V DC megger
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Unit removal force	Min. 0.785N {80gf}/2 contacts	Measured by steel-pin-gauge with (0.64±0.01) × (0.64±0.01)mm <sup>2</sup> cross section area.
	Composite insertion force	Max. 2.94N {300gf} × no. of contacts	
	Post holding force	Min. 19.6N {2kgf}	By pulling post until coming off
	Lever locking strength	Min. 78.5N {8kgf}	Sockets are pulled to the direction of shaft in the mated condition
Lifetime characteristics	Insertion and removal life	500 times	
	Ambient temperature	-55° to +105°C	
Environmental characteristics	Vibration resistance	10 to 55Hz at the double amplitude of 1.52mm	No opening more than 1μsec. at max. 100mA carrying current
	Shock resistance	490m/s <sup>2</sup> {50G}	No opening more than 1μsec. at max. 100mA carrying current

### 2. Materials and surface treatment

Part name	Material	Surface
Molded portion	Glass reinforced PBT (UL94V-0)	—
Contact (Socket)	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Pressured portion: Ni plating on base, Au plating on surface
Post (Header)	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

### 3. Applicable cable

Standard wire	AWG28 Pitch 1.27mm
---------------	--------------------

## PRODUCT TYPES

### 1. Socket

No. of contacts	No. of polarity guide	Without strain relief	With strain relief
10	0	AXM110215	AXM110415
	1	AXM110015	AXM110915
14	1	AXM114215	AXM114415
	1	AXM116215	AXM116415
20	1	AXM120215	AXM120415
	1	AXM126215	AXM126415
30	1	AXM130215	AXM130415
	1	AXM134215	AXM134415
40	1	AXM140215	AXM140415
	1	AXM150215	AXM150415
60	1	AXM160215	AXM160415
	1	AXM164215	AXM164415

### 2. Strain relief

No. of contacts	Part No.
10	AXM310
14	AXM314
16	AXM316
20	AXM320
26	AXM326
30	AXM330
34	AXM334
40	AXM340
50	AXM350
60	AXM360
64	AXM364

3. Header

No. of contacts	No. of polarity slot	Long lever type		Short lever type	
		Angle	Straight	Angle	Straight
10	0	AXM210011	AXM210001	AXM210111	AXM210101
	1	AXM210091	AXM210081	AXM210191	AXM210181
14	1	AXM214011	AXM214001	AXM214111	AXM214101
16	1	AXM216011	AXM216001	AXM216111	AXM216101
20	1	AXM220011	AXM220001	AXM220111	AXM220101
26	1	AXM226011	AXM226001	AXM226111	AXM226101
30	1	AXM230011	AXM230001	AXM230111	AXM230101
34	1	AXM234011	AXM234001	AXM234111	AXM234101
40	1	AXM240011	AXM240001	AXM240111	AXM240101
50	1	AXM250011	AXM250001	AXM250111	AXM250101
60	1	AXM260011	AXM260001	AXM260111	AXM260101
64	1	AXM264011	AXM264001	AXM264111	AXM264101

Notes) 1. A no-lever type is available. This product will be manufactured after receiving your order. Please inquire about delivery.  
 When ordering change the fourth digit in the part number to "2".  
 2. The tray packing quantity for outer carton is 200 pcs.  
 3. For the available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

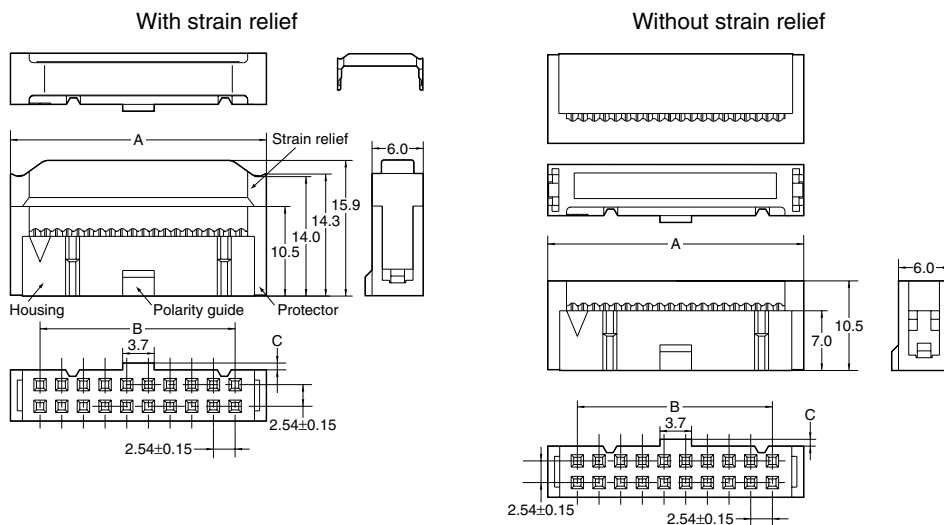
4. Keys

Product name	Part No.
Polarity key	AXM8001
Incorrect insertion prevention key	AXM8002

DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

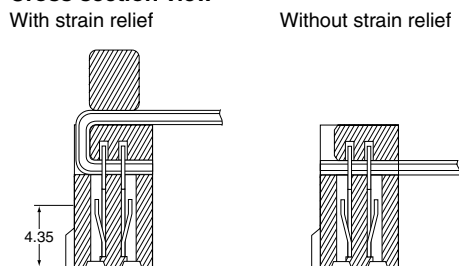
• Socket



Dimension table (mm)

No. of contacts	No. of Polarity slot	A	B	C
10	0	17.3	10.16	—
	1	17.3	10.16	—
14	1	22.4	15.24	0.8
16	1	24.9	17.78	
20	1	30.0	22.86	1.0
26	1	37.6	30.48	
30	1	42.7	35.56	
34	1	47.8	40.64	
40	1	55.4	48.26	1.4
50	1	68.1	60.96	
60	1	80.8	73.66	
64	1	85.9	78.74	

Cross section view



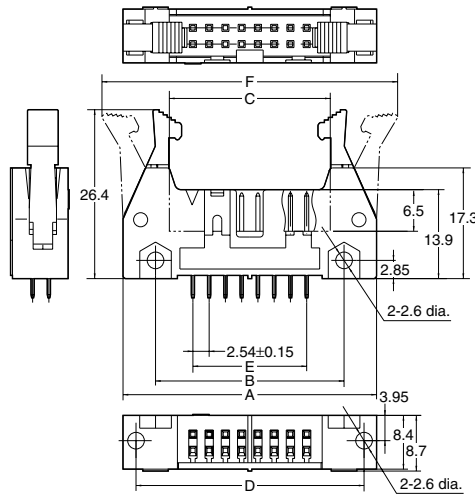
General tolerance: ±0.3

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information



## • Header (Long lever type)

**CAD Data**



General tolerance:  $\pm 0.3$

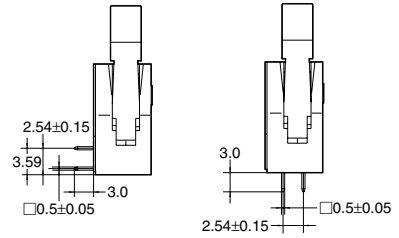
Dimension table (mm)

No. of contacts	No. of Polarity slot	A	B	C	D	E	F
10	0	32.0	21.84	17.53	27.9	10.16	38.6
	1	32.0	21.84	17.53	27.9	10.16	38.6
14	1	37.1	26.92	22.61	33.0	15.24	43.7
16	1	39.6	29.46	25.15	35.6	17.78	46.2
20	1	44.7	34.54	30.23	40.6	22.86	51.3
26	1	52.3	42.16	37.85	48.3	30.48	58.9
30	1	57.4	47.24	42.93	53.34	35.56	64.0
34	1	62.5	52.32	48.01	58.4	40.64	69.1
40	1	70.1	59.94	55.63	66.0	48.26	76.7
50	1	82.8	72.64	68.33	78.7	60.96	89.4
60	1	95.5	85.34	81.03	91.4	73.66	102.1
64	1	100.6	90.42	86.11	96.5	78.74	107.2

## Terminal dimensions

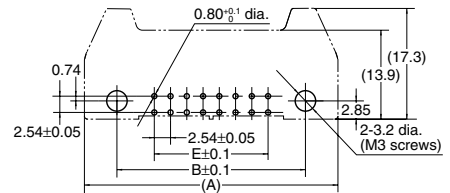
Angle terminal

Straight terminal

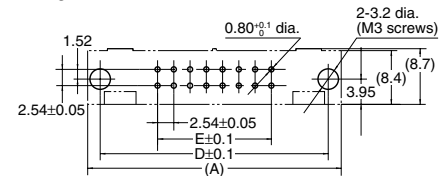


## Recommended PC board pattern (BOTTOM VIEW)

Angle terminal



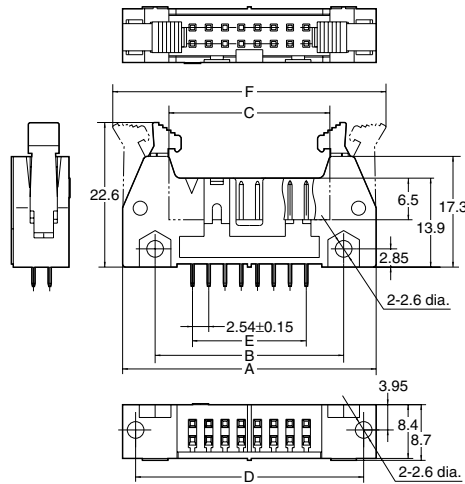
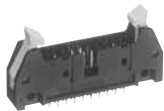
Straight terminal



Note) Dimensions of A, B, D and E are the same as the header dimensions.

## • Header [Short lever]

**CAD Data**



General tolerance:  $\pm 0.3$

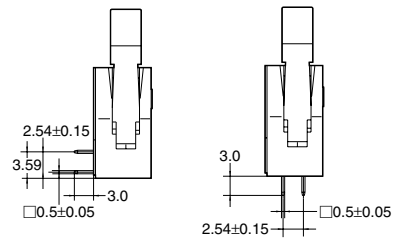
Dimension table (mm)

No. of contacts	No. of Polarity slot	A	B	C	D	E	F
10	0	32.0	21.84	17.53	27.9	10.16	35.0
	1	32.0	21.84	17.53	27.9	10.16	35.0
14	1	37.1	26.92	22.61	33.0	15.24	40.1
16	1	39.6	29.46	25.15	35.6	17.78	42.7
20	1	44.7	34.54	30.23	40.6	22.86	47.7
26	1	52.3	42.16	37.85	48.3	30.48	55.4
30	1	57.4	47.24	42.93	53.34	35.56	60.4
34	1	62.5	52.32	48.01	58.4	40.64	65.5
40	1	70.1	59.94	55.63	66.0	48.26	73.1
50	1	82.8	72.64	68.33	78.7	60.96	85.8
60	1	95.5	85.34	81.03	91.4	73.66	98.5
64	1	100.6	90.42	86.11	96.5	78.74	103.6

## Terminal dimensions

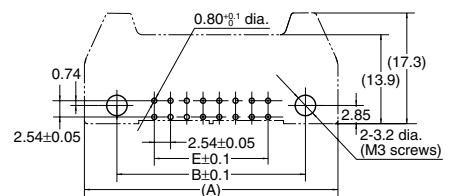
Angle terminal

Straight terminal

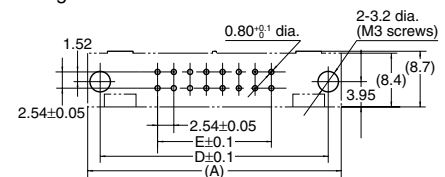


## Recommended PC board pattern (BOTTOM VIEW)

Angle terminal



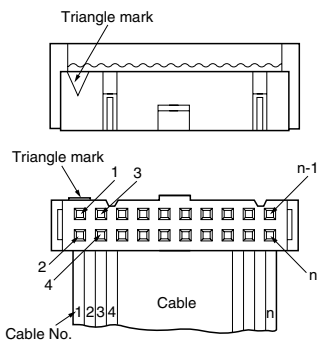
Straight terminal



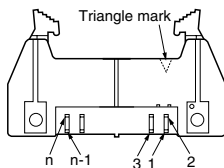
Note) Dimensions of A, B, D and E are the same as the header dimensions.

## CABLE NO. AND TERMINAL POSITION CORRELATION DRAWING

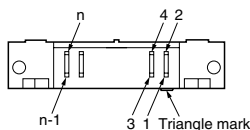
Socket



Header (Angle terminal)



Header (Straight terminal)

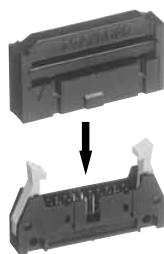


Terminal numbers are not indicated on the connector. Using the triangle mark as reference, the connection operations and printed circuit board design should be carried out.

When the cable numbers are temporarily assigned from the end as 1, 2, 3, 4 ... n, the corresponding terminal number positions for the socket are as shown in the drawing on the left. The header terminal positions and corresponding positions are shown in the drawing on the left.

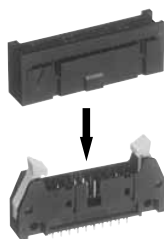
## COMBINATION OF HEADER AND SOCKET

With strain relief



Long lever type

Without strain relief



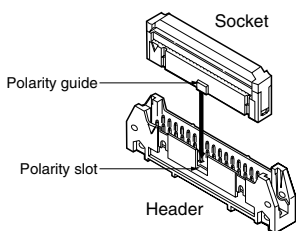
Short lever type

Socket \ Header	Long lever type	Short lever type
Strain relief	Good	Not good
Without strain relief	Not good	Good

## REGARDING REVERSE AND INCORRECT INSERTION PREVENTION

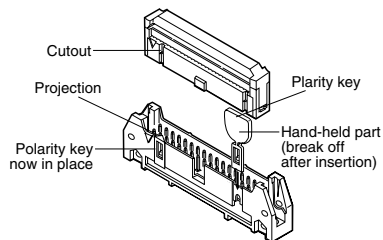
### 1. Reverse insertion prevention mechanism

The header polarity slot and socket polarity guide of these MIL connectors make for a construction which prevents reverse insertion. (However, the 10-contact type does not feature this construction.)



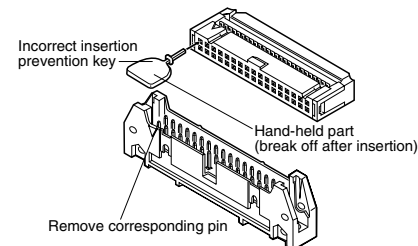
### 2. Polarity key (AXM8001) for double prevention of reverse insertion

Reverse insertion is doubly prevented by inserting the polarity key (AXM8001) into the header to create a projection and by aligning this projection with the cutout in the socket.



### 3. Incorrect insertion prevention key (AXM8002) ideal for preventing incorrect insertion into adjacent connectors when a multiple number of MIL connectors with the same number of contacts are used

Incorrect insertion is prevented by plugging the hole in the socket with the incorrect insertion prevention key (AXM8002) and then by removing or cutting off the pin of the corresponding header.



## NOTES

### 1. Regarding design of printed circuit board

The connector terminal numbers are not indicated. Using the triangle mark as reference, the printed circuit board design and the cable connection operations can be carried out.

### 2. Regarding insertion into and removal from the socket

When inserting or removing the connector, be careful not to pull the cable. Hold the socket by hand to remove the connector when the no-lever type is used. With the lever type header, removal is easy.

When the socket is unconnected, be careful not to apply excessive force to the levers.

### 3. Regarding external force applied to the cable

When there is the possibility that external force may be applied to the cable, or in the case of vibration being applied to the connector cable, a strain relief socket should be used.

### 4. Regarding soldering of the header

Soldering should be carried out under the conditions given below.

260°C: Within 10 seconds

300°C: Within 5 seconds

350°C: Within 3 seconds

### 5. Regarding the handling of header terminals

Care should be taken with the header terminals because repeated bending of the terminals can lead to damage.

### 6. Regarding the cable pressure connection tool

The special tool provided by our company for cutting the cable and making the pressure connections should be used.

### 7. Regarding the selection of header type

When making the selection of the header, the following factors should be used for the selection.

Condition	Repeated vibration and shock	Occasional vibration and shock	Force used on cable
Header			
Long lever type	Very good	Very good	Very good
Short lever type	Good	Good	Not good

Note) Vibration: 9.8 m/s<sup>2</sup> {1G}/10 to 150 Hz

Shock: 49 m/s<sup>2</sup> {5G}

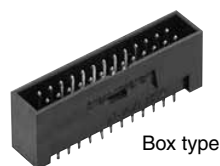
The above should be considered as criteria.

Regarding general notes, please refer to page 17.

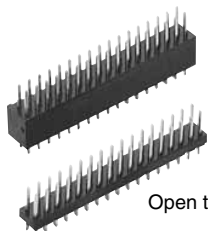
For other details, please verify with the product specification sheets.

FOR PC BOARD TO PC BOARD  
FOR PC BOARD TO WIRE  
FOR PC BOARD TO FLAT CABLE

**LOW-PROFILE  
HEADERS (AXL2)**



Box type



Open type

**FEATURES**

- 1. Simple lock mechanism provided.**  
A simple lock mechanism is used for Box type. It can be used where there is light vibration or shock. Also, the socket is a one-touch insertion and removal type.
- 2. Incorrect insertion prevention mechanism is provided.**  
With the box type, prevention against incorrect insertion is provided.
- 3. Variety of combination possible.**  
Box types can be used with MIL type sockets and Open types can be combined with BB (AXB) sockets.

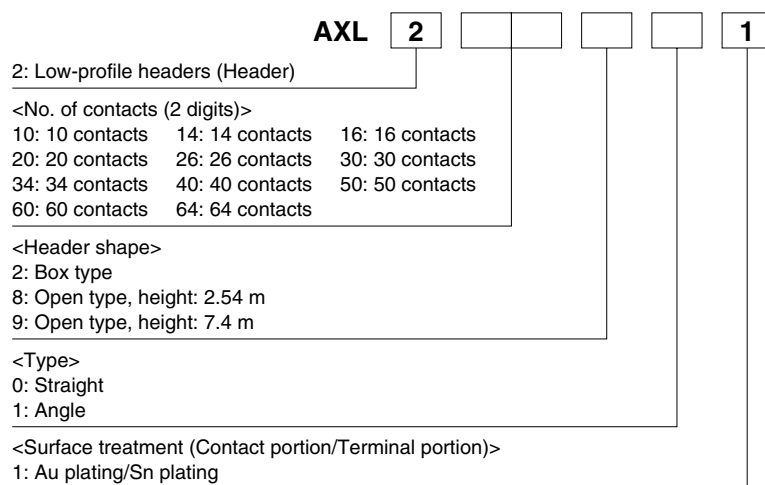
**APPLICATIONS**

- Communication equipment
- Measuring equipment
- Factory automation equipment



Compliance with RoHS Directive

**ORDERING INFORMATION**



**SPECIFICATIONS**

**1. Characteristics**

Item	Specifications		Condition
	Box type, Open type (height: 7.4mm)	Open type (height: 2.54mm)	
Electrical characteristics	Rated current	2 A When the header is connected to our wire-press socket, the rated current varies depending on the wire used as shown below. (AWG#22/#24: 3 A, AWG#26: 2 A, AWG#28: 1 A)	
	Rated voltage	250V AC	
	Breakdown voltage	1,000V AC for 1 min.	
	Insulation resistance	Min. 1,000MΩ	
	Contact resistance	Max. 20mΩ	
Mechanical characteristics	Post holding force	Min. 19.6N {2kgf}	Min. 9.81N {1kgf}
	Insertion and removal life	500 times	
Ambient temperature	-55°C to +105°C		

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# AXL(2)

## 2. Materials and surface treatment

Part name	Material	Surface treatment
Molded parts	Glass reinforced PBT (UL94V-0)	—
Post	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

## PRODUCT TYPES

### 1. Box type

No. of contact	Terminal shape	Angle	Straight
10		AXL210211	AXL210201
14		AXL214211	AXL214201
16		AXL216211	AXL216201
20		AXL220211	AXL220201
26		AXL226211	AXL226201
30		AXL230211	AXL230201
34		AXL234211	AXL234201
40		AXL240211	AXL240201
50		AXL250211	AXL250201

### 2. Open type

No. of contact	Terminal shape	Height 7.4mm		Height 2.54mm
		Angle	Straight	Straight
10		AXL210911	AXL210901	AXL210801
14		AXL214911	AXL214901	AXL214801
16		AXL216911	AXL216901	AXL216801
20		AXL220911	AXL220901	AXL220801
26		AXL226911	AXL226901	AXL226801
30		AXL230911	AXL230901	AXL230801
34		AXL234911	AXL234901	AXL234801
40		AXL240911	AXL240901	AXL240801
50		AXL250911	AXL250901	AXL250801
60		—	—	AXL260801
64		—	—	AXL264801

Notes) 1. Try packaging: Outer carton 200 pcs.  
2. For available foreign standard product, refer to "STANDARDS CHART" on the end of catalog.  
Special order  
- With polarity slot  
- With polarity incorrect insertion prevention projection

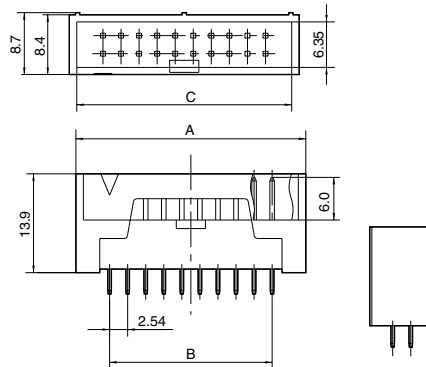
Notes) 1. Try packaging: Outer carton 200 pcs.  
2. For available foreign standard product, refer to "STANDARDS CHART" on the end of catalog.

## DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

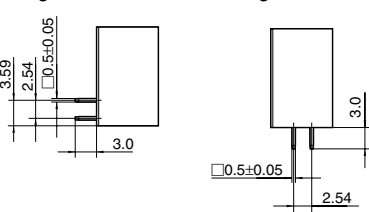
### • Box type

#### CAD Data

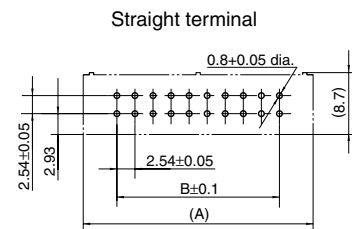
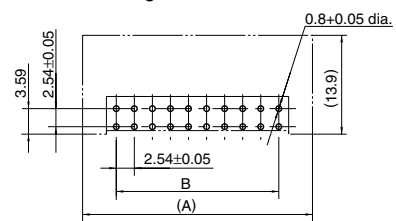


General tolerance:  $\pm 0.3$

### Terminal dimensions



### Recommended PC board pattern (BOTTOM VIEW)

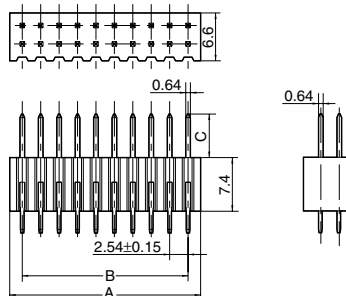


### Dimension table (mm)

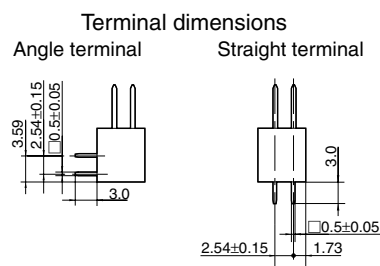
No. of contacts	A	B	C
10	19.6	10.16	17.53
14	24.7	15.24	22.61
16	27.3	17.78	25.15
20	32.3	22.86	30.23
26	40.0	30.48	37.85
30	45.0	35.56	42.93
34	50.1	40.64	48.01
40	57.7	48.26	55.63
50	70.4	60.96	68.33

• Open type (Height: 7.4mm)

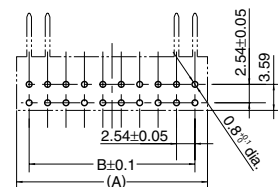
**CAD Data**



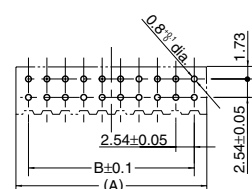
General tolerance: ±0.3



Recommended PC board pattern (BOTTOM VIEW)  
Angle terminal



Straight terminal

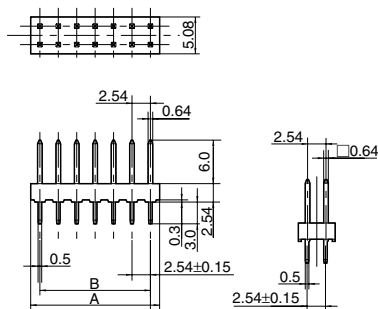
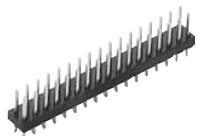


Dimension table (mm)

No. of contacts	A	B	C
10	13.6	10.16	6.0
14	18.6	15.24	
16	21.2	17.78	
20	26.3	22.86	
26	33.9	30.48	
30	39.0	35.56	
34	44.0	40.64	
40	51.7	48.26	
50	64.4	60.96	

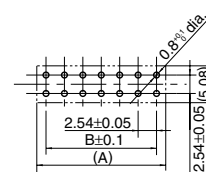
• Open type (Height: 2.54mm)

**CAD Data**



General tolerance: ±0.3

Recommended PC board pattern (Bottom view)



Dimension table (mm)

No. of contacts	A	B
10	12.7	10.16
14	17.78	15.24
16	20.32	17.78
20	25.4	22.86
26	33.02	30.48
30	38.1	35.56
34	43.18	40.64
40	50.8	48.26
50	63.5	60.96
60	76.2	73.66
64	81.28	78.74

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

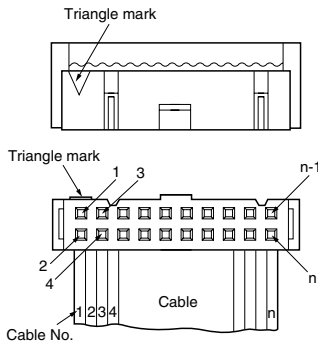
IC sockets

Information

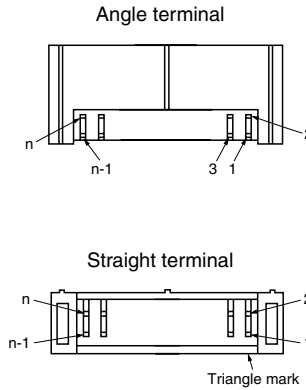
# AXL(2)

## CABLE NO. AND TERMINAL CORRELATION DRAWING

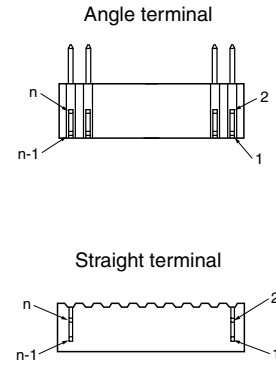
When this low-profile header is fixed with MIL type socket, the header terminal positions and the corresponding cable numbers are shown in the drawing below.



### 1. Box type



### 2. Open type



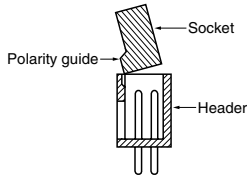
## NOTES

### 1. Regarding socket insertion and removal

The low profile type header does not have a lever mechanism for removal of the header. The socket should be grasped with the hand for insertion and removal. In case that MIL type or wire-press socket are inserted to box type header with 50 contacts, there will be a little difficulty in insertion.

This is because the polarity guide is a little higher for the protection of reverse insertion.

Please refer to the following illustration for smooth inserting.



### 2. Regarding soldering

Soldering should be carried out under the conditions given below.

- 260°C: Within 10 seconds
- 300°C: Within 5 seconds
- 350°C: Within 3 seconds

### 3. Regarding handling of terminals

Care should be taken in the handling of the terminals because repeated bending can lead to damage.

### 4. Regarding the environment for use

Header selection can be made from the table right for use under external mechanical vibration or shock, or for use where there is dust or other adverse environment.

Vibration: approx. 9.8m/s<sup>2</sup> {1G}/10 to 150Hz

Shock: approx. 49m/s<sup>2</sup> {5G}

Header type	Use environment	Vibration, shock		Dust
		Occasionally	Normally	
Low-profile header	Box type	Good	Not good	Good
	Open type	Not good	Not good	Not good
MIL header	Long lever	Good	Good	Good
	Short lever	Good	Not good	Good

### 5. Vibration and shock

When Low-profile headers are used together with MIL type sockets or BB sockets, there is a possibility of socket removal if they are used where always shock or vibration is applied. So care for lock mechanism or no shock application should be taken.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.





PRODUCT TYPES

No. of contacts	Mini-Dip type		IC type (Reverse terminal layout)
	Standard terminal layout	Reverse terminal layout	
10	AXP410218	AXP410618	—
14	AXP414218	AXP414618	AXP514618
16	AXP416218	AXP416618	AXP516618
20	AXP420218	AXP420618	AXP620618
24	—	—	AXP524618
26	AXP426218	AXP426618	—
30	AXP430218	AXP430618	—
34	AXP434218	AXP434618	—
40	AXP440218	AXP440618	AXP540618
50	AXP450218	AXP450618	—
60	AXP460218	AXP460618	—
64	—	AXP464618	—

- Notes) 1. Tray packaging: Outer carton 200 pcs.  
 2. The upper surface of a connector with mini dip type standard pin layout is marked with "▼AXP4○○2". Connectors with reverse pin layout is marked with "▲AXP4○○".  
 The orientation of the triangle distinguishes standard from reverse pin layouts.  
 3. The IC type PCB type connectors are reverse terminal layout only.  
 4. For available foreign standard products, refer to "STANDARDS CHART" on the end of the catalog.

SPECIFICATIONS

1. Characteristics

	Item	Specifications	Conditions
Electrical characteristics	Rated current	1A	
	Breakdown voltage	650V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	at 500V DC megger
	Contact resistance	Max. 15mΩ	Measured based on the HP4338B measurement method of JIS C 5402
Environmental characteristics	Ambient temperature	-55°C to +105°C	
	Vibration resistance	10 to 55Hz at the double amplitude of 1.52mm	No opening more than 1μsec. at Max. 100mA carrying current
	Shock resistance	490m/s <sup>2</sup> {50G}	

2. Material and surface treatment

Part name	Materials	Surface treatment
Molded portion	Glass reinforced PBT (UL94V-0)	—
Contact	Copper alloy	Ni plating on base, Au plating on surface

3. Applicable cable

Flat cable (stranded wire)	Pitch 1.27mm/conductor, AWG28 (7 conductors/0.127 dia.)
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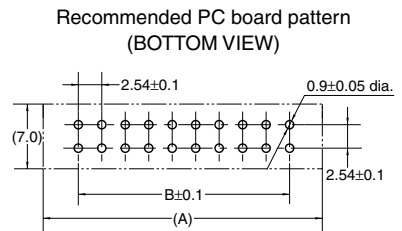
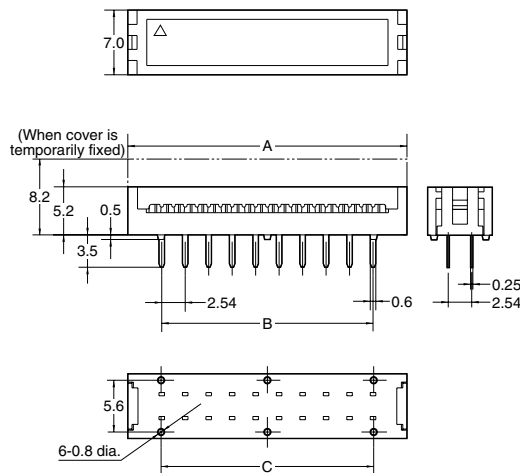
DIMENSIONS (Unit: mm)

- Mini-dip type

CAD Data



The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>



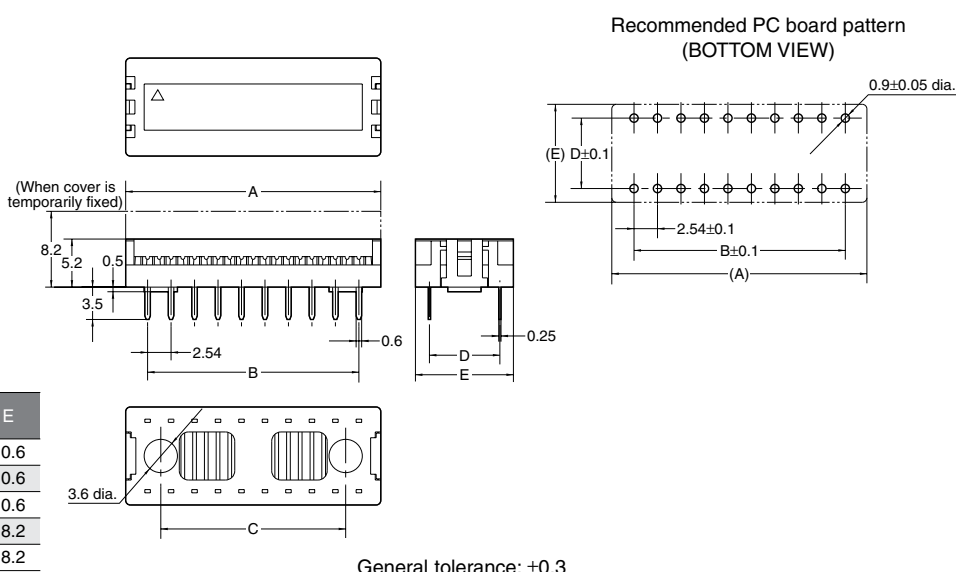
Dimension table (mm)

No. of contacts	A	B	C
10	17.5	10.16	10.3
14	22.7	15.24	15.5
16	25.1	17.78	17.9
20	30.2	22.86	23.0
26	37.9	30.48	30.6
30	42.9	35.56	35.7
34	48.0	40.64	40.8
40	55.6	48.26	48.4
50	68.3	60.96	61.1
60	81.0	73.66	73.8
64	86.1	78.74	78.9

General tolerance: ±0.3

• IC type

**CAD Data**



Dimension table (mm)

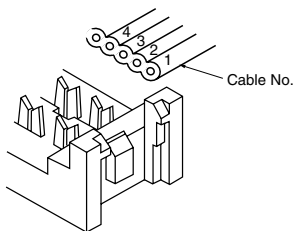
No. of contacts	A	B	C	D	E
14	20.0	15.24	13.0	7.62	10.6
16	22.5	17.78	15.0	7.62	10.6
20	27.6	22.86	20.0	7.62	10.6
24	32.7	27.94	25.0	15.24	18.2
40	53.0	48.26	45.2	15.24	18.2

General tolerance: ±0.3

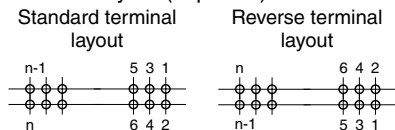
### CABLE NO. AND TERMINAL POSITION CORRELATION DRAWING

**Terminal layout**

Terminal numbers are not indicated on the connector. When the cable numbers are temporarily assigned from the end as 1, 2, 3, 4....., the corresponding terminals are as shown in the drawing below.



Cable No. layout (Top view)



### NOTES

**1. Regarding design of PC board**

The connector terminal numbers are not indicated. Using the triangle mark on the cover as reference, the PC board design and the cable connections can be carried out.

**2. Regarding the soldering operation**

Soldering should be carried out under the conditions given below.

- 260°C: Within 10 seconds
- 300°C: Within 5 seconds
- 350°C: Within 3 seconds

**3. Regarding external force applied to the cable**

Because no strain relief is provided for the PC board type connector, care should be taken not to apply external force to the cable. Sufficient slack should be provided in the cable length.

**4. Regarding handling of terminals**

Care should be taken with the terminals because repeated bending of the terminals can lead to damage.

**5. Regarding handling of the cover**

After the cover has been inserted into the base, when it is to be removed, care should be taken not to apply excessive force to displace the radius section of the cover since that will cause damage.

**6. Regarding the cable pressure connection tool**

The special tool provided for cutting the cable and making the pressure connections should be used.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# Panasonic

## ideas for life

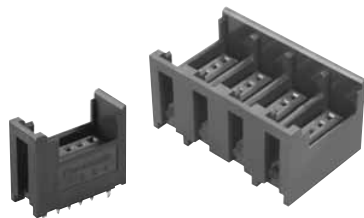
New



Wire connection plug



Wire connection socket



4 contacts × 1 row

4 contacts × 4 row

PC board-mount socket

### • What's e-CON (Easy & Economy Connector)?

e-CON is an industry standard for wire-press connectors for wiring sensors to PLCs that has been promoted by connector manufacturers and factory automation equipment manufacturers since 2001. The name "e-CON" is used in Japan only.

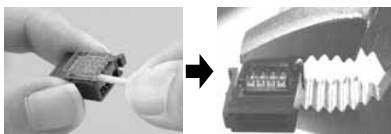
### Compliance with RoHS Directive

## FEATURES

**1. Wires can be easily crimped without any special tools, contributing to reduction of the total setup time and cost.**

This wire-press system only requires "wire insertion", "pressing", and "check of the finish", significantly facilitating wiring work as compared with the conventional wiring system that requires "wire-cover stripping", "terminal crimping", "screwing", and "check of the finish".

### • Simple wire-press system



Insert the wire to be connected.

Wires can be easily crimped without the need for special tools.

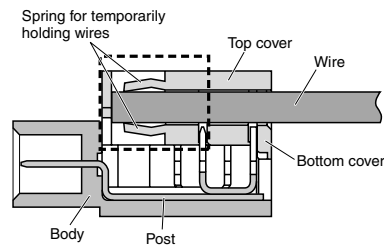
## SIMPLE WIRE-PRESS CONNECTORS

## SIMPLE WIRE-PRESS CONNECTORS (Compliant with e-CON)

**2. The structure is designed to temporarily hold inserted wires before crimping, allowing for high workability.**

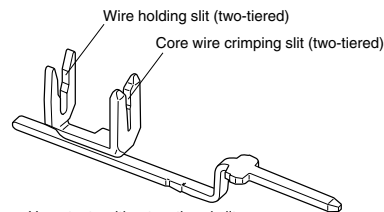
The top and bottom molded covers have a spring to temporarily hold the inserted wire, facilitating the positioning of the wire.

(Cross section of the wire connection plug)



**3. Since each single model supports a wider range of wire types, there will be a reduction of connector part numbers to control and inventory.**

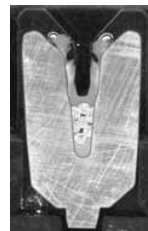
Since the wire holding slit and the core wire crimping slit have a two-tiered structure, only two connector models are required to support a wide range of wire cover diameters from 0.7 to 2.0 mm.



U-contacts with a two-tiered slit

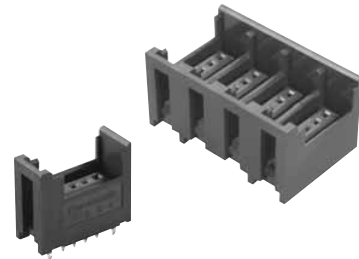


Cross section of wire crimped in the upper tier



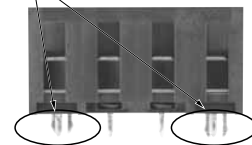
Cross section of wire crimped in the lower tier

**4. The wide selection of the PC board-mount type four-row sockets includes a self-standing bracket type and a flux-tight type.**



PC board-mount socket (standard type)

Self-standing brackets are provided for two sections.

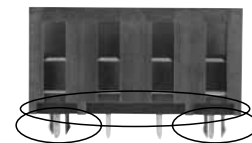


PC board-mount socket (with self-standing brackets)



The socket bottom surface is sealed with resin.

PC board-mount socket (flux-tight type)



PC board-mount socket (flux-tight type with self-standing brackets)

## APPLICATIONS

1. Semiconductors, LCD panel devices (IT equipment market), carrier devices, etc.
2. Wire-saving systems, terminal sockets, sensors, etc.

Color of cover	Nominal cross-sectional area	Wire cover diameter	AWG No.
Red	0.08 to 0.2mm <sup>2</sup>	0.7 to 1.2mm dia.	AWG #28 to 24
Blue	0.3 to 0.5mm <sup>2</sup>	1.2 to 2.0mm dia.	AWG #22 to 20

# SIMPLE WIRE-PRESS CONNECTORS (AXF1, 2)

## ORDERING INFORMATION

### 1. Wire connection type (compliant with e-CON)

**AXF1**

AXF1: Simple wire-press connector  
Wire connection type (compliant with e-CON)

Type  
1: Socket  
2: Plug

Number of rows  
1: 1 row

Number of contacts  
4: 4 contacts

Applicable cable  
2: 1.2 to 2.0 dia.  
6: 0.7 to 1.2 dia.

Packing  
C: 5-connector package  
T: Tray package (50 pieces)

### 2. PC board-mount type (compliant with e-CON)

**AXF2**

AXF2: Simple wire-press connector  
PC board-mount type (compliant with e-CON)

Type  
1: Socket (straight type)

Number of rows  
1: 1-row  
4: 4-row

Number of contacts  
4: 4 contacts

Self-standing brackets / Flux-tight  
1: Without self-standing brackets / Not flux-tight (4-row type only)  
2: Without self-standing brackets / Flux-tight (4-row type only)  
3: With self-standing brackets / Not flux-tight  
4: With self-standing brackets / Flux-tight

Packing  
C: 5-connector package  
T: Tray package

### 3. Special tool for wire-press connector (compliant with e-CON)

**AXY6**  1  1  1

AXY6: Special tool for simple wire-press connector

## TYPES

### 1. Wire connection socket

Number of contacts	Wire cover diameters supported (AWG No.)	Part number	Color of cover	Packing	
				Inner package (Carton/Tray)	Outer carton
4 contacts	0.7 to 1.2 dia. (AWG 28 to 24)	AXF11146*	Red	Asterisk "*" mark on end of Part No.; C: 5 pieces (Package) T: 50 pieces (Tray package)	Asterisk "*" mark on end of Part No.; C: 200 pieces (Package) T: 200 pieces (Tray package)
	1.2 to 2.0 dia. (AWG 22 to 20)	AXF11142*	Blue		

- Notes: 1. If you order five connectors, then we will deliver them in one box.  
2. Order the five-piece packs in units of five pieces, and the tray packs in units of 50.  
3. The wire cover diameters supported may change depending on the wire conductor composition.  
4. Some wires with a cover made of a hard material, such as fluorine resin, cannot be used even if they meet the cover diameter requirements. Please contact us for details before use.  
5. We recommend that Sn-plated wires be used.

### 2. Wire connection plug

Number of contacts	Wire cover diameters supported (AWG No.)	Part number	Color of cover	Packing	
				Inner package (Carton/Tray)	Outer carton
4 contacts	0.7 to 1.2 dia. (AWG 28 to 24)	AXF12146*	Red	Asterisk "*" mark on end of Part No.; C: 5 pieces (Package) T: 50 pieces (Tray package)	Asterisk "*" mark on end of Part No.; C: 200 pieces (Package) T: 200 pieces (Tray package)
	1.2 to 2.0 dia. (AWG 22 to 20)	AXF12142*	Blue		

- Notes: 1. If you order five connectors, then we will deliver them in one box.  
2. Order the five-piece packs in units of five pieces, and the tray packs in units of 50.  
3. The wire cover diameters supported may change depending on the wire conductor composition.  
4. Some wires with a cover made of a hard material, such as fluorine resin, cannot be used even if they meet the cover diameter requirements. Please contact us for details before use.  
5. We recommend that Sn-plated wires be used.

# SIMPLE WIRE-PRESS CONNECTORS (AXF1, 2)

## 3. PC board-mount socket

Number of contacts	Self-standing brackets and Flux-tight type	Part number	Packing	
			Inner package (Carton/Tray)	Outer carton
4 contacts × 1 rows	With self-standing brackets type	AXF21143T	100 pieces (Tray package)	200 pieces (Tray package)
	Flux-tight type with self-standing brackets	AXF21144T		
4 contacts × 4 rows	Standard type	AXF21441*	Asterisk "*" mark on end of Part No.; C: 5 pieces (Package) T: 50 pieces (Tray package)	Asterisk "*" mark on end of Part No.; C: 200 pieces (Package) T: 200 pieces (Tray package)
	Flux-tight type	AXF21442*		
	With self-standing brackets type	AXF21443*		
	Flux-tight type with self-standing brackets	AXF21444*		

Notes: 1. If you order five connectors, then we will deliver them in one box.  
2. Order the five-piece packs in units of five pieces, the tray packs of the single-row type in units of 100, and the tray packs of the four-row type in units of 50.

## SPECIFICATIONS

### 1. Characteristics

Item	Specifications	Conditions	
Electrical characteristics	Rated current	AWG20: 3A/contact, AWG22: 2A/contact, AWG24: 1A/contact, AWG26: 0.5A/contact, AWG28: 0.5A/contact	
	Rated voltage	Max. 32V AC/DC	
	Insulation resistance	Min. 1,000MΩ (initial)	Measured after one minute of voltage application by a 500 V DC megger.
	Breakdown voltage	1,000V AC for 1 min.	Rated voltage is applied for one minute and check for short circuit or damage with a detection current of 1mA.
	Contact resistance	Max. 30mΩ (initial)	Measured based on the HB4338B measurement method of JIS C 5402
Mechanical characteristics	Insertion force	Max. 11N	Including insertion resistance of the lock lever
	Removal force	Min. 0.4N	Measured the removal force with the lock released.
	Vibration resistance	10 to 55 Hz at the double amplitude of 1.52mm There must be no current interruption exceeding 1 μs during two hours of application in each of the three axis directions.	MIL-STD-202F, METHOD204G Max. 100mA carrying current
	Shock resistance	490m/s <sup>2</sup> , There must be no current interruption exceeding 1 μs during three times in each of the three axis directions.	MIL-STD-202F, METHOD202G Max. 100mA carrying current
Lifetime characteristics	Insertion and removal life	500 times, Contact resistance increase: Max.25mΩ	Repeat insertions and removals of the plug and the socket. Insertion/removal speed: 200 times/hour max.
Environmental characteristics	Ambient temperature	-35 to +75°C	With no freezing or condensation Restricted by the ambient temperature limit of the cable.
	Thermal shock resistance (mated)	50 cycles, Contact resistance increase: Max. 25mΩ, Insulation resistance Min. 100MΩ	Sequence 1. -55 <sup>±3</sup> °C, 30 minutes 2. 25 <sup>±10</sup> °C, Max. 5 minutes 3. 85 <sup>±3</sup> °C, 30 minutes 4. 25 <sup>±10</sup> °C, Max. 5 minutes To be tested at 85°C or the upper limit of the ambient temperature, whichever is lower.
	Heat resistance (mated)	85°C, 240 hours, Contact resistance increase: Max. 25mΩ, Insulation resistance Min. 100MΩ	To be tested at 85°C or the upper limit of the ambient temperature, whichever is lower. Avoid continuous use at the maximum rated current at high temperature.
	Humidity resistance (mated)	96 hours, Contact resistance increase: Max. 25mΩ, Insulation resistance Min. 100MΩ	Bath temperature: 40°C±2°C, humidity: 90 to 95 %R.H.
	Temperature and humidity cycles (mated)	10 cycles, Contact resistance increase: Max. 25mΩ, Insulation resistance Min. 100MΩ	Follow JIS C0028.
	Saltwater spray resistance (mated)	48 hours (continuous), Contact resistance increase: Max. 25mΩ, Insulation resistance Min. 100MΩ	Bath temperature: 35°C±2°C, Saltwater concentration: 5%±1%

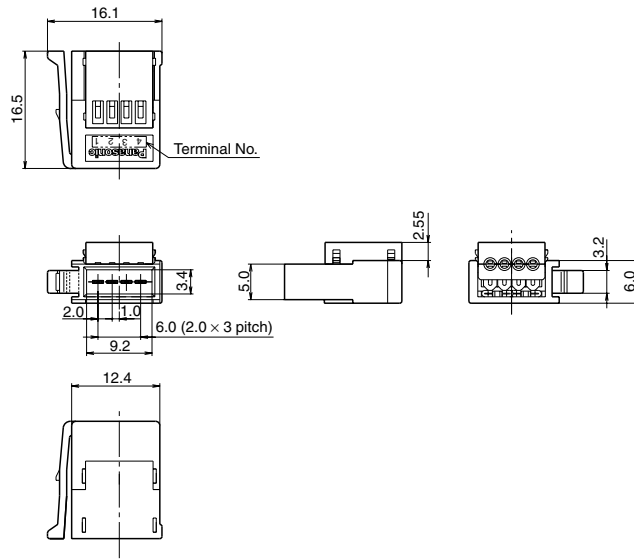
### 2. Material and surface treatment

Part name	Material	Surface treatment
Molded portion	Body: PBT resin (UL94V-0) Top cover: Polycarbonate resin (UL94V-0) Bottom cover: PBT resin (UL94V-0)	—
Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface, Pressured portion: Ni plating

# SIMPLE WIRE-PRESS CONNECTORS (AXF1, 2)

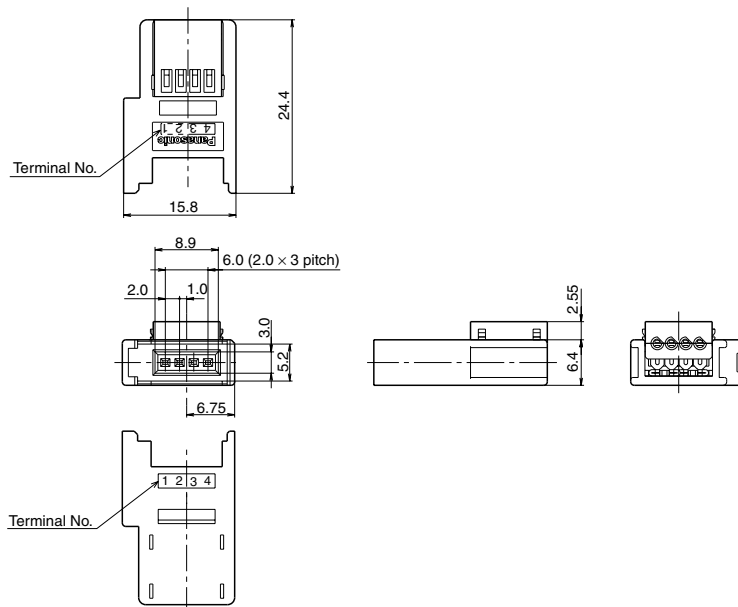
## DIMENSIONS (unit: mm)

### 1. Plug



General tolerance:  $\pm 0.2$

### 2. Socket



General tolerance:  $\pm 0.2$

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

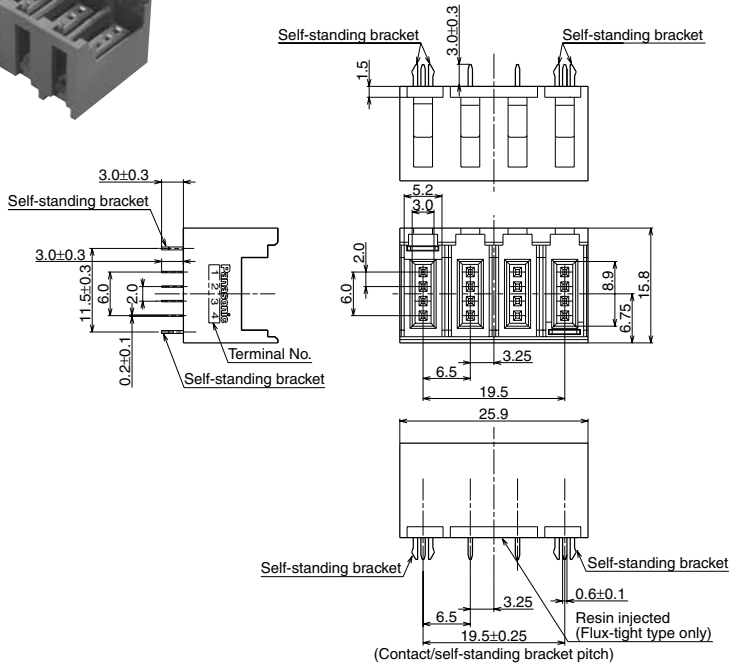
IC sockets

Information

# SIMPLE WIRE-PRESS CONNECTORS (AXF1, 2)

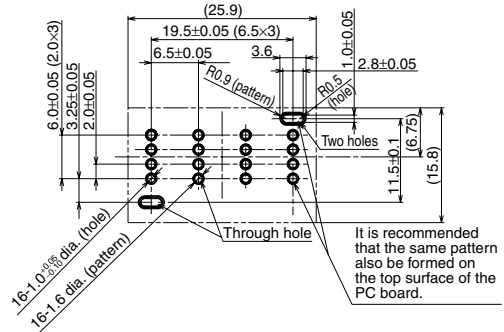
## 3. PC board-mount socket with self-standing brackets

1) 4 contacts × 4 rows



General tolerance: ±0.2

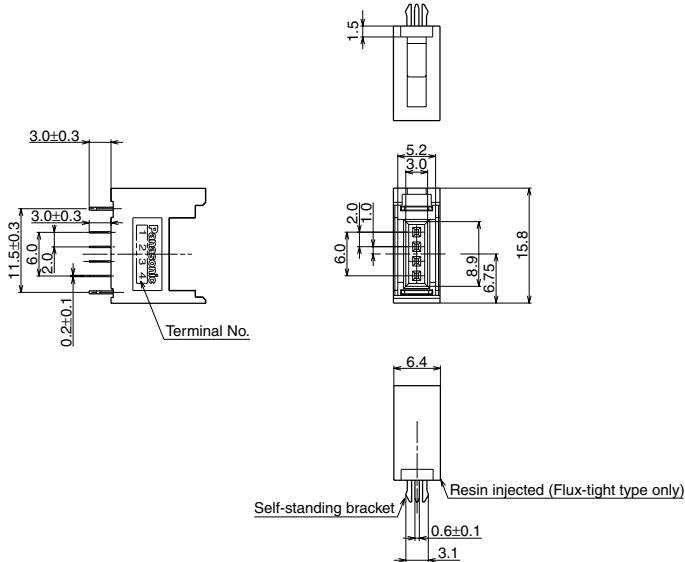
### Recommended PC board pattern (Bottom view)



It is recommended that the same pattern also be formed on the top surface of the PC board.

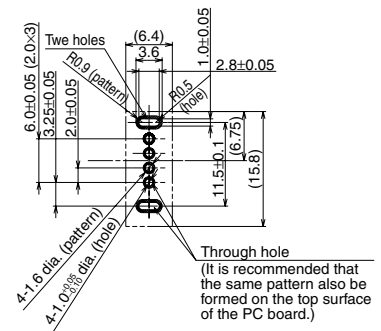
- Notes: 1. When using a socket without self-standing brackets, the two holes are not required.  
2. The dimensions of the flux-tight and non-flux-tight types are identical.

2) 4 contacts × 1 row



General tolerance: ±0.2

### Recommended PC board pattern (Bottom view)



Through hole (It is recommended that the same pattern also be formed on the top surface of the PC board.)

Note: The dimensions of the flux-tight and non-flux-tight types are identical.

## NOTES

### 1. Connector insertion/removal

1) Hold the connector body during insertion/removal of the connector.  
 2) When inserting the plug, do not touch the lock lever of the plug. Keep it parallel to the connector and insert it until the lock lever makes a clicking sound.  
 After inserting the plug, pull it in the removal direction to confirm that it will not be disconnected.

### 2. Do not pull the cable or locked connector.

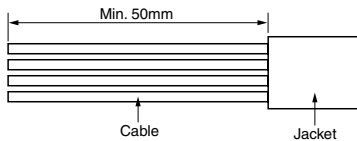
### 3. Wire pressing method

Follow the wire-pressing procedures below.

1) Choose a plug and socket with a part number that matches the target wire.

2) Jacketed wire processing

When using a jacketed wire, strip the wire cover by 50 mm or more.

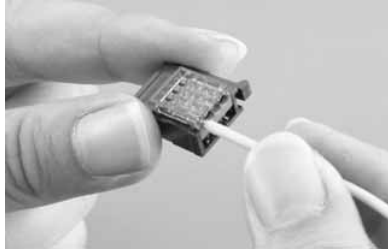


### 3) Wire cutting

If the wire end is crushed, it is difficult to insert it into the connector. Cut the wire end to give it a round shape. (Do not strip the wire.)

### 4) Insert the wire.

Check the terminal number marked on the housing and insert the wire through the wire inlet between the top cover (semi-transparent) and the bottom cover (black and gray) as far as it will go.



Fully inserted wire will be temporarily held.

Check that all wires are inserted into the specified position from the top of the connector.

### 5) Press the connector.

Press the connector with parallel pliers (commercially available).

Note: Set the pliers from the side of the connector as shown in the picture.



Press the connector until the four convex points of the cover are inserted into the concave points of the housing.

Ensure the following points when pressing the connector.

- Press the connector until the four convex points of the cover are inserted into the concave points of the housing.
- If the pressing cannot be completed in one action, position the pliers from the other side and then press the connector to complete the pressing.
- Press the center part of the cover uniformly with 10mm or wider pliers.
- It is important to insert the cover in parallel to the housing. Be careful not to tilt the cover during pressing.
- Do not apply an excessive load exceeding 1,000N to the connector during pressing.

\*If any pressing error occurs, the connector must not be reused.

### 4. Soldering of the PC board-mount sockets

Please also solder the self-standing pins to secure adequate strength of the joint between the socket and the board.



# Panasonic

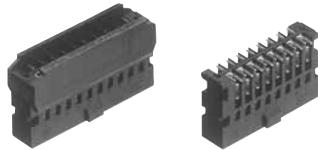
ideas for life

## FOR PC BOARD TO WIRE

# WIRE-PRESS SOCKETS (AXW)



With hood cover



With semi-cover

Socket

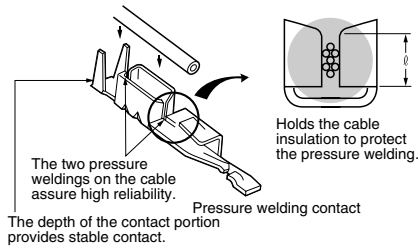
Compliance with RoHS Directive

## FEATURES

**1. Pressure welding method for superior wiring and no need to strip wires.**

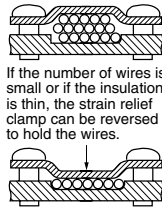
Applicable wires: AWG #22, #24, #26, #28.

**2. Two pressure weldings assure high contact reliability.**

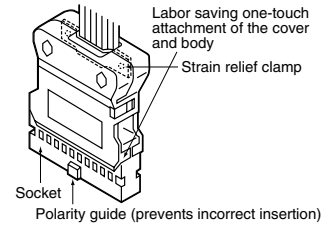


**3. Labor saving one-touch attachment of the cover and socket body.**

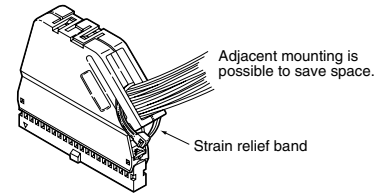
**4. Even if the number of wires is small, the stable pressure welding is assured.**



**5. Angled hood cover type can save space and makes adjacent mounting possible.**



Vertical hood cover type



Angled hood cover type

**6. Fits MIL headers and low profile headers (box and open types).**

**7. Useful pressure welding tools are available.**

## APPLICATIONS

NC machine, automated equipment, office automation equipment, ME equipment, measurement equipment, communications equipment, amusement and game equipment.

## ORDERING INFORMATION

### 1. Socket

AXW 1 [ ] [ ] [ ] [ ] 1 A

1: Wire-press sockets (Socket)

<No. of contacts (2 digits)>

<Configuration and polarity guide position>

4: No polarity guide for 10 contact type, types with other number of contacts have 1 polarity guide in middle.  
9: Polarity guide in middle for 10 contact type.

<Applicable cable>

Nil: Without contact

2: Pressure welding AWG#22 to #24

3: Pressure welding AWG#26 to #28

<Surface treatment (Pressure welding portion/Terminal portion)>

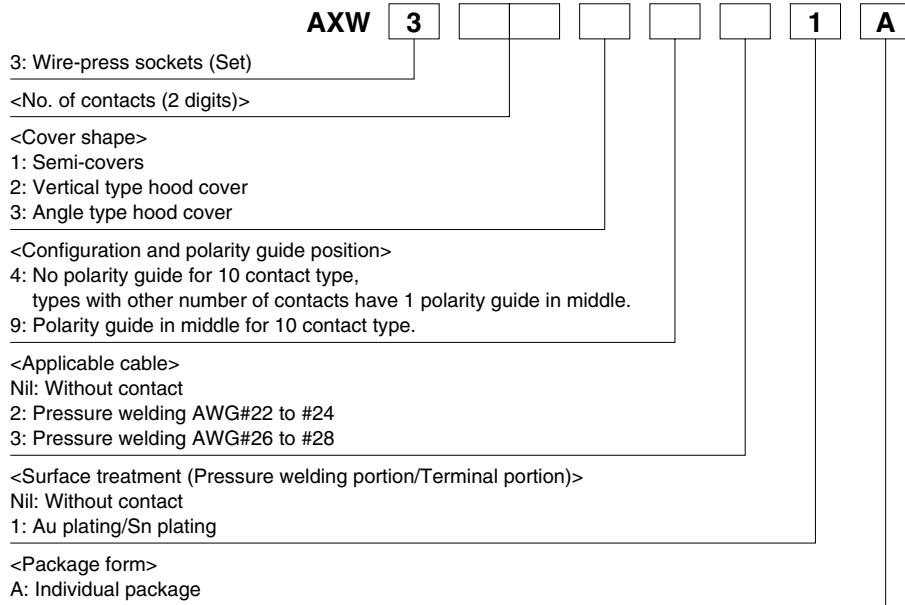
Nil: Without contact

1: Au plating/Sn plating

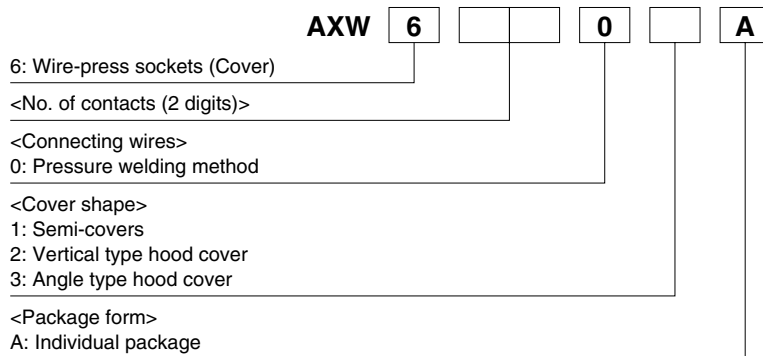
<Package form>

A: Individual package

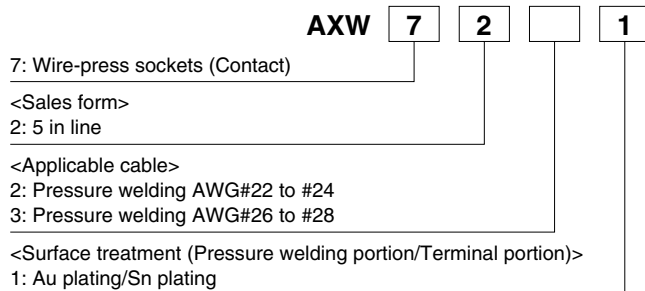
**2. Socket (Set)**



**3. Cover**



**4. Contact**



Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

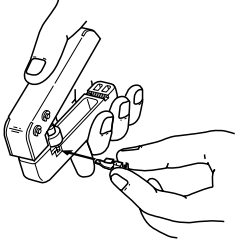
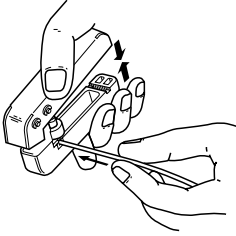
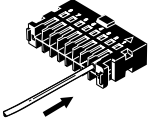
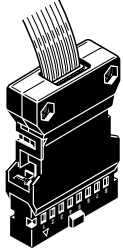
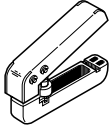
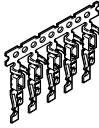

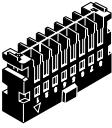
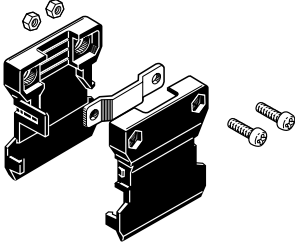
Connectors for industrial equipment

IC sockets

Information

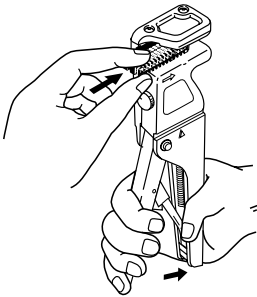
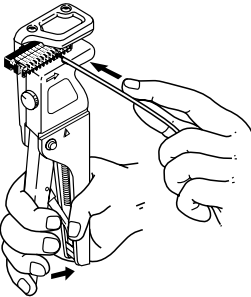

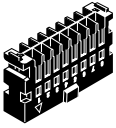
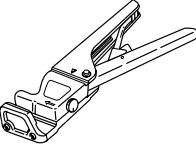

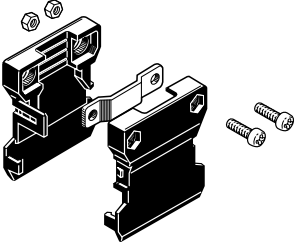
## WIRING AND ASSEMBLY

1. When using small amounts (about 150 pins can be pressure welding per hour)

Narrow-pitch connectors	Process	<p>1. Bend the contact back from the carrier, and set it in the pressure welding tool.</p> 	<p>2. Insert the wire without removing its insulation unit it stops, and lightly grip the tool.</p> 	<p>3. After press-fitting the wire, insert it into housing.</p> 	<p>4. Attach the cover to complete the operation. (Note)</p> 
	Necessary parts	<p>Stapler type AXY52000</p>  <p>Contacts (5 in line)</p> 	<p>Separate wires</p> 	<p>Housing without contacts</p> 	<p>Vertical type hood cover block</p> 

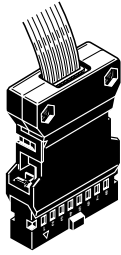
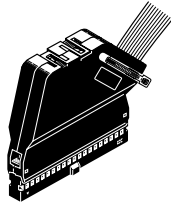
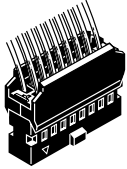


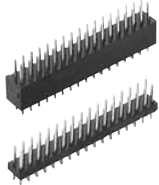
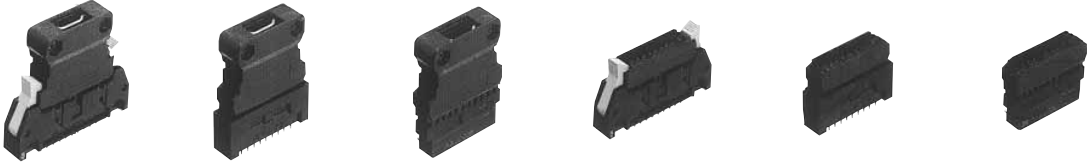
Note) There are 3 types of cover: semi-covers, vertical type hood cover blocks, and angle type hood cover blocks.

2. When using medium to large amounts (when using pliers-type pressure welding tool, about 450 pins per hour)

Sockets for memory card	Process	<p>1. Set the housing with contact in the pressure welding tool.</p> 	<p>2. Insert the wires with insulation attached, until they touch the back, then use the tool's pressure welding operation.</p> 	<p>3. Attach the cover to complete the operation. (Note)</p> 
	Necessary parts	<p>Housing with contacts</p>  <p>Pliers-type AXY51000</p> 	<p>Separate wires</p> 	<p>Vertical type hood cover block</p> 

Note) There are 3 types of cover: semi-covers, vertical type hood cover blocks, and angle type hood cover blocks.

# APPLICABLE HEADERS AND COMBINATIONS

<p>Pressure socket for separate wires</p>	 <p>Vertical type hood cover block</p>	 <p>Angled type hood cover block</p>	 <p>Semi-cover Note) With cover installed on socket</p>	<p>Narrow-pitch connectors</p>	
+					
<p>Applicable headers</p>	 <p>Long lever type MIL header</p>	 <p>Box type low profile header</p>	 <p>Open type low profile header</p> <p>7.4mm high type 2.54mm high type</p>	<p>I/O connectors</p>	
↓					
<p>Combinations</p>				<p>Note) Loose wires omitted from photos</p>	<p>Interface connectors</p>

Sockets for memory card

Connectors for industrial equipment

IC sockets

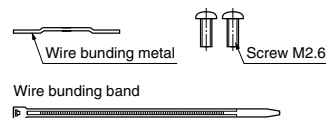
Information

## PRODUCT TYPES

### 1. Individual parts (Standard)

Narrow-pitch connectors	Type	No. of contacts	Part No.		Packing					
			Applicable cable		Inner carton	Outer carton				
			AWG #22, 24	AWG #26, 28						
I/O connectors	Housing Housing with contacts Note) Suitable for use of pliers type or desktop type pressure welding tool.	10	AXW110421A (Without polarity guide)	AXW110431A (Without polarity guide)	100 pcs.	400 pcs.				
		10	AXW110921A (With polarity guide)	AXW110931A (With polarity guide)						
		14	AXW114421A	AXW114431A						
		16	AXW116421A	AXW116431A						
		20	AXW120421A	AXW120431A						
		26	AXW126421A	AXW126431A						
		30	AXW130421A	AXW130431A						
		34	AXW134421A	AXW134431A						
		40	AXW140421A	AXW140431A						
		50	AXW150421A	AXW150431A						
		60	AXW160421A	AXW160431A						
		64	AXW164421A	AXW164431A						
		Interface connectors	Housing without contacts Note) Suitable for use of stapler-type pressure welding tool.	10			AXW1104A (Without polarity guide)		100 pcs.	400 pcs.
				10			AXW1109A (With polarity guide)			
14	AXW1144A									
16	AXW1164A									
20	AXW1204A									
26	AXW1264A									
30	AXW1304A									
34	AXW1344A									
40	AXW1404A									
50	AXW1504A									
Sockets for memory card	Hood cover block	Vertical type	16	AXW61602A		100 pcs.	400 pcs.			
			20	AXW62002A						
			26	AXW62602A						
			30	AXW63002A						
			34	AXW63402A						
			40	AXW64002A						
			50	AXW65002A						
		Angled type	60	AXW66002A		50 pcs.	200 pcs.			
			64	AXW66402A						
			26	AXW62603A						
			30	AXW63003A						
			34	AXW63403A						
			40	AXW64003A						
			50	AXW65003A						
IC sockets	Cover	Semi-cover	60	AXW66003A		50 pcs.	200 pcs.			
			64	AXW66403A						
			10	AXW61001A						
			14	AXW61401A						
			16	AXW61601A						
			20	AXW62001A						
			26	AXW62601A						
		Contacts (5 in line) (Notes 5 and 6)	30	AXW63001A		100 pcs.	400 pcs.			
			34	AXW63401A						
			40	AXW64001A						
			50	AXW65001A						
			60	AXW66001A						
			64	AXW66401A						
			5	AXW7221 (for AWG #22, 24)	AXW7231 (for AWG #26, 28)			40 rows (200pcs.)	400 rows (2,000 pcs.)	

- Notes) 1. The parts above are packaged individually. (Contact is tray packing)  
 2. The vertical type hood cover block is packaged with two covers (one with nuts), one wire bunding metal.  
 3. The angled type hood cover block is packaged with two covers and one wire bunding band.  
 4. The angled type hood cover for less than 20 contacts and the vertical type hood cover for less than 14 contacts are not available. Please use the semi-cover.  
 5. There is a mark "22" on contacts for AWG #22 and #24, and mark "26" for AWG #26 and #28.  
 6. Remarks for contacts  
 1) Reel packaging is available.



**2. Set products (produced after order)**

Set products are produced after an order is received, so if you have a tight deadline, please order the products on the above as stand-alone products.

Type	Set product		No. of contacts	Part No.		Packing	
	Socket	Cover		Applicable cable		Inner carton	Outer carton
				AWG #22, 24	AWG #26, 28		
Full set (Note 1)	Housing with contacts	Vertical type hood cover block	16	AXW3162421A	AXW3162431A	50 pcs.	200 pcs.
			20	AXW3202421A	AXW3202431A		
			26	AXW3262421A	AXW3262431A		
			30	AXW3302421A	AXW3302431A		
			34	AXW3342421A	AXW3342431A		
			40	AXW3402421A	AXW3402431A		
			50	AXW3502421A	AXW3502431A		
			60	AXW3602421A	AXW3602431A		
		Angled type hood cover block	26	AXW3263421A	AXW3263431A		
			30	AXW3303421A	AXW3303431A		
			34	AXW3343421A	AXW3343431A		
			40	AXW3403421A	AXW3403431A		
			50	AXW3503421A	AXW3503431A		
			60	AXW3603421A	AXW3603431A		
		Semi-cover	64	AXW3643421A	AXW3643431A		
			10	AXW3101421A (Without polarity guide)	AXW3101431A (Without polarity guide)		
			10	AXW3101921A (With polarity guide)	AXW3101931A (With polarity guide)		
			14	AXW3141421A	AXW3141431A		
			16	AXW3161421A	AXW3161431A		
			20	AXW3201421A	AXW3201431A		
			26	AXW3261421A	AXW3261431A		
			30	AXW3301421A	AXW3301431A		
			34	AXW3341421A	AXW3341431A		
			40	AXW3401421A	AXW3401431A		
			50	AXW3501421A	AXW3501431A		
			60	AXW3601421A	AXW3601431A		
			64	AXW3641421A	AXW3641431A		
			Half-set (Note 2)	Housing without contacts	Vertical type hood cover block		
20	AXW32024A						
26	AXW32624A						
30	AXW33024A						
34	AXW33424A						
40	AXW34024A						
50	AXW35024A						
60	AXW36024A						
64	AXW36424A						
Angled type hood cover block	26	AXW32634A					
	30	AXW33034A					
	34	AXW33434A					
	40	AXW34034A					
	50	AXW35034A					
	60	AXW36034A					
Semi-cover	64	AXW36434A					
	10	AXW31014A (Without polarity guide)					
	10	AXW31019A (With polarity guide)					
	14	AXW31414A					
	16	AXW31614A					
	20	AXW32014A					
	26	AXW32614A					
	30	AXW33014A					
	34	AXW33414A					
	40	AXW34014A					
	50	AXW35014A					
	60	AXW36014A					
	64	AXW36414A					

- Notes) 1. Full-set products (Housing with contact and cover included)  
 (1) Suitable for use with pliers type.  
 (2) Produced after an order is received. If you are in a hurry, please order a housing with contact and cover separately from the list above.  
 2. Half-set products (Housing without contact and cover included)  
 (1) Suitable for use with stapler-type pressure welding tool  
 (2) As half-sets do not include a contact, order the appropriate stand-alone contact from the list above.  
 (3) Produced after an order is received. If you are in a hurry, please order a housing without contact, contacts and cover separately from the list on page 248.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

# SPECIFICATIONS

## 1. Characteristics

	Item	Specifications	Conditions	
Narrow-pitch connectors	Electrical characteristics	Rated current	AWG#22, 24: 3A, AWG#26: 2A, AWG#28: 1A	
		Rated voltage	250V AC	
		Breakdown voltage	1,000V AC for 1 min.	Detection current: 1mA
		Insulation resistance	Min. 1,000MΩ	Using 500V DC megger
		Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
I/O connectors	Mechanical characteristics	Unit removal force	Min. 0.343N {35gf}	
		Composite insertion force	Max. 2.94N {300gf} × No. of contacts	
I/O connectors	Life time characteristics	Insertion and removal life	500 times	
	Environmental characteristics	Ambient temperature	-50°C to 105°C	
		Vibration resistance	Double amplitude: 1.52mm Frequency: 10 to 55Hz (for 3 axes)	No freezing at low temperatures Ambient temperature of cables should be considered No interruption of current longer than 1μs (Max. carrying current 100mA should be impressed during the test)
Shock resistance		490m/s <sup>2</sup> {50G} (for 3 axes)	No interruption of current longer than 1μs (Max. carrying current 100mA should be impressed during the test)	

## 2. Materials and surface treatment

	Part name	Materials	Surface treatment	
Interface connectors	Housing	Glass fiber reinforced PBT (UL94V-0)	—	
	Cover	Semi-cover	Glass fiber reinforced PBT (UL94V-0)	—
		Hood cover	Glass fiber polycarbonate resin (UL94V-0) Vertical type hood cover (16, 20 contact)	—
Sockets for memory card	Contact	Copper alloy	Contact portion: Ni plating on base, Au plating on surface Contact pressure portion: Ni plating on base, Sn plating on surface	
	Lead wire bundling metal (enclosed with vertical type hood cover)	Steel plate	—	
	Lead wire bundling band (enclosed with angled type hood cover)	Polyimide resin	—	

## 3. Applicable cable

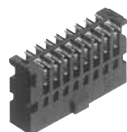
No.	Cross section area	External figure	Rated current	Remarks
AWG#22	0.3 mm <sup>2</sup>	1.5 to 1.1 dia.	3A	12 wires/0.18 should used
AWG#24	0.2 mm <sup>2</sup>		3A	
AWG#26	0.14mm <sup>2</sup>	1.3 to 1.1 dia.	2A	
AWG#28	0.08mm <sup>2</sup>		1A	

# DIMENSIONS (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>

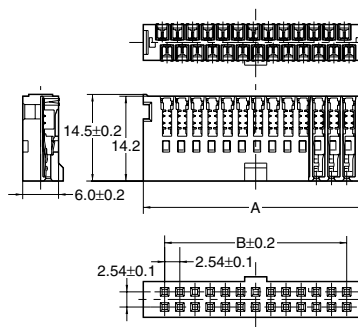
### • Housing with contacts

**CAD Data**



Dimension table (mm)

No. of contacts	Polarity guide	A	B
10	0	17.3	10.16
10	1	17.3	10.16
14	1	22.4	15.24
16	1	24.9	17.78
20	1	30.0	22.86
26	1	37.6	30.48
30	1	42.7	35.56
34	1	47.8	40.64
40	1	55.4	48.26
50	1	68.1	60.96
60	1	80.8	73.66
64	1	85.9	78.74



General tolerance: ±0.3

Note) Dimensions of the housing without contact is the same as the right figure.

• Socket

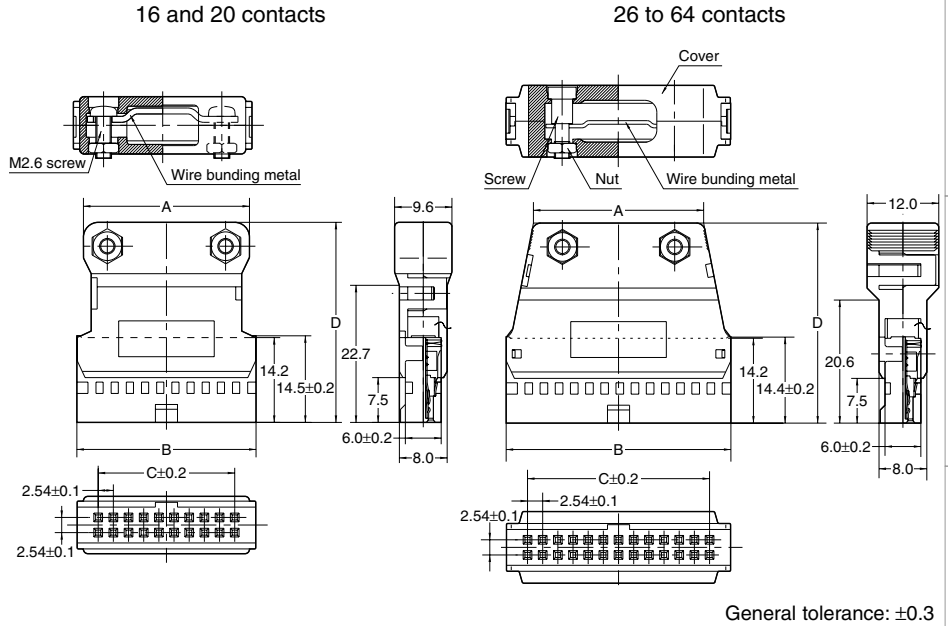
1) When vertical type hood covers are mated (16, 20, 26, 30, 34, 40, 50, 60 and 64 contacts)

CAD Data



Dimension table (mm)

No. of contacts	A	B	C	D
16	24.0	24.92	17.78	33.5
20	27.8	30.0	22.86	33.5
26	28.5	37.6	30.48	33.5
30	33.5	42.7	35.56	33.5
34	38.6	47.8	40.64	33.5
40	43.6	55.4	48.26	41.5
50	56.0	68.1	60.96	41.5
60	68.7	80.8	73.66	41.5
64	73.8	85.9	78.74	41.5



General tolerance: ±0.3

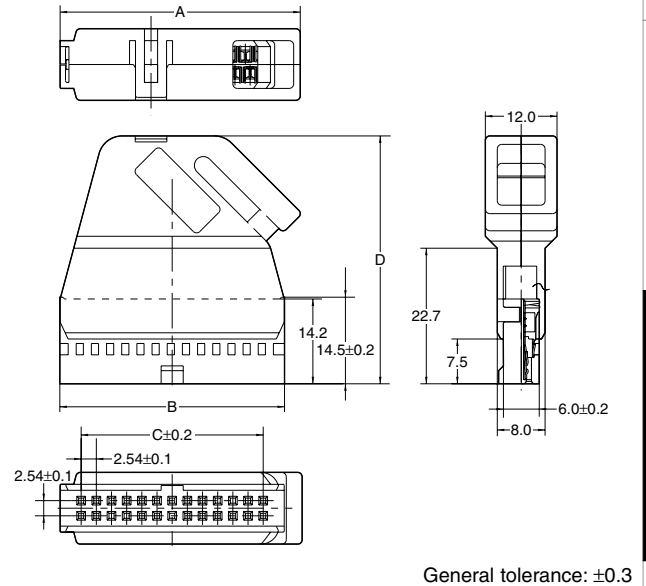
2) When angle type hood covers are mated (26, 30, 34, 40, 50, 60 and 64 contacts)

CAD Data



Dimension table (mm)

No. of contacts	A	B	C	D
26	40.5	37.5	30.48	41.5
30	45.6	42.6	35.56	41.5
34	50.7	47.7	40.64	41.5
40	62.5	55.3	48.26	52.5
50	75.2	68.0	60.96	52.5
60	87.9	80.7	73.66	52.5
64	93.0	85.8	78.74	52.5



General tolerance: ±0.3

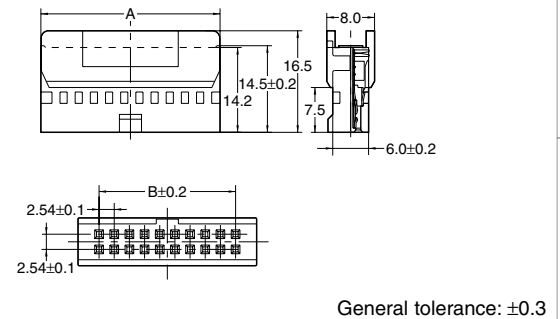
3) When semi-covers are mated

CAD Data



Dimension table (mm)

No. of contacts	A	B
10	17.3	10.16
14	22.38	15.24
16	24.92	17.78
20	30.0	22.86
26	37.62	30.48
30	42.7	35.56
34	47.78	40.64
40	55.4	48.26
50	68.1	60.96
60	80.8	73.66
64	85.88	78.74



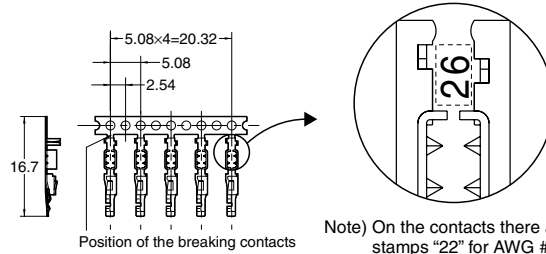
General tolerance: ±0.3



# AXW

## 4) Contacts (5 in line)

### CAD Data



Note) On the contacts there are stamps "22" for AWG #22 and #24 types, and "26" for AWG #26 and #28 types.

General tolerance:  $\pm 0.3$

## NOTES

### 1. Use wires and contact types that match.

The contact's clamp is tamped with 22 or 26.

Use AWG#22 or #24 wire with the type 22 contact and AWG #26 or #28 wire with the type 26 contact.

An incorrect combination will cause faulty connections.

### 2. Use wires having a correct outer insulation diameter.

The use of a wire with an outer insulation diameter larger than the allowable value or a wire with a hard material for the insulation will cause faulty connections. Furthermore, the use of a wire with an outer insulation diameter less than the allowable value will cause a drop in the clamp strength. Use wires with a suitable outer diameter and insulation material. Suitable wire diameters are shown in the table below.

#### Suitable wire diameters

Size	Insulation outer diameter	Remark
AWG#22	1.5 dia. to 1.1 dia.	AWG #22 is Stranded wire of 12 strands/0.18
AWG#24		Stranded wire
AWG#26	1.3 dia. to 1.1 dia.	Stranded wire
AWG#28		

\* AWG#22 and #24 use different contacts from AWG#26 and #28. Refer to the part number chart for the part number.

### 3. Inserted wire length during wire pressure welding

Insert the wire to a proper length and perform the pressure welding.

If the inserted length is too short, the wire will be pressure welded only at one location.

If the inserted length is too long, the wire will end up on the lance portion and a proper pressure welding will not be obtained.

### 4. Cut the end of the wire so that it is straight and flat. Be sure no uneven strands remain.

5. When pressure welding a wire, fully insert it to the proper position. Be sure to squeeze the lever unit it reaches the end position of the stroke.

6. After connecting the wire, check that the wire clamp firmly clamps the wire.

7. It may not be possible to cut a contact from the carrier by folding the contact only once.

8. The contact holder should be replaced as needed.

Regarding general notes, please refer to page 17.

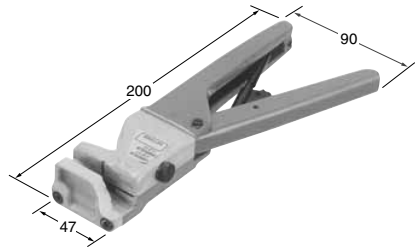
For other details, please verify with the product specification sheets.

# PRESSURE WELDING TOOLS FOR SEPARATE WIRES

## PRODUCT TYPES

Product name		Part No.	Packaging	
			Inner carton	Outer carton
Pressure welding tool	Pliers type pressure welding tool for separate wires (with feed mechanism)	AXY51000	—	1 pc.
	Stapler type pressure welding tool for separate wires	AXY52000	—	
Accessory	Contact holder	AXY5801	—	200 pcs.

### • Pliers-type (with feed mechanism)



Pliers-type pressure welding tool for separate wires (with feed mechanism)  
AXY51000

**Compliance with RoHS Directive**

## FEATURES

**1. Weight balanced design for lightweight handling.**

**2. Lever Lock Mechanism Allows Reliable Pressure Welding**

The lever lock mechanism prevents the lever from returning until the predetermined stroke is reached. This allows for reliable pressure welding, preventing variation due to differences between individual workers.

**3. Automatic feed mechanism indicates the pressure welding terminal number after a pressure welding.**

After each pressure welding, the automatic feed is performed one pitch at a time (2.54mm). At the same time, the number of the connector terminal being pressure-welded is indicated. If the terminal number is set initially, the connector can be moved to any position with the correct terminal number always displayed since the tool is directly linked with the connector.

**4. Stroke adjustment feature.**

The pressure welding stroke can be adjusted to match the diameter of the cable wire for reliable connections.

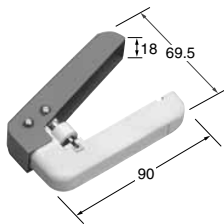
**5. Enables pressure welding of both the socket with contacts and individual contacts.**

A cable can be connected with the contacts positioned in the socket housing (socket housing with contacts) or with the individual contacts separated from the socket housing.

**6. Contact puller feature.**

The contact puller permits incorrectly connected or unnecessary contacts to be pulled out.

### • Stapler type



Stapler type pressure welding tool for separate wires  
AXY52000

## FEATURES

**1. Compact and lightweight, it fits in a pocket.**

**2. Pressure-weld individual contacts.**

**3. Convenient for on-site maintenance work since connection is possible in small spaces.**

**4. Includes a contact puller.**

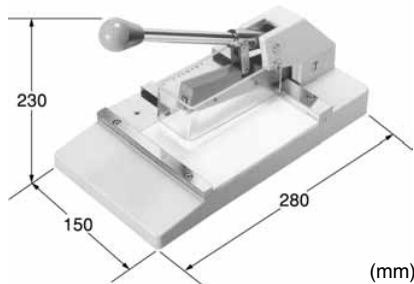
## NOTES

1. Never disassemble the tool. Also, do not subject it to shock or drop it from a high place.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

### CABLE CUTTER



Compliance with RoHS Directive

### FEATURES

1. Flat cable (from 10 to 64 contacts) can be cut.
2. Accurate cutting only by setting cable to the guide.
3. Cutting knife can be fixed by clammer from the side and exchanged easily.
4. Safety cover for cutting knife is equipment.
5. The replacement blade of a commercially available box cutter can be used as the cable cutter blade.

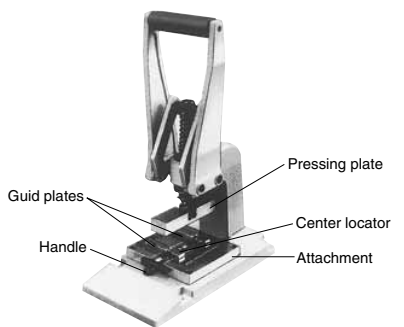
### PRODUCT TYPES

Product name	Part No.
Cable cutter	AXY80000

### NOTES

1. **Setting of flat cable**  
First, set the guide plate at the correct width. Then fix the cable and cut it.
2. **Exchange of cutting knife**  
Push to attach the knife to the stopper pin of cutter holder and then set it.
3. **Safety cover**  
Cutting work should be done with safety cover set. Please do not put your hand inside of safety cover set.
4. **Do not remodel this product or use it for other purposes.**

### PRESSURE WELDING UNIT



AXY10000

Compliance with RoHS Directive

### FEATURES

1. **Operation without worry of connectors becoming damaged**  
When pressure welding, the connector will not break even if pressed too hard because the guide plate acts as a stopper.
2. **Easy operation**  
Designed with the operator in mind, pressure welding is sure and easy with minimal force needed when operating the lever. It is also well suited to repetitive operation.
3. **Using the same unit, all types of connectors can be pressure welded by simply replacing center locator and guide plate.**

4. **Pressure welding of 10 to 64 strand cable is easily accomplished by changing the position of the guide plate.**
5. **Positioning of the connector and cable is easily accomplished with the guide plate.**
6. **After pressure welding a flat cable, the connector can be easily removed by pressing the handle to pop it out.**
7. **Even if the connector type changes, the cover is always face down and pressure welding is always possible. Cables will never be displaced during pressure welding.**

### PRODUCT TYPES

Products name	Part No.	Remarks	
Pressure welding unit	AXY10000		
Accessories	Attachment	AXY20101 MIL and PCB types, Cable pitch 1.27mm	
	Center locator	AXY20201	MIL type
		AXY20202	PCB Mini-dip type
		AXY20203	PCB IC type, Terminal row pitch 7.62mm
		AXY20205	PCB IC type, Terminal row pitch 15.24mm
	Guide plate	AXY20301	MIL type
		AXY20302	PCB Mini-dip type
		AXY20303	PCB IC type, Terminal row pitch 7.62mm
		AXY20305	PCB IC type, Terminal row pitch 15.24mm
	Spacer	AXY20401	Mini-dip type, Terminal row pitch 2.54mm, 30 to 64 contacts
		AXY20404	IC type, Terminal row pitch 15.24mm, 24 to 40 contacts
		AXY20405	Mini-dip type, Terminal row pitch 2.54mm, 10 to 26 contacts
AXY20406		IC type, Terminal row pitch 7.62mm, 14 to 20 contacts	

Note) The pressure welding unit is not include the accessories.

## COMBINATION OF ACCESSORIES

Applicable socket	No. of contacts	Attachment	Center locator	Guide plate	Spacer
MIL type	Every type	AXY20101	AXY20201	AXY20301	—
PCB (Mini-dip type)	10 to 26		AXY20202	AXY20302	AXY20405
	30 to 64		AXY20203	AXY20303	AXY20401
PCB (IC type)	14 to 20		AXY20205	AXY20305	AXY20406
	24 to 40				AXY20404

## SAFETY NOTES

**1. Do not do the following dangerous actions when using the pressure welder.**

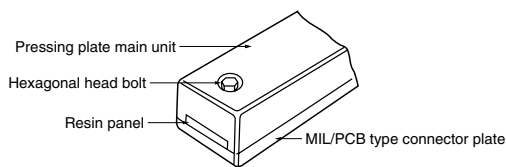
- Insert hand or fingers beneath the pressure plate when operating the lever.
- Allow your fingers to get close to moving parts when operating the lever.
- Let go of the lever when in progress after pressure welding a connector. (Be sure to keep your hand on the lever all the way to the end. Otherwise the lever might snap back with considerable force.)

**2. Secure the pressure welder to the work bench to prevent it from falling over. Also, do not apply excessive force to the lever when pressure welding (such as by applying the full weight of your body).**

## PRESSING PLATE OF PRESSURE WELDING UNIT

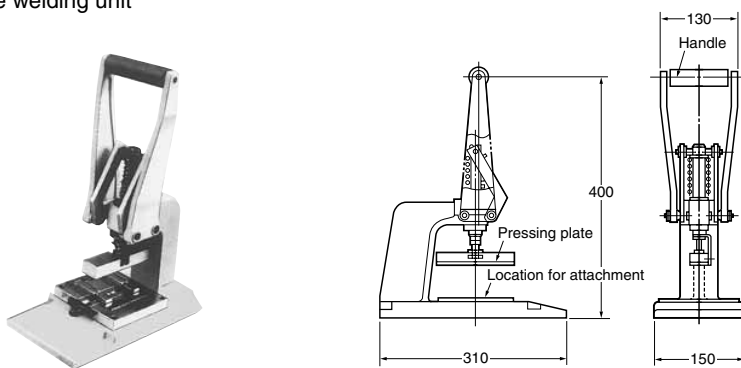
1. The pressing plate consists of the pressing plate main unit and MIL/PCB type connector plate.  
 2. Proceed with the pressure connection of MIL type connectors (AXM1 series) and PCB type connectors (AXP series) with the MIL/PCB connector plate attached to the pressing plate main unit. Use the hexagonal head bolt to mount and remove the MIL/PCB type connector plate.

When pressure-welding MIL/PCB type connectors

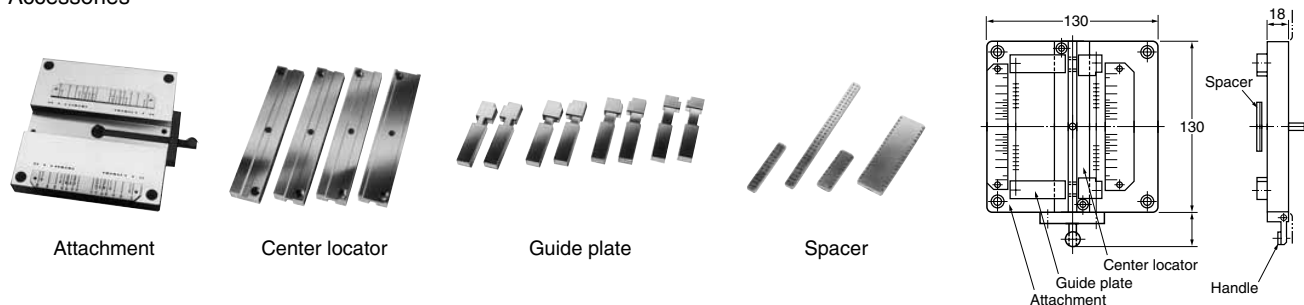


## DIMENSIONS (Unit: mm)

- Pressure welding unit



- Accessories



**NOTES**

**1. Sockets setting**

After covers are temporary fixed with housing (or base), sockets are set at the gutter of center locator. (See Fig. 1)

**2. Method of inserting flat cable**

The guide plate is set at the correct figure of scale, corresponding to the number of contacts (cable width). Then cable is inserted along with the guide until it reaches at the stopper. (See Fig. 2)

**3. Pressure connection**

After adjusting the lower limit of the pressing plate, the connectors should be pressed. Since the guide plate is the stopper, the connectors should be pressed until contacting the pressing plate to the guide plate. In case of PCB types, however, spacers should be placed over the base. (See Fig. 2)

**4. Strain relief**

Regarding MIL type, strain relief should be fixed manually after pressure connection of cables. (See Fig. 3)

**5. Be sure to use our pressure welding unit and its accessories when conducting pressure welding.**

**CABLE PRESSURE WELDING**

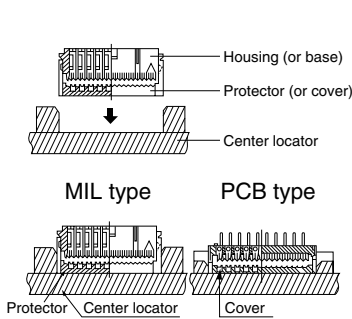


Fig. 1 Socket set condition

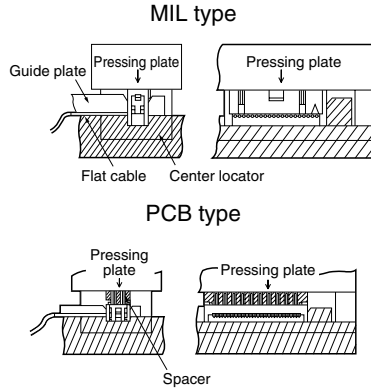


Fig. 2 Pressure welding condition

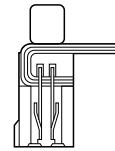


Fig. 3 Set condition of strain relief

**SAFETY NOTES FOR SPECIALIZED TOOLS**

**1. Cable Cutter**

- 1) Never remove the safety cover
- 2) Never insert your finger inside the safety cover
- 3) Use on a stable surface
- 4) Do not alter this product, or use it for other purposes

**2. Pressure Welding Unit**

- 1) Do not place fingers beneath the pressurized plate or in or near moving parts, while the lever is being operated.
- 2) Lock the unit in place on a workbench or the like.
- 3) Do not alter this product, or use it for other purposes

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information

# HARNESS FABRICATION FOR FLAT CABLE CONNECTOR

## NOTES WHEN FABRICATING HARNESSES

### 1. Common items

- 1) Select the appropriate connector and cable according to the conditions of use.
- 2) It is recommended that our cable cutter and pressure welding unit be used.
- 3) After making the pressure welding, the condition of the connection should be confirmed.

- 4) Because there are standard terminal layout and reverse terminal layout for PCB type connectors, the connector suitable for the use should be selected.

### 2. Cable cutter

- 1) The cable should be cut at right angles to the corresponding length.
- 2) Use a sharp cutter for making the cut.
- 3) When setting the cable length, the pressure welding portion and strain relief coil should be considered and set accordingly.

For our product, the following cable length is necessary. (For each side)

MIL type socket	Without strain relief	6mm
	With strain relief	15mm
PCB type connector	Mini-dip type	7mm
	IC type 14 to 20 contacts	10mm
	IC type 24 and 40 contacts	20mm

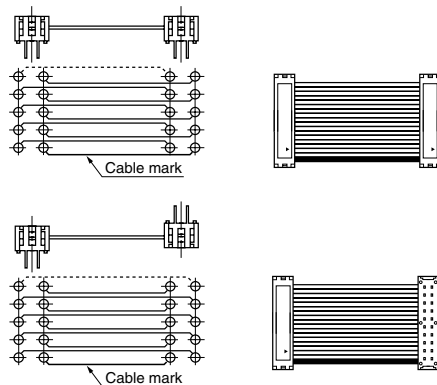
### 3. Cable pressure welding

- 1) Bring the cable end surface in line with the connector end surface, and set in the groove of the cable guide of the protector.
- 2) When making a cable pressure welding for a PCB type connector, it is recommended that a spacer be used. This can prevent breakage of the terminals.

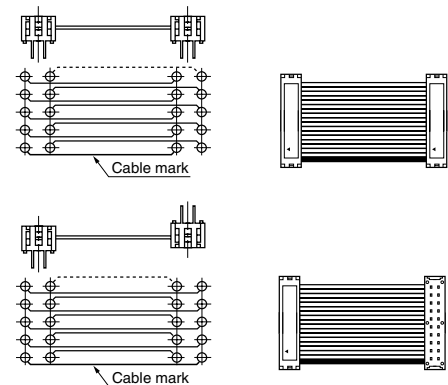
Example 1: MIL type and MIL type



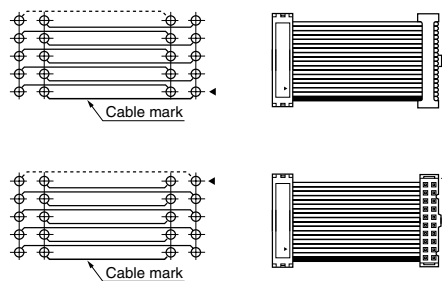
Example 2: PCB type and PCB type  
Standard terminal layout



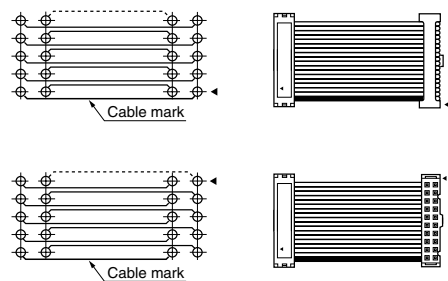
Reverse terminal layout



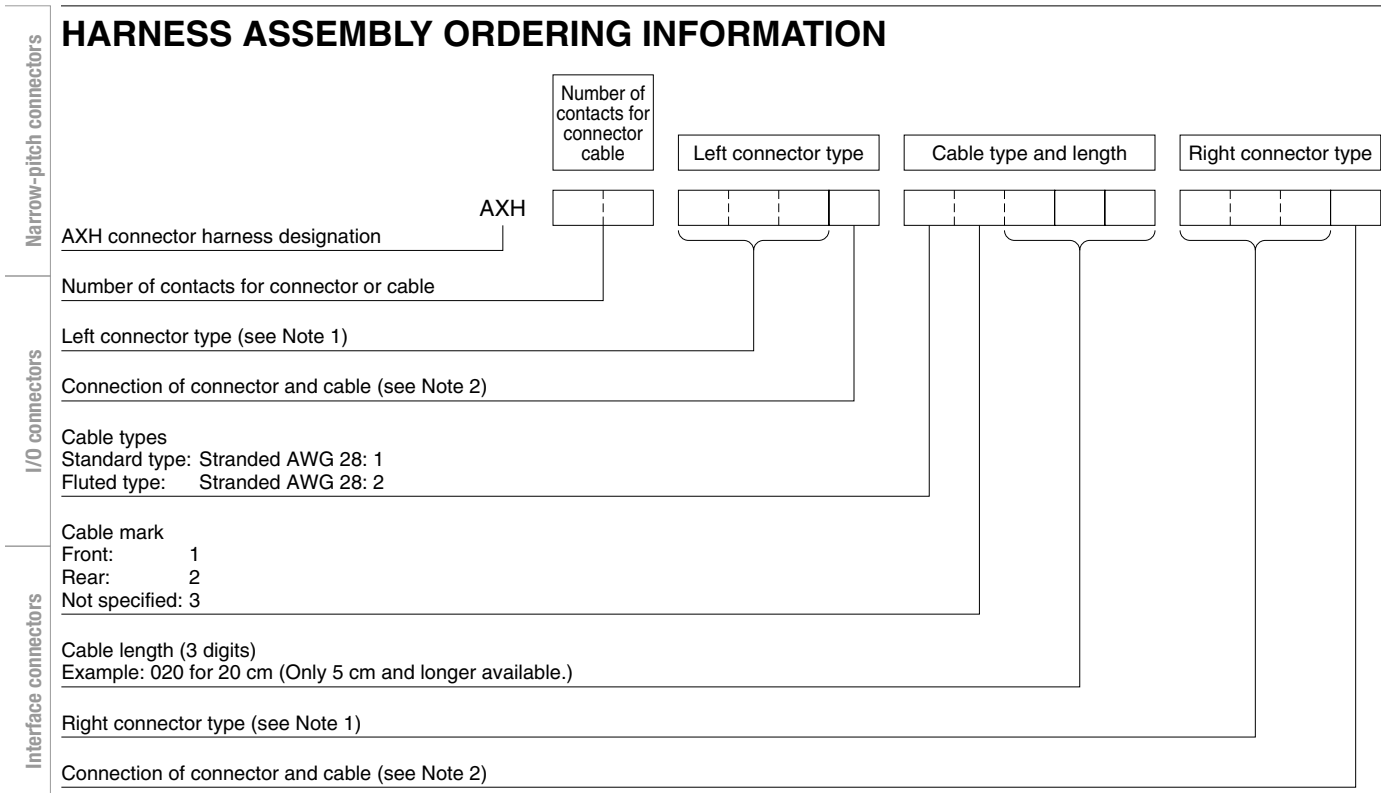
Example 3: PCB type and MIL type  
Standard terminal layout



Reverse terminal layout



## HARNESS ASSEMBLY ORDERING INFORMATION



**Note 1) Connector type**

Connector		Type	Order No.
MIL type connector		Without strain relief	M12
		With strain relief	M14
PCB type connector	Mini-dip type	Standard terminal layout	P42
		Reverse terminal layout	P46
	IC type	Reverse terminal layout	P56

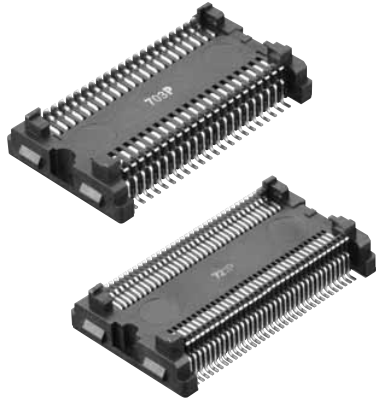
**Note 2) Connection of connector and cable**

Order No.	1	2	3	4	5	6	7	8
Left connector								
Right connector								
Cable mounting	Upper side		Lower side		Upper side		Lower side	
Strain relief	Without strain relief				With strain relief			

We also accept orders for harnessed products. Call for more information.

**EXCELLENT FOR MASS PRODUCTION THESE SOP IC SOCKETS RESIST VIBRATION AND SHOCK**

**SOP IC SOCKETS**  
(600 mil 44 contacts 1.27mm pitch)  
**SSOP IC SOCKETS**  
(600 mil 70 contacts 0.8mm pitch)



Compliance with RoHS Directive

### FEATURES

- 1. Suited for mass production**  
Two-piece socket that features simple assembly to facilitate mass production.
- 2. Easy IC attachment and detachment**  
Owing to a structure that keeps stress from being applied to the IC leads when attaching and detaching, there will be no loss of contact reliability.
- 3. Automated mounting compatible**  
The socket has an open flat construction on its top surface so that it can be picked up by an automated mounting machine using suction for automated mounting.
- 4. Resistant against vibration and shock (edge contact structure)**

### APPLICATIONS

Amusement-related applications, etc.

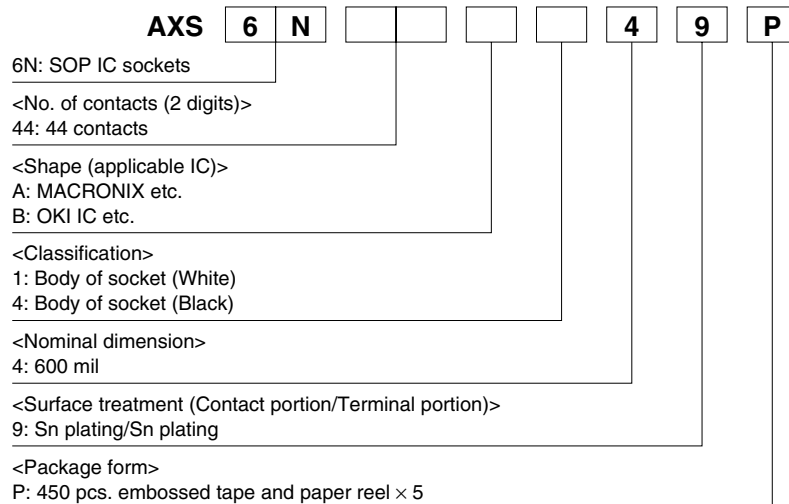
### SUITABLE

Body color	No. of contacts	Part No. of body (Type)	Frame	Example of suitable IC vendor
Black	44	AXS6N44A449P (A type)	AXS6S7054V	MACRONIX etc.
		AXS6N44B449P (B type)		OKI IC etc.
	70	AXS6S70A449P (A type)	AXS6S7054V	OKI IC etc.
		AXS6S70B449P (B type)		MACRONIX, ST MICRO etc.
White	44	AXS6S70C449P (C type)	AXS6S7024V	FUJITSU DEVICE etc.
		AXS6N44A149P (A type)		MACRONIX etc.
	70	AXS6N44B149P (B type)	AXS6S7024V	OKI IC etc.
		AXS6S70A149P (A type)		OKI IC etc.
		AXS6S70B149P (B type)		MACRONIX, ST MICRO etc.
		AXS6S70C149P (C type)		FUJITSU DEVICE etc.

Note) \*Please consult one of our sales offices regarding suitable IC vendor.

### ORDERING INFORMATION

#### 1. SOP IC sockets





# AXS6N/6S

## 2. SSOP IC sockets

**AXS** **6** **S**

6S: SSOP IC sockets

<No. of contacts (2 digits)>  
70: 70 contacts

<Shape (applicable IC)>  
A: OKI IC etc.  
B: MACRONIX, ST MICRO etc.  
C: FUJITSU DEVICE etc.  
Nil: Frame

<Classification>  
1: Body of socket (White)      4: Body of socket (Black)  
2: Frame (Natural)              5: Frame (Black)

<Nominal dimension>  
4: 600 mil

<Surface treatment (Contact portion/Terminal portion)>  
9: Sn plating/Sn plating      Nil: Frame

<Package form>  
P: 450 pcs. embossed tape and paper reel × 5  
V: 450 pcs. vinyl package × 5

## PRODUCT TYPES

Body color	No. of contacts	Nominal dimension	Emboss tape package			Plastic bag packaging		
			Body	Packing quantity		Frame (color)	Packing quantity	
			Part No. of frame	1 reel	Outer carton	Part No. of frame	1 bag	Outer carton
Black	44	600 mil	AXS6N44A449P	450 pcs.	2,250 pcs.	AXS6S7054V (Black)	450 pcs.	2,250 pcs.
			AXS6N44B449P					
			AXS6S70A449P					
			AXS6S70B449P					
			AXS6S70C449P					
White	70		AXS6N44A149P			AXS6S7024V (Natural)		
			AXS6N44B149P					
			AXS6S70A149P					
			AXS6S70B149P					
			AXS6S70C149P					

## 1. Characteristics

Item	Specifications		Conditions
	44 contacts	70 contacts	
Electrical characteristics	Rated current	0.5A	—
	Insulation resistance	Min. 1,000MΩ	Min. 1,000MΩ
	Breakdown voltage	500V AC for 1 minute	250V AC for 1 minute
	Contact resistance	Max. 40mΩ	Max. 50mΩ
Mechanical characteristics	Shock resistance	981m/s <sup>2</sup> (3-axis)	981m/s <sup>2</sup> (3-axis)
	Environmental characteristics	H <sub>2</sub> S	Contact resistance Max. 40mΩ
SO <sub>2</sub>		Contact resistance Max. 40mΩ	Contact resistance Max. 50mΩ
Humidity		Contact resistance Max. 40mΩ, insulation resistance Min. 100MΩ	Contact resistance Max. 50mΩ, insulation resistance Min. 100MΩ
Thermal shock resistance		Contact resistance Max. 40mΩ, insulation resistance Min. 100MΩ	Contact resistance Max. 50mΩ, insulation resistance Min. 100MΩ
Ambient temperature		-55°C to +85°C	-55°C to +85°C
Soldering heat resistance		Peak temperature: Max. 245°C 300°C within 5 seconds	Peak temperature: Max. 245°C 300°C within 5 seconds
Suitable IC package*	44 contacts: SOP IC with nominal dimension 600 mil and 1.27mm pitch 70 contacts: SSOP IC with nominal dimension 600 mil and 0.8mm pitch		

Note) \*Please consult one of our sales offices regarding suitable IC packages.

2. Materials and Surface Treatment

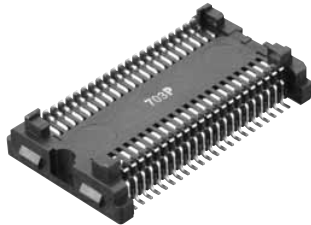
Part name		Material	Surface treatment
Molded plastic part	Body	Glass fiber reinforced polyamide (UL94V-0)	—
	Frame	Glass fiber reinforced PPS resin (UL94V-0)	—
Contact		Copper alloy	Contact portion: Ni plating on base, Sn plating on surface Terminal portion: Ni plating on base, Sn plating on surface (except for top of the terminal)

**DIMENSIONS** (Unit: mm)

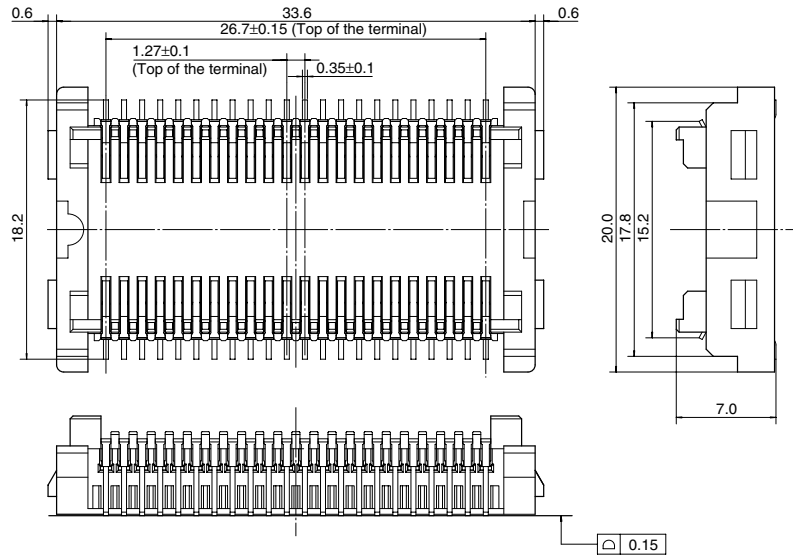
**Socket body**

- Nominal dimension: 600 mil 44 contacts

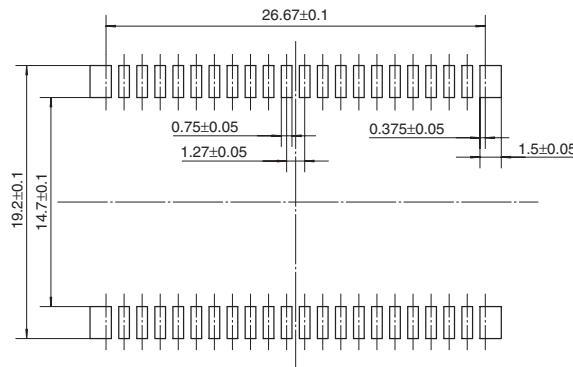
**CAD Data**



The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>



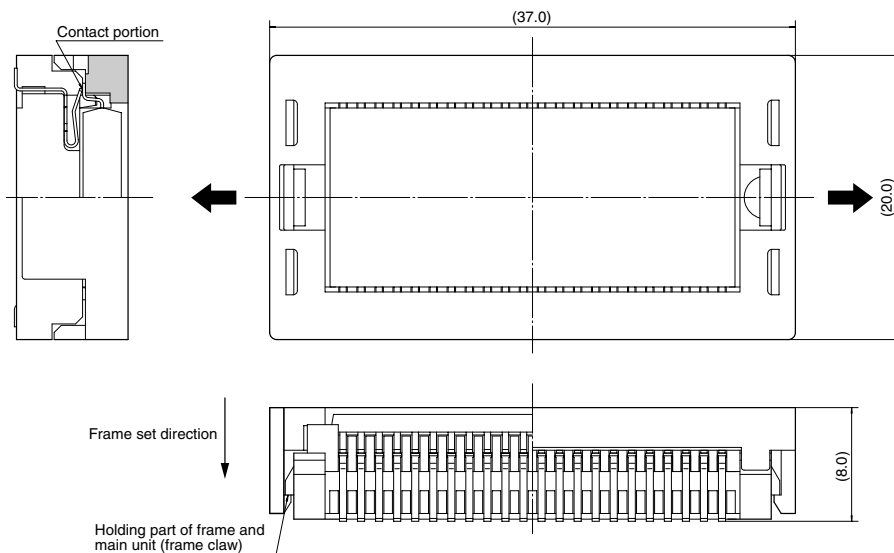
Recommended PC board pattern (TOP VIEW)



Note: Only the IC package positioning part shape (4 corners) and dimensions differ slightly between A and B types.

General tolerance: ±0.3

**IC chip and frame mounted on socket body**



General tolerance: ±0.3

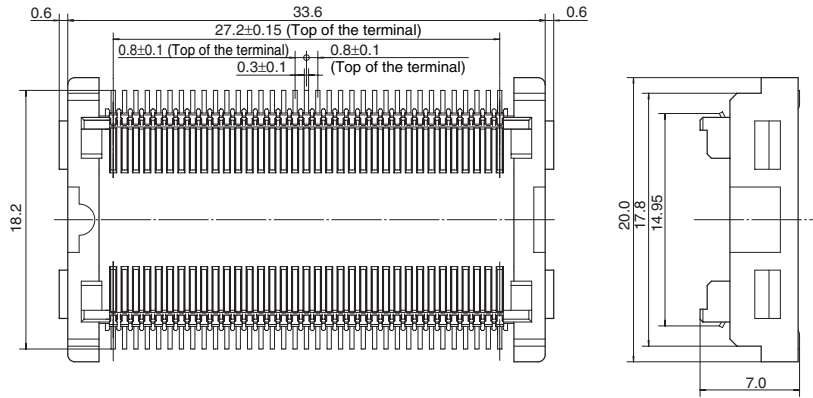
# AXS6N/6S

Narrow-pitch connectors

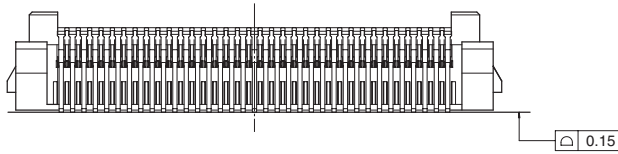
## Socket body

- Nominal dimension: 600 mil 70 contacts

**CAD Data**

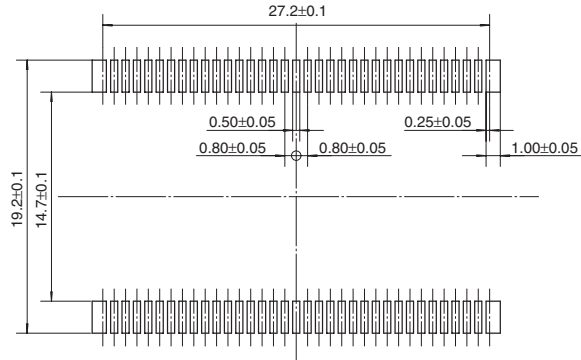


I/O connectors



Interface connectors

### Recommended PC board pattern (TOP VIEW)



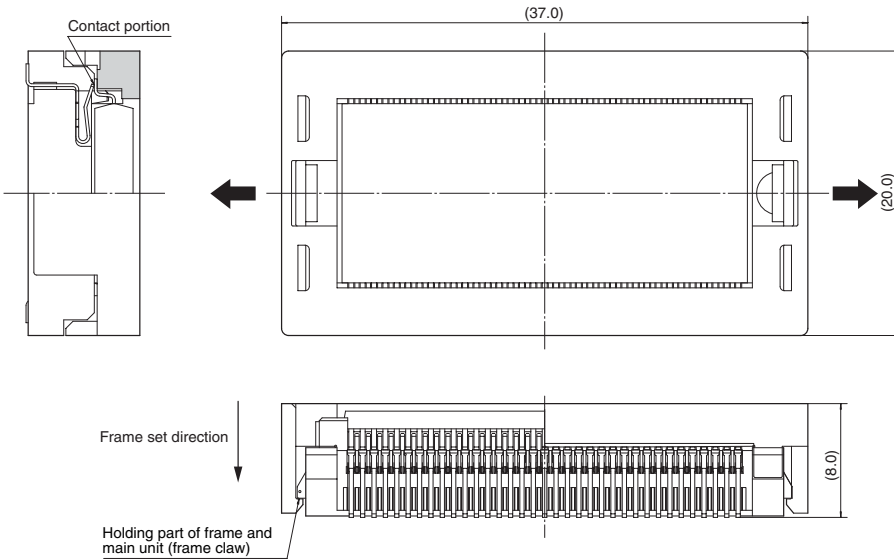
Sockets for memory card

Note: Only the IC package positioning part shape (4 corners) and dimensions differ slightly between A, B and C types.

General tolerance: ±0.3

Connectors for industrial equipment

## IC chip and frame mounted on socket body



General tolerance: ±0.3

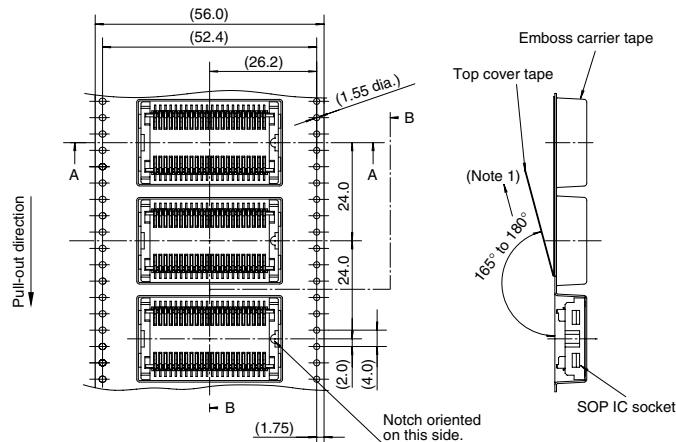
IC sockets

Information

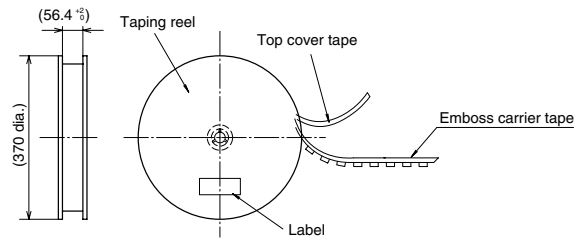
## EMBOSSED TAPE AND REEL (Unit: mm)

### 1. Nominal dimension: 600 mil 44 contacts

1) Tape dimensions (Conforming to JIS C 0806-1990 TB5624)

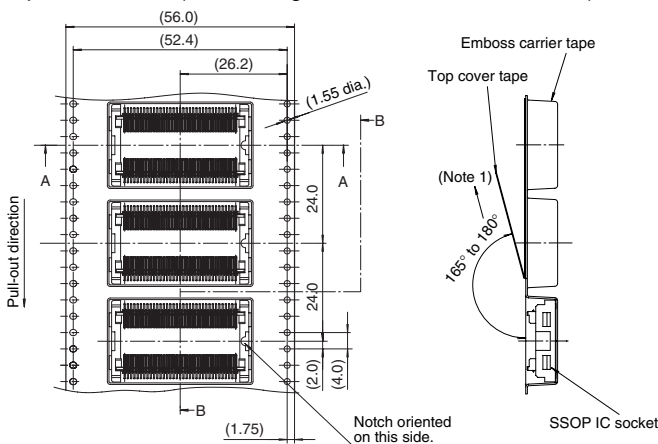


2) Reel dimensions (JIS C 0806-1995R56F)

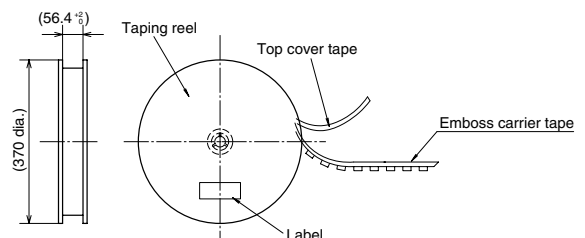


### 2. Nominal dimension: 600 mil 70 contacts

1) Tape dimensions (Conforming to JIS C 0806-1990 TB5624)



2) Reel dimensions (JIS C 0806-1995R56F)



## NOTES

**1. As this construction stresses the PC board's contact ability, you should take the PC board thickness into account when studying creating a socket.**

The recommended PC board (made from FR-4) thickness is at least 1.0 mm for an SOP IC socket.

**2. Reflow soldering**

In order to ensure solder strength, cream solder used should have a strength equivalent to Sparkle Solder Paste 63-101F (Senju Metal Industry Co., Ltd.).

**3. Manual soldering the SO packages**

(1) Soldering iron and solder  
Use a small capacity soldering iron with a narrow tip and thin wire solder.

Example)

Capacity: 100V AC 15W

Tip diameter: 1.0 to 1.2mm

Wire solder diameter: 0.6 to 0.8mm

(2) Soldering time

Perform soldering quickly. Solder within 5 seconds using the soldering iron specified above.

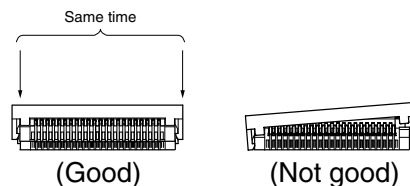
**4. If the IC's pin pitch is uneven, it might not fit into the socket or the IC**

**may become damaged. Check the IC's pin pitch before insertion.**

**5. When setting the frame, please use one of our specialized tools, and make sure that all frame tabs are securely inserted.**

If setting an IC embedded in a frame on the main unit, press in the frame until both tabs are firmly snapped into the main unit. When the frame is full inserted, there will be an audible snapping sound.

**6. When setting the frame by hand, lock all arms (44 and 70 contacts: 4 points) to the socket body at the same time.**



**7. When removing the frame, use the special tool available from us designed for that purpose.**

When replacing an IC, be sure to use the special frame removal tool available from us. Do not apply excessive displacement to the arms on the frame. Doing so may result in damage.

**8. Do not bend the pins. Doing so may result in damage.**

**9. Do not pull the pins with excessive force. Doing so may cause them to come off.**

**10. Unevenness in the mold color**

The white socket frame shows uneven color tones varying from white to gray. However, the unevenness of the color does not affect the socket performance or functions.

The black type does not show such color unevenness. Therefore, please choose the black type if color unevenness can be a problem.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

# SOP IC SOCKET/SSOP IC SOCKET FRAME SET TOOLS

Narrow-pitch connectors

I/O connectors

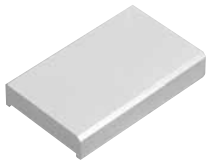
Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

Information



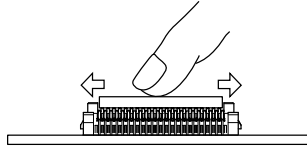
Compliance with RoHS Directive

## PRODUCT TYPES

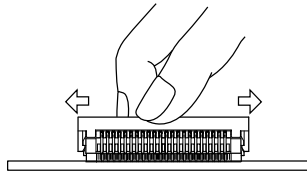
No. of contacts	Nominal dimensions	Part No.
44	600mil	AXY87442
70		

## OPERATION

1. Place IC on the IC socket, put your finger on top of the IC and gently push and pull it along the longer side. Make sure the IC vibrates slightly in the socket as you push and pull it.

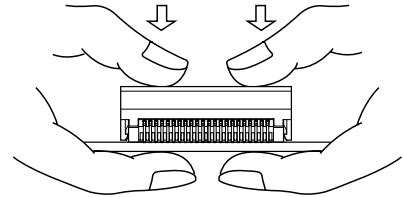


2. Place a frame on the socket. Hold the frame with your two fingers and gently push and pull it along the longer side. Make sure the frame vibrates on the socket as you push and pull it.



3. Socket and frame on your hand and put the frame set tool on them.

4. Snap the frame set tool in the socket with your two thumbs and be sure to keep the frame set tool in the horizontal position.



5. Take off the frame set tool from the frame.

6. To be sure, check visually from one side of the socket that the claws properly contact the socket.

# SOP IC SOCKET/SSOP IC SOCKET FRAME REMOVAL TOOLS



Compliance with RoHS Directive

## FEATURES

### 1. Removes the frame without requiring extra space.

Designed to remove the frame directly from above, the tool can be used even if the socket is surrounded by many devices, and in places where there is no room for the fingers.

### 2. Stopper for safe use

When removing a frame, stoppers are provided on the removal tool to prevent damage to the frame even if the tool is squeezed too hard.

### 3. Pocket-sized and functional design

With a total length of 150mm, the tool is compact and can be carried anywhere. It has a functional design based on human engineering.

## PRODUCT TYPES

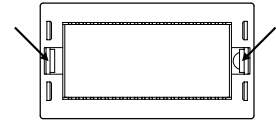
No. of contacts	Nominal dimensions	Part No.
44	600mil	AXY814442
70		

## NOTES

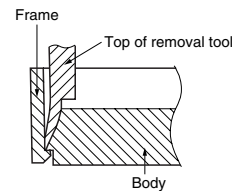
- 1) Avoid trying to pry the frame when the tips of the tool do not touch the body of the IC socket for the SO package. Doing so may damage the frame.
- 2) Do not drop the tool. Doing so may deform the tips.
- 3) Be careful not to poke yourself with the tips of the tool.

## OPERATION

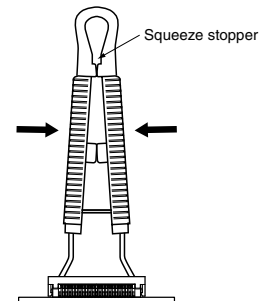
- 1) Insert the tips of the tool on the inside of the frame until they touch the body of the IC socket for the SO package.

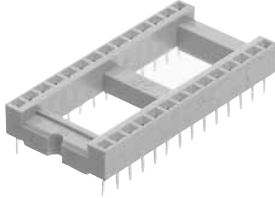


- 2) Lightly place your left index finger on the support, and gently move it apart, then place the tip of the removal tool into the frame joint.



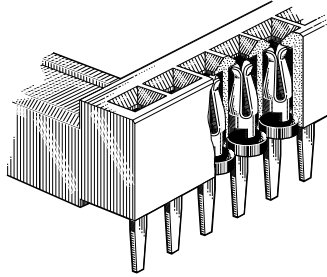
- 3) Squeeze the handles until the squeeze stoppers touch. Detach the frame's tabs and slowly lift the frame straight up.



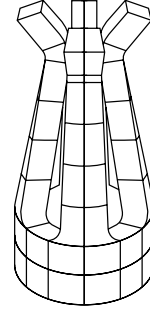


Compliance with RoHS Directive

## CONSTRUCTION OF CONTACT



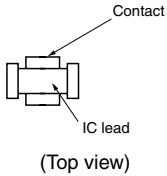
Tulip-style  $\mu$  contact, in which all contacts are arrayed facing the contact surface of the IC lead.



Contact design using ABAQUS

## FEATURES



### 1. Long life by four-face contact



Inside contacts are so aligned to permit a firm four-face contact with an IC lead. Lower insertion force leads to long life.

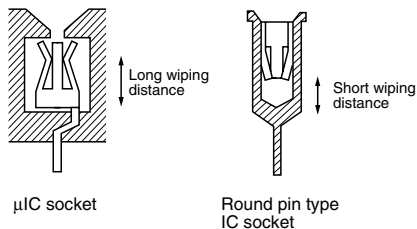
### 2. Array contact facilitates smooth insertion and removal.

Contact status comparison

$\mu$ C socket	
Round pin type IC socket	

All contacts are arrayed facing the contact surface of the IC lead, allowing for smooth insertion and removal, with minimum application of force. This eliminates inner contacts, preventing the IC from snagging when being inserted.

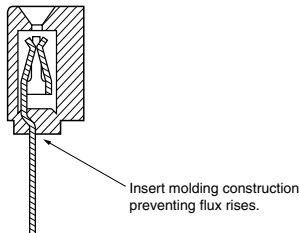
### 3. The tulip-shaped contact provides greater contact wiping action.



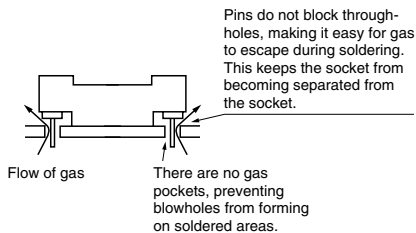
### 4. Porosity treatment provides superior corrosion resistance.

Porosity treatment is applied to the contact surfaces. Contact reliability and anti-corrosiveness equal that of thin or thick gold plating.

### 5. Insert molding construction prevents flux from entering the socket body.



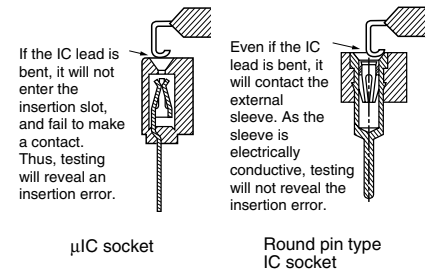
### 6. Solder "blow holes" are eliminated by unique socket construction.



### 7. Frame construction facilitates discovery and prevention of IC lead insertion errors.

Because the contacts are hidden inside the frame, a contact will not be made unless the IC is properly inserted. This makes it easy to test for insertion errors.

Lead bend during IC insertion



## Low Insertion/Removal Force Allows for Smooth Insertion

### • Comparison of overall insertion/removal force of $\mu$ C socket and round-pin type IC socket

We compared the force required to insert and remove a 40-pins type IC using a specialized insertion/removal testing device. Modifying the conventional standard method of measuring the maximum force on a single pin using a gauge, we continually measured the insertion/removal force for the IC as a whole.

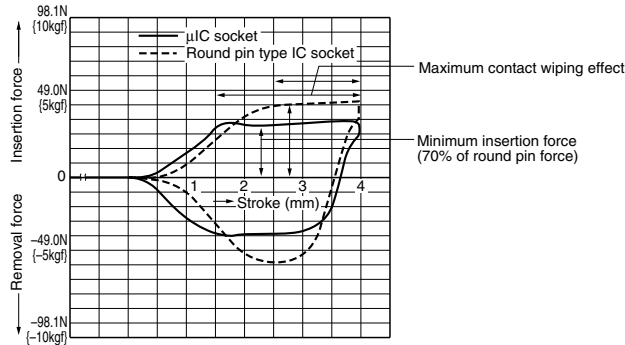


Fig. 1

### • Comparison of single-pin insertion force of $\mu$ C socket and round-pin type IC socket

Using a gage, we measured the force on each pin applied during insertion. The test showed that insertion force was less with the  $\mu$ C socket than with the round-pin type IC socket, and there was less variance as well.

### • Distribution of insertion force of a single pin

Sample: 50 pins  
Condition:  
Measuring gauge . . .  
0.60x0.30 steel gauge

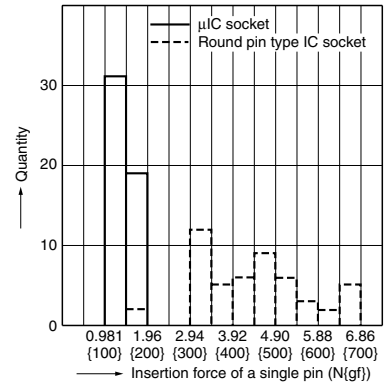


Fig. 2

## Low Abrasion on Contact Surface Increases Lifetime

### • Comparison of contact surface of $\mu$ C socket and round-pin type IC socket after 100 insertions and removals

Insertion/removal condition: Inserter used for IC insertion

	Expanded photo of contact surfaces (200 times)	Au plating distribution of contact surfaces (Surface analysis by an X-ray microanalyzer The part that appears white is Au-plated.)
$\mu$ C socket		
Round pin type IC socket		
Description	With the $\mu$ C socket, the contact surface area is large, and there is little abrasion. With the round-pin type IC socket, however, the contact surface area is small, and there are deep abrasions.	Almost all of the Au plating remains on the $\mu$ C socket, but none remains on the contact area of the round-pin type IC socket.



# AXS2

## ORDERING INFORMATION

AXS 2 0       1 K

20:  $\mu$ C sockets

<No. of contacts (2 digits)>

06: 6 contacts    08: 8 contacts    14: 14 contacts    16: 16 contacts  
 18: 18 contacts    20: 20 contacts    24: 24 contacts    28: 28 contacts  
 32: 32 contacts    40: 40 contacts

<Terminal layout and shape>

1: DIL terminal layout, solder DIP terminal  
 7: DIL terminal layout, solder DIP terminal (24 contacts: row pitch is 7.62 mm)

<Surface treatment (Contact portion/Terminal portion)>

1: Au plating/Sn plating

## PRODUCT TYPES

Terminal portion		Sn plating	Packing quantity	
Contact portion		Au plating		
Type	No. of contact	Part No.	Inner carton (Stick)	Outer carton
DIL	6	AXS200611K	50 pcs.	300 pcs.
	8	AXS200811K	50 pcs.	300 pcs.
	14	AXS201411K	25 pcs.	300 pcs.
	16	AXS201611K	25 pcs.	300 pcs.
	18	AXS201811K	20 pcs.	300 pcs.
	20	AXS202011K	20 pcs.	300 pcs.
	24*1	AXS202411K	15 pcs.	300 pcs.
	24*2	AXS202471K	15 pcs.	300 pcs.
	28	AXS202811K	15 pcs.	300 pcs.
	32	AXS203211K	10 pcs.	300 pcs.
40	AXS204011K	10 pcs.	300 pcs.	

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

(Note) All products are stick packaged.

## SPECIFICATIONS

### 1. Characteristics

Item	Specifications	Condition	
Electrical characteristics	Rated current	1A	
	Breakdown voltage	1,000V AC for 1min.	Detection current: 1mA
	Insulation resistance	Min. 1,000M $\Omega$	Using 500V DC megger
	Contact resistance	Max. 20m $\Omega$	Measured based on the HP4338B measurement method of JIS C 5402
	Electrostatic capacitance	Max. 2pF	at 1kHz
Mechanical characteristics	Vibration resistance	10 to 2,000Hz, Either 147m/s <sup>2</sup> {15G} or 1.52mm double amplitude, whichever is less	No interruption of current longer than 1 $\mu$ s does not occur.
	Shock resistance	981m/s <sup>2</sup> {100G}	No interruption of current longer than 1 $\mu$ s does not occur.
	Insertion force of a single pin	Max. 2.70N {275gf}	Measured by steel-gauge with 0.60x0.30mm
	Removal force of a single pin	Min. 0.392N {40gf}	Measured by steel-gauge with 0.40x0.20mm
	Holding force of a pin	Min. 14.7N {1.5kgf}	
Insertion and removal life	Min. 1,000 times	Measured by steel-gauge with 0.50x0.25mm	
Applicable leads	0.38 to 0.61x0.20 to 0.35mm		
Environmental resistance	H <sub>2</sub> S gas	Contact resistance after test: Max. 20m $\Omega$	240 hours exposure, 75 to 80% R.H., 40 $\pm$ 2 $^{\circ}$ C, 3 $\pm$ 1 ppm
	SO <sub>2</sub> gas	Contact resistance after test: Max. 20m $\Omega$	96 hours exposure, 90 to 95% R.H., 40 $\pm$ 2 $^{\circ}$ C, 10 $\pm$ 3 ppm
	Humidity	Contact resistance after test: Max. 20m $\Omega$ Insulation resistance after test: Min. 300M $\Omega$	240 hours exposure, 90 to 95% R.H., 40 $\pm$ 2 $^{\circ}$ C
	Thermal shock resistance	Contact resistance after test: Max. 20m $\Omega$ Insulation resistance after test: Min. 300M $\Omega$	Low temperature: -55 $^{\circ}$ C (30 min.) 1 cycle High temperature: +125 $^{\circ}$ C (30 min.) 1 cycle No. of cycles: 5 cycles
	Ambient temperature	-55 $^{\circ}$ C to +125 $^{\circ}$ C (No freezing at low temperatures)	
	Soldering temperature	260 $^{\circ}$ C: within 5 sec. (soldering tub) 300 $^{\circ}$ C: with 2 sec. (soldering iron)	

### 2. Materials and surface treatment

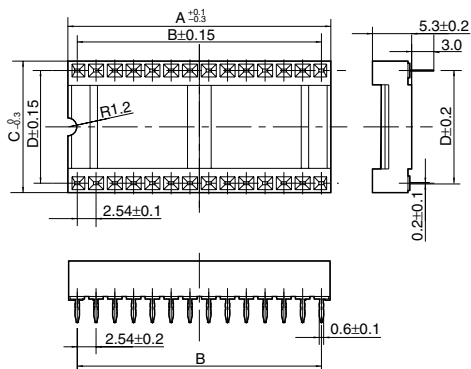
Part name	Material	Surface treatment
Frame	Glass-reinforced PBT (UL94V-0)	—
Contact	Copper alloy	Contacting portion: Ni plating on base, Au plating on surface Terminal portion: Ni plating on base, Sn plating on surface

**DIMENSIONS** (Unit: mm)

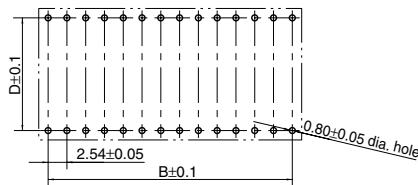
The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

• DIL Solder-DIP type

**CAD Data**



Recommended PC board pattern (Bottom view)



Note) Rib is not provided for 6, 8, 14, and 16 contacts;  
1 rib is provided for 18, 20, 24, and 28 contacts;  
2 ribs are provided for 32 and 40 contacts.

General tolerance: ±0.3

Dimension table (mm)

No. of contacts	A	B	C	D
6	7.62	5.08	10.16	7.62
8	10.16	7.62	10.16	7.62
14	17.78	15.24	10.16	7.62
16	20.32	17.78	10.16	7.62
18	22.86	20.32	10.16	7.62
20	25.4	22.86	10.16	7.62
24*1	30.48	27.94	17.78	15.24
24*2	30.48	27.94	10.16	7.62
28	35.56	33.02	17.78	15.24
32	40.64	38.10	17.78	15.24
40	50.8	48.26	17.78	15.24

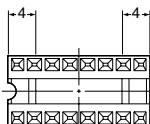
\*1: Row pitch is 15.24 mm

\*2: Row pitch is 7.62 mm

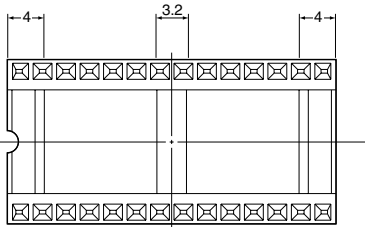
• Rib position (for DIL type)

**CAD Data**

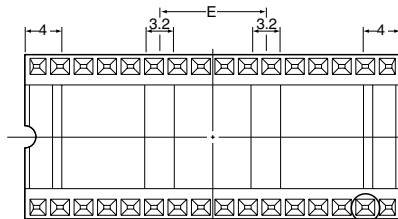
6 to 16 contacts



18 to 28 contacts



32 to 40 contacts



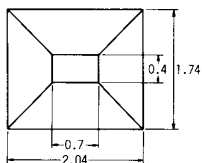
IC lead insertion hole

General tolerance: ±0.3

Dimension table (mm)

No. of contacts	E
32	11.5
40	15.5

• IC lead insertion hole



Note) Do not insert components with leads greater than applicable dimensions. Applicable leads dimensions: 0.38 to 0.61x0.20 to 0.35mm.

**NOTES**

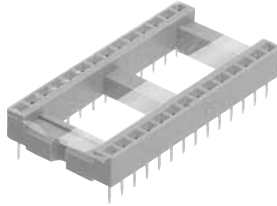
- The  $\mu$ IC socket has a squared IC terminal guide aperture, in order to avoid excessive displacement of the contact. For this reason, the pin bending correction angle of the  $\mu$ IC socket is larger than that of the round-pin type. Please insert the IC after correcting to ensure that all pins are inside the IC terminal insertion aperture. This will allow for a smooth insertion. Particular care is needed if the IC pin tips are flat, with no rounding.
- For reference, appropriate lead dimensions are 0.38 to 0.61 x 0.20 to 0.35.

- Please do not insert leads with dimensions exceeding these dimensions. Doing so could cause deformation in the contact.
- When soldering with a dip solder bath, maintain the temperature at 260°C or less, and time at no more than 5 seconds. If soldering with a soldering iron, maintain the temperature of the tip at no more than 300°C, and the time at no more than 2 seconds. Do not apply force to the pins while soldering.
- Flux of the non-corroding resin type should be used.
- Liquid flux of minimum chemical action type alcohol can be used.

- Sufficient care should be taken to prevent flux from entering the upper surface of the IC socket.
- For mounting and removing the IC, a special tool for insertion and removal of IC's should be used.
- Repeated flexing of the terminals may lead to the breakage of the integrally molded portions and cause flux to rise up when soldering.

Regarding general notes, please refer to page 17.

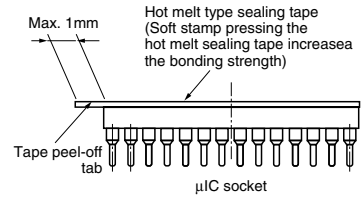
For other details, please verify with the product specification sheets.



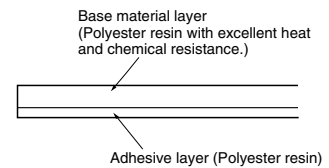
### FEATURES

1. Sealed μIC sockets compatible with ultrasonic cleaning (for 30 seconds) 3-bath cleaning (boiling, ultrasonic, vapor) and hot water cleaning.

2. The socket is sealed by the hot melt method for high bonding strength.



Construction of sealing tape



Compliance with RoHS Directive

### PRODUCT TYPES

Terminal portion		Sn plating	Packing quantity	
Contact portion		Au plating		
Type	No. of contact	Part No.	Inner	Outer
DIL	6	AXS210611K	60 pcs.	600 pcs.
	8	AXS210811K	60 pcs.	600 pcs.
	14	AXS211411K	30 pcs.	300 pcs.
	16	AXS211611K	30 pcs.	300 pcs.
	18	AXS211811K	30 pcs.	300 pcs.
	20	AXS212011K	30 pcs.	300 pcs.
	24*1	AXS212411K	30 pcs.	300 pcs.
	24*2	AXS212471K	30 pcs.	300 pcs.
	28	AXS212811K	30 pcs.	300 pcs.
	32	AXS213211K	30 pcs.	300 pcs.
	40	AXS214011K	20 pcs.	200 pcs.

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

Note) All products are tray packed sockets.

### ORDERING INFORMATION

AXS 2 1       1 K

21: Sealed type μIC sockets

<No. of contacts (2 digits)>

06: 6 contacts    08: 8 contacts    14: 14 contacts    16: 16 contacts  
 18: 18 contacts    20: 20 contacts    24: 24 contacts    28: 28 contacts  
 32: 32 contacts    40: 40 contacts

<Terminal layout and shape>

1: DIL terminal layout, solder DIP terminal  
 7: DIL terminal layout, solder DIP terminal (24 contacts: row pitch is 7.62 mm)

<Surface treatment (Contact portion/Terminal portion)>

1: Au plating/Sn plating

Note: Some part number combinations are not possible in the ordering information chart above.  
 Please refer to the table of product types.

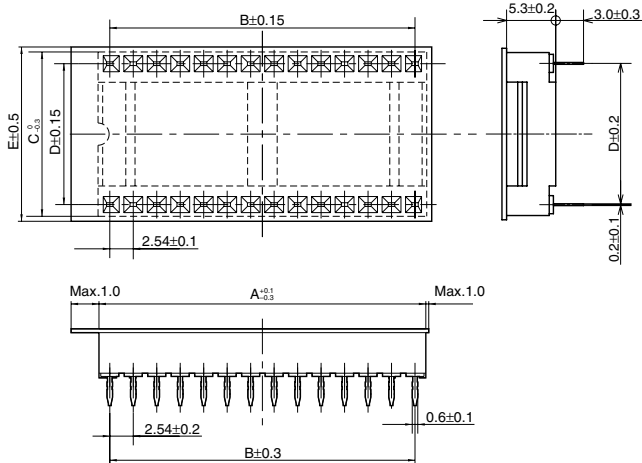
### SPECIFICATIONS

Please see "μSOCKET SERIES μIC SOCKET".

**DIMENSIONS** (Unit: mm)

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e/>

**CAD Data**



Dimension table (mm)

No. of contacts	A	B	C	D	E
6	7.62	5.08	10.16	7.62	10.8
8	10.16	7.62	10.16	7.62	10.8
14	17.78	15.24	10.16	7.62	10.8
16	20.32	17.78	10.16	7.62	10.8
18	22.86	20.32	10.16	7.62	10.8
20	25.4	22.86	10.16	7.62	10.8
24*1	30.48	27.94	17.78	15.24	18.5
24*2	30.48	27.94	10.16	7.62	10.8
28	35.56	33.02	17.78	15.24	18.5
32	40.64	38.1	17.78	15.24	18.5
40	50.8	48.26	17.78	15.24	18.5

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

Note) The PC board pattern rib position and IC lead insertion dimensions are same as DIL solder-dip type.

General tolerance:  $\pm 0.3$

**NOTES**

**1. Storage**

- 1) Store the sockets at ambient temperature of 60°C or less.
- 2) Do not peel off the tape until completion of cleaning. (If the tape is peeled before cleaning, the solvent enters the inside of the contact area.)

**2. Cleaning**

- Cleaning shall be performed in the following procedure:
- 1) Cleaning time  
 Boil bath: Within 30 seconds  
 Vapor bath: Within 30 seconds.  
 Ultrasonic bath: Within 30 seconds.
  - 2) Use a cleaning liquid that will not dissolve polyester. Also, keep the temperature of the cleaning liquid at 40°C or lower.

Please consult us for the solvent.

**3. After cleaning, peel off the tape and insert a componet.**

For other notes, see (page 269) above.

Regarding general notes, please refer to page 17.

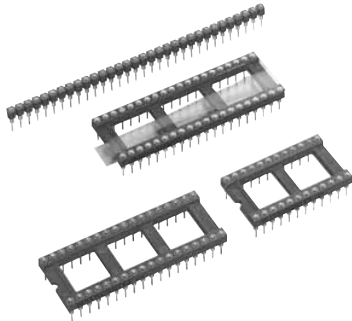
For other details, please verify with the product specification sheets.

# Panasonic

ideas for life

## HIGH RELIABILITY IC SOCKET WITH ROUND PIN

## ROUND PIN TYPE IC SOCKETS



Compliance with RoHS Directive

### FEATURES

**1. With advanced design method of the frame, stress transmission from the PC board is greatly reduced.**  
**2. This is a high reliability IC socket with round pin external contacts constructed with 4 point internal contacts.**

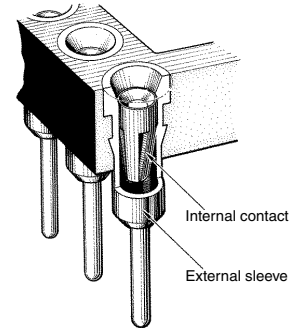
Because of the gold plating on all surfaces, the 4 point contact construction offers superior resistance to vibration, shock, and environmental conditions, resulting in high reliability.

**3. Terminal shape prevents entrance of solder flux. Because of the round pin construction and sufficient distance being provided between the PC board mounting surface and the frame, flux cannot rise up into the contact section.**

**4. Water-washable sealed types also available**

As the sealed type uses hot-melt tape, there is a strong bond between the tape and molded product, which will prevent cleaning fluid from entering even if a 3-bath cleaning (boiling, ultrasonic, vapor) is used.

### CONSTRUCTION OF CONTACT



### ORDERING INFORMATION

AXS 1 0

10: Round PIN type IC sockets

<No. of contacts (2 digits)>

08: 8 contacts	14: 14 contacts	16: 16 contacts	18: 18 contacts
20: 20 contacts	22: 22 contacts	24: 24 contacts	28: 28 contacts
32: 32 contacts	36: 36 contacts	40: 40 contacts	48: 48 contacts
64: 64 contacts			

<Terminal layout and shape>

1: DIL terminal layout, solder DIP terminal  
 2: SIL terminal layout, solder DIP terminal  
 7: DIL terminal layout, solder DIP terminal (24 contacts: row pitch is 7.62 mm)

<Surface treatment (Internal contact/External sleeve)>

1: Au plating 0.25 $\mu$ m/Sn plating  
 3: Au plating 0.76 $\mu$ m/Sn plating  
 7: Au plating 0.76 $\mu$ m/Au plating  
 9: Sn plating/Sn plating

## PRODUCT TYPES

### 1. Solder dip terminal type

Item	Economical type (Extremely resistant to fretting with IC)		General-purpose type (Extremely resistant to fretting with IC)		High-reliability type (Contact resistance is stable even if left unadhered for extended periods.)	Testing use		Packaging	
	Sn plating		Au plating (0.25μm)		Au plating (0.76μm)	Au plating (0.76μm)			
External sleeve	Sn plating					Au plating			
Internal contact	Sn plating		Au plating (0.25μm)		Au plating (0.76μm)	Au plating (0.76μm)			
Type	No. of contacts	Part No.	Part No.	Part No.	Part No.	Inner carton (Stick)	Outer carton		
DIL	8	AXS100819	AXS100811	AXS100813	AXS100817	50 pcs.	300 pcs.		
	14	AXS101419	AXS101411	AXS101413	AXS101417	25 pcs.	300 pcs.		
	16	AXS101619	AXS101611	AXS101613	AXS101617	25 pcs.	300 pcs.		
	18	AXS101819	AXS101811	AXS101813	AXS101817	20 pcs.	300 pcs.		
	20	AXS102019	AXS102011	AXS102013	AXS102017	20 pcs.	300 pcs.		
	22	AXS102219	AXS102211	AXS102213	AXS102217	15 pcs.	300 pcs.		
	24*1	AXS102419	AXS102411	AXS102413	AXS102417	15 pcs.	300 pcs.		
	24*2	AXS102479	AXS102471	AXS102473	AXS102477	15 pcs.	300 pcs.		
	28	AXS102819	AXS102811	AXS102813	AXS102817	15 pcs.	300 pcs.		
	32	AXS103219	AXS103211	AXS103213	AXS103217	10 pcs.	300 pcs.		
	36	AXS103619	AXS103611	AXS103613	AXS103617	10 pcs.	300 pcs.		
	40	AXS104019	AXS104011	AXS104013	AXS104017	10 pcs.	300 pcs.		
	48	AXS104819	AXS104811	AXS104813	AXS104817	8 pcs.	200 pcs.		
SIL	64	AXS106419	AXS106411	AXS106413	AXS106417	5 pcs.	100 pcs.		
	32	AXS103229	AXS103221	AXS103223	AXS103227	10 pcs.	100 pcs.		

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

Note) All are stick packaged.

• SIL type produced after order products: Supports up to 32 contacts. (Minimum order is 1,000 pieces)

## SPECIFICATIONS

### 1. Characteristics

Item		Specifications	Condition
Electrical characteristics	Rated current	1A	
	Breakdown voltage	1,000V AC for 1 min.	Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ	Using 500V DC megger
	Contact resistance	Max. 20mΩ	Measured based on the HP4338B measurement method of JIS C 5402
	Electrostatic capacitance	Max. 2pF	at 1kHz
Mechanical characteristics	Vibration resistance	10 to 2,000Hz, 147m/s <sup>2</sup> {15G}	After carrying current (Max. 100mA) during the test, no interruption of current longer than 1μs does not occur.
	Shock resistance	980m/s <sup>2</sup> {100G}	After carrying current (Max. 100mA) during the test, no interruption of current longer than 1μs does not occur.
	Insertion force of single contact	Max. 3.33N {340gf}	Measured by a 0.41mm dia. steel gauge with a surface roughness of 0.1 s.
	Pull-out force of single contact	Min. 0.392N {40gf}	Measured by a 0.41mm dia. steel gauge with a surface roughness of 0.1 s.
	Insertion and removal life	Min. 100 times	With usage of applicable leads
Applicable leads		Square lead: at 0.5±0.1×0.25±0.05 Round lead: Diameter 0.4 to 0.53mm	
Environmental resistance	H <sub>2</sub> S gas	Contact resistance after test: Max. 20mΩ	After 96 hours of exposure to humidity 75 to 80% R.H., temperature 40°C±2°C, concentration 3±1 ppm
	SO <sub>2</sub> gas	Contact resistance after test: Max. 20mΩ	After 48 hours of exposure to humidity 90 to 95% R.H., temperature 40°C±2°C, concentration 10±3 ppm
	Humidity	Contact resistance after test: Max. 20mΩ Insulation resistance after test: Min. 300MΩ	After 96 hours of exposure to humidity 90 to 95% R.H., temperature 40°C±2°C
	Thermal shock resistance	Contact resistance after test: Max. 20mΩ Insulation resistance after test: Min. 300MΩ	Low temperature: -55°C (30 min.) 1 cycle High temperature: +125°C (30 min.) 1 cycle No. of cycles: 5 cycles
	Ambient temperature	Au plating: -55°C to +125°C Sn plating: -55°C to +85°C (No freezing at low temperature)	
	Soldering temperature	350°C: within 3 sec. 260°C: with 10 sec.	

### 2. Materials and surface treatment

Part name	Material	Surface treatment
Frame	Glass-reinforced PBT (UL94V-0)	—
External sleeve	Brass	Ni plating on base, Sn plating on surface or Ni plating on base, Au plating on surface
Internal contact	Beryllium copper	Ni plating on base, Sn plating on surface Ni plating on base, Au plating on surface (0.25μm) Ni plating on base, Au plating on surface (0.76μm)

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

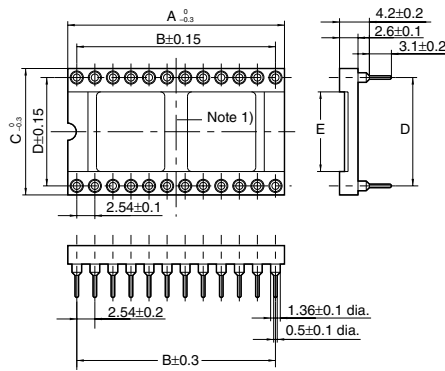
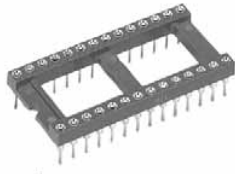
# AXS1

## DIMENSIONS (Unit: mm)

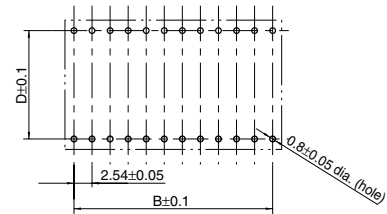
### • DIL solder-DIP terminal type

#### CAD Data

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://www.mew.co.jp/ac/e>



### Recommended PC board pattern (BOTTOM VIEW)



Note) Rib is not provided for 8, 14 and 16 contacts;  
1 rib is provided for 18, 20, 22, 24 and 28 contacts;  
2 ribs are provided for 32, 36, 40 and 48 contacts;  
4 ribs are provided for 64 contacts.

### Dimension table (mm)

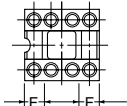
No. of contacts	A	B	C	D	E
8	10.16	7.62	10.16	7.62	4.3
14	17.78	15.24	10.16	7.62	4.3
16	20.32	17.78	10.16	7.62	4.3
18	22.86	20.32	10.16	7.62	4.3
20	25.4	22.86	10.16	7.62	4.3
22	27.94	25.4	12.7	10.16	6.4
24*1	30.48	27.94	17.78	15.24	11.2
24*2	30.48	27.94	10.16	7.62	4.3
28	35.56	33.02	17.78	15.24	11.2
32	40.64	38.1	17.78	15.24	11.2
36	45.72	43.18	17.78	15.24	11.2
40	50.8	48.26	17.78	15.24	11.2
48	60.96	58.42	17.78	15.24	11.2
64	81.28	78.74	25.4	22.86	17.8

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

### • Rib layout (for DIL type)

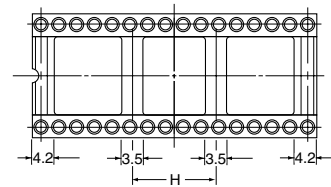
#### 8 to 16 contacts



#### Dimension table (mm)

No. of contacts	F
8	2.9
14	3.0
16	3.1

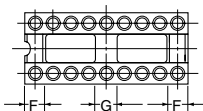
#### 32 to 48 contacts



#### Dimension table (mm)

No. of contacts	H
32	11.5
36	13.5
40	15.5
48	15.5

#### 18 to 28 contacts



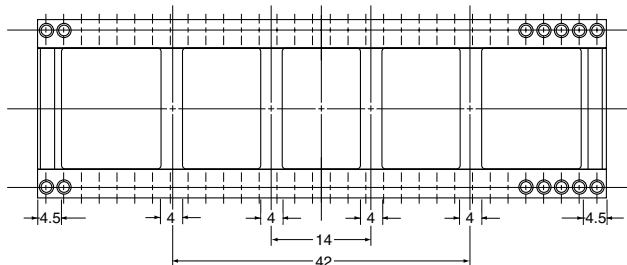
#### Dimension table (mm)

No. of contacts	F	G
18	3.5	3.0
20	3.5	3.0
22	3.7	3.0
24*1	4.0	3.2
24*2	4.2	3.0
28	4.0	3.2

\*1 Pitch: 15.24mm

\*2 Pitch: 7.62mm

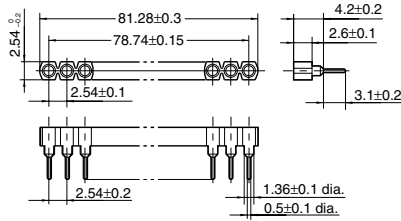
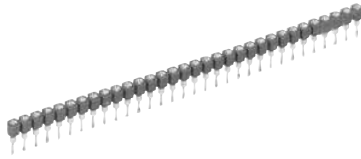
#### 64 contacts



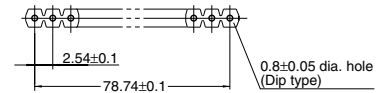
General tolerance:  $\pm 0.3$

• SIL solder-DIP type (32 contacts)

**CAD Data**

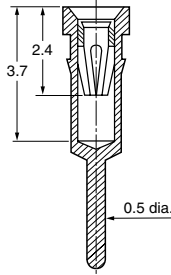


Recommended PC board pattern  
(BOTTOM VIEW)



• Terminal (Common for DIL and SIL terminals)

Dip terminal



**NOTES**

1. Do not use for inserting of leads other than of applicable dimension. There is the possibility of distorting the internal contacts.
2. Because repeated flexing of the terminals can lead to the breakage of the terminal, care should be taken.
3. Soldering should be done under the following conditions.  
260°C: Within 10 seconds soldering bath  
350°C: Within 3 seconds soldering iron
4. Flux of the non-corroding rosin type should be used.
5. Liquid flux of minimum chemical action type alcohol can be used.
6. Sufficient care should be taken to prevent flux from entering the upper surface of the IC socket.
7. For mounting and removing the IC, a special tool for insertion and removal of IC's should be used.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

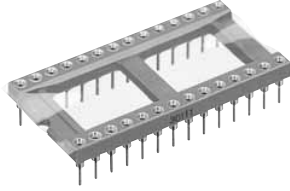
IC sockets

Information



# Panasonic

ideas for life



Compliance with RoHS Directive

**HIGH RELIABILITY  
IC SOCKET  
WITH ROUND PIN  
(SEALED TYPE)**

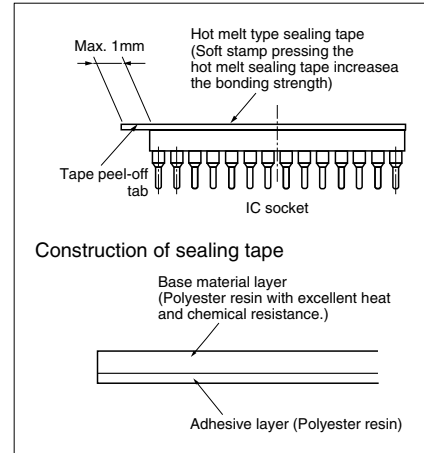
**ROUND PIN TYPE SEALED  
IC SOCKETS (AXS1)**

## FEATURES

1. Sealed IC sockets compatible with ultrasonic cleaning (30 seconds), 3-bath cleaning (boiling, ultrasonic, vapor) and hot water.
2. The top surface of the socket is sealed by the hot melt method for high bonding strength.
3. High reliability sockets with round pin contacts and a 4-point contact construction.

## CONSTRUCTION

Sealing tape is bonded to the top surface of the IC socket. The sealing tape is peeled off before IC chip insertion.



## ORDERING INFORMATION

AXS **1** **1**

11: Round PIN type sealed IC sockets

<No. of contacts (2 digits)>

08: 8 contacts	14: 14 contacts	16: 16 contacts	18: 18 contacts
20: 20 contacts	22: 22 contacts	24: 24 contacts	28: 28 contacts
32: 32 contacts	36: 36 contacts	40: 40 contacts	48: 48 contacts
64: 64 contacts			

<Terminal layout and shape>

1: DIL terminal layout, solder DIP terminal  
7: DIL terminal layout, solder DIP terminal (24 contacts: row pitch is 7.62 mm)

<Surface treatment (Internal contact/External sleeve)>

1: Au plating 0.25 $\mu$ m/Sn plating  
3: Au plating 0.76 $\mu$ m/Sn plating  
7: Au plating 0.76 $\mu$ m/Au plating  
9: Sn plating/Sn plating

## PRODUCT TYPES

Item		Economical type (Extremely resistant to fretting with IC)	General-purpose type (Extremely resistant to fretting with IC)	High-reliability type (Contact resistance is stable even if left unadhered for extended periods.)	Quantity in box			
External sleeve		Sn plating			Inner carton		Outer carton	
Internal contact		Sn plating	Au plating (0.25μm)	Au plating (0.76μm)				
Type	No. of contacts	Part No.	Part No.	Part No.	30 pcs.	300 pcs.		
DIL	8	AXS110819	AXS110811	AXS110813				
	14	AXS111419	AXS111411	AXS111413				
	16	AXS111619	AXS111611	AXS111613				
	18	AXS111819	AXS111811	AXS111813				
	20	AXS112019	AXS112011	AXS112013				
	22	AXS112219	AXS112211	AXS112213				
	24 <sup>*1</sup>	AXS112419	AXS112411	AXS112413				
	24 <sup>*2</sup>	AXS112479	AXS112471	AXS112473				
	28	AXS112819	AXS112811	AXS112813				
	32	AXS113219	AXS113211	AXS113213				
	36	AXS113619	AXS113611	AXS113613				
	40	AXS114019	AXS114011	AXS114013				
	48	AXS114819	AXS114811	AXS114813				
64	AXS116419	AXS116411	AXS116413	20 pcs.	200 pcs.			

\*1 Pitch: 15.24mm  
 \*2 Pitch: 7.62mm  
 Note) All are tray packed sockets

## SPECIFICATIONS AND DIMENSIONS

1. The specification of the sealed IC socket are the same as the round pin type IC socket.
2. See the DIL solder-dip type for the socket and PC board pattern dimensions.

## NOTES FOR SEALED TYPE

### 1. Storage

- 1) Store at an ambient temperature of 60°C or lower.
- 2) Do not peel off the tape until after cleaning. (If the tape is peeled off before cleaning, the cleaning liquid will enter the inside of the contact.)

### 2. Cleaning

- Observe the following conditions when cleaning.
- 1) Cleaning time  
 Boiling bath: within 30 seconds  
 Vapor bath: within 30 seconds  
 Ultrasonic bath: within 30 seconds
  - 2) Use a cleaning liquid that will not dissolve polyester. Also, keep the temperature of the cleaning liquid at 40°C or lower.

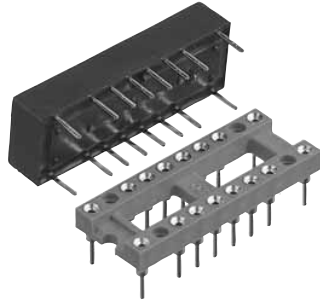
### 3. After cleaning, peel off the tape and insert the IC.

Please see (page 275) above for other notes.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

Narrow-pitch connectors  
I/O connectors  
Interface connectors  
Sockets for memory card  
Connectors for industrial equipment  
IC sockets  
Information

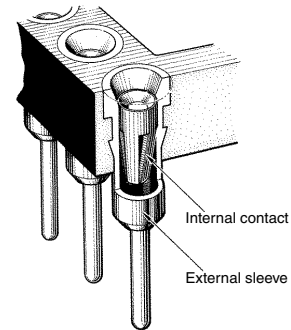


Compliance with RoHS Directive

### FEATURES

1. These sockets have a contact configuration which match the terminal layout of signal relays.
2. The use of round pin contacts with a 4-point contact construction gives the sockets an excellent resistance to vibration, impact and environmental conditions, and it thereby ensures that they maintain a high contact reliability.
3. The terminals are shaped in such a way as to prevent flux penetration.
4. The sockets have a space-saving design (they occupy the same space as the area taken up by the relays).

### CONSTRUCTION OF CONTACT



### ORDERING INFORMATION

AXS

10: Sockets for PC board relays

<Product name>  
DS: For DS relays  
TQ: For TQ relays

<Arrangement>  
2: 2 Form C  
4: 4 Form C

<Operation function>  
1: Single side stable type/1 coil latching type  
2: 2 coil latching type

### PRODUCT TYPES

Product name	Part No.	No. of terminals	Terminal layout (Bottom view)	Applicable relays of ours			Quantity	
				Product name	Arrangement	Operation function	Inner carton	Outer carton
DS21 socket	AXS10DS21	8		DS Relay	2 Form C	Single Side Stable Type 1 Coil Latching Type	25 pcs.	300 pcs.
DS22 socket	AXS10DS22	10			2 Form C	2 Coil Latching Type	25 pcs.	300 pcs.
TQ41 socket	AXS10TQ41	16		TQ Relay	4 Form C	Single Side Stable Type 1 Coil Latching Type 2 Coil Latching Type	20 pcs.	300 pcs.

Notes) 1. Consistent terminal layout of competitor's will be applied.  
2. All are stick packaged.

# SPECIFICATIONS

## 1. Characteristics


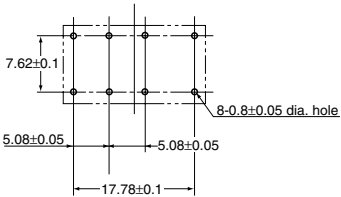

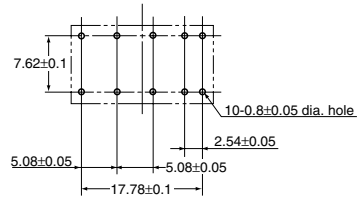

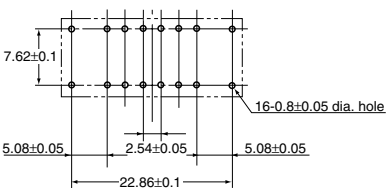
Item		Specifications			Condition
Electrical characteristics	Rated current	2A			
	Breakdown voltage	1,000V AC for 1 min.			Detection current: 1mA
	Insulation resistance	Min. 1,000MΩ			Using 500V DC megger
	Contact resistance	Max. 20mΩ			Measured based on the HP4338B measurement method of JIS C 5402
Mechanical characteristics	Composite insertion force	AXS10DS21	AXS10DS22	AXS10TQ41	—
		Max. 56.4N {5.75kgf}	Max. 70.5N {7.19kgf}	Max. 70.6N {7.20kgf}	
	Holding force of a pin	Max. 19.6N (2.0kgf)			—
Environmental characteristics	Ambient temperature	-55 to +125°C (not applied to relays)			No freezing at low temperature, Max. 85% R.H.
	Soldering heat resistance	260°C within 10 sec. Soldering iron tip 350°C within 3 sec.			Soldering bath Soldering iron

## 2. Material and surface treatment

	Part name	Material	Surface treatment
Molded poration	Frame	Glass reinforced PBT (UL94V-0)	—
Metal poration	External sleeve	Brass	Ni plating on base, Sn plating on surface
	Internal contact	Beryllium copper	Ni plating on base, Au plating on surface (0.25μm) For TQ Relay 4 Form C: Au (0.76μm) plating

Recommended PC board thickness: 1.6mm

## PC BOARD PATTERN (Unit: mm)

Part No.	Pattern (Bottom view)	Part No.	Pattern (Bottom view)
AXS10DS21	  <p>Dimension is same as 16 contacts, round pin type IC socket.</p>	AXS10DS22	  <p>Dimension is same as 16 contacts, round pin type IC socket.</p>
AXS10TQ41	  <p>Dimension is same as 20 contacts, round pin type IC socket.</p>		

## NOTES

- Pre-soldering the relay terminals will make the terminals thicker so that it may not be possible to insert them into the socket.
- These sockets cannot be used for self-standing relays whose terminals are bent in places.
- Do not insert leads which exceed the suitable dimensions. Otherwise, the internal contacts may be bent out of shape.
- Repeated bending of the terminals can cause breakage. Take extra care when handling.
- Soldering should be carried out under the following conditions.
  - 260°C: within 10 seconds
  - 300°C: within 5 seconds
  - 350°C: within 3 seconds
- Care should be exercised at the assembly stage since these sockets do not come with a function of preventing the reverse assembly of the relays.

Regarding general notes, please refer to page 17.

For other details, please verify with the product specification sheets.

# FOREIGN SPECIFICATIONS OVERVIEW

Narrow-pitch connectors

I/O connectors

Interface connectors

Sockets for memory card

Connectors for industrial equipment

IC sockets

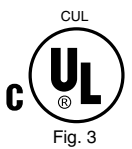
Information

## 1. North America

### UL (Underwriters Laboratories Inc.)

This is a non-profit testing organization formed in 1894 by a coalition of U.S. fire insurance firms, which tests and approves industrial products (finished products). When electrical products are marketed in the U.S., UL approval is mandated in many states, by state law and city ordinances. In order to obtain UL approval, the principal parts contained in industrial products must also be UL-approved parts.

UL approval is divided into two general types. One is called "listing", and applies to industrial products (finished products). Under this type of approval, products must be approved unconditionally. The other type is called "recognition", and is a conditional approval which applies to parts and materials.



### CSA (Canadian Standards Association)

This was established in 1919 as a non-profit, non-governmental organization aimed at promoting standards. It sets standards for industrial products, parts, and materials, and has the authority to judge electrical products to determine whether they conform to those standards. The CSA is the ultimate authority in the eyes of both the government and the people in terms of credibility and respect. Almost all states and provinces in Canada require CSA approval by law, in order to sell electrical products. As a result, electrical products exported from Japan to Canada are not approved under Canadian laws unless they have received CSA approval and display the CSA mark. Approval is called "certification", and products and parts which have been approved are called "certified equipment", and display the mark shown in Fig. 1. The mark shown in Fig. 2 is called the "Component Acceptance" mark, and indicates conditional approval which is applicable to parts. The C-UL mark shown in Figs. 3 and 4 indicates that the product has been tested and approved in UL laboratories, based on CSA standards, through mutual approval activities. The marks shown in Fig. 5 (finished products) and Fig. 6 (parts) are consolidations of the C-UL and UL marks, and indicate that the product or part has obtained both C-UL and UL approval.

## 2. Europe Germany

### VDE (Verband Deutscher Elektrotechniker)

The VDE laboratory was established mainly by the German Electric Technology Alliance, which was formed in 1893. It carries out safety experiments and passes approval for electrical devices and parts. Although VDE certification is not enforced under German law, punishment is severe should electrical shock or fire occur; therefore, it is, in fact, like an enforcement.



### TÜV (Technischer Überwachungs-Verein)

TÜV is a civilian, non-profit, independent organization that has its roots in the German Boiler Surveillance Association, which was started in 1875 for the purpose of preventing boiler accidents. A major characteristic of TÜV is that it exists as a combination of 14 independent organizations (TÜV Rheinland, TÜV Bayern, etc.) throughout Germany.

TÜV carries out inspection on a wide variety of industrial devices and equipment, and has been entrusted to handle electrical products, as well, by the government. TÜV inspection and certification is based mainly on the VDE standard.

TÜV certification can be obtained from any of the 14 TÜVs throughout Germany and has the same effectiveness as obtaining VDE certification.

# STANDARDS CHART

Products Name		UL (Recognized)		CSA (Certified)		TÜV (Certified)		TV rating (UL/CSA)		Remarks
		File No.	Rating	File No.	Rating	File No.	Rating	File No.	Rating	
DIN connectors (AXD)	Standard B and C type Header	E174782	2A 250V 125°C	LR56172	2A 300V 125°C	—	—	—	—	
	Standard B and C type Socket	E174782	2A 250V 125°C	LR56172	2A 300V 125°C	—	—	—	—	
Card edge connectors (AXC)		E174782	125V 105°C	—	—	—	—	—	—	
BB sockets (AXB1)		E174782	2A 250V 105°C	LR56172	2A 125V 105°C	—	—	—	—	
MIL connectors (AXM)		E174782	1A 105°C	LR56172	1A 125V 105°C	—	—	—	—	
Low-profile Headers (AXL)	Box type	E174782	2A 250V 105°C	LR56172	1A 125V 105°C	—	—	—	—	
	Open type (height: 7.4mm)	E174782	2A 250V 105°C	LR56172	1A 125V 105°C	—	—	—	—	
	Open type (height: 2.54mm)	E174782	2A 250V 105°C	LR56172	2A 250V 105°C	—	—	—	—	
PCB type connectors (AXP)		E174782	1A 105°C	LR56172	1A 125V 105°C	—	—	—	—	

Note) For UL-recognized and CSA-certified products, specify "9" at the end of the part No. when ordering.  
DIN UL and CSA certification is available on types other than those with 20 or 100 contacts.

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# ISO9001 Certificate of Approval

Our connector division, which handles everything from development to production and marketing, has been approved for certification of the ISO9001 quality assurance standards established by the International Organization for Standardization (ISO).

In October 12, 1993, this achievement was officially registered by the certification organizations UKAS of the United Kingdom and RVA of the Netherlands. We were also registered with JAS-ANZ of Australia and New Zealand.



# ISO 14001 Certificate of Approval

Our Tsu Plant (located in Tsu City, Mie Prefecture), which develops and manufactures connectors, has obtained certification for ISO14001, an international standard for environmental management systems and environmental monitoring of the International Organization for Standardization (ISO).



Tsu Plant (Tsu City, Mie Prefecture)

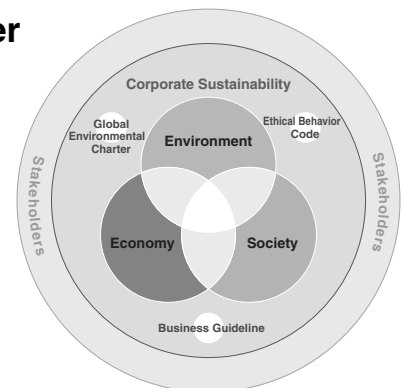


Since the establishment of the "Matsushita Electric Works Global Environmental Charter" in 1992, we are set to unite in a concerted effort toward making Matsushita Electric Work a company capable of sustainable development by striking the right balance between our commitments to the environment, the economy, and society.

Regarding environmental conservation, we are fully committed to the complete elimination of freon and trichloroethylene. In energy-related efforts, we are developing technology to create energy-saving products, and for natural resources, we are working to eliminate industrial waste and to develop recycling technology. Our goal is peaceful co-existence with local communities.

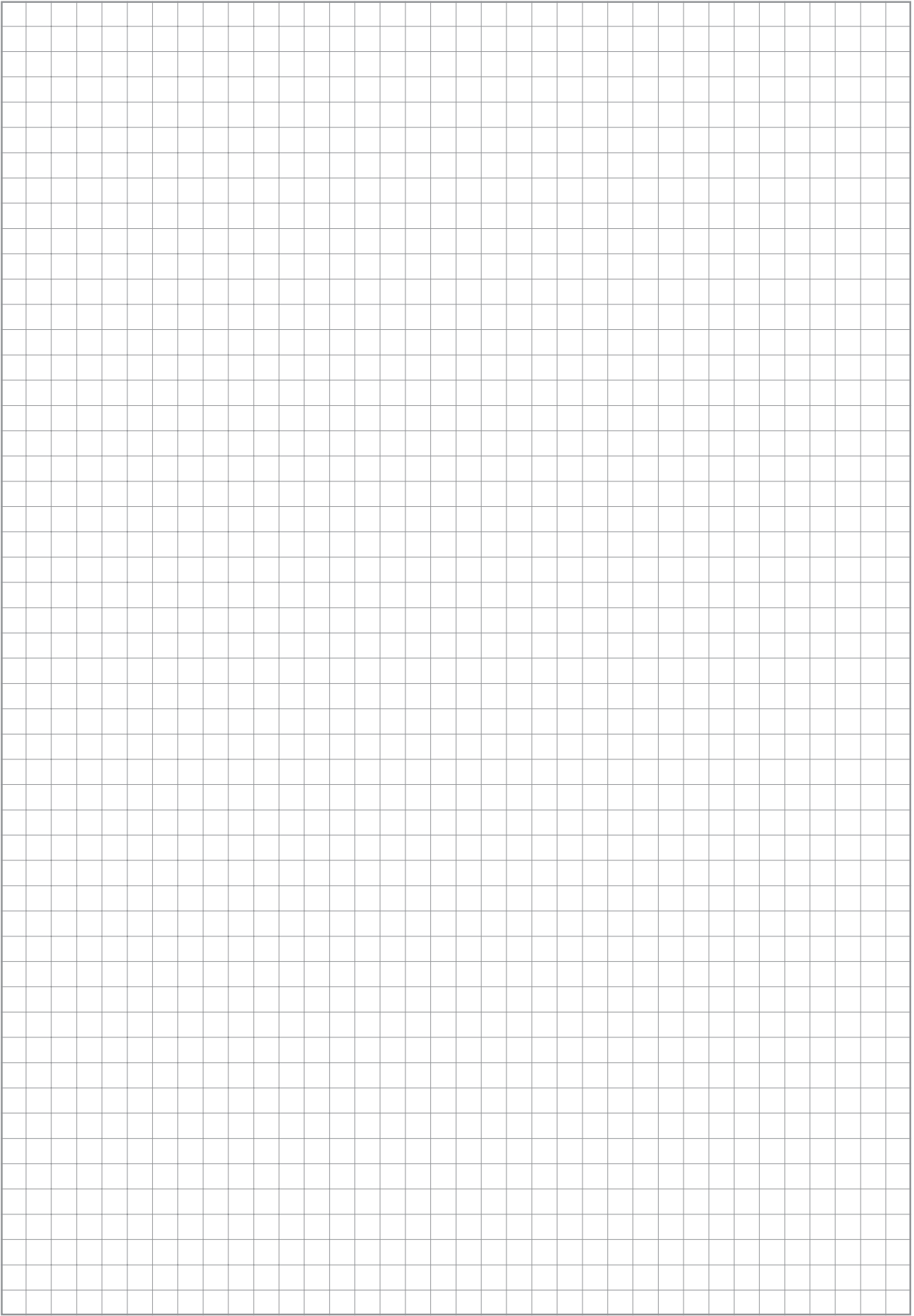
## Matsushita Electric Works Global Environmental Charter

- **Responsibilities of industry**
  - To provide products and services useful to society
  - To fulfill social responsibilities
  - To pursue corporate logic
- **Harmonization with the global environment**
  - Conservation of the global environment
  - Protection of resources
- **Harmonization with Society**
  - Contributing to local communities
  - Contributing to the global community





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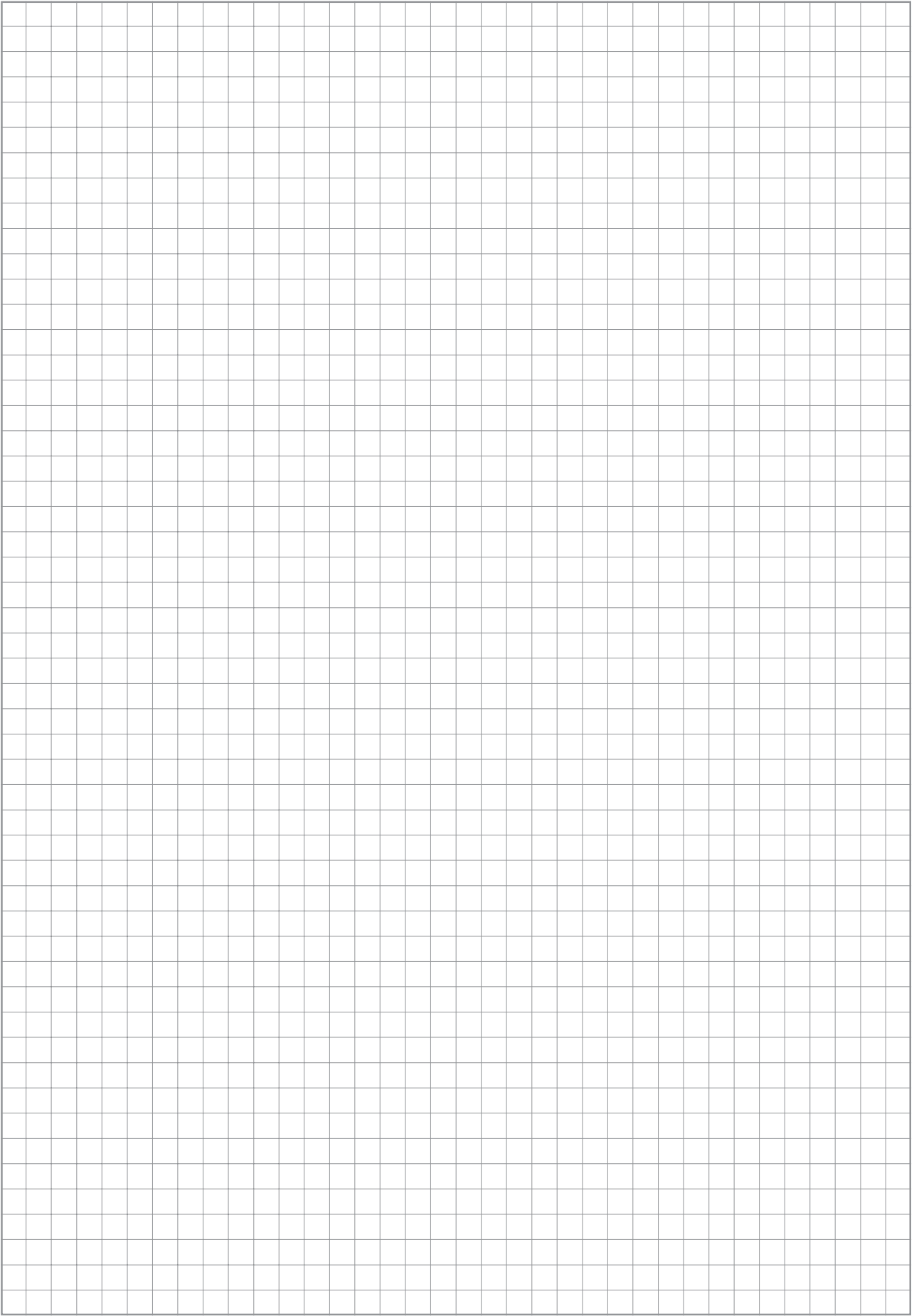
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