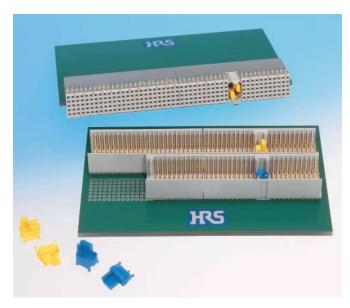
2mm Hard Metric Connector

PCN21 Series

IEC 61076-4-101-compliant



■Applications

Switchboards, transmission systems, Celluler base stations, industrial computer boards, measuring instruments, control equipment

■Features

1. Variety of styles

IEC Styles: A (110 contacts, 5 row), B (125 contacts, 5 row), C (55 contacts, 5 row), D (176 contacts, 8 row), E (200 contacts, 8 row) and M (5 row + 3 coaxial or power contacts).

Compact PCI styles: P2/J2 (110 contacts), P3/J3 (95 contacts) and Type AB (125 contacts).

2. Compliant press-fit board connection

Headers and receptacles with the compliant press-fit terminations can be easily installed on PCB with readily available tools.

3. High reliability socket contacts

Two-point contacts assure good electrical and mechanical connection.

4. Ground connection

Ground connection contact rows can be added (except M Style).

5. 3-stage sequential contacts

Header can be supplied with different lengths of contacts (mating side) to assure ground-signal-power mating sequence.

6. Coding keys

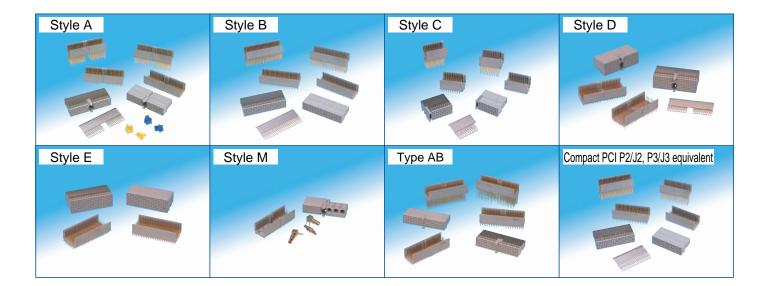
Style A, D and M will accept coding keys to prevent mating of incorrect connectors.

7. Different platings are available

Gold plating and tin plating are available for the termination side. (Except 8 rows type)

8. Coding key

UL listed (File E52653)



■PCN21 Series Seletion Chart



Note: ...A: PCB leads gold plated (top ground plate is tin-lead or tin plated, bottom ground plate is tin-lead plated). B...PCB leads tin plated Mid-plane (Shroud): Page 22 to 23, Coding key: Page 24, High power contact or coaxial connector: Page 25



■Ordering information

Connector

PCN 21 * - * P A * - 2 PF - G (01)

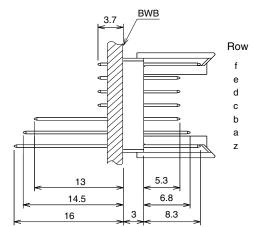
Series name : PCN 21	Positioning post (Applicable to receptacle styles A and C only)
2 A···PCB leads : Gold plated	Blank : With
B···PCB leads : Tin plated	A : Without
3 No. of contacts : 55, 95, 110, 125,176,200	Contact pitch: 2 mm
Connector classification	8 Terminal length
P: Pin header	PF : Press-fit short pin
S: Receptacle	W : Press-fit long pin
5 IEC type	Ground
A : IEC 61076-4-101 Style A	Blank : Without ground terminal
B : IEC 61076-4-101 Style B	G : With ground terminal
C : IEC 61076-4-101 Style C	Contact area gold plating thickness
D : IEC 61076-4-101 Style D	Blank : 0.8 μm
E : IEC 61076-4-101 Style E	(01) : 0.2 μm
M : IEC 61076-4-101 Style M	
AB : Compact PCI AB type equivalent	
For Compact PCI P2/J2, P5/J5 equivalent,	
the IEC type should be style B.	

Bottom ground plate for receptacle

Series name: PCN21	4 Applicable connector	A: for PCN21*-110SA-2PF-G
2 A···PCB leads : Gold plated		B : for PCN21*-125SB-2PF-G
B···PCB leads : Tin plated		C: for PCN21*-55SC-2PF-G
3 Connector classification		D : for PCN21B-176SD-2PF-G
		E: for PCN21B-200SE-2PF-G
S : For receptacle		B1: for PCN21*-110SB-2PF-G
		B2: for PCN21*- 95SB-2PF-G
	5 Ground	

● Product construction (5 row)

●Header



Rows f and z are ground terminals. PCN21*-*P*-2PF (W) has no ground terminal PCN21*-*P*-2PF (W)-G has ground terminal

Row f: Top ground plate

PKG

Row z: Bottom ground plate

PCN21*-S*-G

Row a b c d e f

A ground plate is joined with the f row.

PCN21*-*S*-2PF has no top ground plate PCN21*-*S*-2PF-G has top ground plate PCN21*-S*-G has bottom ground plate only

■Product Specifications

	Current rating	1.5A	Operating temperature	–55°C to +85°C(Note 1)	Storage temperature	-10°C to +60°C(Note 2)
Rating	Voltage rating	AC 300V	Operating humidity	95% RH max.	Storage humidity	40% to 70% RH (Note 2)
				(No condensation)		

Item	Requirements	Test Conditions
1.Insulation resistance	104 ΜΩ	100 V DC
2.Withstanding voltage	No flashover or breakdown	750 V rms AC / 1 min
3.Contact resistance	30 mΩ max.	0.1 A
4.Vibration	No electrical discontinuity for 1 μ s min.	Frequency 10 to 500 Hz, single amplitude of 0.35 mm, acceleration of 50m/s ₂ , 10 cycles in each of the 3 axis.
Contact resistance: 40 mΩ max.		96 hours at temperature of $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$
5.Damp heat	Insulation resistance: 103 MΩ min.	and RH of 90% to 95%
6 Panid shangs of	Contact resistance:40 mΩ max.	Temperature: $-55^{\circ}\text{C} \rightarrow +15^{\circ}\text{C}$ to $+30^{\circ}\text{C} \rightarrow +125^{\circ}\text{C} \rightarrow +15^{\circ}\text{C}$ to $+30^{\circ}\text{C}$
6.Rapid change of	Insulation resistance: 103 MΩ min.	Duration : 30 → 5max. → 30 → 5max.(Minutes)
temperature	No damage, cracks or parts dislocation	5 cycles
7.Heat resistance	Contact resistance:40 mΩ max.	16 hours at temperature of 125°C
1.1 leat resistance	Insulation resistance: 10 ₃ MΩ min.	16 hours at temperature of 125℃
8.Operation life	Contact resistance:40 m ohms max.	500 cycles

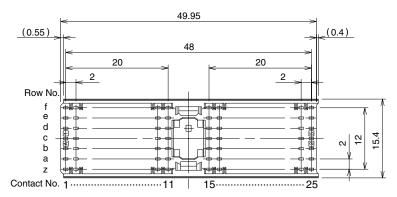
Note 1: Includes temperature rise caused by the current flow.

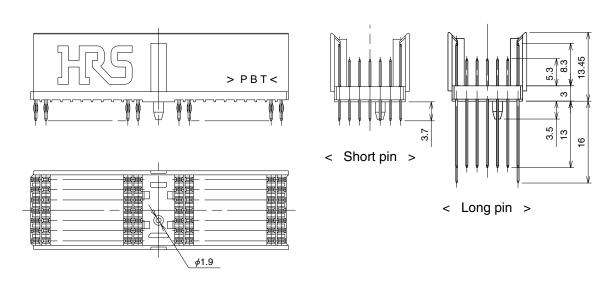
■Materials / Finish

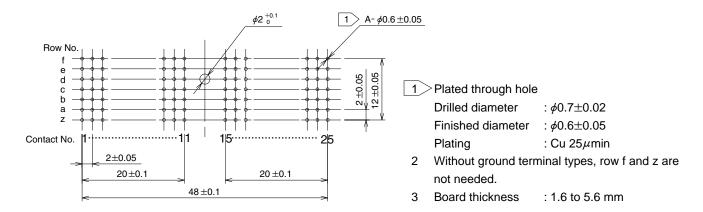
Product	Part	Material	Finish/color	Remarks
	Insulator	PBT	Gray	UL94V-0
Header			PCN21A Contact area: Nickel base, gold plated PCB leads: Nickel base, gold plated	
	Terminal	Phosphor bronze	PCN21B Contact area: Nickel base, gold plated PCB leads: Nickel base, tin plated	
	Insulator	PBT	Gray	UL94V-0
Receptacle	Terminal Shield	Phosphor bronze Phosphor bronze	PCN21A Contact area: Nickel base, gold plated PCB leads: Nickel base, gold plated PCN21B Contact area: Nickel base, gold plated PCB leads: Nickel base, tin plated PCN21A Contact area: Nickel base, gold plated Mounted area: Nickel base, tin lead plated PCN21B Contact area: Nickel base, gold plated PCN21B Contact area: Nickel base, gold plated PCB leads: Nickel base, tin plated	
Shroud	Insulator	PBT	Gray	UL94V-0
Coding key	Insulator	PBT	Refer to page 24	UL94V-0
Power contact		Brass, phosphor bronze	Nickel base, gold plated	
	Insulator	PTFE	White	
Coaxial contact	Outer conductor	Brass, phosphor bronze	Nickel base, gold plated	
Coaxiai contact	Inner conductor	Phosphor bronze, beryllium copper	Nickel base, gold plated	

Note 2: The term "storage" refers to products stored for long period of time prior to mounting and use. Operating temperature range and humidity range covers non-conducting condition of installed connectors in storage, shipment or during transportation.

■Header (Style A) [Backplane side male connector, 5 row]



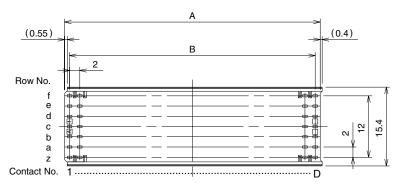


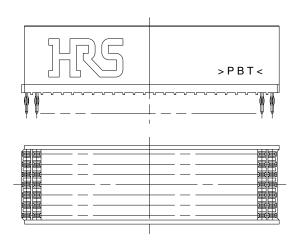


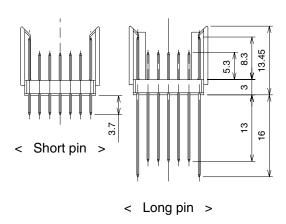
Part number	А	No. of contacts	Mounting side
PCN21*-110PA-2PF	110	5	Chart nin
PCN21*-110PA-2PF-G	154	7	Short pin
PCN21*-110PA-2W	110	5	Longnin
PCN21*-110PA-2W-G	154	7	Long pin

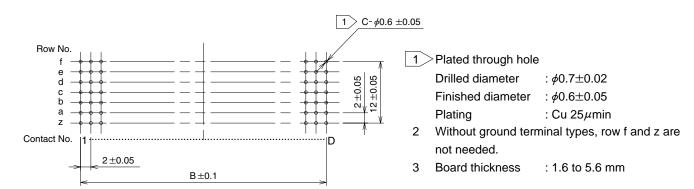
*A: PCB leads gold plated B: PCB leads tin plated

■Header (Style B) [Backplane side male connector, 5 row]





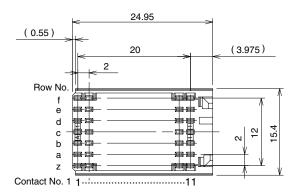


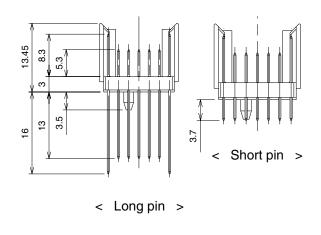


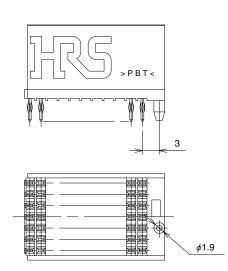
Product No.	Α	В	С	D	No. of contacts	Mounting side
PCN21*-125PB-2PF	49.95	48	125	25	5	
PCN21*-125PB-2PF-G	49.95	48	175	25	7	
PCN21*-110PB-2PF	49.95	42	110	22	5	Chart nin
PCN21*-110PB-2PF-G	49.95	42	154	22	7	Short pin
PCN21*- 95PB-2PF	37.95	36	95	19	5	
PCN21*- 95PB-2PF-G	37.95	36	133	19	7	
PCN21*-125PB-2W	43.95	48	125	25	5	
PCN21*-125PB-2W-G	43.95	48	175	25	7	
PCN21*-110PB-2W	43.95	42	110	22	5	Longin
PCN21*-110PB-2W-G	43.95	42	154	22	7	Long pin
PCN21*- 95PB-2W	37.95	36	95	19	5	
PCN21*- 95PB-2W-G	37.95	36	133	19	7	

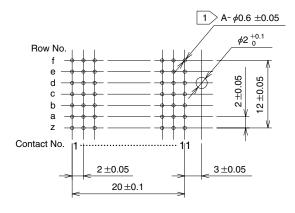
*A: PCB leads gold plated B: PCB leads tin plated

■Header (Style C) [Backplane side male connector, 5 row]









1>Plated through hole

Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

2 Without ground terminal types, row f and z are

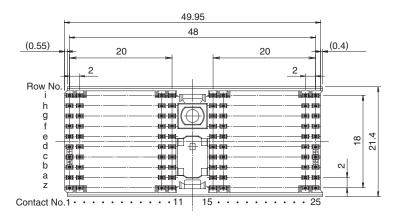
not needed.

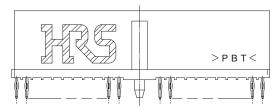
3 Board thickness : 1.6 to 5.6 mm

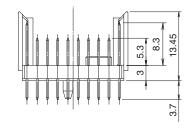
Part number .	Α	No. of contacts	Mounting side
PCN21*-55PC-2PF	55	5	Chart nin
PCN21*-55PC-2PF-G	77	7	Short pin
PCN21*-55PC-2W	55	5	Longnin
PCN21*-55PC-2W-G	77	7	Long pin

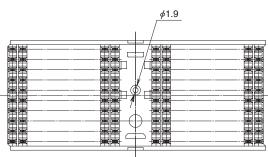
*A: PCB leads gold plated B: PCB leads tin plated

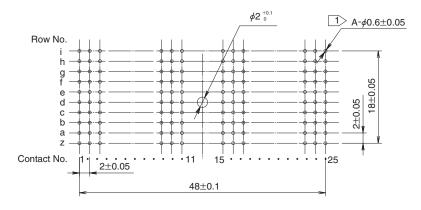
■Header (Style D) [Backplane side male connector, 8 row]











1> Plated through hole

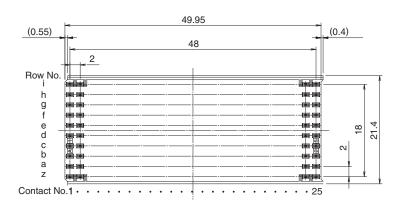
Drilled diameter : ϕ 0.7±0.02 Finished diameter : ϕ 0.6±0.05 : Cu 25 µmin

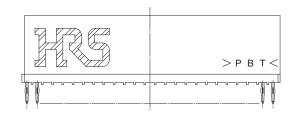
Without ground terminal types, row i and z are not needed.

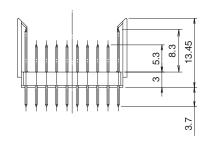
Board thickness : 1.6 to 5.6 mm

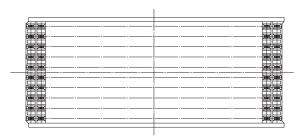
Part number	A	No. of contacts	Mounting side
PCN21B-176PD-2PF	176	8	Chartain
PCN21B-176PD-2PF-G	220	10	Short pin

■Header (Style E) [Backplane side male connector, 8 row]

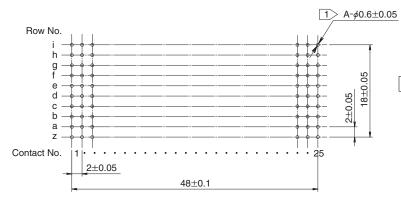








●Recommended PCB mounting pattern



1> Plated through hole

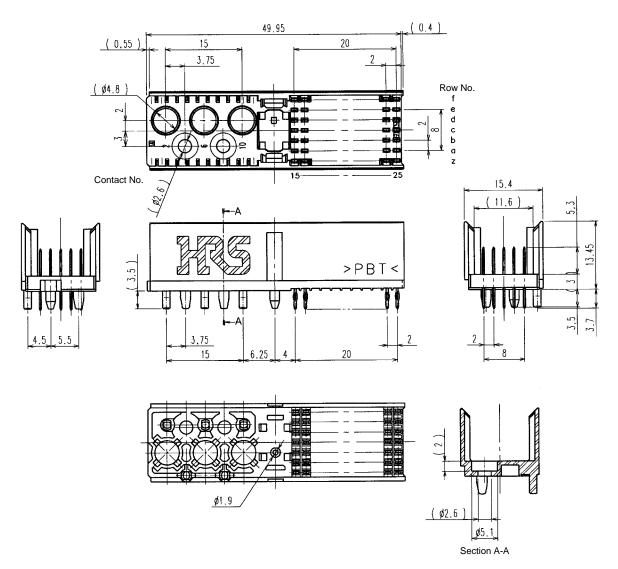
Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

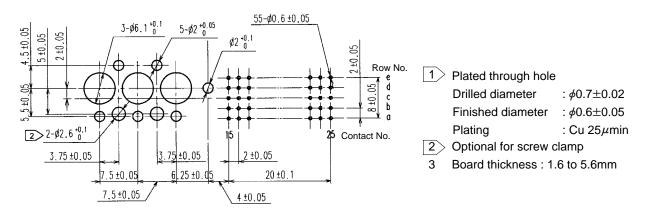
Without ground terminal types, row i and z are not needed.

3 Board thickness : 1.6 to 5.6 mm

Part number	Α	No. of contacts	Mounting side
PCN21B-200PE-2PF	200	8	Chartnin
PCN21B-200PE-2PF-G	250	10	Short pin

■Header (Style M) [Backplane side connector, 5 row]

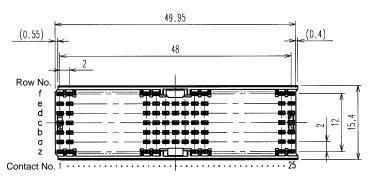


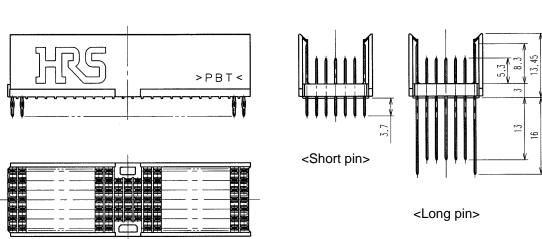


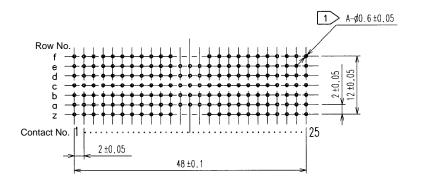
Part number	No. of contacts	Mounting side
PCN21*-55PM-2PF	5	Short Pin

*A: PCB leads gold plated B: PCB leads tin plated

■Header (Type AB) [Backplane side male connector, 5 row]







1 Plated through hole

Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

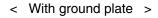
Without ground terminal types, row f and z are not needed.

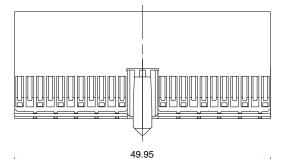
3 Board thickness : 1.6 to 5.6 mm

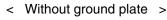
Part number	А	No. of contacts	Mounting side	
PCN21*-125PAB-2PF	125	5	Chart Dia	
PCN21*-125PAB-2PF-G	169	7	Short Pin	
PCN21*-125PAB-2W	125	5	Long Din	
PCN21*-125PAB-2W-G	169	7	Long Pin	

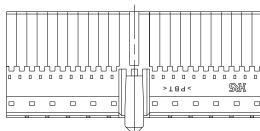
*A: PCB leads gold plated B: PCB leads tin plated

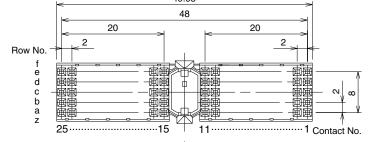
■ Receptacle (Style A) [Package side female connector, 5 row]

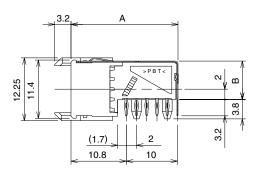


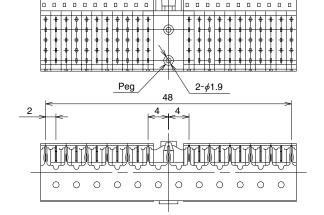




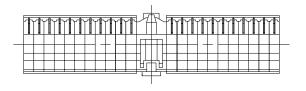




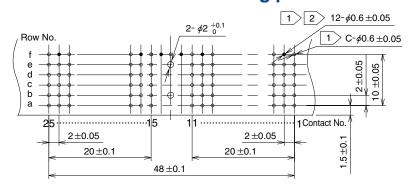




_ _



Recommended PCB mounting pattern



1>Plated through hole

Drilled diameter $: \phi 0.7 \pm 0.02$ Finished diameter $: \phi 0.6 \pm 0.05$ Plating $: \phi 0.6 \pm 0.05$ Cu 25 μ min

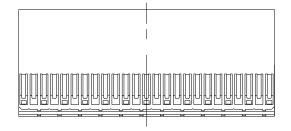
- 2 Even numbers are required on the f row when using the lower surface ground plate (PCN21*-SA-G).
- 3 Without ground terminal types, row f are not needed.
- 4 The type without the post does not require the 2mm dia, hole.
- Board thickness: 1.6 to 4.2 mm

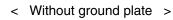
Part number	Α	В	С	Ground plate	Post
PCN21*-110SA-2PF	20.7	7.3	110	Without	With
PCN21*-110SA-2PF-G	20.9	7.5	123	With	VVILII
PCN21*-110SAA-2PF	20.7	7.3	110	Without	Without
PCN21*-110SAA-2PF-G	20.9	7.5	123	With	vvitriout

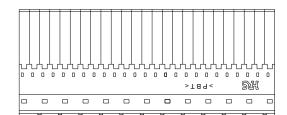
*A: PCB leads gold plated (Ground plate mounting area : tin plated) B: PCB leads tin plated

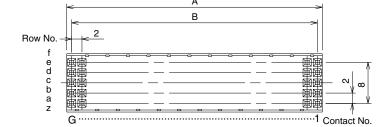
■Receptacle (Style B) [Package side female connector, 5 row]

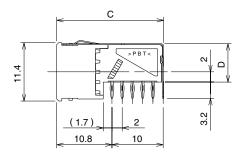
< With ground plate >

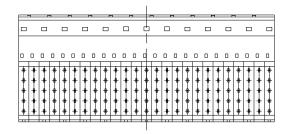


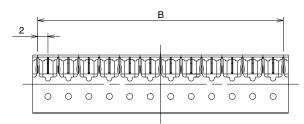


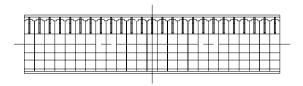




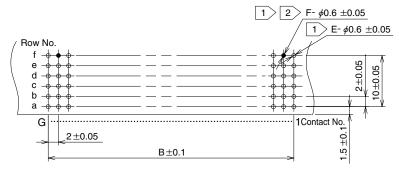








Recommended PCB mounting pattern



1 Plated through hole

Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

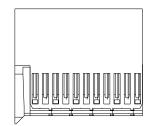
- 2 Even numbers are required on the f row when using the lower surface ground plate (PCN21*-SB-G).
- Without ground terminal types, row f are not needed.
- 4 Board thickness: 1.6 to 4.2 mm

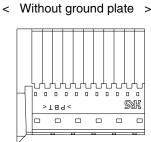
Part number	Α	В	С	D	Е	F	G	Ground plate
PCN21*-125SB-2PF	49.95	48	20.7	7.3	125	_	25	Without
PCN21*-125SB-2PF-G	49.95	48	20.9	7.5	138	12	25	With
PCN21*-110SB-2PF	43.95	42	20.7	7.3	110	_	22	Without
PCN21*-110SB-2PF-G	43.95	42	20.9	7.5	121	11	22	With
PCN21*- 95SB-2PF	37.95	36	20.7	7.3	95	_	19	Without
PCN21*- 95SB-2PF-G	37.95	36	20.9	7.5	105	9	19	With

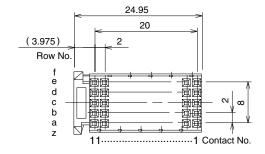
*A: PCB leads gold plated (Ground plate mounting area : tin plated) B: PCB leads tin plated

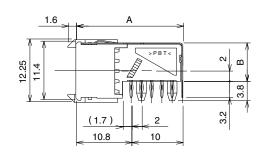
■ Receptacle (Style C) [Package side female connector, 5 row]

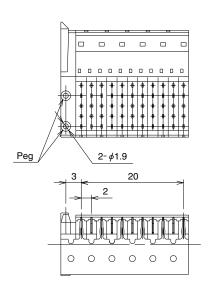
< With ground plate >

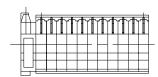




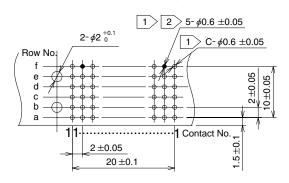








Recommended PCB mounting pattern



1>Plated through hole

Drilled diameter $: \phi 0.7 \pm 0.02$ Finished diameter $: \phi 0.6 \pm 0.05$ Plating $: \psi 0.6 \pm 0.05$ Cu $25\mu \text{min}$

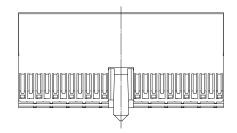
- 2>Even numbers are required on the f row when using the lower surface ground plate (PCN21*-SC-G).
- Without ground terminal types, row f are not needed.
- 4 The type without the post does not require the 2mm dia, hole.
- 5 Board thickness: 1.6 to 4.2 mm

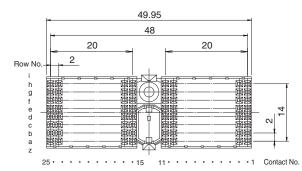
Part number	Α	В	С	Ground plate	Post	
PCN21*-55SC-2PF	20.7	7.3	55	Without	With	
PCN21*-55SC-2PF-G	20.9	7.5	61	With	VVIIII	
PCN21*-55SCA-2PF	20.7	7.3	55	Without	Without	
PCN21*-55SCA-2PF-G	20.9	7.5	61	With	vvitriout	

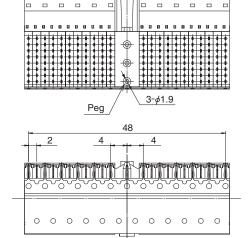
*A: PCB leads gold plated (Ground plate mounting area : tin plated) B: PCB leads tin plated

■ Receptacle (Style D) [Package side female connector, 8 row]

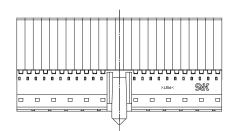
<With ground plate>

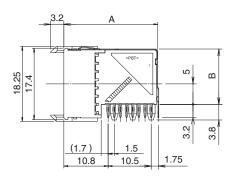


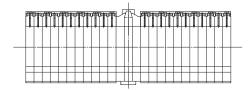


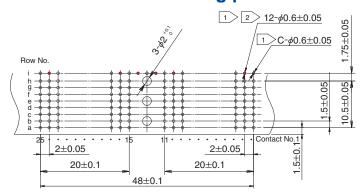


<Without ground plate>









1 Plated through hole

Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

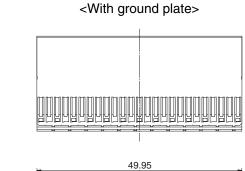
2 Even numbers are required on the i row when using the low surface ground plate (PCN21B-SE-G).

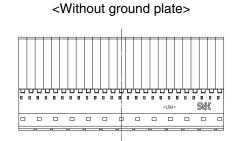
3 Without ground plate types, row i not needed.

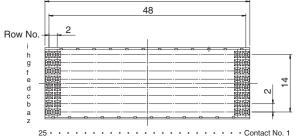
4 Board thickness: 1.6 to 4.2mm

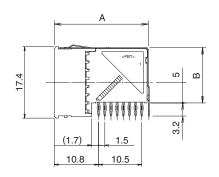
Part number	Α	В	С	Ground plate
Through hole	22.7	13.3	176	Without
PCN21B-176SD-2PF-G	23.15	13.5	189	With

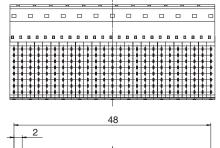
■ Receptacle (Style E) [Package side female connector, 8 row]

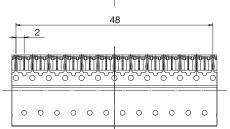


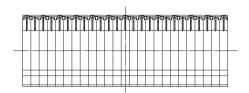




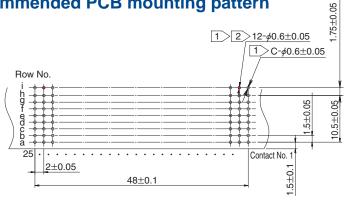








●Recommended PCB mounting pattern



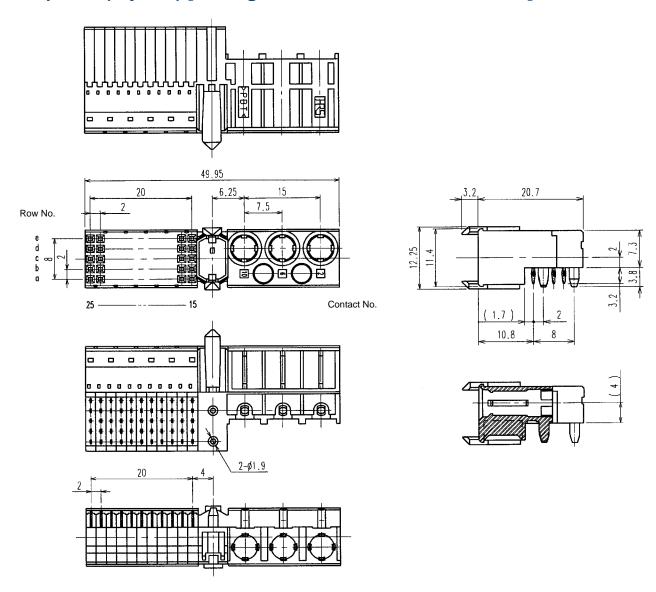
1 Plated through hole

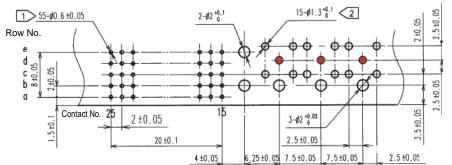
Drilled diameter : ϕ 0.7 \pm 0.02 Finished diameter : ϕ 0.6 \pm 0.05 Plating : Cu 25 μ min

- 2 Even numbers are required on the i row when using the low surface ground plate (PCN21B-SE-G).
- 3 Without ground plate types, row i not needed.
- 4 Board thickness: 1.6 to 4.2mm

Part number	Α	В	С	Ground plate
PCN21B-200SE-2PF	22.7	13.3	200	Without
PCN21B-200SE-2PF-G	23.15	13.5	213	With

■ Receptacle (Style M) [Package side female connector, 5 row]

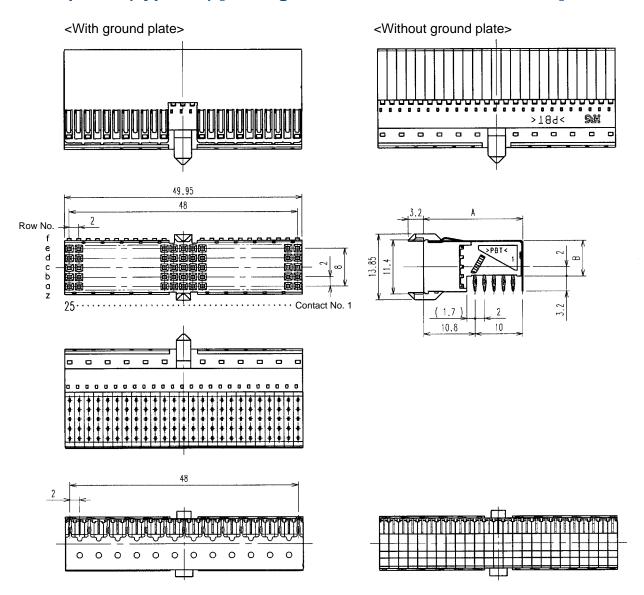


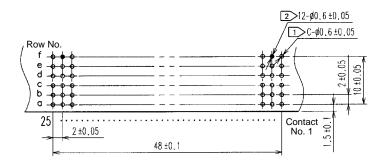


- Plated through hole
 Drilled diameter : ϕ 0.7 \pm 0.02
 Finished diameter : ϕ 0.6 \pm 0.05
 Plating : Cu 25 μ min
- 2 Optional for high power contact (PCN21-S-PWR(PC)) and coaxial connector(PO51M-LPR-PC-1A). High power contact type, hole not needed.
 - 3 Board thickness: 1.6 to 4.2 mm

Part number.	Ground plate	Post
PCN21*-55SM-2PF	Without	With

■ Receptacle (Type AB) [Package side female connector, 5 row]





1> lated through hole

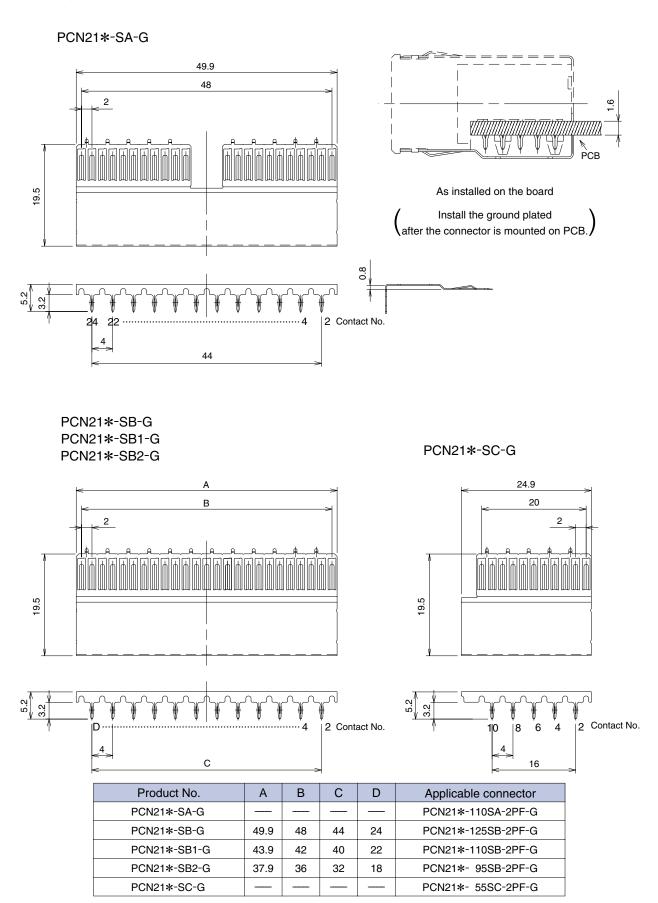
Drilled diameter ϕ 0.7 \pm 0.02 Finished diameter ϕ 0.6 \pm 0.05 Plating : ϕ 0.6 \pm 0.05 : Cu 25 μ min

- 2 Even numbers are required on the f row when using the lower surface ground plate (PCN21*-SA-G).
 - Without ground the plate types, rows f not needed.
 - 4 Board thickness: 1.6 to 4.2 mm

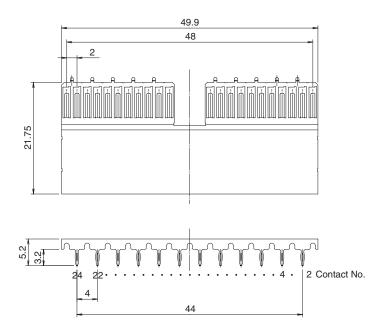
Part number.	Α	В	С	Ground plate
PCN21*-125SAB-2PF	20.7	7.3	125	Without
PCN21*-125SAB-2PF-G	20.9	7.5	138	With

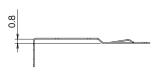
*A: PCB leads gold plated (Ground plate mounting area : tin plated) B: PCB leads tin plated

■Bottom ground plates for receptacles

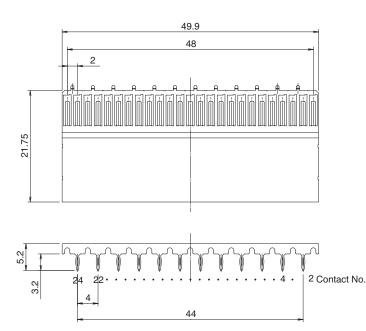


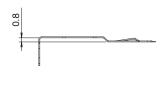
PCN21B-SD-G





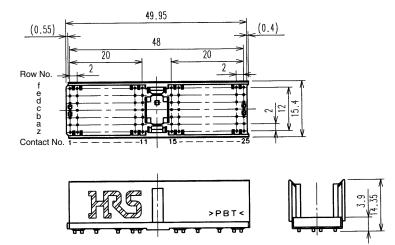
PCN21B-SE-G



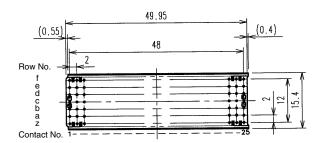


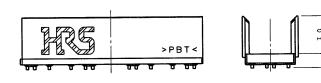
Prod	uct No.	Applicable connector
PCN2	IB-SD-G	PCN21B-176SD-2PF-G
PCN2	IB-SE-G	PCN21B-200SE-2PF-G

■Mid-plane (Shroud) [Style A]



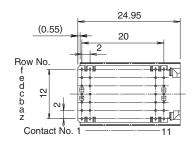
[Style B]

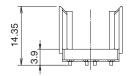


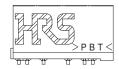


Style	Part number	Applicable connector
Α	PCN21-110PA-2C1	PCN21*-110PA-2W(-G)
В	PCN21-125PB-2C1	PCN21*-125PB-2W(-G)
С	PCN21- 55PC-2C1	PCN21*- 55PC-2W(-G)
AB	PCN21-125PAB-2C	PCN21*-125PAB-2W(-G)

■Mid-plane (Shroud) [Style C]

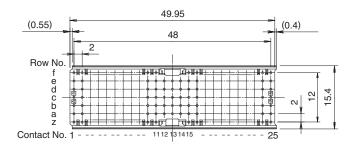


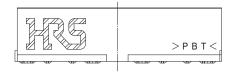


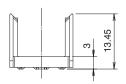




[Type AB]







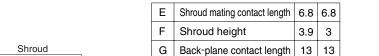
Shroud mating contact length: 6.8mm (Example)

2.3 3.2

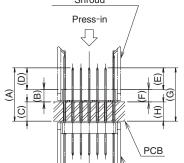
◆Assemblied condition

Back-plane contact length: 13mm (Example)

	1	,	
Α	Back-plane contact length	13	13
В	Shroud height	3.9	3
С	PCB thickness	2.3	3.2
D	Shroud mating contact length	6.8	6.8



PCB thickness



PCN21* series long pin type header

■Coding keys

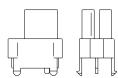
Installed on Style A, D, M to prevent improper insertion.

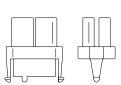
For header

For receptacle













For header		For receptacle		Color	Remarks
Part number	Туре	Part number	Туре	Color	Hemarks
PCN21-P-CK(A)	3456	PCN21-S-CK(A)	1278	Yellow	Supports compact PCI 3.3V
PCN21-P-CK(B)	1567	PCN21-S-CK(B)	2348	Blue	Supports compact PCI 5V
PCN21-P-CK(D)	1248	PCN21-S-CK(D)	3567	Red	
PCN21-P-CK(F)	2578	PCN21-S-CK(F)	1346	Breen	
PCN21-P-CK(G)	3467	PCN21-S-CK(G)	1258	Gray	
PCN21-P-CK(I)	3568	PCN21-S-CK(I)	1247	Orange	

♦ Header contact

Custom support for header sequencial contacts is available. Contact a Hirose sales representative. Use of rows of contacts having the same length is recommended.

Contact code

A B C K L M N P Q R S T

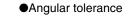
PKG side

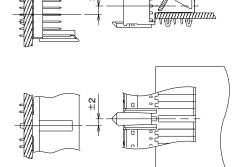
PKG side

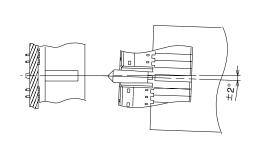
Reference plane (Connector termination side)

► Mating conditions

●Lateral and longitudinal mating tolerance

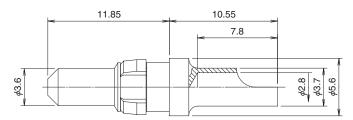




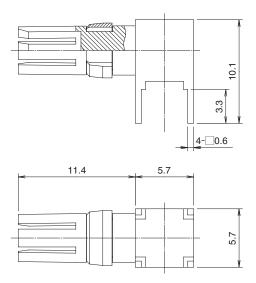


■High power contact

PCN21-P-PWR(20A)



PCN21-S-PWR(PC)



Part number	Power Applicable connector	
PCN21-P-PWR(20A)	20A(70°C)	PCN21*-55PM-2PF
PCN21-S-PWR(PC)	20A(70°C)	PCN21*-55SM-2PF

■Coaxial connector

Part number	Characteristic impedance	Applicable cable	Applicable connector
PO51M-J-1.5W	50Ω	1.5D-HQEW, 1.5D-2W or equivalent	PCN21*-55PM-2PF
PO51M-J-1.5	50Ω	1.5D-HQEV, 1.5D-2V or equivalent	PCN21*-55PM-2PF
PO82M-J-1.5C	75Ω	1.5C-QEV, 1.5C-2V or equivalent	PCN21*-55PM-2PF
PO51M-LJ-1.5W	50Ω	1.5D-HQEW, 1.5D-2W or equivalent	PCN21*-55PM-2PF
PO51M-LJ-1.5	50Ω	1.5D-HQEV, 1.5D-2V or equivalent	PCN21*-55PM-2PF
PO51M-LJ-178-1	50Ω	RG-178B/U	PCN21*-55PM-2PF
PO51M-P-1.5W	50Ω	1.5D-HQEW, 1.5D-2W or equivalent	PCN21*-55SM-2PF
PO51M-P-1.5	50Ω	1.5D-HQEV, 1.5D-2V or equivalent	PCN21*-55SM-2PF
PO82M-P-1.5C	75Ω	1.5C-QEV, 1.5C-2V or equivalent	PCN21*-55SM-2PF
PO51M-LPR-PC-1A	50Ω		PCN21*-55SM-2PF

Refer to PO21M, PO51M, PO82M series for dimensions.

■High power contact, coaxial connector extraction tools

	Part number
For PCN21*-55PM-2PF	PO51J-T-1
For PCN21*-55SM-2PF	PO51MP-T-1