PRODUCT SPECIFICATION

1.0 SCOPE

This specification covers the characteristics, performance, and test requirements of the Molex family of SCA-2 receptacle connectors. This system has been designed to meet the specific requirements of the Small Form Factor (SFF) committee as described in the appropriate Electronics Industry Association (EIA) documents, both dimensionally and from a performance perspective. These connectors are intermateable with other interfaces that comply with the same specification.

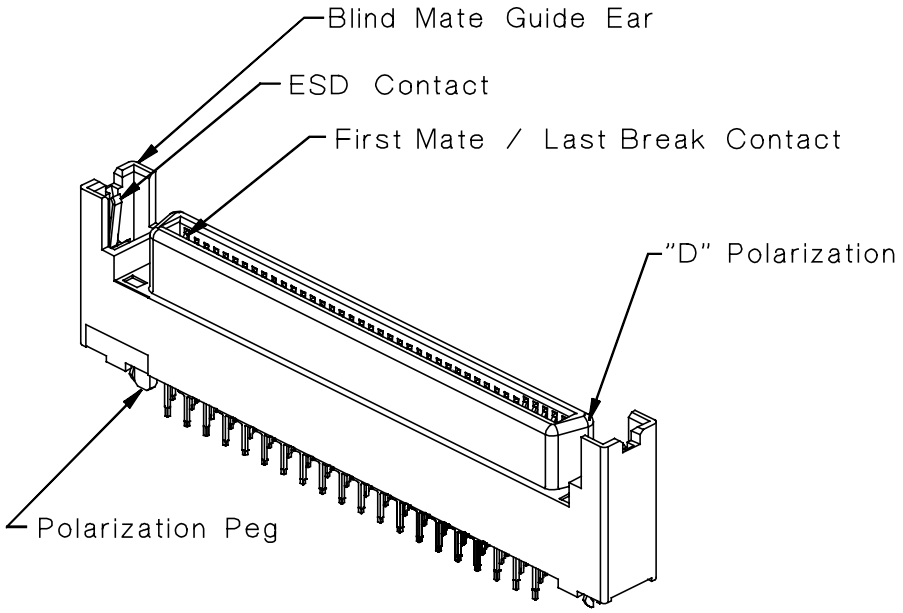
2.0 PRODUCT DESCRIPTION

2.1 CONNECTORS COVERED IN THIS SPECIFICATION:

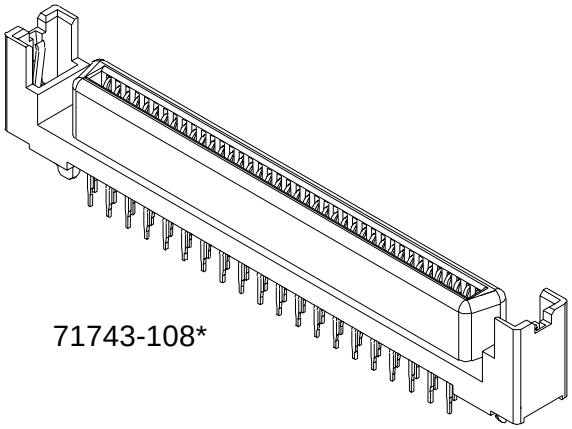
DESCRIPTION	SALES DRAWING	CKT SIZE
SCA-2 Standard Height Through-Hole Receptacle	SDA-71743-104* SDA-71743-108*	40 80
SCA-2 Extended Height Through-Hole Receptacle	SD-71744-001	40 & 80
SCA-2 Standard Height Compliant Pin Receptacle	SD-73826-001	40 & 80
SCA-2 Extended Height Compliant Pin Receptacle	SD-73829-001	40 & 80
SCA-2 Straddle Mount Receptacle	SD-75083-001 & -002	80
SCA-2 SMT Receptacle	SD-71743-003	40 & 80
SCA-2 Adapter	SD-74185-999	40 & 80
GBIC Right Angle Through-Hole Receptacle	SD-74065-001	20
GBIC Dual Stack Right Angle Through-Hole Receptacle	SD-74432-003	20 (Upper) 20 (Lower)

2.2 GENERAL SERIES INFORMATION

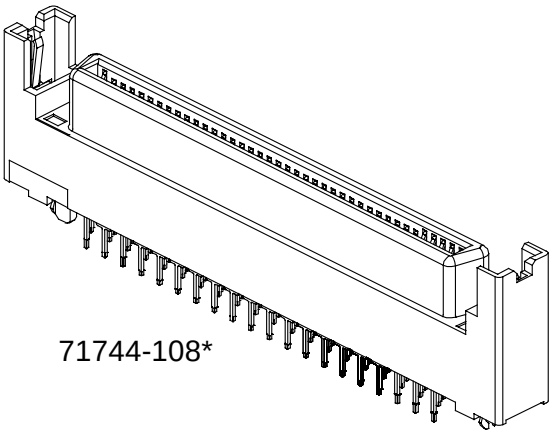
The SCA-2 connector group is based on the Molex EBBI™ 50D product family, with select gold, dual-row cantilever contacts on .050" centerline spacing in a polarized "D" shaped housing. SCA-2 (Enhanced Single Connector Attach) is an industry standard featuring blind - mating guide ears, integral ESD grounding contacts, and sequential first - mate / last - break contacts for hot plugging storage devices to disk arrays and backplanes.



2.3 SERIES 71743, 71744 AND 73718 – THROUGH HOLE SCA-2 RECEPTACLES:
The SCA-2 Through Hole Receptacles are available standard and extended height. This family offers a variety of tail lengths, and is also available with or without polarization pegs. The high temperature polymer housing is I.R. reflow compatible, allowing the product to be attached by wave solder or pin - in - paste methods.



71743-108*



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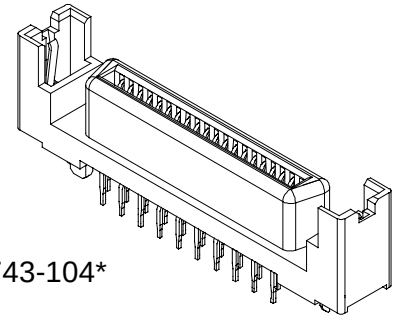

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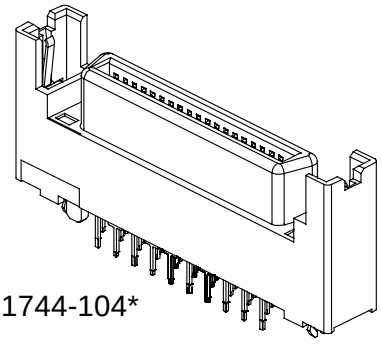
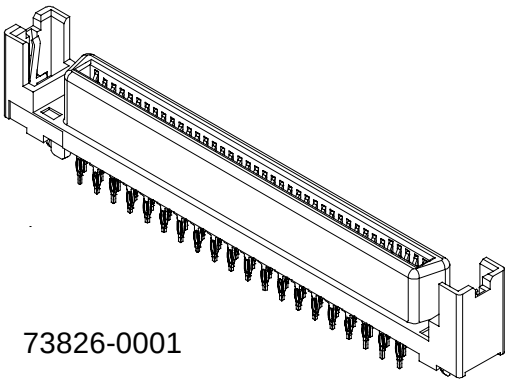


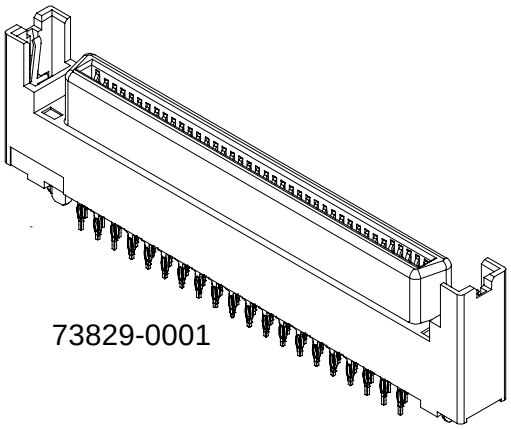
71744-104*

* Other options are available under series 73718

2.4 SERIES 73826, 73829 – COMPLIANT PIN SCA-2 RECEPTACLES:
The SCA-2 Compliant Receptacles are available in both Standard and Extended Height options. The compliant tail is an “eye of the needle” design. The housings are molded of a high temperature polymer that is I.R. reflow compatible, allowing the connectors to be pressed on before or after the board has been processed. These connectors are intended for thicker backplane PCB’s (.093”/2.44mm) and will help reduce processing complications and costs. Application tooling for this product (62100 series) is available upon request; consult with your Molex representative for details.



73826-0001



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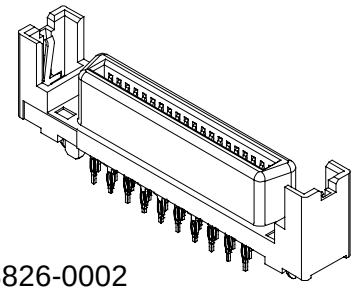
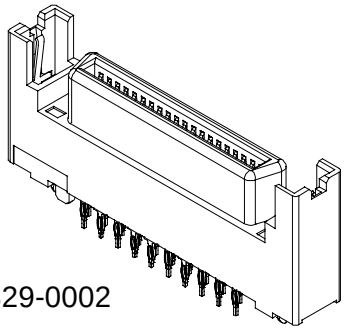


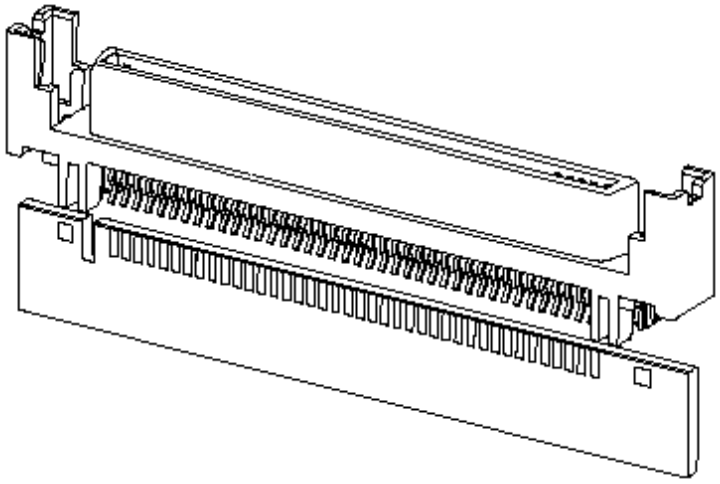
73826-0002



73829-0002

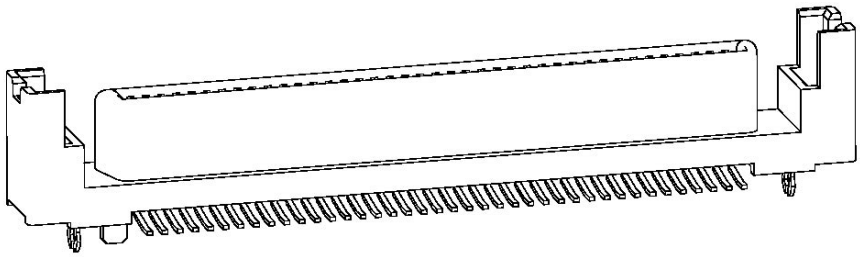
2.5 SERIES 74185 – SCA-2 ADAPTER:
The SCA-2 Adapter is a connector made up of a plug SCA-2 interface on one side and receptacle on the other. This is an inter-connect device used primarily in servers or storage devices to bridge the disk drives to the back plane. This connector is custom and customer specific for each application.

2.6 SERIES 75083 – STRADDLE MOUNT SCA-2 RECEPTACLE
Straddle mount version of the receptacle described in paragraph 2.3.



75083-****

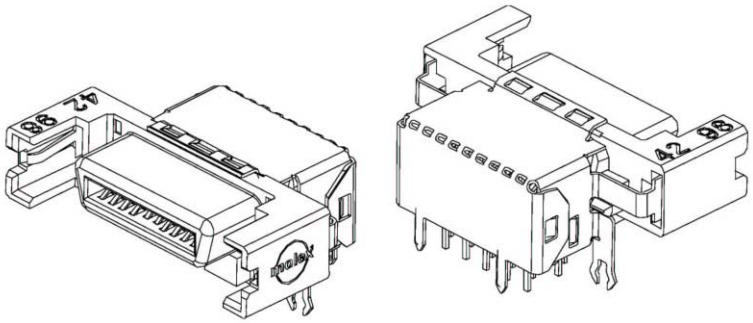
2.7 SERIES 71743 – SCA-2 SMT RECEPTACLE:
Surface mount version of the receptacle described in paragraph 2.3.



71743-40**

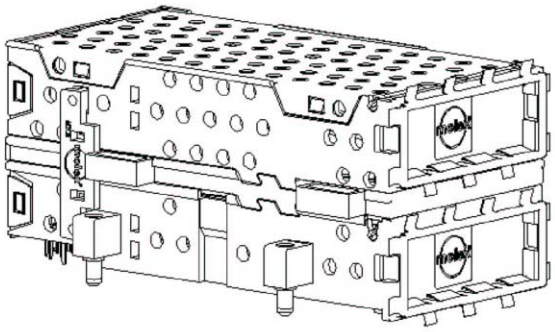
2.8 SERIES 74065 – GBIC RIGHT ANGLE RECEPTACLE:
The GBIC Right Angle Shielded Receptacle is a high-speed interface designed to meet the Small Form Factor Giga-Bit Interface Converter specification. This SCA-2 interface can be intermated with a variety of industry standard GBIC transceiver modules. The shielding improves the EMI performance and allows the connector to operate at higher speeds.

(See images on next sheet)

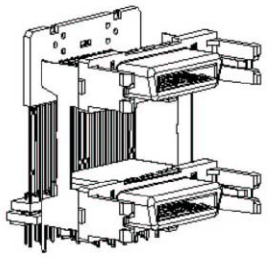


74065-000*

2.9 SERIES 74432 – DUAL STACK GBIC RIGHT ANGLE THROUGH HOLE RECEPTACLE:
The Dual Stack GBIC Right Angle Shielded Receptacle is a high-speed interface designed to meet the Small Form Factor Giga-Bit Interface Converter specification. This one-piece unit allows the user to double the port density in the same amount of board space. Improved EMI shielding is provided with EMI gaskets, EMI doors and EMI covers. This SCA-2 interface can be intermated with a variety of industry standard GBIC transceiver modules. The Dual Stack GBIC is available in tray packaging.



DUAL STACK GBIC



DUAL STACK GBIC
(SHIELDING REMOVED)

2.10 ADVANTAGES:
The Molex SCA-2 family of products offers several design advantages over the competition. One key advantage is a robust contact design that offers increased wipe length, giving users more tolerance when designing their systems. All versions except the standard height through-hole, utilize a pre-loaded contact design. This decreases the opportunity for stubbing and contact misalignment, lowers mating forces, and reduces the variability of the contact gap. The connectors can be used on a variety of boards and applications in addition to disk drive and transceiver device attachment.

3.0 AGENCY APPROVALS

3.1 UNDERWRITERS LABORATORIES: E29179

3.2 CANADIAN STANDARDS ASSOCIATION: LR19980-239A

4.0 MECHANICAL SPECIFICATIONS

4.1 MATERIALS

4.1.1 Housings:
All housings and tail aligners are molded out of high temperature I.R. compatible polymers. The exception to this is the Adapter bracket. All polymers used are 94V-0.

4.1.2 Stamped Components:
All contacts are stamped from high strength copper alloys that have excellent electrical properties.

4.1.3 Platings:
Precious metal plating in the contact area. See sales drawings for specific plating materials and thicknesses.

5.0 ELECTRICAL SPECIFICATIONS

5.1 VOLTAGE:
30 VAC maximum

5.2 CURRENT:
1.0 amp per contact maximum for three consecutive circuits maximum.

5.3 DIELECTRIC STRENGTH:
500 VRMS, per MIL-STD-202 Method 302 condition B.

6.0 ENVIRONMENTAL SPECIFICATIONS

6.1 TEMPERATURE RANGES:

6.1.1 NON-OPERATING: -30°C to +60°C

6.1.2 OPERATING: -40°C to +105°C

6.2 RESISTANCE TO SOLDERING HEAT:
Peak soldering temperature to be 265 degrees C. Maximum time within 5 degrees of peak temperature to be 40 seconds.

6.3 RESISTANCE TO CLEANING SOLVENTS:
Good resistance to water or alcohol based cleaners.

7.0 RELIABILITY TEST REQUIREMENTS

TEST	EIA#	CRITERIA	COMMENTS
General Examination	364-18	Visual and dimensional inspection	No defects allowed that may impair normal operation
Mating Force	361-13	Force to mate 1.08N, (110gf) maximum per contact	Measure the force to mate at a rate of 12.7 mm per minute max.
Durability and LLCR	364-23	Low level contact Resistance ≤ 15 milliohm initial	20 mV max. open circuit at 100mA max.; measured at 0, 50, 250, and 500 cycles
Shock	364-27	Continuity ≤ 1 micro-second	30 G peak acceleration, half sine. 3 shocks along 3 perpendicular planes.
Vibration	364-28	Continuity ≤ 1 micro-Second. LLCR change ≤ 15 milliohms	15-500-15 Hz random, for 1 hr. in each of 3 mutually perpendicular planes.
Unmating Force	354-13	Force to unmate 0.15N (15gf) minimum per contact	Measure the force to unmate at a rate of 12.7 mm per minute max.
Mixed Flowing Gas	364-65	No physical damage and shall meet all requirements of subsequent tests	Class II for 14 days mated. Includes compliant interface where applicable.
Temperature Life	364-17	No physical damage and shall meet all requirements of subsequent tests	105 degrees C for 1000 hours
Thermal Shock	364-32	No physical damage and shall meet requirements of subsequent tests	5 cycles between -55 C and 105 C, mated connectors
Humidity – Temperature Cycling	364-31	No physical damage and shall meet requirements of subsequent tests	10 cycles between 25 C and 65 C, at 95% rh , 240 hrs. mated connectors.
Current vs. temperature rise	364-70	30 degree max. temperature rise	2A. max. for two voltage applied contact positions, 3A max. for 3 voltage applied contact positions
Insulation resistance	364-21	1000 megaohms min.	Test voltage 500 volt dc
Resistance to solvents	364-11	No defect or damage that would impair normal operations	Exposure to trichloroethylene
Compliant to PCB hole cycling	N/A	No fracture or break-out of PTH	Each set of PTH's are cycled 3 times using a new connector each cycle
Compliant to PCB insertion force	N/A	Maximum insertion force allowed is 15 lbs per circuit	Press connector to PCB, the force to seat should not exceed 15 lbs. / circuit
Compliant to PCB retention force	N/A	Minimum retention force of compliant to PCB allowed is 1.5 lbs. min per circuit	Removal of connector or contacts from PCB should yield a force > 1.5 lb./ contact