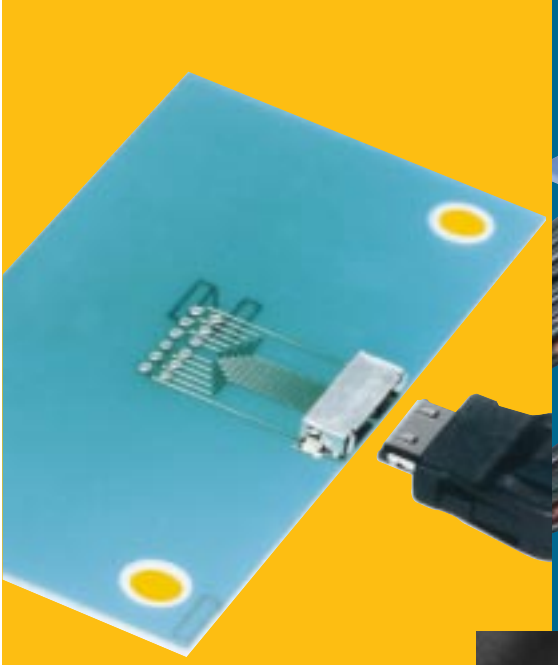
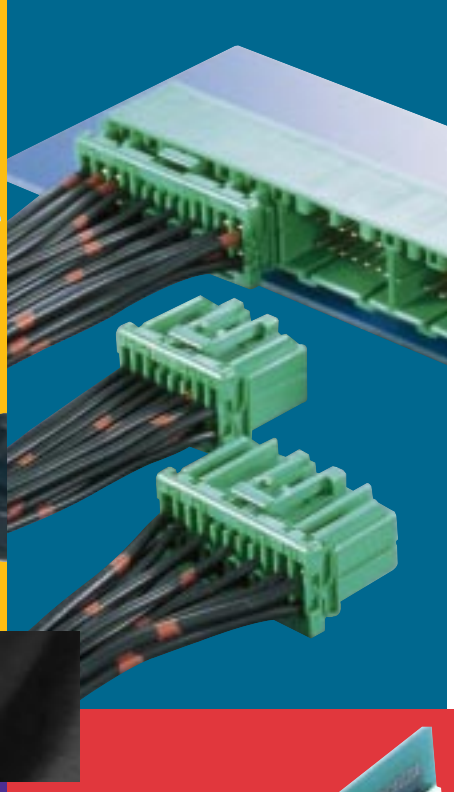
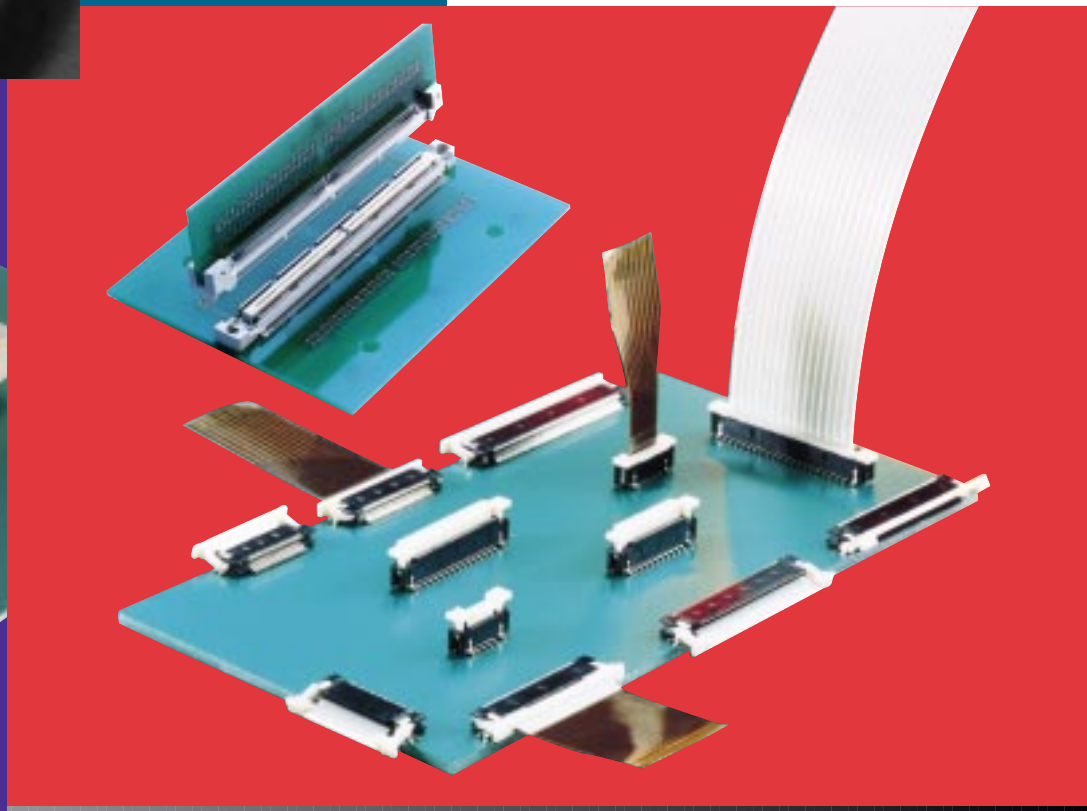




JAE



Short Form Catalog
Connector Products

Japan Aviation Electronics Industry, Ltd. (JAE) is an international manufacturer and supplier of electronic components and systems. For over four decades, JAE has provided the electronics industry with solutions to complex design requirements.

With worldwide and worldclass manufacturing certified to ISO 9001, JAE has made the commitment to meet the global requirements of our customers. In addition to a network of state of the art manufacturing facilities, JAE has technical service offices located around the world, staffed with experts in connector design and application.

This catalog contains an overview of the complete line of JAE Connector Products. Separate catalogs for JAE's Sockets and Memory Products, Board-to-Board Connector Products, Input/Output Connector Products, and Automotive Connectors Products provide in-depth information on each product line.

Innovative design, quality oriented manufacturing, commitment to our customers and sensitivity to the environment assures JAE's leadership position in the 21st century.

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Table of Contents

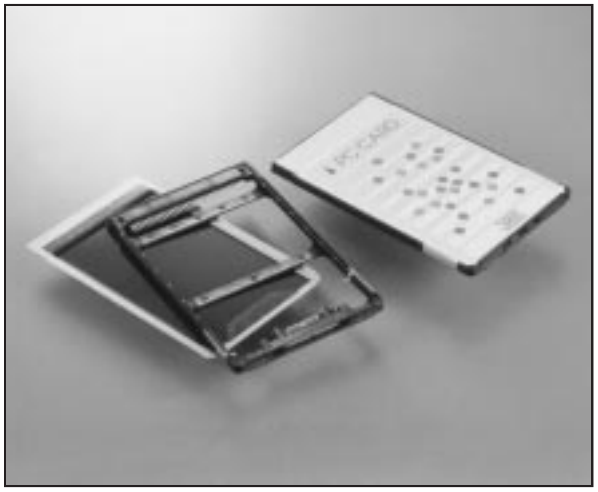
Table of Contents

- Please consult JAE for verification of product availability.
- Refer to end of catalog for alphabetical index of products.

NOTE: Products shown in this catalog are made for the applications specified. However, if the above-mentioned products are to be used in aerospace devices, marine cable-connection devices, atomic power control systems, medical equipment for life-support systems, or any other specific application requiring extremely high reliability, please contact JAE for further information.
Recommended Applications: Computers, Office Machines, Measuring Devices, Telecommunications Devices (Terminals, Mobile Devices) AV Devices, Household Applications, FA Devices, etc.

CR10 SERIES CONNECTORS

Frames and Covers for PC Cards



The CR10 Series is a PC Card Kit that includes both frames and covers. The series of card kits is designed for I/O PC cards (Type II) used for LAN, FAX/Modem and similar applications.

FEATURES

- Various frames available for specific connector requirements
- Frame ground clips are soldered to the PCB to prevent damage from surge and static electricity
- Excellent adhesion provided by thermocompression bonding of frames and covers
- Complies with PCMCIA/JEIDA standards
- Custom print with logos and graphics or adhesive labels available for covers

GENERAL SPECIFICATIONS

Operation

Temperature	0°C to 55°C
Relative Humidity	95% max. (no bedewing)

Storage

Temperature	-20°C to 65°C
Relative Humidity	95% max. (no bedewing)

MATERIALS AND FINISHES

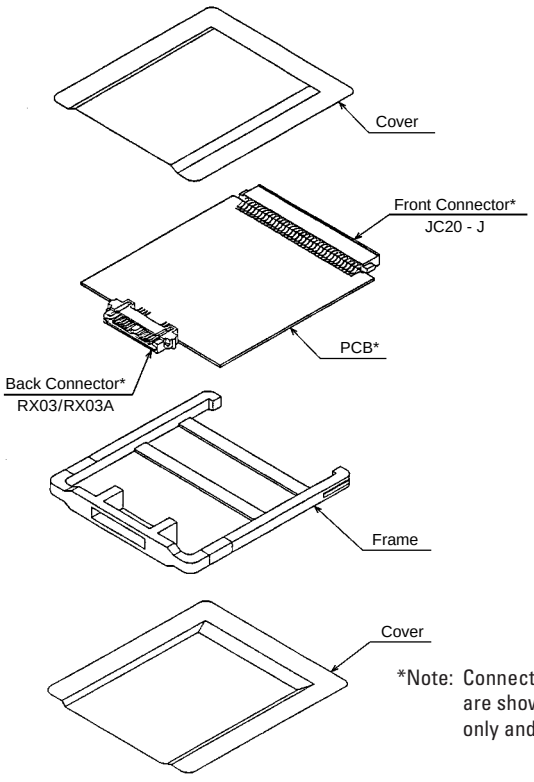
Frame

Description	Materials/Finishes
Frame	Glass-filled PBT (Black)
Ground Clip	Copper Alloy/selective Gold plating

Cover

Cover	SUS (Surface) Protective Sheet (Reverse) Resist, Adhesive

Connector Profile (Ref.)



*Note: Connectors and PCB are shown for reference only and are not part of kit.

Dimensions and specifications subject to change without notice.

Frames and Covers for PC Cards

ORDERING INFORMATION

FRAME

CR10 – F * B * *

- Series
- Frame
- Operating Voltage
  - S – 5 V
  - L – 3.3 V (Consult JAE)
- Front Connector Mounting Code
  - B – JC20-J68S-NB*, NC*
- Offset Code
  - 1 – 0.85mm (.033")
  - 2 – 0.4mm (.016")
  - 4 – 0.6mm (.024")
- Back Connector Type
  - 1 – RX03-L9P
  - 2 – RX03-L15P
  - 3 – RX03A-4P
  - 4 – RX03A-7P
  - 5 – RX03-L25P

COVER

CR10 – CP *

- Series
- Cover
- Back Connector Type
  - Blank – Common for 4 and 7 contacts
  - 1 – 9 contacts
  - 2 – 15 contacts
  - 5 – 25 contacts

Offset	Front C/N (Note 1)	Back C/N (Note 2)	Frame	Cover (Note 3)	Usage
0.85mm (.033")	JC20-J68S-NC1	RX03-L9P-FG1	CR10-FSB11	CR10-CP1	LAN
		RX03-L15P-FG1	CR10-FSB12	CR10-CP2	
		RX03-L25P-FG1	CR10-FSB15	CR10-CP5	SCSI
		RX03A-4P-F2	CR10-FSB13	CR10-CP	Fax/Modem
		RX03A-7P-F2	CR10-FSB14	CR10-CP	
0.4mm (.016")	JC20-J68S-NB2 JC20-J68S-NC2	RX03-L9P-FE1	CR10-FSB21	CR10-CP1	LAN
		RX03-L15P-FE1	CR10-FSB22	CR10-CP2	
		RX03-L25P-FE1	CR10-FSB25	CR10-CP5	SCSI
		RX03A-4P-F1	CR10-FSB23	CR10-CP	Fax/Modem
		RX03A-7P-F1	CR10-FSB24	CR10-CP	
0.6mm (.024") (Note 4)	JC20-J68S-NB4 JC20-J68S-NC4	RX03-L9P-F1	CR10-FSB41	CR10-CP1	LAN
		RX03-L15P-F1	CR10-FSB42	CR10-CP2	
		RX03-L25P-F1	CR10-FSB45	CR10-CP5	SCSI
		RX03A-4P-F4	CR10-FSB43	CR10-CP	Fax/Modem
		RX03A-7P-F4	CR10-FSB44	CR10-CP	

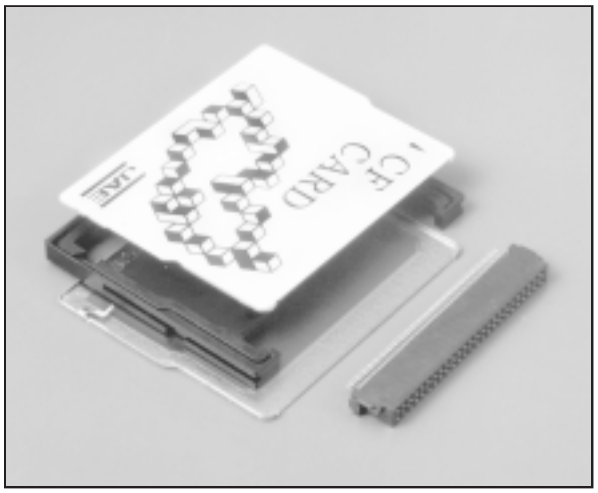
Note 1: JC20-J68S-NB* Straddle. No automatic mounting.
JC20-J68S-NC* One side, single row SMT. No automatic mounting.
Note 2: RX03-L: Lock type. No automatic mounting.
Note 3: Surface printing: Custom-made. Consult JAE.
Note 4: Please consult JAE for 7 contacts.

* JC20-J68S-NB2 and RX03-L25P-FE1 shown on last page of CR10 Series Connectors.
Please consult JAE for dimensions on other front and back connectors used with CR10 series.

Dimensions in mm (inches).

CR16 SERIES CONNECTORS

Frames and Covers for Compact Flash Cards



The CR16 Series is a Compact Flash™ Card Kit that includes both frames and covers. Combined with the JC26 Series, offers a complete mechanical kit for flash memory makers to produce compact flash cards.

FEATURES

Frame

- Printed Circuit Board is fixed with frame to ensure against vibration and shock

Cover

- Protected from EMI by a spring that connects to the PC Board
- Excellent adhesion provided by thermocompression bonding of frames and covers
- Complies with Compact Flash Association Standard
- Custom print logos and graphics or adhesive labels available for covers

ORDERING INFORMATION

CR16 Frame **CR16 – F B ***

Series
Frame
Front Connector
Packaging Code
Offset Code
2 – 0.35 (.0138)
3 – 0.3 (.0118) Center Type

CR16 Cover **CR16 – C P ***

Series
Cover
Printing Type
Offset Code
1 & 2 – 0.4mm (.016) Offset
3 – 0.25 (.01) Center Type

GENERAL SPECIFICATIONS

Operation

Temperature	-20°C to +60°C
Relative Humidity	95% max. (no bedewing)

MATERIALS AND FINISHES

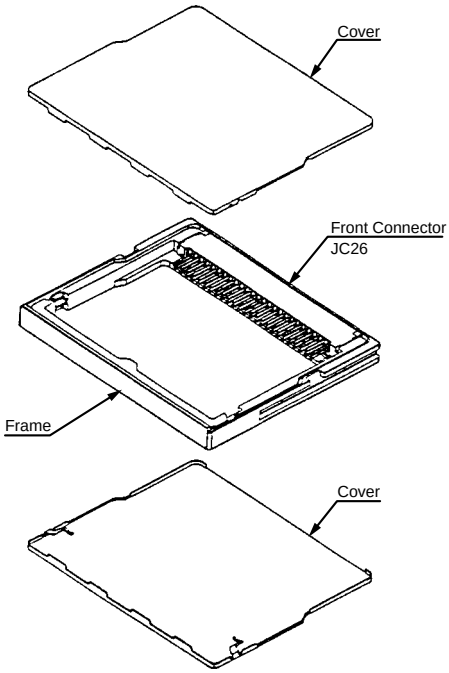
Frame

Description	Materials/Finishes
Frame	Glass-filled PBT (UL94V-0, Black)

Cover

Cover	Stainless Steel
Front	SUS (Surface) Protective Sheet
Rear	(Reverse) Resist, Adhesive

Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

JC20 SERIES CONNECTORS

Two-Piece Connectors for IC Memory Cards

JC20 Series connectors are designed to meet demanding requirements for IC memory cards interconnection. The versatile two-piece type JC20 Series connectors cover various card thicknesses, contact numbers and termination methods. Applications include personal computers, word processors, security systems and other electronic equipment.

Variation of JC20 Series

Type	No. of Contacts	Contact Pitch	Applicable Card Thickness	Applicable PCB Thickness		Durability
				Card Side	System Side	
J	68	1.27 (.050)	3.3 (.130)	0.5 (.020)/F1, 0.2 (.008)/F2, F3, 0.35 to 0.45 (.014 to .018)/F4, 0.35 (.014)/F5	1.6 (.063)	10,000 Cycles min.
J **EJ**	68	1.27 (.050)	3.3 (.130)	—	0.8 (.031) min.	10,000 Cycles min.
B	38	1.27 (.050)	3.2 (.126)	0.37 (.015)/F1, 0.5 (.020)/F2, 0.2 (.008)/F3	1.6 (.063)	5,000 Cycles
C	45	1.0 (.039)	2.0 (.079)	0.2 to 0.3 (.008 to .012)	1.6 (.063)	10,000 Cycles
D	20, 38	1.27 (.050)	2.2 (.087) & 3 (.118)	0.4 (.016) max.	1.6 (.063)	10,000 Cycles
E	60	1.27 (.050)	3 (.118)	0.6 to 0.8 (.024 to .031)	1.6 (.063)	10,000 Cycles

Consult JAE for “Connector Profile”.

■ JC20 SERIES J TYPE CONNECTORS

68 CONTACTS/1.27 (.050) PITCH

• • • • • • • • • • • • • • •

JC20 Series J type connectors are designed in accordance with PCMCIA (Personal Computer Memory Card International Association) and JEIDA (Japanese Electronic Industry Development Association) standards. Designed for use with memory cards, these high density, low profile connectors have 1.27mm (.050") pitch and 68 contacts (2 rows). Socket connectors are mounted on the card edge and pin connectors are on the PCB of the mating system side. A push eject mechanism type is available for pin connectors.

FEATURES

- Conforms to PCMCIA/JEIDA (Ver. 4.1) Standard

Socket connectors for card side

- Low profile. Mating part is 3.3mm (.130") thick, and card mounting part is 2.8mm (.110") thick. Minimum applicable card thickness is 3.3mm (.130")
- Connecting area is protected from static electricity
- Connection with board circuits within cards is SMT straddle type which is suitable for high density mounting. Five terminal configurations are available corresponding to PCB mounting positions and PCB thickness
- Highly reliable contacts with three contacting points
- Low insertion force

Pin connectors for system side

- Through hole type (straight and right angle) and SMT type (right angle) are available
- Push eject mechanism is available for right angle type
- Right angle type is available in both over-the-board mounting type (standard) and under-the-board mounting type (reverse). Cards are inserted from the same side
- PCB mounting height is 5.3mm (.209") (right angle). Card thickness 3.3mm (.130") (insertion part) is accepted
- Polarization key
- Length of contact connecting area:
  Per PCMCIA/JEIDA (Ver. 4.1) standards
  Power pin, ground pin: 5mm (.197")
  CD pin: 3.5mm (.138")
  Other signal pin: 4.25mm (.167")

GENERAL SPECIFICATIONS

Number of Contacts	68 contacts
Contact Spacing	1.27mm (.050") pitch, 2 rows
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-20°C to +60°C
Contact Life Durability	10000 cycles min.

MATERIALS AND FINISHES

Socket Connector

Description	Materials/Finishes
Insulator	Glass-filled Nylon (UL94V-0, Black)
Contact	Phosphor Bronze Connecting area: Gold 0.1μm (.000004") min. over Nickel Terminal area: Tin plating over Nickel

Pin Connector

Description	Materials/Finishes
Insulator	Glass-filled PPS (UL94V-0, Light Gray)
Contact	Phosphor Bronze Connecting area: Gold 0.1μm (.000004") min. over Nickel Terminal area: Tin plating
Locator	Glass-filled PPS (UL94V-0, Light Gray)
Hold Down	Phosphor Bronze/Tin plating
Hook Pin	Phosphor Bronze/Tin plating
Hexagon Nut	Steel/Zinc plating

Dimensions in mm (inches).

■ JC20 SERIES J TYPE CONNECTORS • PIN CONNECTOR FOR SYSTEM SIDE

ORDERING INFORMATION

JC20 J 68 P V4 HF S H 1

Series
Type
No. of Contacts
Connector Type
  P – Pin
JEIDA Standard
  V4: Ver. 4.1
Termination
  LT – Right Angle Through Hole (Standard)
  LR – Right Angle Through Hole (Reverse)
  ST – Straight Through Hole
  HF – Right Angle SMT (Standard)
  HR – Right Angle SMT (Reverse)
Length of Guide Way
  S – 26mm (1.024") M – 40mm (1.575")
Fixture to PCB (Right Angle Only)
  H – Hook Pin N – Hexagonal Nut
Contact Finish of Connecting Area – 0.1μm (.000004") min. Gold over Nickel

- Applicable Cards:
  PCMCIA/JEIDA Standards Cards
  TYPE-I 3.3mm (.130") thick
  TYPE-II 5mm (.197") thick
  TYPE-III 10.5mm (.413") thick (See note)
  Note: A part of PCB must be notched for reverse type pin connectors. Please consult JAE for details.

- Length of pin contact connecting area
  Per PCMCIA/JEIDA (Ver. 4.1) Standards
  Power pin, Ground pin 5mm (.197")
  CD pin 3.5mm (.138")
  Other signal pin 4.25mm (.167")

PIN CONNECTOR WITH EJECT MECHANISM

FOR SYSTEM SIDE

EJ Type
- Two-piece right angle SMT type.
- Option of PCB mounting type (over/under); eject button position (right/left); frame bridge position (over/under).
- Option: Nut, hold-down.

B Type
- Right angle through hole type.
- Over-the-board mounting type, right side button position.

Options
- Hook pins to fix connectors to PCB.
- Earth lugs to protect from static electricity.
- Grounding lug to touch pad which prevents surge current/voltage.

Dimensions in mm (inches).

■ JC20 SERIES EJ TYPE CONNECTORS

FEATURES

- Compliant with PC Card Standard (Type, I, II)
- Light weight: 13g
- Compact and space saving design
  Height: 5.6mm (.220")
  Width: 65.2mm (2.57"), excluding hold-down
  Depth: 92.3 mm (.264")—distance from mating face to edge of frame is 6.7mm (.264")
- Separate structure of base connector and frame
- Weight of base connector reduced by simplified connector shape. Compatible with automatic mounting using semi-hard tray packaging.
- Metal cover prevents reverse card insertion and withstands twisting force
- Ground lug compatible with upper/lower screw fixing. Hold-down settings also possible.
- Ejectors are located at both sides of the card for improved card removal. Cut-off length is 7mm (.275").

ORDERING INFORMATION

JC20 - B * * - ** - S

- Series
- Base
- Mounting Code (Table 2)
  - S – Standard
  - R – Reverse
- Positioning Boss
  - B – With Boss
  - Blank – Without Boss
- Stand-off
  - Blank – None
  - 20 – 2.0mm (.079") stand-off
- Modification Code
  - S – Normal

JC20EJ - F * * * - ***

- Series
- Frame Side
- Mounting Code
  - S – Standard
  - R – Reverse
- Eject Button Location
  - M – Right
  - H – Left
  - R – Right bendable
  - L – Left bendable
- Nut
  - N – With Nut, without hold-down
  - H – Without Nut, with hold-down
- Modification Code
  - S – Normal

JC20 Series EJ type connectors are designed for small mobile devices, such as notebook PCs, PDAs, and HPCs, where compact size constraints are needed.

GENERAL SPECIFICATIONS

Number of Contacts	68
Contact Spacing	0.635mm (.025")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C
Contact Life Durability	10000 times (indoor), 5000 times (outdoor)

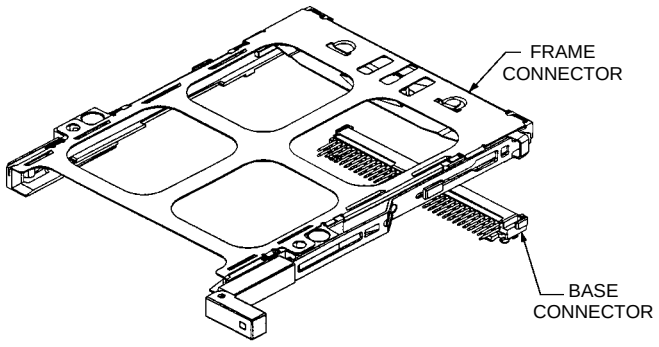
MATERIALS AND FINISHES

Base

Description	Materials/Finishes
Insulator	PPS
Contact	Brass/Gold plating over Nickel
Hold Down	Brass/Tin plating

Frame

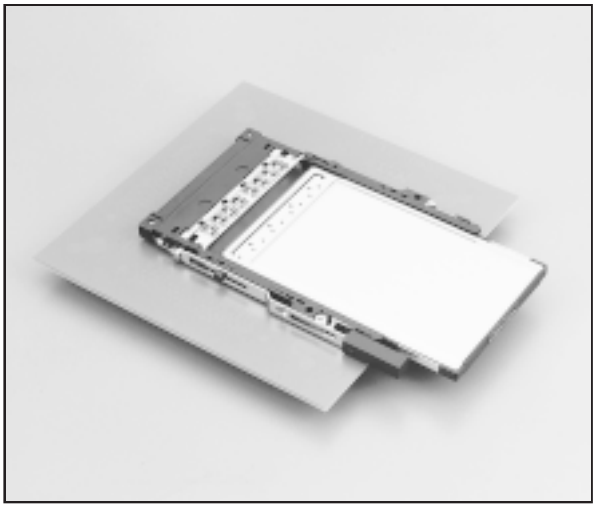
Description	Materials/Finishes
Frame	PBT
Cover	Stainless
Lever	Stainless
Plate	Stainless
Ejector Bar	Stainless
Button, Lock	PBT
Spring	Stainless
Hexagon Nut	Brass/Nickel plating
Ground Lug	Phosphor Bronze/partially Gold plating



Dimensions in mm (inches).

JC21 SERIES CONNECTORS

Three-Piece Connectors for IC Memory Cards



The JC21 Series is designed for the PC Card Standard Cardbus and is in accordance with PCMCIA (Personal Computer Memory Card International Association) and JEIDA (Japanese Electronic Industry Development Association) standards.

FEATURES

Socket connectors for card side

- Ground plate assembled over insulator
- Ground plate terminals are located outside of signal contacts (68 pins) for easier pattern design and automatic mounting
- Can be auto-mounted (supplied with semi-hard tray)

Pin connectors for system side

- Applicable PC Card type I through type III
- Polarization key is provided with 3.3 V actuation voltage
- 2mm (.079") stand-off connector available for mounting components under the connector
- Push eject or horizontal turndown mechanism is available for either the right or left sides
- Two piece SMT connector enables easy PCB design and reduces mounting cost

	Front C/N	Back C/N		Front Cover	Rear Cover
Offset		(Note 1)	Frame	(Note 2)	
-0.25	JC21-SA3-H	RX03-L9P-FA1	CR10-FLC31	CR10-CBP1	CR10-CP1
-0.25	JC21-SA3-H	RX03-L15P-FA1	CR10-FLC32	CR10-CBP2	CR10-CP2
-0.25	JC21-SA3-H	RX03-L25P-FA1	CR10-FLC33	CR10-CBP3	CR10-CP3
0.4	JC21-SA3-H	RX03-L9P-FA1	CR10-FLC21	CR10-CBP1	CR10-CP1
0.4	JC21-SA3-H	RX03-L15P-FA1	CR10-FLC32	CR10-CBP2	CR10-CP2
0.4	JC21-SA3-H	RX03-L25P-FA1	CR10-FLC33	CR10-CBP3	CR10-CP3

Consult JAE for "Connector Profile".

GENERAL SPECIFICATIONS

Number of Contact	68
Contact Spacing	1.27mm (.050") pitch, 2 rows
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to 85°C

MATERIALS AND FINISHES

Socket Connector

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0)
Contact	Copper Alloy Connecting area: Gold 0.1μm (.000004") over Nickel plating Terminal area: Tin plating over Nickel
Grounding Plate	Phosphor Bronze Connecting area: Gold plating Terminal area: Tin plating

Pin Connector (Card Side)

Description	Materials/Finishes
Insulator	Glass-filled PBT (UL94V-0)
Contact	Brass Connecting area: Gold 0.1μm (.000004") min. over Nickel plating Terminal area: Tin over Nickel plating
Locator	Glass-filled LCP
Ejector Button	Glass-filled PBT
Plate	Stainless Steel
Lever	Stainless Steel
Ground Plate	Phosphor Bronze Connecting area:Gold 0.1μm (.000004") min. over Nickel Terminal area: Tin over Nickel
Eject Bar	Stainless Steel
Ground Lug	Phosphor Bronze selective Gold plating
Hexagon Nut	Brass, Nickel plating

(PCB Side)

Insulator	Glass-filled LCP (UL94V-0, Black)
Contact	Phosphor Bronze, Tin plating

Dimensions and specifications subject to change without notice.

■ JC21 SERIES CONNECTORS • SOCKET CONNECTOR FOR CARD SIDE

ORDERING INFORMATION

JC21 – SA * – H

Series
Lead Type
A – One row SMT
Offset Code
2 – 0.4mm
3 – -0.25mm (Center)
Modification Code

■ JC21 SERIES CONNECTORS WITH EJECT MECHANISM FOR SYSTEM SIDE

CARD BUS CONNECTOR

ORDERING INFORMATION

(Frame Side) **JC21 – A * 20 * ***

Series
Connector Type
A – Single slot
Key Code
L – 3.3v Standard mounting
M – 3.3v Reverse mounting
Stand-off Code
See Table 1
Ejector Button Location
B – Left
C – Right
Style of eject button – Blank: Standard type
D: Vertical turndown type
E: Horizontal turndown type

(PCB Side) **JC20EG-B – * ***

Series
Positioning Boss
Blank – Without boss
B – With boss
Hold Down
H – With hold down
N – Without hold down

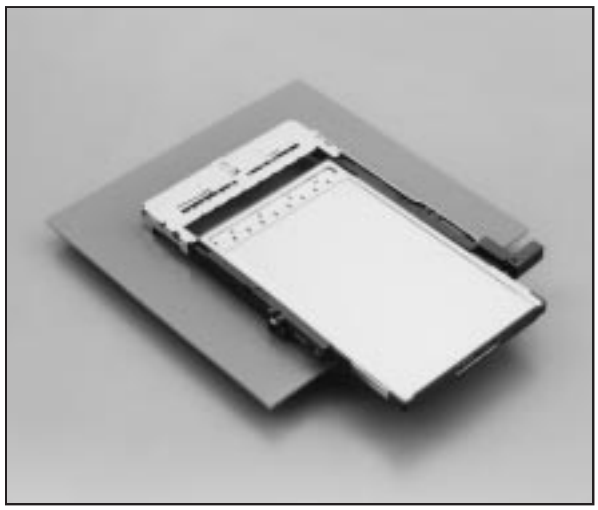
Table 1

Code of Stand-off	A	B	C	D	E	F	G
None	0.3 (.012)	5.65 (.222)	2.95 (.116)	3.1 (.122)	3.45 (.136)	0	0
20	2.3 (.091)	7.65 (.301)	4.95 (.195)	5.1 (.201)	5.45 (.215)	2.1 (.083)	1.8 (.071)

Dimensions in mm (inches).

JC21EJ SERIES CONNECTORS

Two-Piece Connectors for Card Bus Connectors



FEATURES

Socket connectors for card side

- Ground plate assembled over insulator
- Ground plate terminals are located outside of signal contacts (68 pins) for easier pattern design and automatic mounting
- Can be auto-mounted (supplied with semi-hard tray)

Pin connectors for system side

- Compliant with PC Card Standards (Type I, II, and III)
- Lightest weight pin header connector in the industry: 11g
- Smallest space saving pin header connector in the industry
  Height: 5.5mm (.216") (0mm stand-off)
  Width: 63.9mm (2.516")
  Depth: 91.6mm (3.606") [Length from mating surface to the end of the frame is 6mm (.236")]
- Separate base and frame structure
- Reduced weight thanks to simplified base connector shape. Compatible with automated mounting with semi-hard tray packing
- Variety of product types
  Standard, reverse, right bendable button, left bendable button, 0mm stand-off, 2mm (.079") stand-off
- Double push ejector with 7mm (.276") cut-off for smooth card removal

Consult JAE for "Connector Profile".

The JC21 (EJ) Series is designed for the PC Card Standard Cardbus and is in accordance with PCMCIA (Personal Computer Memory Card International Association) and JEIDA (Japanese Electronic Industry Development Association) standards.

GENERAL SPECIFICATIONS

Number of Contact	68
Contact Spacing	1.27mm (.050") pitch, 2 rows
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C

MATERIALS AND FINISHES

Socket Connector

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0)
Contact	Copper Alloy Connecting area: Gold 0.1μm (.000004") over Nickel plating Terminal area: Tin plating over Nickel
Grounding Plate	Phosphor Bronze Connecting area: Gold plating Terminal area: Tin plating

Pin Connector (Card Side)

Description	Materials/Finishes
Insulator	Glass-filled PBT (UL94V-0)
Contact	Copper Alloy Connecting area: Gold 0.1μm (.000004") min. over Nickel plating Terminal area: Tin over Nickel plating
Locator	Glass-filled LCP
Ejector Button	Glass-filled PBT
Plate	Stainless Steel
Lever	Stainless Steel
Ground Plate	Phosphor Bronze Connecting area:Gold 0.1μm (.000004") min. over Nickel Terminal area: Tin over Nickel
Eject Bar	Stainless Steel
Ground Lug	Phosphor Bronze selective Gold plating
Hexagon Nut	Brass, Nickel plating

(PCB Side)

Insulator	Glass-filled LCP (UL94V-0, Black)
Contact	Phosphor Bronze, Tin plating

Dimensions and specifications subject to change without notice.

■ JC21 SERIES CONNECTORS • SOCKET CONNECTOR FOR CARD SIDE

JC21 – SA * – H

- Series
- Lead Type
  - A – One row SMT
- Offset Code
  - 2 – 0.4mm
  - 3 – -0.25mm (Center)
- Modification Code

■ JC21EJ SERIES CONNECTORS • PIN CONNECTOR FOR SYSTEM SIDE

ORDERING INFORMATION *(Frame)* **JC21EJ - F * * * **

- Series
- Frame
- Mounting Code
  - S – Standard
  - R – Reverse
- Eject Button
  - R – Horizontal Turndown Right Side
  - L – Horizontal Turndown Left Side
  - M – Rigid Right
  - H – Rigid Left
- Mounting Method
  - N – With Nut , Without Hold down
  - H – Without Nut, With Hold down
- Stand-off Code
  - 20 – 2.0mm (.079")

■ JC21EJ SERIES CONNECTORS • PIN CONNECTOR FOR SYSTEM SIDE

(Base Connector) **JC20 - B * * **

- Series
- Base
- Mounting Code
  - S – Standard
  - R – Reverse
- Positioning Boss
  - B – With Boss
  - N – Without Boss
- Stand-off
  - Blank – None
  - 20 – 2.0mm (.079") stand-off

Dimensions in mm (inches).

RX03 SERIES CONNECTORS

1.0mm (.039") Contact Spacing, I/O Card Rear Side Interface Connectors

RX03 Series connectors are tailored to meet the requirements for use as interface connectors for I/O (LAN, MODEM) cards.

The SMT type (straddle mount) card side connector is designed for PCB mounting and the IDC type cable side connector is overmolded.

The low profile connectors feature high density contact spacing of 1.0mm (.039"). The SMT card connector is 3.5mm (.138") thick and the IDC cable connector is 5mm (.197") thick.

Ribbon type contacts assure contact durability against twisting force. The connectors are shielded to protect from EMI.

FEATURES

- SMT (straddle) type PCB mounting side
- Overmolded IDC type for cable side
- Ribbon type contacts withstand twisting force
- Polarizing key prevents mismating
- Grounding dimples on receptacle side shell
- Backshell incorporated in hood for IDC cable side enhances shielding
- Both card and cable sides have grounding tabs
- EMI protection

ORDERING INFORMATION

RX03 – ** ** – * * *

Series

No. of Contacts
- 9, 15

Connector Type
- S – Cable Side
- P – Card Side

Termination
- M – IDC (Cable Side)
- F – SMT, Straddle Mount (Card Side)

Offset Code (Card Side)
- Blank – 0.8mm (.031") offset from center
- A – Center

Finish Code
- 1 – Gold 0.1μm (.000004") min.

Note: RX03 Lock type connectors (9, 15, 25 contacts) are also available. Please consult JAE for details.

GENERAL SPECIFICATIONS

Number of Contacts	9, 15
Contact Spacing	1.0mm (.039")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Applicable PCB Thickness	0.4 ± 0.05mm (.016 ± .002")
Applicable Wire Size	#28 AWG
Operating Temperature	-40°C to +80°C
Durability	5000 Cycles

MATERIALS AND FINISHES

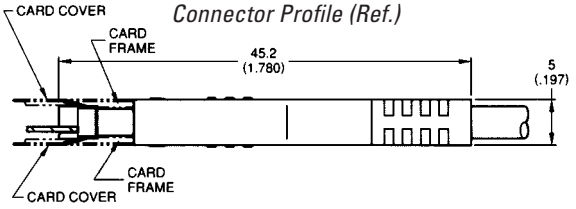
Card Side

Description	Materials/Finishes
Contact	Phosphor Bronze: Connecting Area: Gold plating, 0.1μm min. (.000004") over Nickel Terminal Area: Tin plating
Insulator	Glass-filled PPS (UL94V-0, Black)
Shell	Steel/Nickel plating

Cable Side

Contact	Copper Alloy: Gold plating, 0.1μm min. (.000004") over Nickel
Insulator	Glass-filled PBT (UL94V-0)
Cover Insulation	Glass-filled 6-6 Nylon (UL94V-0)
Shell	Steel/Nickel plating
Back Shell	Stainless Steel
Hood	PVC (UL94V-0)

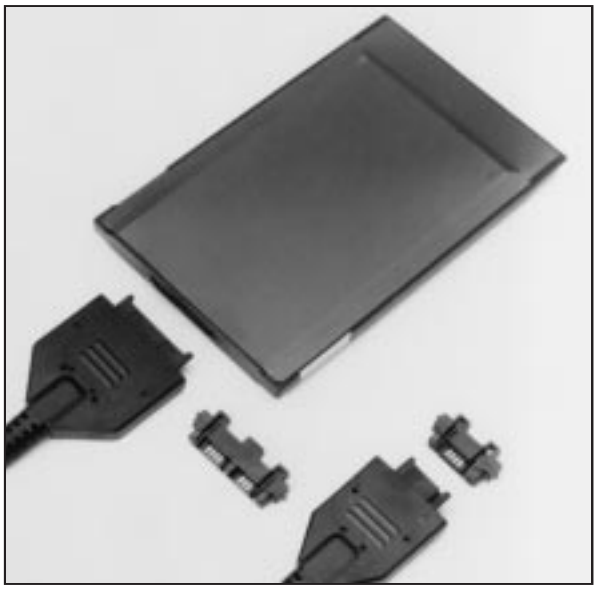
Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

RX03A SERIES CONNECTORS

1.0mm (.039") Contact Spacing, PCMCIA Modem I/O Connectors



• • • • • • • • • • • • • • •

The RX03A Series connectors conform to PCMCIA Open Systems Standards for I/O Connectors used in Modem PC Cards with an internal DAA.

Card side connectors are available in 4 and 7 positions. Cable side connectors are available in 3, 4, and 7 positions. The 7 position Card connector will accept the single 7 position cable connector or either the 3 or 4 position cable connectors. This feature permits varied cable connection options.

FEATURES

- PCMCIA Type II Card compatible
- Tactile friction lock mechanism
- High reliability contact design
- Both IDC and solder type terminations available for cable side
- Refer to RX03 Series for EMI/RFI shielded configurations

ORDERING INFORMATION

**RX03A – * * – ** **

Series

No. of Contacts
- Cable Side: 3, 4, 7
- Card Side: 4, 7

Connector Type
- S – Cable Side
- P – Card Side

Termination

Cable Side:
- PI – IDC
- UI – Solder

Card Side:
- F1 – SMT, Offset 0.4mm (.016")
- F2 – SMT, Offset 0.85mm (.033")
- F4 – SMT, Offset 0.6mm (.024") (*Note 1)

Cover Insulator (Cable Side)
- Blank – Provided (standard)
- CL – No cover insulator provided

*Note 1: Please consult JAE for 7 contacts.

GENERAL SPECIFICATIONS

Number of Contacts	3, 4, 7
Contact Spacing	1.0mm (.039")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	45 milliohms max.
Operating Temperature	-20°C to +60°C
Applicable Wire Sizes	#24 to #30 AWG (Note 1)
Durability	5,000 Cycles

Note 1: #28 AWG or equivalent for IDC Type.

MATERIALS AND FINISHES

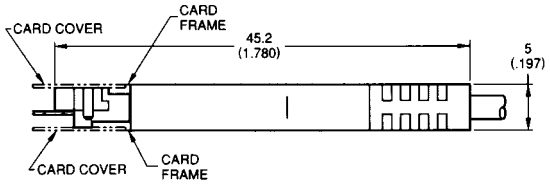
Card Side

Description	Materials/Finishes
Contact	Copper Alloy Connecting Area: Gold Flash over Ni-Pd Terminal Area: Tin plating
Insulator	Glass-filled PPS (UL94V-0, Black)

Cable Side

Contact	Copper Alloy Connecting Area: Gold Flash over Ni-Pd Terminal Area: Tin plating
Base Insulator	6-6 Nylon (UL94V-0, Black)
Cover Insulator	Glass-filled PBT (UL94V-0, Black)

Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

RX03L SERIES CONNECTORS

1.0mm (.039") Contact Spacing, I/O Card Rear Side Interface Connectors

FEATURES

- SMT (straddle) type PCB mounting side
- Rapid sure-locking mechanism
- Ribbon type contacts withstand twisting force
- Cable side hood included
- Polarizing key prevents mismating
- Card kit CR10-FSB & CR10-CP applicable
- Grounding dimples on receptacle side shell
- 15 Pos 2 cable sizes available
- Backshell incorporated in hood for IDC cable side enhances shielding
- Both card and cable sides have grounding tabs
- EMI protection

ORDERING INFORMATION

RX03 –	L *	15 *	P *	– FE **	1 *

Series

Locking Type

No. of Contacts
9, 15, 25

Connector Type
S – Cable Side
P – Card Side

Termination
F – SMT, Straddle Mount (Card Side)
(See offset below)
P – IDC, 9 Pos Only (Cable Side)
U – Solder, 15 & 25 Pos Only (Cable Side)

Contact Finish
1 – 0.1µm (.000004") min. Gold over Nickel

■ Locking Type

RX03L Series connectors are tailored to meet the requirements for use as interface connectors for I/O (LAN, MODEM) cards.

The SMT type (straddle mount) card side connector is designed for PCB mounting and the cable side connector is available in IDC (9 Pos only) or Solder (15 & 25 Pos only).

The low profile connectors feature high density contact spacing of 1.0mm (.039"). The SMT card connector is 3.5mm (.138") thick and the IDC cable connector is 5mm (.197") thick.

Ribbon type contacts assure contact durability against twisting force. The connectors are shielded to protect from EMI.

GENERAL SPECIFICATIONS

Number of Contacts	9, 15, 25
Contact Spacing	1.0mm (.039")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Applicable PCB Thickness	0.4 ± 0.05mm (.016 ± .002")
Applicable Wire Size	IDC #28 AWG 9 Pos Solder #24-30 AWG 15 & 25 Pos
Operating Temperature	-20°C to +60°C
Durability	5000 Cycles

MATERIALS AND FINISHES

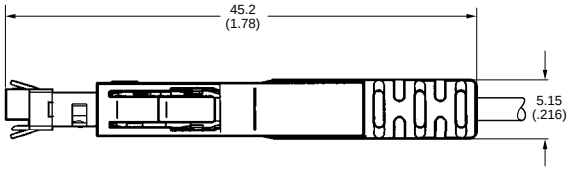
Card Side

Description	Materials/Finishes
Contact	Phosphor Bronze: Connecting Area: Gold plating, 0.1µm min. (.000004") over Nickel Terminal Area: Tin plating
Insulator	Glass-filled PPS (UL94V-0, Black)
Shell	Steel/Nickel plating

Cable Side

Contact	Copper Alloy: Gold plating, 0.1µm min. (.000004") over Nickel
Insulator	Glass-filled PBT (UL94V-0)
Cover Insulator	Glass-filled 6-6 Nylon (UL94V-0)
Hood	6-6 Nylon

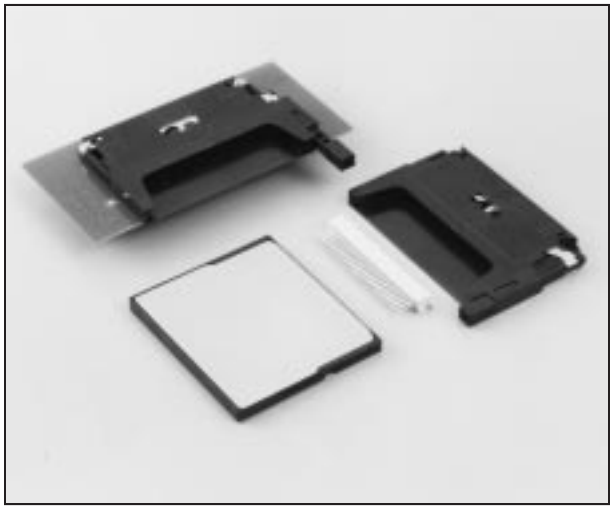
Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

JC26/JC26A SERIES CONNECTORS

Two Piece Connectors for Compact Flash Type I and Type II Cards



JC26 Series connectors are designed for compact flash type I and type II cards and are in accordance with Compact Flash Association standard. Applications include digital still cameras and other portable devices. These connectors are on 1.27mm (.050") centers and are available with 50 contacts (2 rows). Socket connectors are mounted on the card edge and pin connectors are on the PCB of the mating system side.

FEATURES

Socket connectors for card side

- Low profile. Minimum applicable card thickness is 3.3mm (.130"), and card mounting side is 2.96mm (.117") thick
- Highly reliable contacts with three contacting points
- Connection with board circuits within cards is SMT or Straddle mount
- Connecting area is protected from static electricity
- Low insertion force

Pin connectors for system side

- 2.0mm (.079") standoff available for mounting components under the connector
- PCB mounting height (right angle) is 7.1mm (.280"). Card thickness 3.3mm (.130") (insertion part) is accepted
- Polarization key
- Conforms to Compact Flash Association standard
- Complete selection of standard, reverse, right button, left button, or no button ejection mechanism
- Hook pin mechanism employed for ground lug terminals and to ensure mounting on PCB

GENERAL SPECIFICATIONS

Number of Contacts	50
Contact Spacing	1.27mm (.050") pitch, 2 rows
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-20°C to +60°C
Contact Life Durability	10,000 cycles min.

MATERIALS AND FINISHES

Socket Connector

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0, Ivory)
Contact	Copper Alloy Connecting Area: Gold plating 0.1μm (.000004") min. over Nickel Terminal Area: Tin over Nickel plating

Pin Connector

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0, Ivory)
Contact	Copper Alloy Connecting Area: Gold plating 0.1μm (.000004") min. over Nickel Terminal Area: Tin over Nickel plating
Lever	Stainless Steel
Hold Down	Phosphor Bronze

Consult JAE for "Connector Profile".

Dimensions in mm (inches).

JC26/JC26A SERIES CONNECTORS

Two Piece Connectors for Compact Flash Type I and Type II Cards

■ JC26

ORDERING INFORMATION

Card Side

JC26 – J * *

Series
CF50 contact socket
Terminal Code
A – Single Row SMT B – Straddle Mount
Offset Code
2 – 0.4mm (.015") 3 – 0.25mm (.010") Center Type

System Side • One-Piece

JC26 – C S 20 * *

Series
Compact Flash
Standard Type
Stand-off Code
20 – 2.0mm (.079")
Ejector Button Location
L – Left R – Right
Ejector Button Type
None – Normal H – Horizontal Turndown

Base Connector • Two-Piece

JC26 – B *

Series
Base
Positioning Boss
B – With Boss
Blank – Without Boss

Frame Connector

JC26 – F * * *

Series
Frame
Key Code
S – Standard
R – Reverse
Button
R – Right
L – Left
Fixture to PCB
H – With Hexagon Nut
N – Without Hexagon Nut

■ JC26A

ORDERING INFORMATION

Base Connector

JC26A – B * **

Series
Base
Positioning
B – Boss
N – No Boss
Standoff
Blank – No Standoff
16 – 1.6mm (.063") Standoff

Frame Connector

JC26A – F * * * *

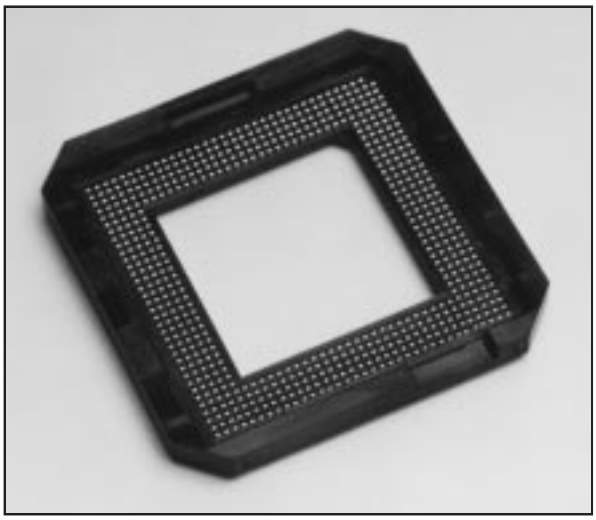
Series
Frame
P.C.B. Mounting
S – Standard
R – Reverse
Eject Button Location
R – Right Turn Down
L – Left Turn Down
M – Right Rigid
H – Left Rigid
Standoff
Blank – No Standoff
16 – 1.6mm (.063") Standoff

Specifications				Standoff 0mm	Standoff 1.6mm (.063")
				Part Number	Part Number
Base Connector				JC26A-BB	JC26A-BB16
				JC26A-BB-E1050	JC26A-BB16-E800
Frame	Bendable Button	Standard	Right	JC26A-FSR	JC26A-FSR16
			Left	JC26A-FSL	JC26A-FSL16
		Reverse	Right	JC26A-FRR	JC26A-FRR16
			Left	JC26A-FRL	JC26A-FRL16
	Normal Button	Standard	Right	JC26A-FSM	JC26A-FSM16
			Left	JC26A-FSH	JC26A-FSH16
		Reverse	Right	JC26A-FRM	JC26A-FRM16
			Left	JC26A-FRH	JC26A-FRH16
	Without Eject Lever	Standard		JC26A-FSN	JC26A-FSN16
		Reverse		JC26A-FRN	JC26A-FRN16

Dimensions in mm (inches).

LGPS SERIES CONNECTORS

1.27mm (.050") Contact Spacing, Land Grid Array Sockets



The LGPS Series connector is a low profile connector for LGA (Land Grid Array) Packages with 599 contacts. The connector features a grid pattern arrangement of spring contacts that assures good contact between LGA and PCB grounds through the spring compression.

FEATURES

- The Socket consists of a Frame, Insulation Film, and Metal Plate
- This Socket is temporarily attached to the PCB with the Frame Boss. After the LGA is mounted in the Frame, the Plate and Film can be affixed with four screws
- Four compression screws accommodate LGA and PCB packages of varying thickness
- The connection between the package and PCB ground is uniform and stable
- Unique ground connection structure with short conductors suitable for high signal transmission

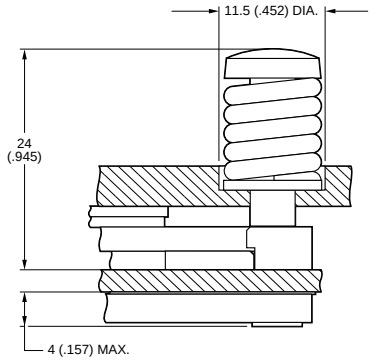
GENERAL SPECIFICATIONS

Number of Contacts	599
Contact Spacing	1.27mm (.050") grid
Current Rating	0.3 Amp
Dielectric Withstanding Voltage	600 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +105°C
Inductance	3.0nH max.

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0, Black)
Frame	Glass-filled PPS (UL94V-0, Black)
Contact	Phosphor Bronze 0.1μm (.000004") min. Gold over Nickel plated
Plate	Steel, Nickel plated
Screw	Stainless Steel (M3)
Spring	Piano Wire
Film	PET

Connector Profile (Ref.)



ORDERING INFORMATION

LGPS – 599 – A – 01

Series — LGPS

No. of Contacts — 599

Modification — A

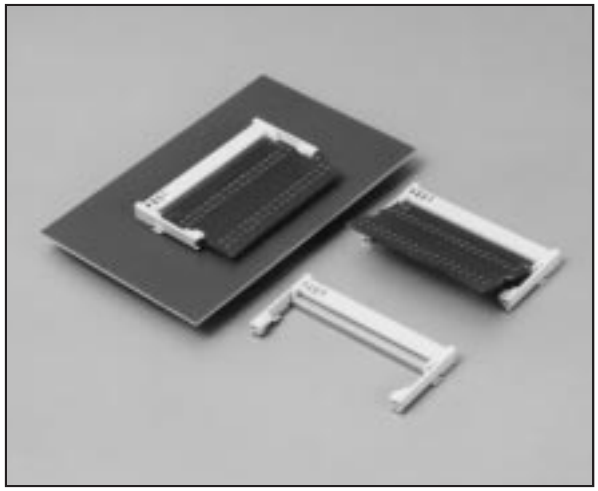
Contact Finish — 01

Gold Plating 0.1μm (.000004") min. over Nickel

Dimensions and specifications subject to change without notice.

MM40 SERIES CONNECTORS

0.5mm (.020") Contact Spacing, DIMM Socket Connectors

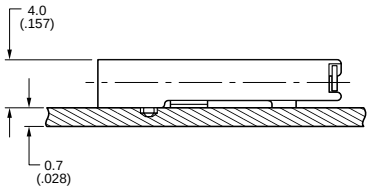


This 8 byte Micro DIMM socket meets JEDEC standard. Small Outline DIMM can easily be replaced with Micro DIMM because the pin allocation is the same as the existing 144 contact SO-DIMM. Ideal for compact applications and high density mounting.

FEATURES

- 0.5mm (.020") contact spacing and thin latch design reduce mounting area to approximately 62%, compared to SO-DIMM socket
- Single-mold thin latch strengthened by backup mechanism with metal springs that also functions as hold-down
- Metal springs prevent latch from bending inward and prevent mis-mating
- Mis-mating prevention key compatible with 3.3V and 2.5V operating voltages
- Connector height: 4mm (.157") and 5.2mm (.205")

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	144
Contact Spacing	0.5mm (.020")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-55°C to +105°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PPA Resin
Contact	Phosphor Bronze Contact: More than 0.1μm (.000004") gold plating over Nickel Connection: Tin-Lead Plating over Nickel
Hold-down	Phosphor Bronze/Tin-Lead Plating

ORDERING INFORMATION

MM40 – * B * – * 1**

Series — MM40

No. of Contacts — ***
- 72 Single
- 144 Double

Socket Type — B
- B – Latch SMT

Key Code — *
- 1 – 3.3V
- 2 – 2.5V

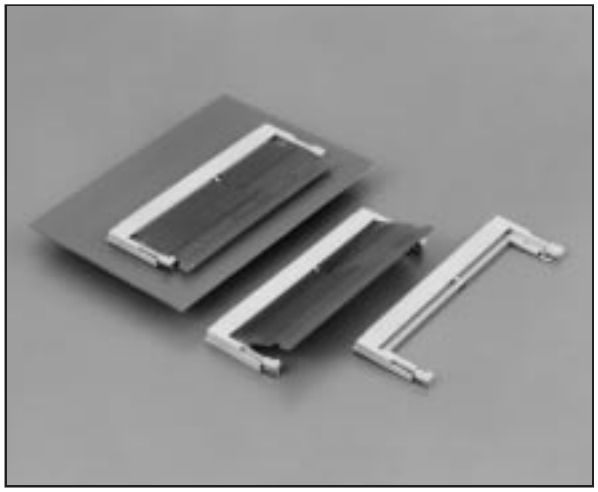
Height — *
- B – 4.0mm (.157")
- Blank – 5.2mm (.205")

Contact Finish — 1
- 1 – Connecting area: Gold Plating 0.1μm (.000004") min. over Nickel
  Terminal area: Tin over Nickel

Dimensions and specifications subject to change without notice.

MM30 SERIES CONNECTORS

0.8mm (.031") Contact Spacing, SOD Socket Connectors



MM30 Series socket connectors are designed for use with small outline DIMM (SOD) 8-bit memory modules. These connectors are used in portable devices such as notebook personal computers to increase the memory volume and provide the same performance level as desktop personal computers.

FEATURES

- Designed for use with 8-bit SOD, as specified in JEDEC
- Low insertion force
- Latch is molded-in and reinforced with metal spring
- Available in 3.9mm (.153") and 5.2mm (.205") connector heights

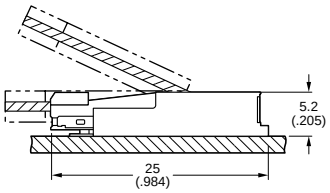
GENERAL SPECIFICATIONS

Number of Contacts	144
Contact Spacing	0.8mm (.030")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	60 milliohms max.
Durability	25 insertions
Operating Temperature	-55°C to +105°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled LCP, Ivory (UL94V-0)
Contact	Copper Alloy Connecting Area: Gold plating 0.1μm (.000004") min. over Nickel Terminal Area: Tin over Nickel
Hold-down	Copper Alloy, Tin plating over Nickel

Connector Profile (Ref.)



ORDERING INFORMATION

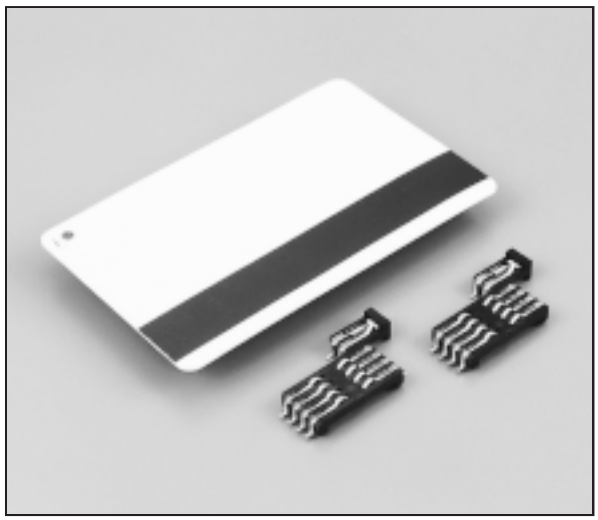
MM30 – 144 B 1 – * 1

Series
No. of Contacts
Socket Type
B – Latch Type SMT
Key Code
1 – 3.3V DRAM
Height
H – Reverse
J – Standard
Contact Finish
1 – Gold plating 0.1μm (.000004") min. over Nickel in connecting area
Terminal area, Tin over Nickel

Dimensions and specifications subject to change without notice.

SF1 SERIES CONNECTORS

2.54mm (.010") Contact Spacing, Smart Card SMT Connectors



SF1 Series socket connectors are designed for ISO 7816 specified IC cards. They are designed for use in various terminal devices such as network computers, set-top boxes, PCs and portable telecommunications terminals.

GENERAL SPECIFICATIONS

Number of Contacts	8 signal contacts, plus 2 switch contacts
Contact Spacing	2.54mm (.100")
Current Rating	1 Amp
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +90°C

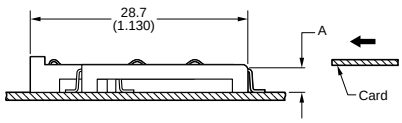
FEATURES

- 8 pins, plus 2 card switch detection pins
  16 pins, plus 2 card switch detection pins
- Slide to contact IC card
- High density SMT packaging
- Insulator Thickness:
  3.5mm (.138") Standoff 1.5mm (.059")
  2.5mm (.098") Standoff 0.5mm (.020")
  1.4mm (.055") Standoff 0.15mm (.006")

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PPS (UL94V-0, Black)
Signal Contact	Copper Alloy Connecting area: Gold over Palladium Nickel SMT area: Tin-Lead
Switch Contact	Copper Alloy Connecting area: Gold over Palladium Nickel SMT area: Tin over Nickel Plating

Connector Profile (Ref.)



ORDERING INFORMATION

SF1 – W0 – 010 – S – * – *

Series

Mounting Type
- W0 – SMT

No. of Contacts
- 10 – 8 Signal, 2 Switch

Connector Type
- S – Socket

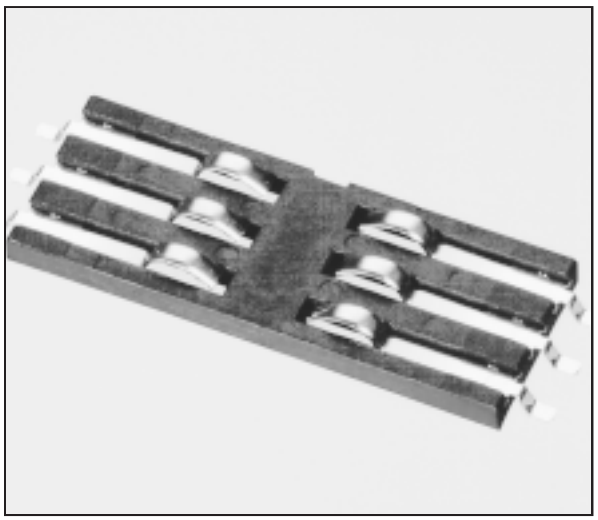
Contact Plating
- 1 – 0.1μm (.000004") Gold plating
- 9 – 0.03μm (.00000001") Gold over Palladium plus Nickel

Insulator Thickness Code
- A – 3.5mm (.138") Left Side Switch
- B – 3.5mm (.138") Right Side Switch
- C – 2.5mm (.098") Right Side Switch
- D – 1.4mm (.055") Right Side Switch

Dimensions and specifications subject to change without notice.

SF2 SERIES CONNECTORS

2.54mm (.010") Contact Spacing, SIM Card SMT Connectors

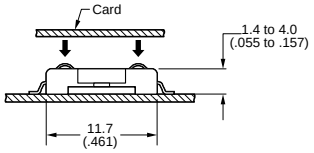


SF2 Series socket connectors meet the GSM11.11 Standard for Small IC Chip Cards (Plug-In SIM) used in EU digital GSM-type cellular phones.

FEATURES

- 6 and 8 contacts
- Connector is press-on type
- Flange-groove provided for mounting on body
- Connectors on embossed tape for automatic SMT mounting

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	6
Contact Spacing	2.54mm (.100")
Current Rating	10μA ~ 1A
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +90°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PPS (UL94V-0, Black)
Contact	Brass Connecting area: Palladium Nickel over Gold Plating SMT area: Tin Plating

ORDERING INFORMATION

SF2 W 006 S 9 *

Series

Mounting Type
- W – SMT

No. of Contacts
- 006 – 6

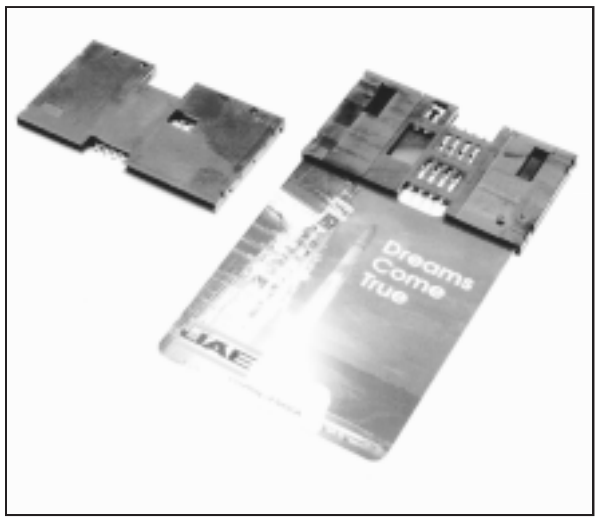
Connector Type
- S – Socket

Contact Plating
- 9 – 0.03μm (.00000001") Gold over Palladium plus Nickel

Insulator Thickness Code
- A – 2.6mm (.102")
- B – 2.0mm (.079")
- C – 1.4mm (.055")
- D – 4.0mm (.157"), 8 contact only
- 1E – 1.0mm (.039")

SF3 SERIES CONNECTORS

2.54mm (.010") Contact Spacing, Smart Card SMT Connectors



SF3 Series socket connectors are designed for ISO 7816 specified IC cards. They are ideal for use in various terminal devices such as network computers, set-top boxes, PCs keyboards and portable telecommunications terminals.

FEATURES

- 8 pins, plus 2 card switch detection pins
- Slide to contact IC card
- High density SMT packaging
- 3.3mm (.130") installed connector height

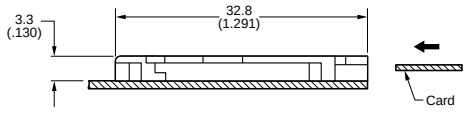
GENERAL SPECIFICATIONS

Number of Contacts	8 signal contacts, plus 2 switch contacts
Contact Spacing	2.54mm (.100")
Current Rating	1μA ~ 1A
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +90°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PPS (UL94V-0, Black)
Signal Contact	Copper Alloy Connecting area: Gold over Palladium Nickel SMT area: Tin-Lead
Switch Contact	Copper Alloy Connecting area: Gold over Palladium Nickel Terminal area: Tin over Nickel Plating

Connector Profile (Ref.)



ORDERING INFORMATION

SF3 W * S * A**

Series

Mounting Type
- W – SMT

No. of Contacts
- 010 – 8 Signal, 2 Switch
- 018 – 16 Signal, 2 Switch

Connector Type
- S – Socket

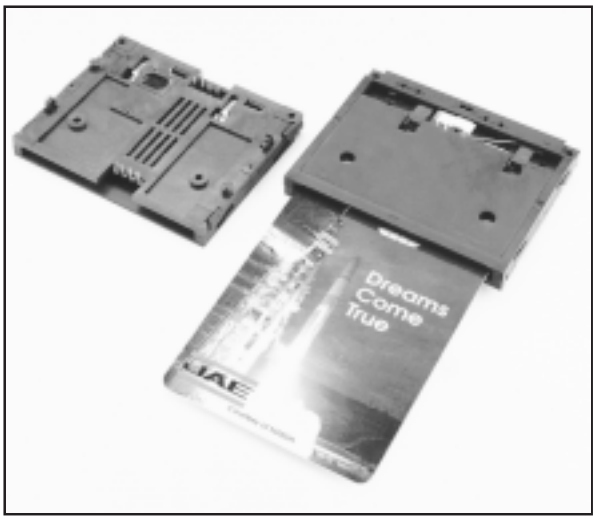
Contact Plating
- 9 – 0.03μm (.00000001") Gold over Palladium plus Nickel

Modification Code
- A – Right Side Switch

Dimensions and specifications subject to change without notice.

SF4 SERIES CONNECTORS

2.54mm (.010") Contact Spacing, Smart Card, Through Hole Connectors

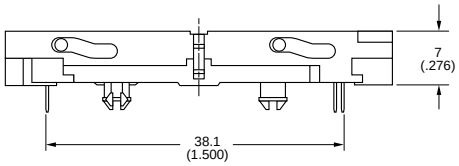


SF4 Series connectors are designed for smart cards conforming to the ISO 7816 standard. Applications include various electronic equipment utilizing smart cards, POS stations, computer equipment, telecommunications equipment and ID administrative systems.

FEATURES

- 8 pins, plus 2 card switch detection pins
- Slide to contact IC card
- Long-life landing contact system
- Sealed tactile switch is protected from humidity and dust
- Zero Insertion Force (ZIF) design prevents damage to chipset surface
- 7.0mm (.276") height

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	8 signal contacts, plus 2 switch contacts
Contact Spacing	2.54mm (.100")
Current Rating Contact Switch	 10μ Amp to 1 Amp 50mA
Dielectric Withstanding Voltage Contact Switch	 500 VAC r.m.s. (for one minute) 250 VAC r.m.s. (for one minute)
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +90°C
Conformed Board Thickness	Equal to or less than 1.6mm (.063")

MATERIALS AND FINISHES

Description	Materials/Finishes
Signal Contact	Copper Alloy Connecting area: Gold over Palladium Nickel Lead area: Tin-Lead Plating or Solder
Tactile Switch	Not Applicable
Switch Plate	Stainless Steel
Base Insulator	Glass-filled LCP (UL94V-0, Black)
Cover Insulator	Glass-filled LCP (UL94V-0, Black)
Slider	Glass-filled LCP (UL94V-0, Black)
Lock Spring	Copper Alloy
Spring	Stainless Steel

ORDERING INFORMATION

SF4 U 010 S 9 *

Series
- 4 – Landing Contact System

Mounting Type
- U – Through Hole

No. of Contacts
- 010 – 8 Signal, 2 Switch

Connector Type
- S – Socket

Contact Plating
- 9 – 0.03μm (.00000001") Gold Plating over Palladium-Nickel

Modification Code
- A – Right Side Switch, Locked Cover
- B – Right Side Switch, Cover Opens

Dimensions and specifications subject to change without notice.

SF5 SERIES CONNECTORS

2.54mm (.010") Contact Spacing, Smart Card, Through Hole Connectors

SF5 Series guide frames are designed for use with smart cards conforming to the ISO 7816 standard. Applications include various electronic equipment utilizing smart cards, POS stations, computer equipment, telecommunications equipment and ID administrative systems.

FEATURES

- 8 pins, plus 2 card switch detection pins
- Slide to contact IC card
- Sliding contact system
- Sealed tactile switch is protected from humidity and dust
- Removable top cover
- Protected against hostile environments

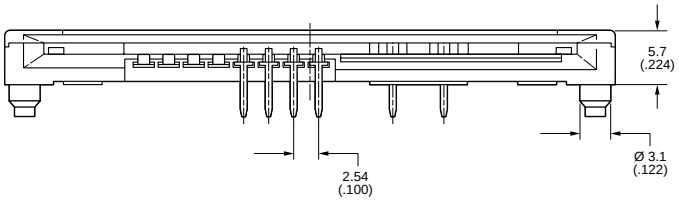
GENERAL SPECIFICATIONS

Number of Contacts	8 signal contacts, plus 2 switch contacts 16 signal contacts, plus 2 switch contacts
Contact Spacing	2.54mm (.100")
Current Rating Contact Switch	 10μ Amp to 1 Amp 50mA max.
Dielectric Withstanding Voltage Contact Switch	 500 VAC r.m.s. (for one minute) 250 VAC r.m.s. (for one minute)
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +90°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Contact	Copper Alloy Connecting area: Gold over Palladium Nickel Lead area: Tin-Lead Plating or Solder
Switch Contact	Stainless Steel
Tactile Switch	—
Base Insulator	Glass-filled LCP (UL94V-0, Black)
Cover Insulator	Glass-filled LCP (UL94V-0, Black)

Connector Profile (Ref.)



ORDERING INFORMATION

SF5 U * S 9 A**

Series
- 5 – Slide Guide Frame

Mounting Type
- U – Through Hole Contact

No. of Contacts
- 010 – 8 Signal, 2 Switch
- 018 – 16 Signal, 2 Switch

Connector Type
- S – Socket

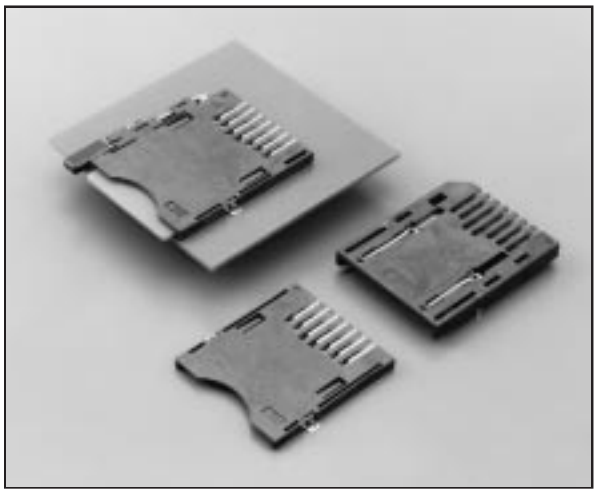
Contact Plating
- 9 – 0.03μm (.00000001") Gold Plating over Lead-Nickel

Modification Code
- A – 5.7mm (.224"), Right Side Switch

Dimensions and specifications subject to change without notice.

SH1/SH2/SH3 SERIES CONNECTORS

2.5mm (.098") Contact Spacing, Multi Media Card Connectors



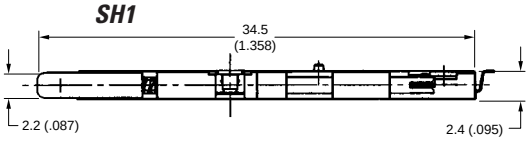
The SH1, SH2 and SH3 Series connectors are designed to meet the standardization by MMCA (Multi Media Card Association). Applications for these connectors include small hand held communication devices such as, PDAs, HPCs, DVDs, mobile phones and other equipment.

FEATURES

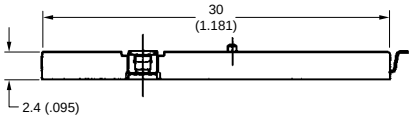
- 7 contacts, hot-plugable structure, pins 3 and 4 first make/last break contact to card pads first
- Surface mount technology
- Three versions are available:
  SH1 – with ejector
  SH2 – without ejector button
  SH3 – without ejector button and with a "push-push" card ejector feature
- Spring-loaded ejector button returns to initial position after being pushed
- Positioning boss and hold down
- 2.4mm (.094") low profile

Connector Profile (Ref.)

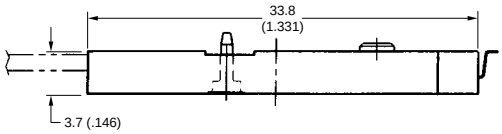
SH1



SH2



SH3



GENERAL SPECIFICATIONS

Number of Contacts	7
Current Rating	100 mA
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-25°C to +90°C
Life Time	10,000 times

MATERIALS AND FINISHES

• SH1

Description	Materials/Finishes
Insulator	Glass-filled LCP
Contact	Copper alloy, Connecting area: 0.1μm (.000004") min. Gold plating over Nickel Terminal area: Tin-Lead over Nickel
Hold Down	Copper alloy
Eject Plate	Stainless steel
Eject Bar	Stainless steel
Button	Glass-filled PPS
Spring	Stainless Steel

• SH2

Contact	Copper alloy, Connecting area: 0.1μm (.000004") min. Gold plating over Nickel Terminal area: Tin-Lead over Nickel
Housing	Glass-filled LCP
Hold Down	Copper alloy, Tin-Lead

• SH3

Contact	Copper alloy, Connecting area: 0.1μm (.000004") min. Gold plating over Nickel Terminal area: Tin-lead over Nickel
Cam Follower	Stainless steel
Spring	Stainless steel
Eject Plate	Stainless steel
Anchor Pin	Copper alloy, Tin plating
Housing	Glass-filled LCP

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

SH*	S	007	V	1	*

Series
- 1 – Ejector
- 2 – No ejector
- 3 – No ejector, card push push

Contact Type
- S – Socket

No. of Contacts
- 7

Termination
- SMT

Contact Finish
- 1 – Connecting Area: Gold plating 0.1μm (.00004") min. over Nickel
  Terminal Area: Tin plating over Nickel

Mounting Method
- A – Reverse
- B – Standard (SH2 only)

Dimensions in mm (inches).

WA2 SERIES CONNECTORS

0.4mm (.016") Contact Spacing, PCB-to-PCB SMT Connectors

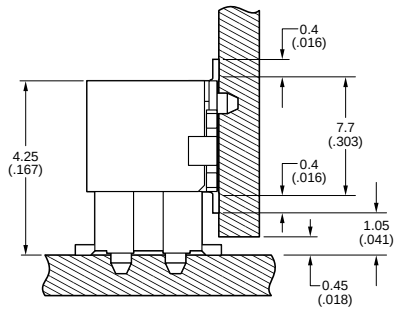
• • • • • • • • • • • • • •

The WA2 Series connectors are SMT board-to-board connectors, ideally used in video cameras, notebook PCs, audio visual, and communication equipment.

FEATURES

- 0.4mm (.016") spacing board-to-board connector
- 2-row contact pattern is ideal for high density mounting and vertical connection
- Simple lock structure using insulator
- Molded-in pin structure provides improved reliability of connection and mounting
- Compatible with automatic mounting equipment
- Number of contacts: 80 and 90

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	80, 90
Contact Spacing	0.4mm (.016")
Current Rating	0.2 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	50 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description		Materials/Finishes
WA2M***H11	Insulator	Glass-filled LCP (UL94V-0, Beige)
	Contact	Copper Alloy/Gold Plating over Nickel [more than 0.1μm (.000004")]
WA2F***W11	Insulator	Glass-filled LCP (UL94V-0, Beige)
	Contact	Copper Alloy/Gold Plating over Nickel [more than 0.1μm (.000004")]

ORDERING INFORMATION

WA2 * 0 * 1 1**

Series — WA2

Contact Type — *
- M – Plug
- F – Receptacle

No. of Contacts — 0**
- 80, 90

Termination Style — *
- H – Right Angle with Hold Down – Plug
- W – Straight with Hold Down – Receptacle

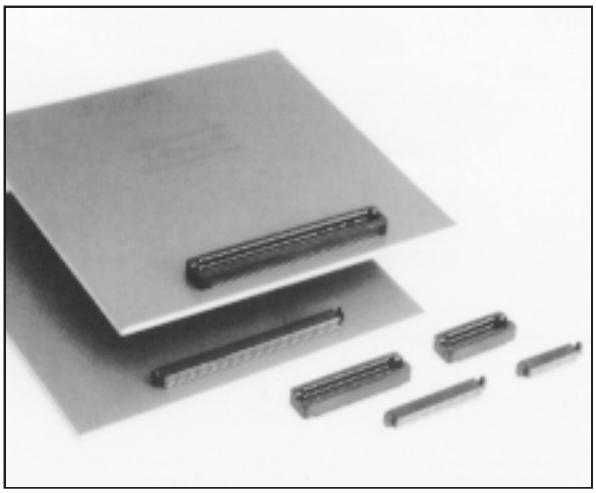
Contact Finish — 1
- 1 – Gold plating 0.1μm (.000004") min. over Nickel

Modification Code — 1

Dimensions and specifications subject to change without notice.

IL-312 SERIES CONNECTORS

0.5mm (.020") Contact Spacing, PCB-to-PCB SMT Connectors



These high density SMT connectors are designed for parallel PCB-to-PCB applications. They are ideal for use in VCRs, notebook PCs, cordless telephones, mobile phones, audio/visual and other telecommunications equipment where reduced size and weight are important.

FEATURES

- SMT contacts
- 2.5mm (.098") to 3.5mm (.138") stacked height
- Surface area of both pin and socket connectors facilitates automatic mounting
- Contact terminal length permits image recognition
- Available on embossed tape for automatic mounting

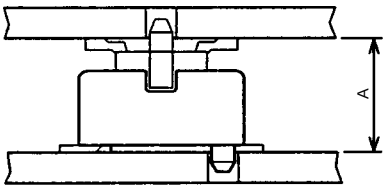
GENERAL SPECIFICATIONS

Number of Contacts	20 to 80, 100
Contact Spacing	0.5mm (.020")
Current Rating	0.3 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Heat-resistant plastic (Black)
Contact	Copper alloy/Gold plating: connecting area 0.1μm (.000004") min.

Connector Profile (Ref.)



Stacking Height (A)

	Pin		
Socket	Connector height code	Blank (standard)	30
	Blank (standard)	2.5 (.098)	3.0 (.118)
	H05	3.0 (.118)	3.5 (.138)

ORDERING INFORMATION

IL-312 – ** * * VF ** – A1

Series

No. of Contacts

20, 30, 40, 50, 60, 70, 80, 100

Contact Type

P – Pin S – Socket

Polarizing Boss

Blank – No Boss

B – Positioning Boss

Termination Style

VF – Straight

Connector Height Code

[Socket] Blank (Standard) – 2.15 (.085)

H05 – 2.65 (.104)

[Pin] Blank (Standard) – 1.55 (.061)

30 – 2.05 (.081)

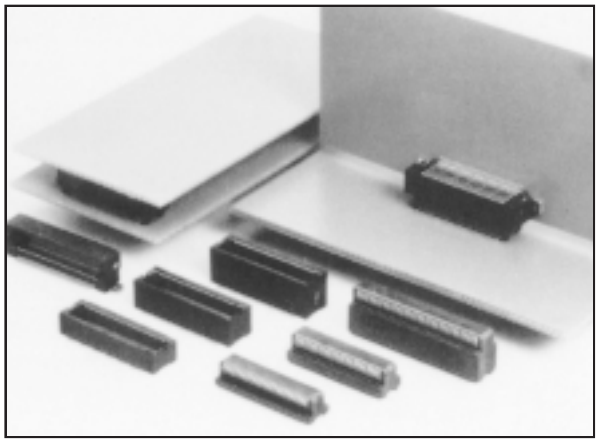
Finish Code

A1 – Gold plating, 0.1μm (.000004") min.

Dimensions and specifications subject to change without notice.

WR SERIES CONNECTORS

0.5mm (.020") Contact Spacing, PCB-to-PCB SMT Connectors



WR Series connectors are SMT-type connectors for PCB-to-PCB applications. These subminiature, low profile connectors keep the required space and height on the PCB to a minimum. High density, ribbon-type contacts are on 0.5mm (.020") centers.

Applications include camcorders, notebook PCs, cellular telephones and other electronic equipment requiring high density packaging.

FEATURES

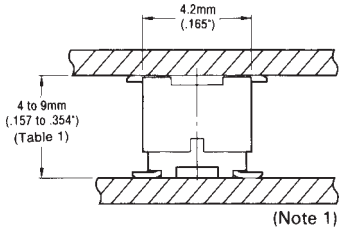
- Ribbon contact design (surface contact)
- Vertical/Parallel Board-to-Board Connections
- Nine varieties 4 to 9mm (.157 to .354") of parallel board-to-board distance
- Three straight type insulator heights
- Metal hold-downs on both ends of right angle type prevent floating up during automatic mounting
- PCB area beneath insulator may be used for circuit traces
- Available in embossed tape for automatic SMT mounting
- Contact terminal length permits image recognition

GENERAL SPECIFICATIONS

Number of Contacts	30, 40, 50, 60, 70, 80, 120 (double row)
Contact Spacing	0.5mm (.020")
Current Rating	0.3 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	50 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Socket side: Glass-filled LCP (UL94V-0, Black) Pin side: Glass-filled PPS (UL94V-0, Black)
Contact	Copper alloy Connecting area: Gold plating 0.1μm (.000004") min. over Nickel Terminal area: Tin plating over Nickel or Gold flash over Nickel
Hold-down	Copper alloy/Tin plating



PIN SIDE
Straight • Standard Type
WR-**P-VF-1

Straight • 50 Type
WR-**P-VF50-1

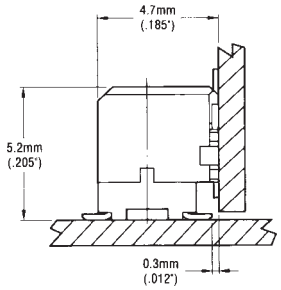
Straight • 60 Type
WR-**P-VF60-1

SOCKET SIDE
Straight • Standard Type
WR-**S-VF-1

Straight • H05 Type
WR-**S-VFH05-1

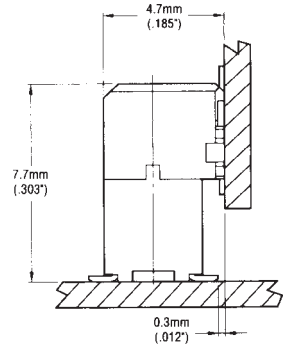
Straight • H30 Type
WR-**S-VFH30-1

Connector Profile (Ref.)



PIN SIDE
Right Angle Type
WR-**P-HF-HD-A1

SOCKET SIDE
Straight • H05 Type
WR-**S-VFH05-1



PIN SIDE
Right Angle Type
WR-**P-HF-HD-A1

SOCKET SIDE
Straight • H30 Type
WR-**S-VFH30-1

Table 1

	SOCKET SIDE			
PIN SIDE	Connector type	Standard type	H05 type	H30 type
	Standard type	4.0mm (.157")	4.5mm (.177")	7.0mm (.276")
	50 type	5.0mm (.197")	5.5mm (.217")	8.0mm (.315")
	60 type	6.0mm (.236")	6.5mm (.256")	9.0mm (.354")

Note 1: 3 connector heights are available for straight type. Parallel board-to-board distance can be selected in a range from 4mm (.157") to 9mm (.354") [9 kinds].

Dimensions and specifications subject to change without notice.

■ WR Series
Mezzanine Type Connectors
(Double Connector Configuration)

FEATURES

- SMT
- 3mm (.118") - 9mm (.354") stacking height (parallel PCB connection)
- Reliable socket contact
- Compatible with automatic mounting equipment:
  – Available in embossed tape
  – Vacuum bar pick up
  – Terminal length allows for image recognition

ORDERING INFORMATION

WR – * * – * VF W * ***

Series
No. of Contacts
200, 240
Contact Type
S – Socket
P – Pin
Polarizing Boss
Blank – No Boss
B – With Boss
Termination Style
VF – Straight
Connector Configuration
W – Double
Socket
No Letter (Standard): 3.25mm (.128")
H05: 3.75mm (.148"), 240 position only
H30: 6.25mm (.246")
L05: 2.5mm (.098")
Pin
No Letter: 3mm (.118")
30: 2.5mm (.098"), 240 position only
60: 5mm (.197"), 240 position only
Contact Finish
A1 – Connecting area: Gold plating 0.1μm (.000004") min. over Nickel
Terminal area: Gold flash over Nickel
1 – Connecting area: Gold plating 0.1μm (.000004") min. over Nickel
Terminal area: Tin plating over Nickel

Note: For embossed tape, consult JAE.

These double-connector configuration, 0.5mm (.020") pitch stacking PCB connectors are used to upgrade the CPU board of notebook PCs, information equipment or embedded systems.

GENERAL SPECIFICATIONS

Number of Contacts	200, 240 (double row x 2)
Contact Spacing	0.5mm (.020")
Current Rating	0.3 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	50 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator Socket Side Pin Side	 Glass-filled LCP (UL94V-0, Black) Glass-filled PPS (UL94V-0, Black)
Contact	Copper alloy Connecting area: Gold plating 0.1μm (.000004") min. over Nickel Terminal area: Gold flash over Nickel or Tin plating over Nickel
Vacuum Bar (Note 1)	Glass-filled PPS (Color Black)

Note 1: Vacuum bar can be removed.

Table 2

	SOCKET SIDE			
	Connector Type	Standard Type	H05	L05
PIN SIDE	Standard Type	4.0	4.5	3.5
	30 Type	N/A	6.5	3.0
	60 Type	6.0	9.0	5.0

■ WR Series
Floating Type Connectors

These 0.5mm (.020") pitch, floating type straight and right angle PCB-to-PCB pin connectors mate with standard WR socket connectors. They are designed for VCR, notebook PC, cordless phone, portable phone, audio-visual and other telecommunication equipment applications where space, weight and high density contacts are design considerations.

FEATURES

- SMT contacts
- 0.25mm (.010") deviation from X and Y direction can be tolerated
- Reliable socket contacts
- Compatible with automatic mounting equipment:
  – Available in embossed tape
  – Terminal length allows for image recognition

GENERAL SPECIFICATIONS

Number of Contacts Straight Right Angle	 30, 60, 70 70
Contact Spacing	0.5mm (.020")
Current Rating	0.3 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	90 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PPS (UL94V-0, Black)
Contact	Copper alloy Connecting area: Gold plating 0.1μm (.000004") min. over Nickel Terminal area: Gold flash over Nickel

ORDERING INFORMATION

Pin Side • Straight Type

WR – F ** P – VF ** A1

- Series
- Floating Type
- No. of Contacts
  30, 60, 70
- Contact Type
  P – Pin
- Termination Style
  VF – Straight
- Connector Height
  50 – 4mm (.157")
  60 – 5mm (.197")
- Contact Finish
  A1 – Connecting area: Gold plating 0.1μm (.000004") min. over Nickel
  Terminal area: Gold flash over Nickel

Note : For embossed tape reels, please consult JAE.

• Mating Connectors: WR-**S-VF-1
WR-**S-VFH05-1
WR-**S-VFH30-1

Pin Side • Right Angle

WR – F ** P – HF – HD – A1

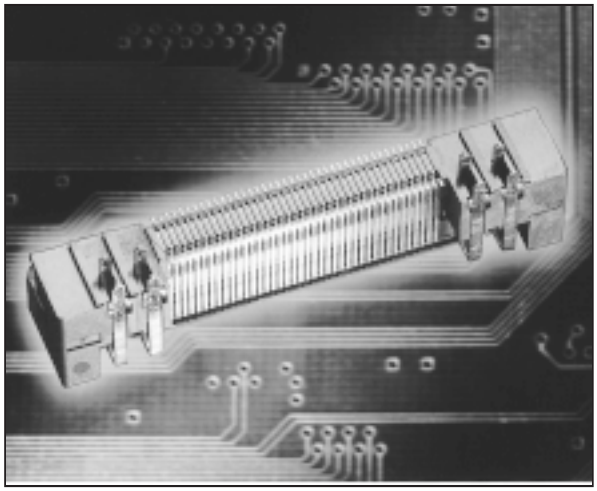
- Series
- Floating Type
- No. of Contacts
  70
- Contact Type
  P – Pin
- Termination Style
  HF – Right Angle
- Hold Down Tab
- Contact Finish
  A1 – Connecting area: Gold plating 0.1μm (.000004") min. over Nickel
  Terminal area: Gold flash over Nickel

Note : For embossed tape reels, please consult JAE.

Dimensions and specifications subject to change without notice.

PD3 SERIES CONNECTORS

0.6mm (.024") Contact Spacing, PCB-to-PCB SMT Connectors

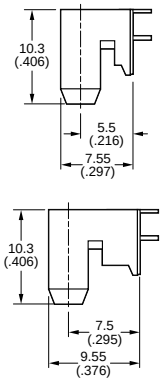


The PD3 Series connectors are 0.6mm (.024") vertical board-board connectors include both signal and power contacts. These multi-function connectors address the need to allow a variety of peripherals such as CD-ROMs and floppy disk drives to be connected to a single media bay slot in notebook personal computers, thereby increasing their functionality.

FEATURES

- 8 power contacts and 80 signal contacts
- Connector makes audible "clicking" sound when locked
- 5.5mm (.22") and 7.5mm (.29") mating heights
- Connectors can be mounted on both sides of board

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	8 power contacts, 80 signal contacts (78 signals and two for insertion detection)
Contact Spacing	0.6mm (.024")
Current Rating	Signal Contacts 0.5 Amps Power Contacts 3 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	125 megohms min.
Contact Resistance	70 milliohms max.
Durability	5,000 cycles
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Housing	Glass-filled LCP (UL94V-0)
Contact	Copper Alloy
Signal	Connecting area: Gold plating 0.1μm (.000004") min. over Palladium Nickel Terminal area: Tin-Lead
Power	Copper Alloy Connecting area: Gold plating 0.1μm (.000004") min. over Nickel Terminal area: Tin-Lead

ORDERING INFORMATION

PD3 – * – 080 – * – 1 – *

Series

Contact Type
- B – Plug
- R – Receptacle

No. of Contacts
- 80 Signal Contacts, 8 Power Contacts

Termination
- J – Right angle, without hold-down
- H – Right angle with hold-down
- W – Straight, without hold-down

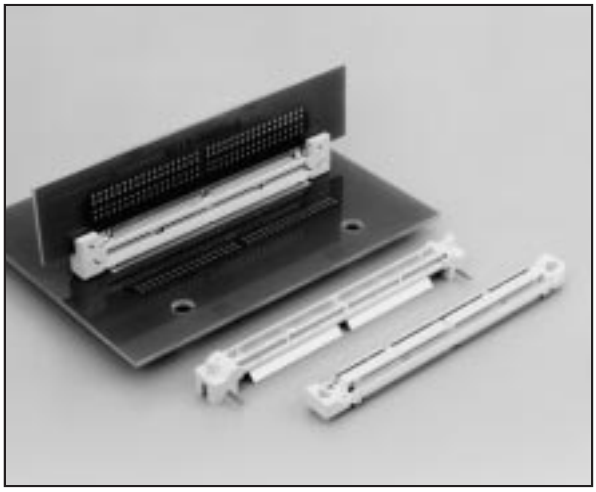
Contact Finish Code
- 1 – 0.1μm (.000004") Gold, min. in connecting area

Modification Code

Dimensions and specifications subject to change without notice.

PD2 SERIES CONNECTORS

0.635mm (.025") Contact Spacing, PCB-to-PCB Connectors

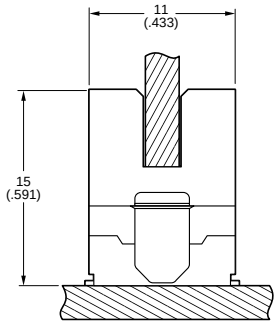


The PD2 Series is a high density high speed transmission connector, for use in computers, workstations and servers.

FEATURES

- Vertical PC board-to-board connection
- 0.635mm (.025") pitch
- Ground metal shell and metal plate provide EMI protection
- Stripline style suitable for high-speed transmission
- Hybrid signals and power source terminals
  PD2*240: 240 signal terminals,
  2 power source terminals
  PD2*304: 304 signal terminals,
  2 power source terminals
- Rugged 1.5mm (.059") long molded guide withstands insertional abuse
- Plug-side connector applicable for three PCB thicknesses: 1.6mm (.063")/2.0mm (.079")/2.5mm (.098")

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	240 signal/2 power 304 signal/2 power
Current Rating	0.5Amp/pin, Signal 20Amp/pin, Power
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0)
Signal Contact	Phosphor Bronze Connecting Area: Gold over Nickel SMT Area: Sn-Pb plated
Power Contact	Copper Alloy Connecting Area: Gold over Nickel SMT Area: Sn-Pb plated
Shell	Stainless Steel SMT Area: Sn-Pb plated (PD2B only)
Plate	Phosphor Bronze Connecting Area: Nickel plated SMT Area: Sn-Pb plated
Spring Pin	Stainless steel
Anchor Pin	Phosphor Bronze, Gold flash over Nickel
Polarizing Post	Phosphor Bronze, Gold flash over Nickel

ORDERING INFORMATION

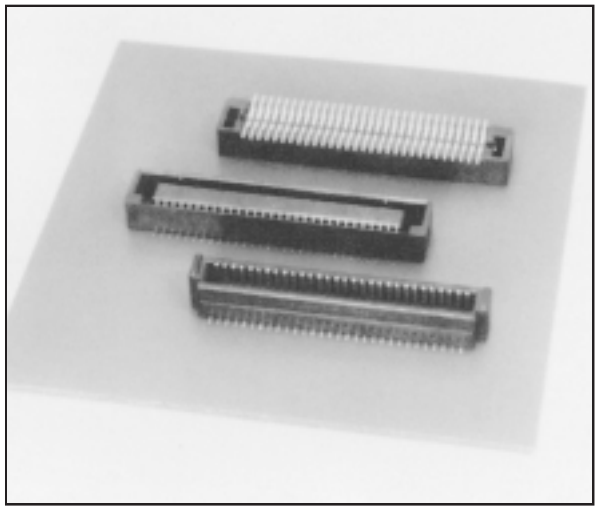
PD2 * * * 1 A

Series
Contact Type
No. of Contacts
240, 304
Termination
V – Straight, S – Straddle SMT
Contact Finish
1 – Connecting Area: Gold Plating
0.1μm (.000004") min. over Nickel
Terminal Area: Tin Plating over Nickel
Modification Code

Dimensions and specifications subject to change without notice.

KX14/15 SERIES CONNECTORS

0.8mm (.031") Contact Spacing, PCB-to-PCB SMT Connectors



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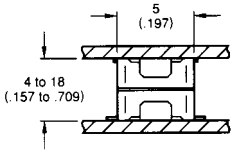
The KX14/15 Series connectors are low profile, SMT type connectors for PCB-to-PCB applications. Contact spacing is 0.8mm (.031"). The receptacle (KX14) and plug (KX15) combination offer variable stacking heights of 4 to 18mm (.157 to .709").

These connectors are ideal for use in the personal computer industry where space, weight and high density are critical factors.

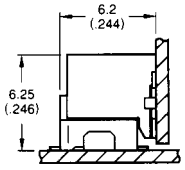
FEATURES

- 0.8mm (.031") contact spacing
- Straight receptacle (KX14) and right angle/straight plug (KX15) for paralleled and vertical PCB connections
- 4 to 18mm (.157 to .709") stacking heights
- Polarization key prevents mismating
- Resistant to vibration and twisting
- Available in embossed tape for automatic mounting

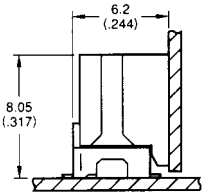
Connector Profile (Ref.)



Hold-down type (Right-angle side)



Screw type (Right-angle side)



GENERAL SPECIFICATIONS

Number of Contacts	20, 30, 40, 50, 60, 70, 80, 100, 120, 140, 160, 200 (See Note 1)
Contact Spacing	0.8mm (.031")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	70 milliohms max.
Operating Temperature	-40°C to +85°C

Note 1: Please consult JAE for availability.

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	
KX14	Glass-filled LCP/Black
KX15 Straight	Glass-filled PPS/Black
KX15 Right Angle	Glass-filled LCP/Black
Contact	Copper Alloy Connecting Area: 0.1μm (.000004") min. Gold Plating Over Nickel Terminal Area:Gold flash over Nickel or Tin-lead over Nickel
Hold Down	Copper Alloy/Tin-lead over Nickel
Hook Pin	Copper Alloy/Tin plating
Hexagon Nut	Brass/Nickel plating

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

STRAIGHT

KX ** – ** * * * *

Series

Connector Type
- 14 – Receptacle
- 15 – Plug

No. of Contacts (See Note 1)
- 20, 30, 40, 50, 60, 70, 80
- 100, 120, 140, 160, 200

Polarization Key
- K – With Polarization Key
- N – Without Polarization Key

Stacking Height Code (See Note 2)

(Receptacle) 2, 5, 8, 11, 14

(Plug) 2, 3, 4

Mounting Type (See Table Below)
- B, C, D, E, F

Contact Finish
- Blank – Connecting Area: Gold plating 0.1µm (.000004") min. over Nickel
  Terminal Area: Gold Flash over Nickel
- 1 – Connecting Area: Gold plating 0.1µm (.000004") min. over Nickel
  Terminal Area: Tin-Lead over Nickel

Note 1: Please consult JAE for availability.
Note 2: Stacking Height = Stacking Height Code of KX14 & Stacking Height Code of KX15.

Mounting Type for Straight

	Positioning Key	Hold Down	Flange	Hook Pin
B	○	—	—	—
C	○	—	○	○
D	○	○	○	—
E	○	—	○	—
F	—	○	○	—

RIGHT ANGLE

KX 15 – ** * * * (Blank)

Series

Connector Type
- 15 – Plug

No. of Contacts (See Note 1)
- 20, 30, 40, 50, 60, 70, 80
- 100, 120, 140, 160

Polarization Key
- K – With Polarization Key
- N – Without Polarization Key

Termination
- L – Right Angle Type

Mounting Type (See Table Below)
- D, F, J, N

Contact Finish
- Blank – Connecting Area: Gold plating 0.1µm (.000004") min. over Nickel
  Terminal Area: Gold Flash over Nickel

Note 1: Please consult JAE for availability.

Mounting Type for Right Angle

	Positioning Key	Hold Down	Nut
D	○	○	—
F	—	○	—
J	○	—	—
N	○	—	○

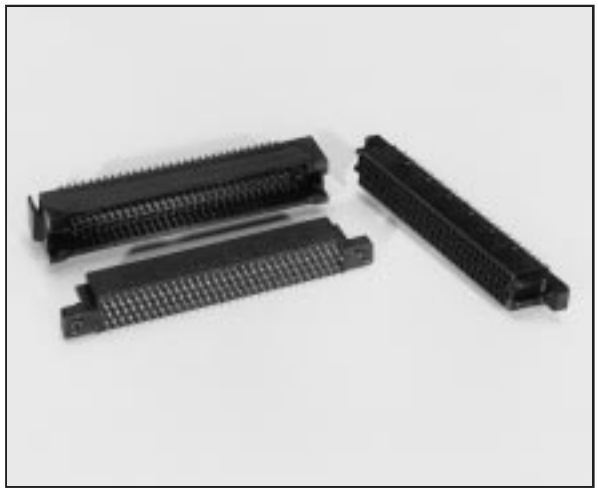
Stacking Height (Parallel PCB to PCB connection)

		Plug		
	Stacking Height Code	2	3	4
Receptacle	2	4 (.157)	5 (.197)	6 (.236)
	5	7 (.276)	8 (.315)	9 (.354)
	8	10 (.394)	11 (.433)	12 (.472)
	11	13 (.512)	14 (.551)	15 (.591)
	14	16 (.630)	17 (.669)	18 (.709)

Dimensions in mm (inches).

MJ02 SERIES CONNECTORS

1.0mm (.039") Contact Spacing, PCB-to-PCB Connectors

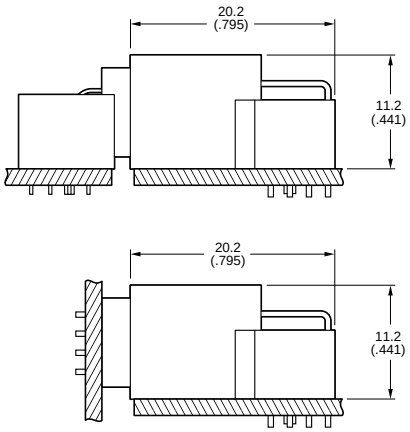


The MJ02 Series is a board-to-board connector, ideal for switch-boards, communications, medical and measuring equipment.

FEATURES

- Smooth mating is ensured by the 2.2mm (.087") guidance lead in the insulator taper area on the pin header and socket
- Mechanism absorbs up to ±0.3mm (.012") mis-mating with wide contacts (pin connector) Ideal for multiple mounting
- Wide pin header insulator body withstands twisting
- Straight socket withstands flux rising
- Mis-mating can be prevented by attaching optional polarizing keys at both ends of the connector

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	100, 124, 148, 180 (Note 1)
Contact Spacing	1.0mm (.039")
Current Rating	1 Amp
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	5000 megohms min.
Contact Resistance	30 milliohms max.
Operating Temperature	-55°C to +125°C

Note 1: 180 contacts for vertical contact combination (right angle, pin header and straight socket) only.

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PBT (Black)
Contact	Copper Alloy: Contact: Gold over Nickel 0.1μm (.000004") Terminal: Tin-Lead over Nickel
Hook Pin	Copper Alloy: Tin
Locator	Glass-filled PBT (Black)

Note : Locators are used for angled socket and angled pin header only.

ORDERING INFORMATION

MJ02 – * * * * – 1**

Series

No. of Contacts
100, 124, 148, 180

Termination Style
S – Straight, R – Right Angle

Contact Type
F – Socket, M – Pin

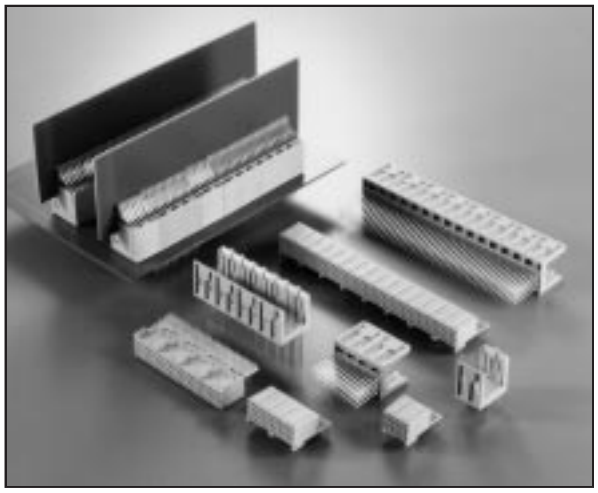
Connection Style
T – Through Hole
M – Compliant Pin

Contact Finish
1 – Connecting area: Gold plating 0.1μm (.000004") min. over Nickel
Terminal area: Tin over Nickel

Dimensions and specifications subject to change without notice.

MJ01 SERIES CONNECTORS

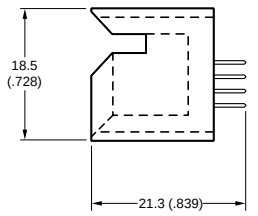
2.0mm (.079") Contact Spacing, PCB-to-PCB Connectors

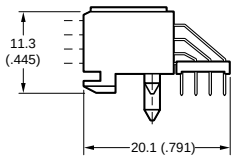


FEATURES

- 4 row, 2.0mm (.079") grid arrangement high density connector
- 24, 48, 96 and 192 contacts combinations permit easy design of signal circuit modules
- Wide body type housing with backplane pin connector for added strength
- Press-fit board mounting of pin connector leads
- Pin connectors for other connection sequences are available (please contact JAE.)

Connector Profile (Ref.)





The MJ01 Series was designed in accordance with future bus specifications for high density metric applications for all industrial products, including switching and transmission equipment.

GENERAL SPECIFICATIONS

Number of Contacts	24, 48, 96, 192
Contact Spacing	2.0mm (.079")
Current Rating	1 Amp signal, 2.75 Amps power
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	10 milliohms max. signal/power 1 milliohms max. compliant
Operating Temperature	-55°C to +125°C

MATERIALS AND FINISHES

• Pin

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0, natural color)
Contact	Copper Alloy Contact: More than 0.1μm (.000004") Gold Plating over Nickel

• Socket

Insulator	Glass-filled LCP (UL94V-0, natural color)
Contact	Copper Alloy Plating: See Ordering Information below
Locator	Glass-filled LCP (UL94V-0, natural color)

ORDERING INFORMATION

MJ01 – * ** * * – * *****

Series — MJ01

No. of Contacts — ***
24, 48, 96, 192

Mounting Type — **
RP – Right Angle, SW – Straight

Contact Type — *
F – Socket, M – Pin

Termination — *
P – compliant Pin, T – Through Hole

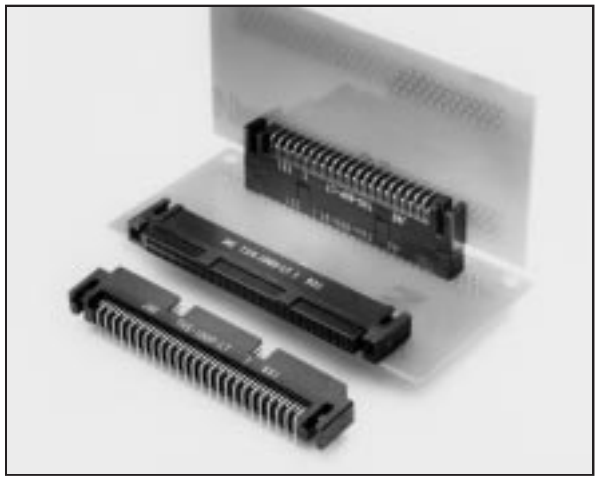
Contact Finish — *
1 – Connecting Area: Gold 0.1μm (.00004") over Nickel
Terminal Area: Socket – Tin over Nickel
Pin – Gold flash over Nickel
9 – Connecting Area: Gold flash over 0.64μm (.025μin.) Palladium Nickel over Nickel
Terminal Area: Socket – Tin over Nickel
Pin – Gold flash over Nickel

Terminal Length Code (see Table 1 and 2) — ***

Dimensions and specifications subject to change without notice.

TX4/TX5 SERIES CONNECTORS

1.27mm (.050") Contact Spacing, PCB-to-PCB Connectors



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TX4 and TX5 Series connectors are two-piece PCB connectors with 1.27mm (.050") contact spacing.

They are designed for board-to-board connections.

Configurations include; socket receptacles (TX4) and pin headers (TX5) for horizontal, parallel and vertical board-to-board connections.

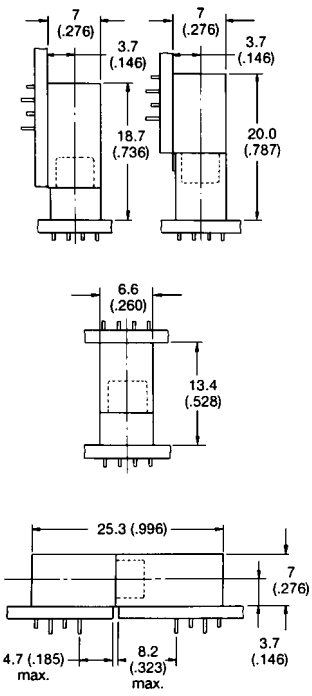
Applications include computers, business machines, industrial control machinery, telecommunications, audiovisual appliances, measuring equipment, and applications wherever high density packaging is required.

FEATURES

■ **Socket Receptacle (TX4) and Pin Header (TX5)**

- Horizontal, parallel and vertical board-to-board connections
- Straight and right angle through hole types are available in both receptacle and pin header
- With/without mounting ears

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	20, 26, 30, 34, 40, 50, 60, 68, 80, 100
Contact Spacing	1.27mm (.050"), Double row
Current Rating	0.5 Amps
Operating Voltage	250 VAC r.m.s.
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	25 milliohms max.
Operating Temperature	-40°C to + 80°C
Applicable PCB Thickness	1.6mm (.063")
Applicable F.R.C.: TX1 TX2	0.635mm (.025") pitch: #30 AWG 1.27mm (.050") pitch: #28 AWG

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT (UL94V-0, Black)
Expansion Post	Phosphor Bronze/Tin plating
Contact (Note)	Phosphor Bronze Connecting area: Gold plating over Nickel Terminal area: Tin plating

Note: Contact finish – Gold plating on connecting area is 0.1μm (.000004") min.

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

TX * – ** D – D2 ** ** *

Series

Connector Type
- 4 – Socket Receptacle
- 5 – Pin Header

No. of Contacts
- 20, 26, 30, 34, 40, 50, 60, 68, 80, 100

Contact Type
- P – Pin (TX3, TX5)

Contact Arrangement
- D2 – Double Row

Termination
- LT – Right Angle Through Hole
- ST – Straight Through Hole

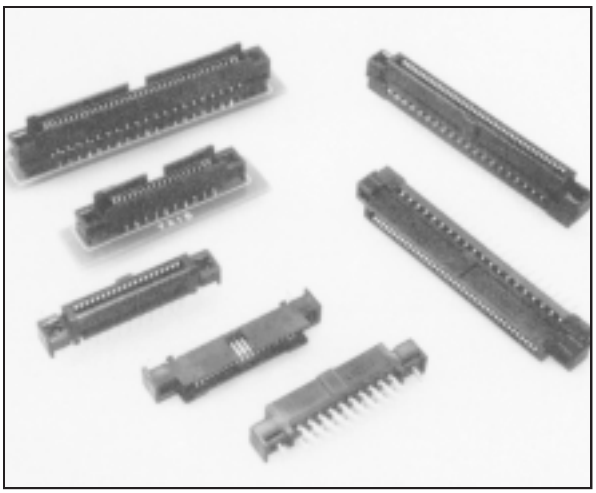
Mounting Method
- MH – With Mounting Ears and Expansion Posts
- MN – With Mounting Ears and Without Expansion Posts
- N – Without Mounting Ears and Expansion Posts

Contact Finish Code
- 1 – 0.1μm (.000004") thick gold plating min.

Dimensions in mm (inches).

TX14/15 SERIES CONNECTORS

1.27mm (.050") Contact Spacing, PCB-to-PCB Connectors



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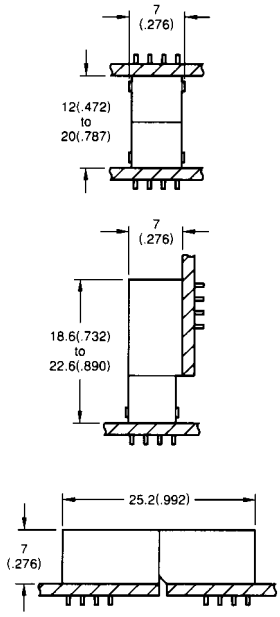
The leaf-type design (non-pin) contact of this board-to-board connector is superior in reliability and stability due to its resistance to twisting. The receptacle (TX14) and plug (TX15) combination can be arranged in horizontal, vertical or parallel connections. Straight through hole and right angle through hole types are available. With 5 variable heights of the straight through hole type, this series is particularly adaptable to parallel board assemblies spaced within a range of 12 to 20mm (.472-.787"). These connectors are ideal for all types of office/factory automation equipment, computers, and other electronic equipment.

FEATURES

- Greater stability and reliability due to extra long contact wipe
- Leaf-type contact design resists damage from twisting
- First-to-make-last-to-break contact action
- Nine optional stacking heights: 12 to 20mm (.472 to .787"), 1mm (.039") intervals
- 16 optional polarization keying positions
- With/without hook pin

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	30 to 80, 100, 120, 140, 160, 180, 200
Contact Spacing	1.27mm (.050"), Double row
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C
PCB Thickness	1.6mm (0.063")

MATERIALS AND FINISHES

Description	Materials/Finishes
Contact	Copper Alloy Connecting area: Gold 0.1μm (.000004") min. over Nickel Terminal area: Tin plating
Insulator	Glass-filled Nylon (UL94V-0, Black)
Spacer	Glass-filled Nylon (UL94V-0, Black)
Hook Pin	Phosphor Bronze/Tin plating

ORDERING INFORMATION

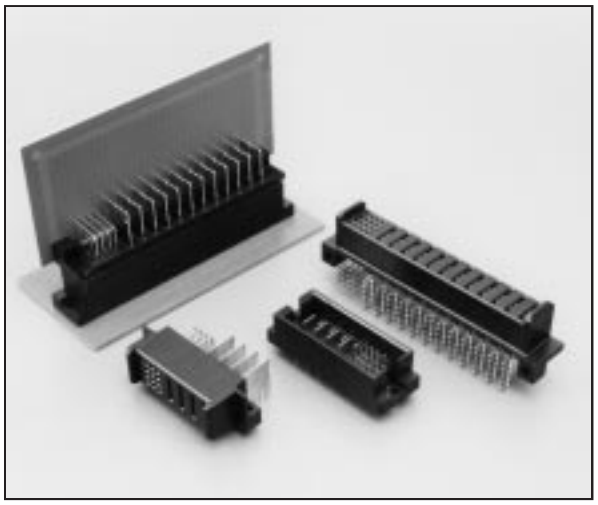
TX** – ** * * ** – * * 1

Series
TX14/TX15
No. of Contacts
30, 40, 50, 60, 70, 80, 100, 120, 140, 160, 180, 200
Connector Type
P – Plug R – Receptacle
Mating Height Code
(ST) – 6 to 10 (LT) – None
Termination Style
ST – Straight Through Hole LT – Right Angle Through Hole
Mounting Ears
M – With Mounting Ears
Blank – Without Mounting Ears
Hook Pin
H – With Hook Pin N – Without Hook Pin
Finish Code
1 – Connecting Area: Gold 0.1μm (.000004") min. over Nickel
Terminal Area: Tin plating

Dimensions and specifications subject to change without notice.

PW05 SERIES CONNECTORS

5.08mm (.20") Contact Spacing, Board-to-Board Connectors

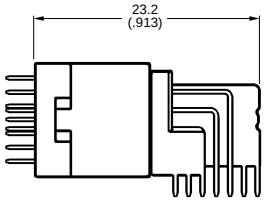


The PW05 Series is a board to board connector for high speed applications using mixed power and signal contacts. Applications include personal computers, office automation equipment and measuring devices. Most suitable for connecting between power and backplane of computer, control unit, telecommunication and measuring equipment.

FEATURES

- Pin contact is available in solderless compliant or through hole
- Mixed signal and power contact

Connector Profile (Ref.)



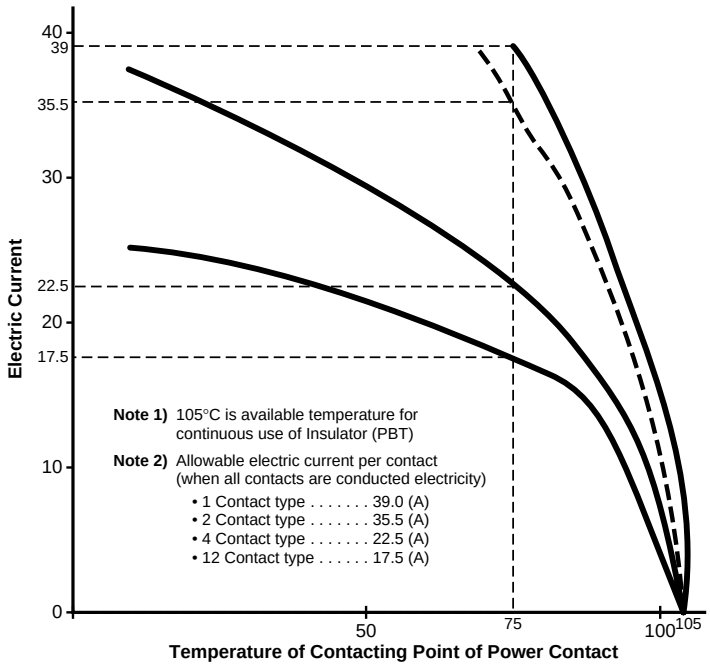
GENERAL SPECIFICATIONS

Number of Contacts	Power: 2 to 12, Signal: 0 to 32
Contact Spacing	Power: 5.08mm (.20"),
	Signal: 2.54mm (.10")
Current Rating	Power Contact: 1 – 39 Amps. 2 – 35.5 Amps. 4 – 22.5 Amps. 6 – 20 Amps. 8 – 18.8 Amps. 10 – 18 Amps. 12 – 17.5 Amps. Signal Contact: 3 Amps.
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	1 x 10^6 megohms min.
Contact Resistance	30 milliohms max.
Applicable PCB Thickness:	
Through Hole	1.6mm (.063")
Compliant	2.4mm (.094")
Operating Temperature Range	-10°C to +75°C

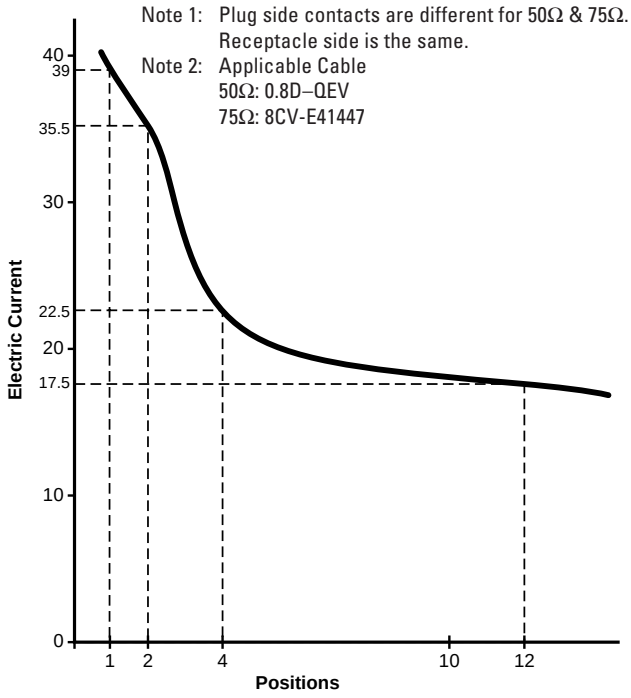
MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PBT (Black)
Pin Contact	CA725 Connecting Area: Gold Plating over Nickel Terminal: Tin Plating over Nickel
Socket Contact	Copper Connecting Area: Gold Plating over Nickel Terminal: Tin Plating over Nickel

DERATING CURVE



POSITION AND ELECTRIC CURRENT CURVE



ORDERING INFORMATION

Pin Side **PW05 – 4 – 16 P – SM 9 – A2**

Series
No. of Contacts (Power): 2-12
No. of Contacts (Signal): 0-32
Connector Type
P – Pin
Termination Style
SM – Straight (Compliant Pin)
ST – Straight (Through Hole)
Terminal Length
9 – 3.8
Contact Finish
A2 – Connecting area: Gold plating 0.3μm (.000012") over Nickel

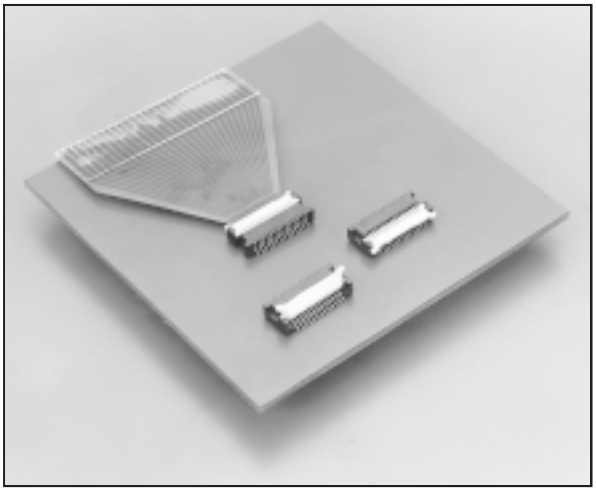
Socket Side **PW05 – 4 – 16 S – LT 1 – A2**

Series
No. of Contacts (Power): 2-12
No. of Contacts (Signal): 0-32
Connector Type
S – Socket
Termination Style
LT – Right Angle
Terminal Length
1 – 2.8mm (.110")
Contact Finish
A2 – Connecting area: Gold plating 0.3μm (.000012") over Nickel

Dimensions in mm (inches).

IL-FHJ SERIES CONNECTORS

0.3mm (.012") Contact Spacing Connectors for FPC



IL-FHJ Series connectors are designed for board-to-FPC applications. The design utilizes a slider for easy, yet reliable, engagement of the flex cable to the contacts. They are ideally used in audio-visual, camcorders, personal computers, mobile computers, wireless and mobile phones.

FEATURES

- 0.6mm (.024") contact spacing
- 0.3mm (.012") pitch conductor spacing
- Applicable FPC 0.3mm (.012") center, 0.2mm (.008") thick with reinforcement
- Available in embossed tape for automatic mounting

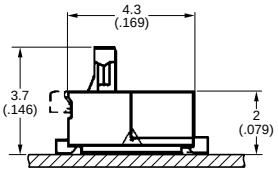
GENERAL SPECIFICATIONS

Number of Contacts	21, 27, 33, 39, 45, 51
Applicable FPC	0.3mm (.012") Center 0.2mm (.008") Thick with reinforcement
Current Rating	0.35 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Base Insulator	Glass filled LCP (UL94V-0), Beige
Contact	Copper Alloy/Tin Plated Terminal Area: Tin plating
Slider	Glass filled PPS, Brown

Connector Profile (Ref.)



ORDERING INFORMATION

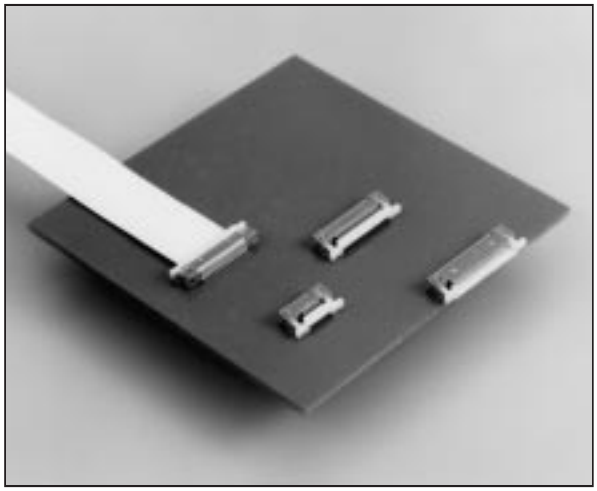
IL-FHJ – ** S – HF – E2000

Series
No. of Contacts
Contact Type
S – Socket
Termination
HF – Right Angle
Embossed Tape
E2000 – 2,000 Pieces/Reel

Dimensions and specifications subject to change without notice.

FA1/FA2 SERIES CONNECTORS

0.5mm (.020") Contact Spacing, ZIF Connectors for FPC



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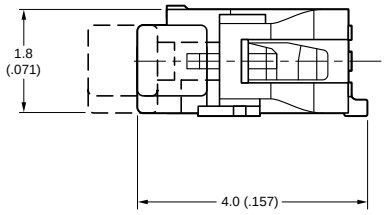
FA1/FA2 Series connectors are high density, low profile connectors for FPC applications. The ZIF (zero insertion force) structure utilizes a slider for easy, yet reliable engagement of the flex cable. Applications include AV and communications devices such as DVC, notebook PCs, PDAs, LCD displays and mobile phones.

FEATURES

- ZIF structure enables easy insertion and removal of FPC
- 3.5mm (.138") and 4mm (.157") depth space saving mounting type
- SMT type compatible with automated mounting
- Embossed tape packaging available
- Contact structure permits continuity test
- One-side contact structure withstands reverse insertion
- Lower contact and upper contact structures available

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	5 through 30
Applicable FPC	0.5mm (.020") pitch, thickness 0.3mm (.012") ± 0.05mm (.002") with back plate
Current Rating	0.5 Amps
Voltage Rating	50 VDC
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	Greater than 100 megohms min.
Contact Resistance	Less than 20 milliohms max.
Contact Pitch	0.5mm (.020")
Lifetime	20 insertions
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Slide Insulator	Glass-filled PPS (UL94V-0, White)
Base Insulator	Glass-filled PPS (UL94V-0, Brown)
Contact	Copper Alloy, Tin Plating
Hold-down	Phosphor Bronze, Tin-Lead Plating

ORDERING INFORMATION

FA* ******* **H** **5** **E3000**

Series
- FA1 – Bottom Contact Mating
- FA2 – Top Contact Mating

No. of Contacts
- 5-30

Termination
- H – Right Angle

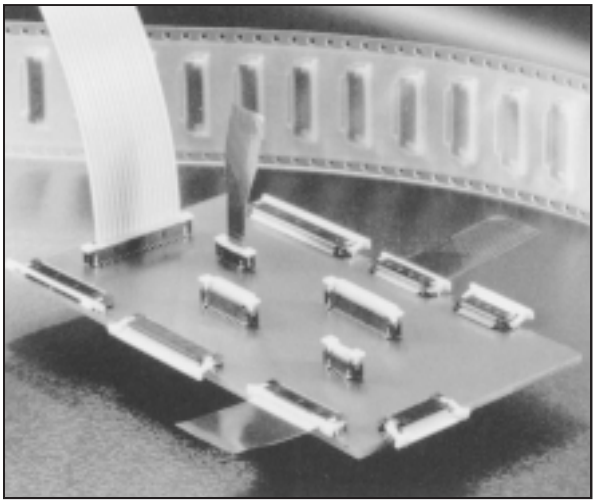
Contact Finish Code
- 5 – Tin-Plating

Embossed Tape
- E3000 – 3,000 Pieces/Reel

Dimensions and specifications subject to change without notice.

IL-FPR SERIES CONNECTORS

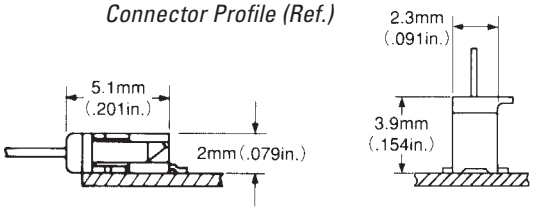
0.5mm (.020") Pitch, ZIF Type Connectors for FPC/FFC



FEATURES

- Extremely small, 0.5mm (.020") spacing
- SMT type for FPC
- Available in right-angle and straight versions
- A slider enables insertion/extraction of FPC without applying force (Zero Insertion Force)
- One-side contact configuration avoids mismating of FPC
- Lower-side or upper-side FPC contact surfaces on right-angle version
- Hold down mechanism prevents floating up of the connector during soldering and retains the connector on the board
- Designed to avoid defective mating
- Supplied in embossed tape for automatic SMT mounting

Connector Profile (Ref.)



IL-FPR Series SMT connectors meet today's requirements for smaller size and lighter weight. These connectors have extremely high contact density and low profiles: 0.5mm (.020") centers and a 2.0mm (.079") mounted height (right-angle type).

Both straight and right-angle types are available. The ZIF (zero insertion force) configuration permits easy insertion and extraction of the FPC (flexible printed circuit), even in a minimal amount of space. A wide variety of mounting styles are available.

GENERAL SPECIFICATIONS

Number of Contacts	Right Angle type: 5 to 50 Straight type : 8 to 33 and 40
Contact Spacing	0.5mm (.020"), single row
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature	-40°C +85°C
Applicable FPC	0.5mm (.020") Center 0.3mm $^{+0.05}_{-0.02}$ (.012" $^{+.002}_{-.001}$) Thick with reinforcement

MATERIALS AND FINISHES

Description	Materials/Finishes
Contact	Copper Alloy/Tin Plated
Base Insulator	Glass-filled PPS (Black)
Slide Insulator	Glass-filled PPS (White)
Hold-down Tab	Phosphor Bronze/Tin Plated

ORDERING INFORMATION

IL – FPR – * ** S – ** – ***

Series
Contact Configuration
- Blank – Lower-Side Contact
- U – Upper-Side Contact

No. of Contacts
Contact Type
- S – Socket

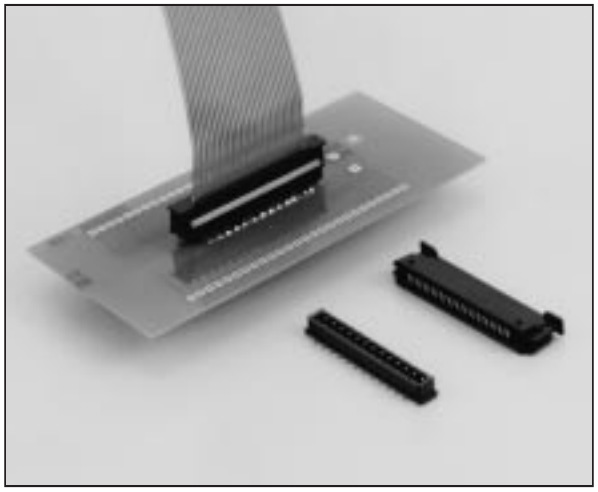
Termination
- HF – Right Angle
- VF – Straight

Embossed Tape
- E 1500 – 1,500 Straight Pieces/Reel
- E 3000 – 3,000 Right Angle Pieces/Reel

Dimensions and specifications subject to change without notice.

FK1 SERIES CONNECTORS

1.0mm (.039") Contact Spacing, PCB-to-FPC/FFC Connectors



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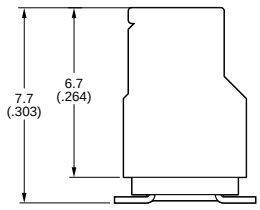
The FK1 Series utilizes a two-piece structure board-to-board FPC connector. This design prevents unwanted removal of plug and receptacle while in the mated condition. Their many applications are in notebook PCs, and PDA.

FEATURES

- FPC contact spacing 1.0mm (.039")
- Enables FPC connection (mainly for membrane, carbon ink circuit, etc.)
- FPC removal prevention with FPC flanges
- Plug slider structure prevents removal after mating
- Receptacle connector available on embossed tape for automatic mounting
- No polarity key
- Enables blind mating
  Connector mating guide lead: ±0.6mm (.024")
  Easy locking to the insulator: (4 places)

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	25
Current Rating	1 Amp per contact
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	80 milliohms max.
Operating Temperature	-40°C to +80°C
Applicable FPC	1.0mm (.039") center, 0.5 ± 0.05mm (.020 ± .002") thick with reinforcement

MATERIALS AND FINISHES

• Plug

Description	Materials/Finishes
Insulator	Glass-filled Nylon (UL94V-0, Black)
Contact	Copper Alloy/Tin Plating
Slider	Glass-filled Nylon (UL94V-0, Black)

• Receptacle

Insulator	Glass-filled Nylon (UL94V-0, Black)
Contact	Copper Alloy/Tin-Lead Plating

ORDERING INFORMATION

FK1 * 025 * 5 *

Series — FK1

Contact Type
- P – Plug
- S – Receptacle

No. of Contacts
- 025 – 25

Termination
- Y – FPC: Plug
- W – Straight: Receptacle

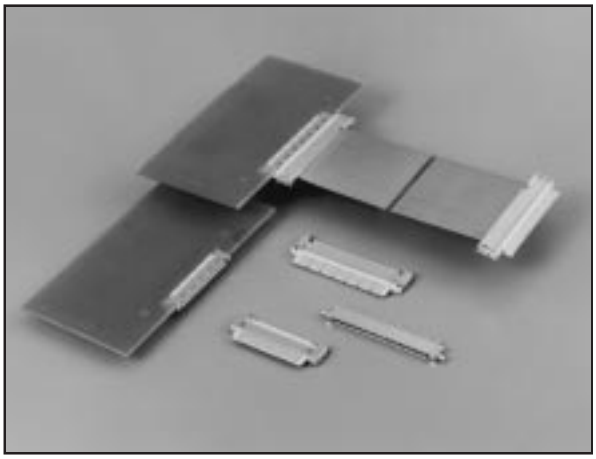
Contact Finish Code
- 5 – Tin over Tin-Lead

Packaging
- 1 – Loose (tray)
- 2 – Embossed Tape, 1400 pieces per reel

Dimensions and specifications subject to change without notice.

FI-X SERIES CONNECTORS

1.0mm (.039") Contact Spacing, PCB-to-Cable Connectors for FPC



The FI-X Series connectors are designed for thin LCD interface applications, and are compatible with high-speed differential transmissions. They are ideal for use in compact notebook PCs, and other applications where size and weight are critical considerations.

FEATURES

- Compatible with high-speed differential transmission and high-level impedance matching (90 to 100 ohms)
- Greatly improved ground condition which is directly related to EMI characteristics
- Bottom type structure provides 1.5mm (.059") connector height and 1mm (.039") height above the PCB
- 1mm (.039") contact pitch with impedance matching
- FPC provides stable grounding to the PCB
- Compatible with a variety of cables such as thin wire coaxial cables and flex circuitry

GENERAL SPECIFICATIONS

Number of Contacts	14, 20, D7 (D7 for differential transmission)
Contact Spacing	1mm (.039")
Applicable FPC	0.14mm (.005")
Current Rating	1 Amp
Voltage Rating	200 (AC and DC)
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C

MATERIALS AND FINISHES

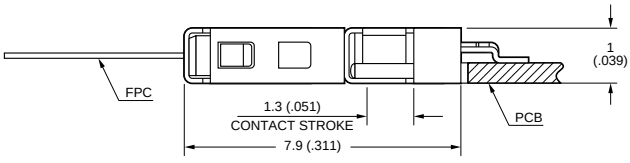
FI-XB**S-HF10 (Board Connector)

Description	Materials/Finishes
Insulator	Thermal Plasticity Resin (UL94V-0)
Shell	Copper Alloy/Tin Plating
Contact	Copper Alloy/Gold Plating over Nickel, Tin Plating

FI-X**M (Cable Connector)

Insulator	Thermal Plasticity Resin
Shell	Copper Alloy/Tin Plating
Slider	Thermal Plasticity Plating
Contact	Copper Alloy/Gold Plating over Nickel, Tin-Lead Plating

Connector Profile (Ref.)



ORDERING INFORMATION

FI-X B ** S HF 10 – E3000

Series
Mounting Type
B – Bottom Mount
No. of Contacts
14, 20, D7 (D: Differential Pairs)
Contact type
S- Socket
Termination
HF – Right Angle
Mounting Height
1mm (.039")
Embossed Tape
E3000 – 3,000 Pieces/Reel

Dimensions and specifications subject to change without notice.

IL-402/402R SERIES CONNECTORS

1.0mm (.039") Contact Spacing, ZIF Type SMT Connectors for FPC/FFC

The IL-402/402R Series has been developed to meet the demands of increased density of components in the surface mount environment. This 1.0mm (.039") pitch, low profile connector for Flexible Printed Circuit (FPC) and Flexible Flat Cable (FFC) has a mounting height of 2.5mm (.098"). Its construction is compatible with automatic mounting equipment when ordered on embossed tape. Zero Insertion Force cable termination allows for simplified operation.

FEATURES

- SMT configuration
- Low profile of 2.5mm (0.98")
- Easy termination of cable utilizing a slide actuator
- Zero Insertion Force (ZIF) cable termination
- Hold down tabs prevent floating up of the connector during soldering and secure the connector on PCB
- Optional embossed tape packaging for automatic mounting

GENERAL SPECIFICATIONS

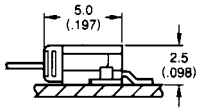
Number of Contacts	IL-402/4 to 30, IL-402R/4, 7, 8, 10 to 12, 14 to 18, 20, 23
Contact Spacing	1.0mm (.039"), Single Row
Current Rating	0.5 Amps
Operating Voltage	200 VAC, VDC
Dielectric Withstanding Voltage	500 VAC r.m.s. (one minute)
Insulation Resistance	1000 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature	-40°C +85°C
Applicable FPC	1.0mm (.039") Center (IL-402) 0.3mm $^{+0.05}_{-0.02}$mm (.012" $^{+.002}_{-.001}$")Thick (IL-402R) 0.3mm ± 0.05mm (.012" ± .002") Thick

MATERIALS AND FINISHES

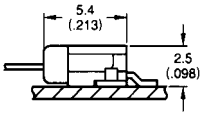
Description	Materials/Finishes
Contact	Phosphor Bronze/Tin Plated
Insulator	Glass-filled PPS (UL94V-O, Light Gray)
Hold-down Tab	Phosphor Bronze/Tin Plated
Slider	Glass filled PPS

Connector Profile (Ref.)

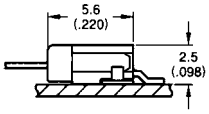
IL-402 4 to 20 Contacts



21 to 30 Contacts



IL-402R



ORDERING INFORMATION

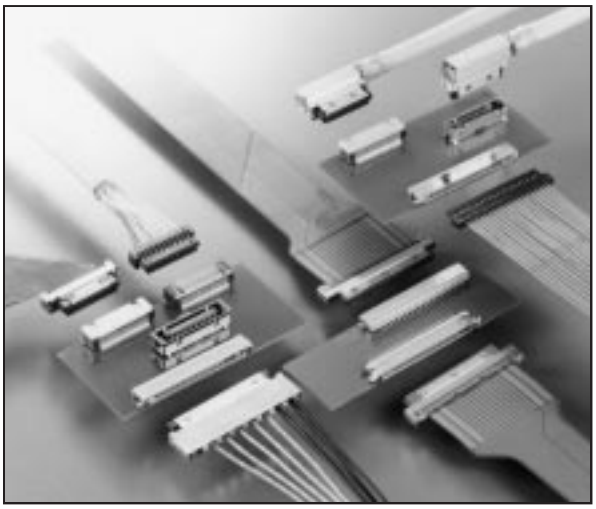
IL – 402 * – ** S – S 1 L – SA – E**

- Series
  - IL-402 – Bottom Contact Mating
  - IL-402R – Top Contact Mating
- No. of Contacts
- Contact Type
  - S – Socket
- Contact Arrangement
  - S – Single Row
- Contact Pitch
  - 1 – 1.0mm (.039")
- Termination
  - L – Right Angle
- Modification Code
- Embossed Tape Packaging
  - E1000 – 1000 pcs. per reel (4 to 24 contacts)
  - E1500 – 1500 pcs. per reel. (25 to 30 contacts)

Dimensions and specifications subject to change without notice.

FI SERIES CONNECTORS

1.25mm (.049") Contact Spacing, PCB-to-Cable Connectors



FI Series connectors are designed for board-to-cable applications. High-density 1.25mm (.049") contact spacing SMT single and double row shielded and unshielded versions available. They are used in notebook PCs, VCR's, mobile phones, and other consumer applications, where reduced space is a requirement.

FEATURES

- Socket housing available with or without a shield
- Flex connector available
- Pin header available on embossed tape for automatic SMT mounting
- Dependable pin-type double contacts (post and box)
- Friction lock housing enables secure connections

Refer to Ordering Information for Connector Profiles.

GENERAL SPECIFICATIONS

Number of Contacts	Single row: 2-6, 8, 10, 15, 20, 25, 30 Double row: 5-21 (every 2 pins), 31, 41
Contact Spacing	1.25mm (.049")
Current Rating	1 Amp
Dielectric Withstanding Voltage	500 VAC r.m.s. (one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C
Applicable Wire Size	Standard #28 to #32 AWG
Applicable FPC	.625mm (.025") Center .14mm (.006") Thick

MATERIALS AND FINISHES

• Pin Header

Description	Materials/Finishes
Insulator	Single Row: Glass-filled PPS (UL94V-0, Black) Double Row: Glass-filled LCP (UL94V-0, Beige)
Contact	Copper Alloy Connecting area: Gold 0.1 (.000004") min. over Nickel Terminal area: Tin over Nickel Plating
Shell	Copper Alloy/Tin Plating
Hold-down	Copper Alloy/Tin over Nickel

• FPC

Insulator	Glass-filled PPS (UL94V-0, Black)
Contact	Copper Alloy Connecting area: Gold 0.1 (.000004") min. over Nickel FPC area: Tin over Nickel Plating
Shell	Copper Alloy/Tin Plating
Slider	Glass-filled PPS (UL94V-0, Brown)

• Socket Housing

Housing	Glass-filled PPS (UL94V-0, Black)
Socket Contact	Phosphor Bronze/Gold over Nickel

Consult JAE for other available sizes.
Dimensions and specifications subject to change without notice.

1.25mm (.049") Contact Spacing, PCB-to-Cable Connectors

SINGLE ROW

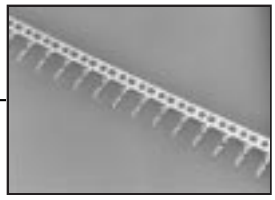
Cable Side Plug
Discrete Wire Unshielded
FI-S*S**

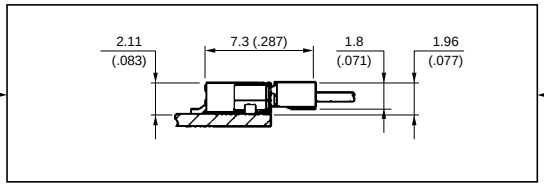
Board Side Receptacle

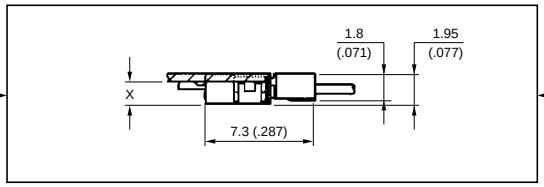
Right Angle
Standard Mount Shielded
FI-S*P-HF**

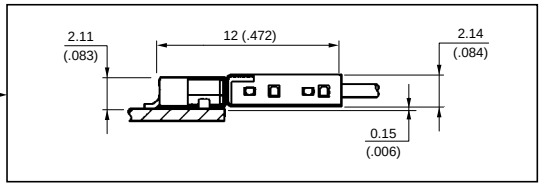
Note: Shielding only available in 20 position.

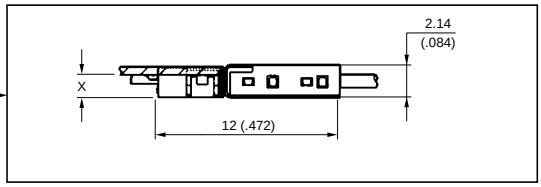
Socket Contact
FI-C3-A1-15000

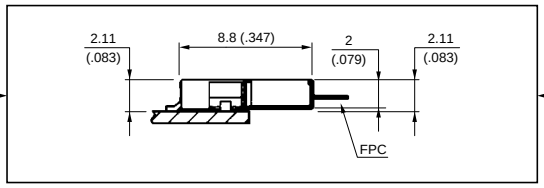


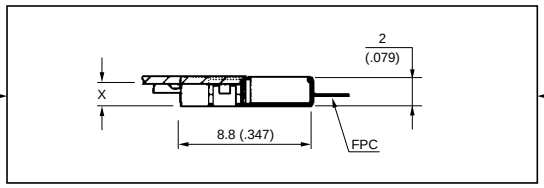


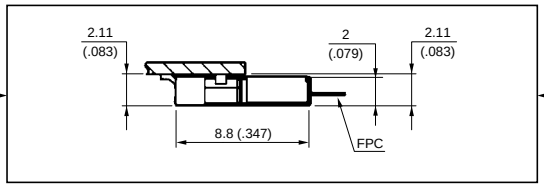


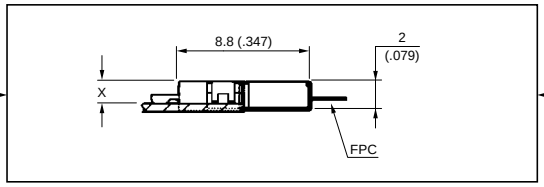




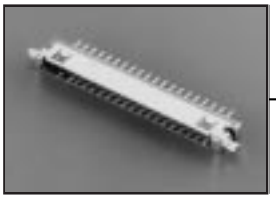






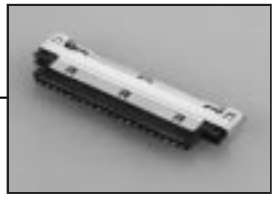


Right Angle
Reverse Mount Shielded
FI-SEB20P-HF

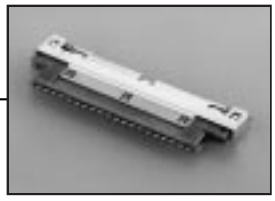


Type	Size
HF	1.48 (.058)
HF13	1.3 (.051)
HF10	1.0 (.039)

Standard Shielded
FI-SE20M



FPC-Reverse
FI-SE20MR



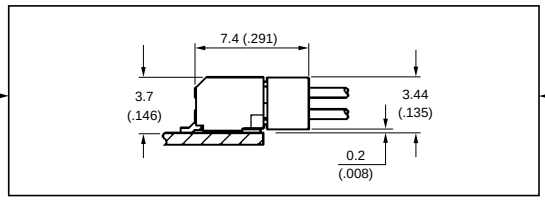
Dimensions in mm (inches).

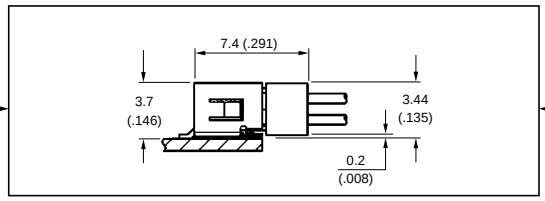
1.25mm (.049") Contact Spacing, PCB-to-Cable Connectors

DOUBLE ROW

Board Side Receptacle

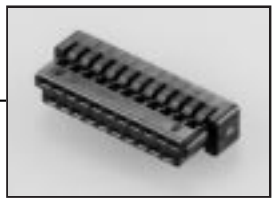
Right Angle, Unshielded
21, 31, 41 Sizes
FI-W*P-HF



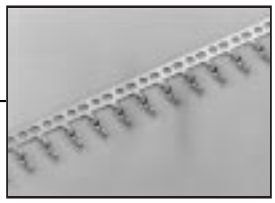


Cable Side Plug

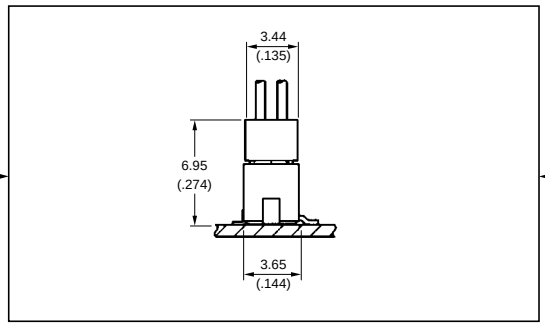
Discrete Wire, Shielded
21, 31, 41 Sizes
FI-W*S



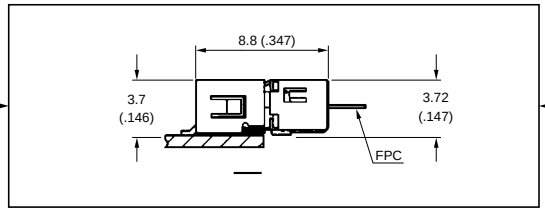
Socket Contact
FI-C3-A1-15000



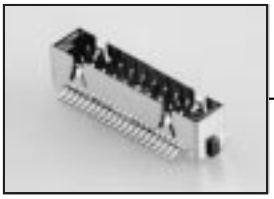
Right Angle, Shielded
21, 31, 41 Sizes
FI-WE*P-HF

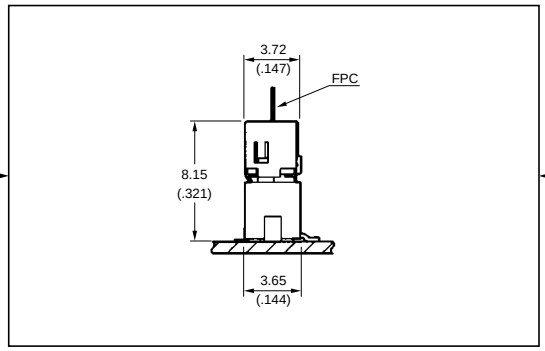


FPC Right Angle, Shielded
21, 31 Sizes
FI-WE*M



Straight, Shielded
21, 31 Sizes
FI-TWE*P*-VF



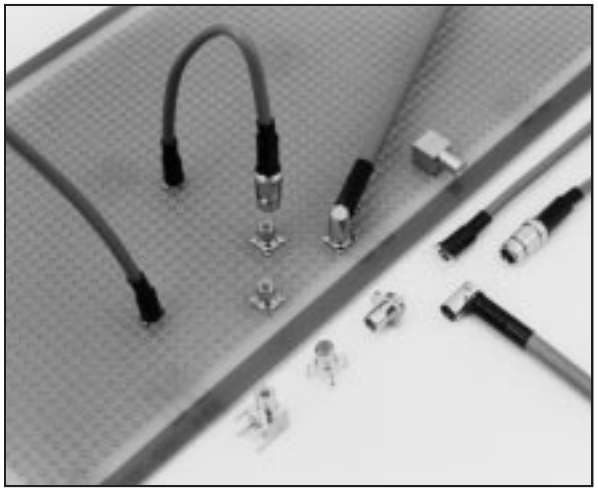


FPC Straight, Shielded
21, 31 Sizes
FI-WE*MV

Dimensions in mm (inches).

CN10 SERIES CONNECTORS

Board-to-Coaxial Jumper



Miniature connectors for board-to-jumper coaxial cable applications intended for transmission of high frequency waves and high density packaging in electronic devices. With the combination of three types of receptacle (straight, right-angle and bulkhead) and three types of plug (straight, right-angle and board-in), it is feasible to have various connection styles. Suitable for use in automotive telephone sets, portable telephone sets, various communication devices and electronic measuring instruments.

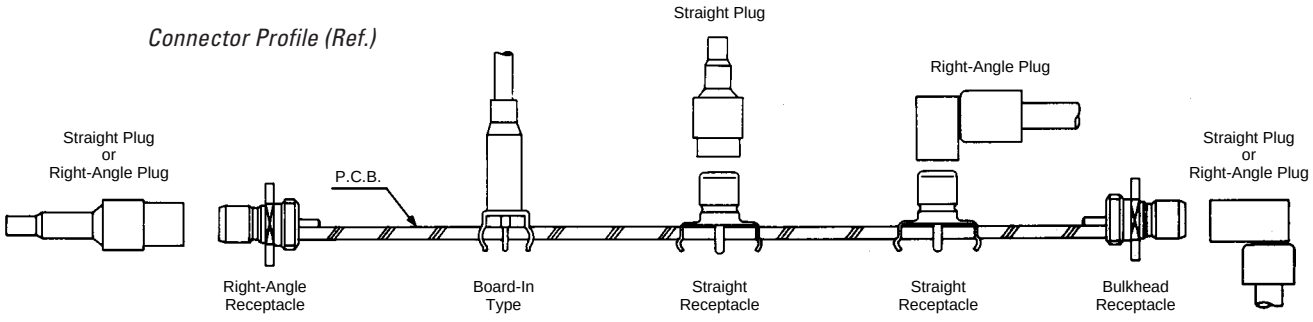
FEATURES

- Miniature connectors for board-to-coaxial jumper cable applications. Designed per MIL SMB type and JIS-C-5415
- Applicable frequency range is zero through 3 GHz. High impedance matching: the voltage standing wave ratio is less than 1.1 (Right-angle receptacle is 1.2 max. voltage standing wave ratio.)
- Low profile: the height on the board is 8mm (.315") to 9mm (.354") when a right-angle plug is mated with a straight receptacle
- An extrusion on the shell innerwall of the plug ensures mechanical and electrical integrity
- Plugs are supplied as cable assemblies
- The straight receptacle and board-in plug have kinked leads to hold connector during soldering

GENERAL SPECIFICATIONS

Characteristic Impedance	50 ohms
Current Rating	2 Amps (DC)
Voltage Rating	100 VAC r.m.s. (for one minute)
Dielectric Withstanding Voltage	200 VAC r.m.s. (one minute)
Insulation Resistance	500 megohms min. (DC 250 V)
Contact Resistance	8 milliohms max. Only right-angle receptacle is 12 milliohms max.
Voltage Standing Wave Ratio (V.S.W.R.)	1.1 max. (DC-3 GHz) (Applicable: 1.5 D-QEV. L=300mm) Only right-angle receptacle is 1.2 max.
Total Mating Force	5 kilograms max.
Total Unmating Force	0.9 kilograms min.
Temperature Range	-55°C to +165°C (Connector only) Only right-angle receptacle is -20°C ~ 85°C
Applicable Cables	1.5 D-QEV (1.5 D-2V) 1.5 D-QEW (1.5 D-2W) 0.8 D-QEW (0.8 D-2W)

Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

CN10 SERIES CONNECTORS

Board-to-Coaxial Jumper

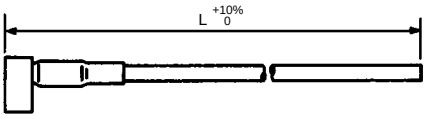
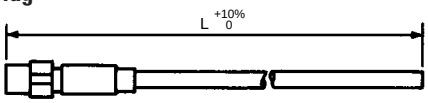
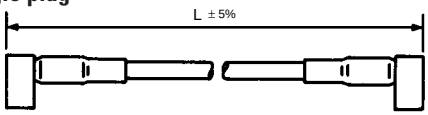
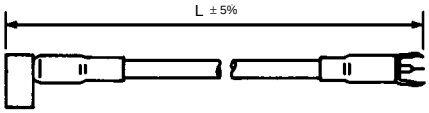
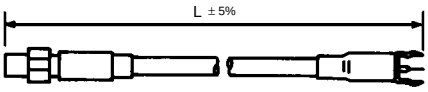
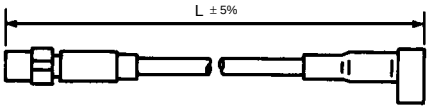
■ STANDARD CABLE ASSEMBLIES (PLUG INCLUDED)

- For plug side, cable harnessed plug will be supplied
- The length (L in the figure below) is 100mm (3.937")
- For other lengths, consult JAE

Part No. Explanation

CN10 – CA 100 – RPL – *
CN10 – CA 100 – BI –PL – *

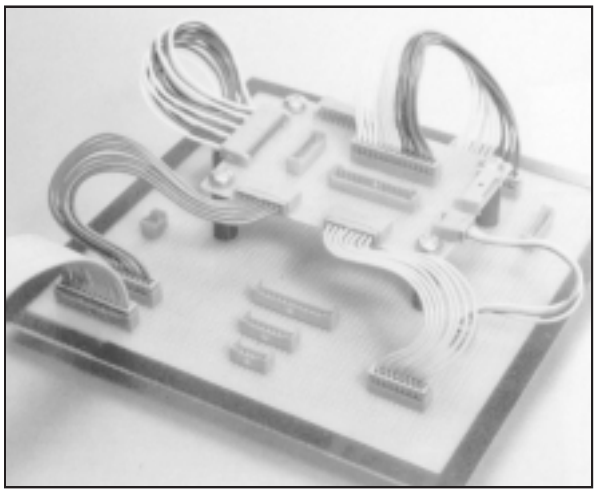
Series
Cable Harness Mark
Cable Length
L – 100mm
Connector Configuration
PL – Straight Plug
RPL – Right-Angle Plug
BI – Board-In Plug
Connector Configuration
PL – Straight Plug
RPL – Right-Angle Plug
Applicable Cable
15 DV – 1.5D-QEV (1.5D-2V)
15DW – 1.5D-QEW (1.5D-2W)
8 DW – 0.8D-QEW (0.8D-2W)

		Applicable Cable	Part Number
Single-end termination	• Right-angle plug 	1.5D -QEV (1.5D-2V)	CN10-CA100-RPL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-RPL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-RPL-8DW
	• Straight plug 	1.5D -QEV (1.5D-2V)	CN10-CA100-PL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-PL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-PL-8DW
Double-end termination	• Right-angle plug 	1.5D -QEV (1.5D-2V)	CN10-CA100-RPL-RPL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-RPL-RPL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-RPL-RPL-8DW
	• Right-angle plug and Board-in type 	1.5D -QEV (1.5D-2V)	CN10-CA100-BI-RPL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-BI-RPL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-BI-RPL-8DW
	• Straight plug and Board-in type 	1.5D -QEV (1.5D-2V)	CN10-CA100-BI-PL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-BI-PL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-BI-PL-8DW
	• Straight plug and Right-angle plug 	1.5D -QEV (1.5D-2V)	CN10-CA100-RPL-15DV
		1.5D -QEW (1.5D-2W)	CN10-CA100-RPL-15DW
		0.8D -QEW (0.8D-2W)	CN10-CA100-RPL-8DW

Dimensions in mm (inches).

IL-Z SERIES CONNECTORS

1.25mm (.049") Contact Spacing, PCB-to-Cable (Crimp Type) Connectors



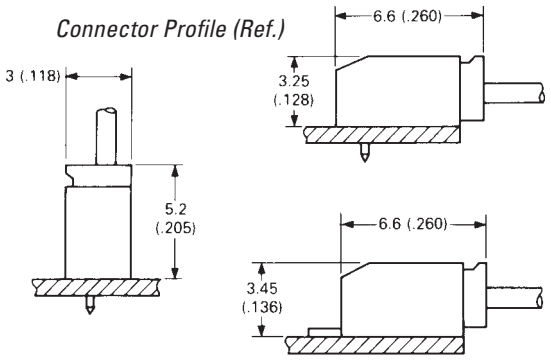
IL-Z Series connectors are designed for board-to-cable applications. High-density 1.25mm (.049") contact spacing (single row), 5.2mm (.205") high when mated vertically. Low-profile design includes board-mounted pin headers (straight and right-angle) and wire-terminated socket housings (with crimp socket contacts).

The IL-Z Series has a wide variety of applications, including commercial and household appliances, VTR's, television, office automation equipment and measuring instruments.

FEATURES

- Crimp type for efficient wire termination
- High reliability socket contacts
- High-density packaging and automatic mounting
- SMT and through hole pin headers available
- Boxed pin header design prevents mismating
- Anti-wicking feature

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	2 to 15
Contact Spacing	1.25mm (.049"), single row
Current Rating	1 Amp
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohams min.
Contact Resistance	20 milliohms max.
Operating Temperature Range	-40°C to +70°C
Applicable PCB Thickness	0.6 to 1.2mm (.024 to .047")
Applicable Wire	#32 to #28 AWG (stranded)

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Through hole pin header and socket housing: 6-6 Nylon (UL94V-0, Light Brown) SMT pin header: PPS (UL94V-0, Light Gray)
Pin Contact	Brass/Tin plating over Nickel
Socket Contact	Phosphor Bronze/Tin plating
Hold-down	Phosphor Bronze/Tin plating (SMT only)

ORDERING INFORMATION

PIN HEADER (SMT TYPE)

IL - Z – ** P L – SMTY – E1500

- Series
- No. of Contacts
  - 2 to 15
- Contact Type
  - P – Pin
- Termination
  - L – Right Angle
- Mounting Type
  - Surface Mount Type
- Embossed Tape
  - 1,500 pcs/reel

PIN HEADER (THROUGH HOLE TYPE)
SOCKET HOUSING

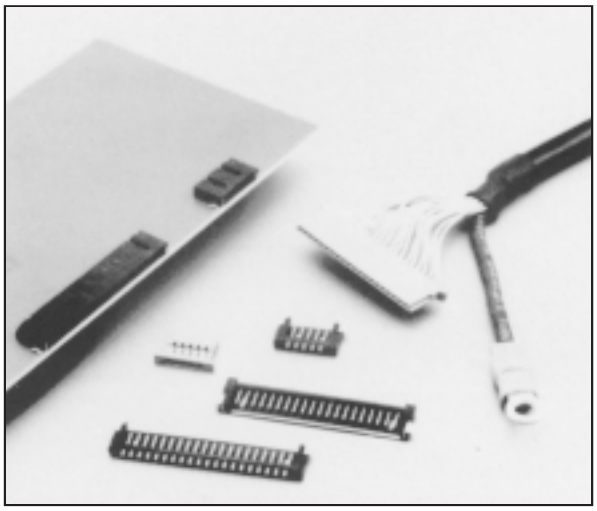
IL - Z ** * S 125 * 3 *

- Series
- No. of Contacts
  - 2 to 15
- Contact Type
  - P – Pin S – Socket
- Contact Arrangement
  - S – Single Row
- Pitch
  - 1.25mm (.049")
- Termination
  - T – Straight Through Hole C – Crimp Contact
  - L – Right Angle Through Hole
- Pin Header
  - PCB Thickness: 0.6mm (.024") – 1.2mm (.047")
- Socket
  - Applicable Wire: AWG #28, #30, #32
- Pin Header
  - Solder Post Length:
    - E – 1.7mm (.067")

Dimensions and specifications subject to change without notice.

LZ SERIES CONNECTORS

1.25mm (.049") Contact Spacing, PCB-to-Cable (Crimp Type) Connectors



Subminiature, low profile connectors with 1.25mm (.049") contact spacing and 2.0mm (.079") mounted height. SMT board mounting sides are supplied on embossed tape for automated mounting. Applications include PCB to cable and LCD interface.

FEATURES

- Embossed tape for automated mounting process
- Polarizing key prevents mismating
- Socket contacts on cable side are gold-plated
- Dual contact configuration provides reliable connection and low mating/unmating force
- Cable harnesses may be made to your specifications

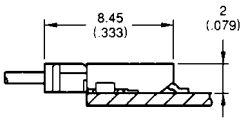
GENERAL SPECIFICATIONS

Number of Contacts	5, 10, 15, 20, 25, 30, 35
Contact Spacing	1.25mm (.049"), single row
Current Rating	1 Amp
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature Range	-40°C to +85°C
Applicable Wire	#28 to #32 AWG (stranded)

MATERIALS AND FINISHES

Description	Materials/Finishes
Pin Contact	Copper Alloy: Connecting area/Gold plating over Nickel Terminal area/SnPb plating
Socket Contact	Phosphor Bronze/Gold plating over Nickel
Insulator	Pin Header: Glass-filled PPS (UL94V-0, Black) Socket Housing: Glass-filled 6-6 Nylon (UL94V-0, Brown)
Hold-down	Copper Alloy/SnPb plating over Nickel

Connector Profile (Ref.)



ORDERING INFORMATION

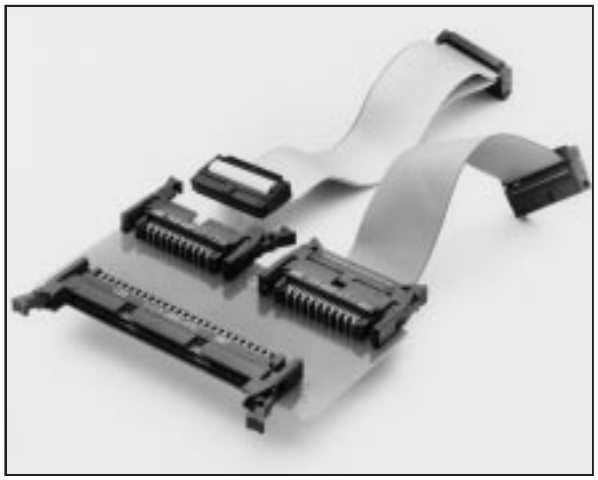
LZ – ** * – S * * ***

Series
No. of Contacts
5, 10, 15, 20, 25, 30
Contact Type
P – Pin
S – Socket
Contact Arrangement
S – Single Row
Termination
L – Right Angle
C – Crimp Contact
(Pin) Mounting Type
SMT – Surface Mount
(Socket) Applicable Wire Size
3 – #28 to #32 AWG
(Pin) Connector Height
(5 to 30 Contacts) None – 2.0mm (.079")
(35 Contacts) H25 – 2.5mm (.098")

Dimensions and specifications subject to change without notice.

TX1/TX2/TX3 SERIES CONNECTORS

1.27mm (.050") Contact Spacing, PCB-to-Cable Connectors



• • • • • • • • • • • • • • •

TX 1 to 3 Series connectors are two-piece PCB connectors with 1.27mm (.050") contact spacing.

They are designed for board-to-cable applications.

Configurations include IDC sockets (TX1 and TX2) for flat ribbon cable; and pin headers (TX3) with a latching mechanism.

Applications include computers, business machines, industrial control machinery, telecommunications, audiovisual appliances, measuring equipment, and applications wherever high density packaging is required.

FEATURES

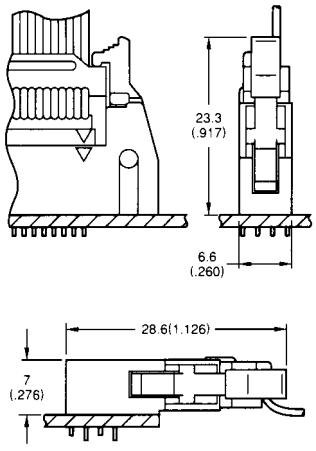
■ **IDC Socket (TX1/TX2)**

- Flat ribbon cable centers:
  0.635mm (.025") for TX1
  1.27mm (.050") for TX2
- TX1 socket can be terminated in "daisy-chain" style in the middle of the cable
- TX2 socket is terminated at the end of the two stacked cables
- Socket contacts have dual-contact-point tuning fork design
- All wires can be terminated in a single action (Insulation is automatically removed)

■ **Pin Header With Latch (TX3)**

- Available in straight and right angle through hole types
- Self-locking, self-ejecting lever for easy operation

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	20, 26, 30, 34, 40, 50, 60, 68, 80, 100
Contact Spacing	1.27mm (.050"), Double row
Current Rating	0.5 Amps
Operating Voltage	250 VAC r.m.s.
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	25 milliohms max.
Operating Temperature	-40°C to + 80°C
Applicable PCB Thickness	1.6mm (.063")
Applicable F.R.C.: TX1 TX2	0.635mm (.025") pitch: #30 AWG 1.27mm (.050") pitch: #28 AWG

MATERIALS AND FINISHES

TX1/TX2

Description	Materials/Finishes
Insulator	PBT (UL94V-0, Black)
Strain Relief	Glass-filled Nylon (UL94V-0, Black)
Cover	Glass-filled Nylon (UL94V-0, Black)
Contact (Note)	Beryllium Copper Connecting area: Gold plating over Nickel IDC Terminal area: Tin plating Other areas: Gold flash over Nickel

TX3

Description	Materials/Finishes
Insulator	PBT (UL94V-0, Black)
Expansion Post	Phosphor Bronze/Tin plating
Lever (TX3)	Nylon (UL94V-0, Black)
Contact (Note)	Phosphor Bronze Connecting area: Gold plating over Nickel Terminal area: Tin plating

Note: Contact finish – Gold plating on connecting area is 0.1μm (.000004") min.

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

TX * – ** * – D2 ** * – * * * *

Series

Connector Type
- 1 – IDC Socket, .635mm (.025") pitch cable
- 2 – IDC Socket, 1.27mm (.050") pitch cable
- 3 – Pin Header with latch

No. of Contacts
- 20, 26, 30, 34, 40, 50, 60, 68, 80, 100

Contact Type
- S – Socket (TX1, TX2)
- P – Pin (TX3)

Contact Arrangement
- D2 – Double Row

Termination
- P – IDC
- LT – Right Angle Through Hole
- ST – Straight Through Hole

Applicable Wire
- 1 – #30 AWG (TX1)
  #28 AWG (TX2)

Latch Type (TX3)
- L – Standard Latch
- S – Short Latch

Expansion Post (TX3)
- H – With Post
- N – Without Post

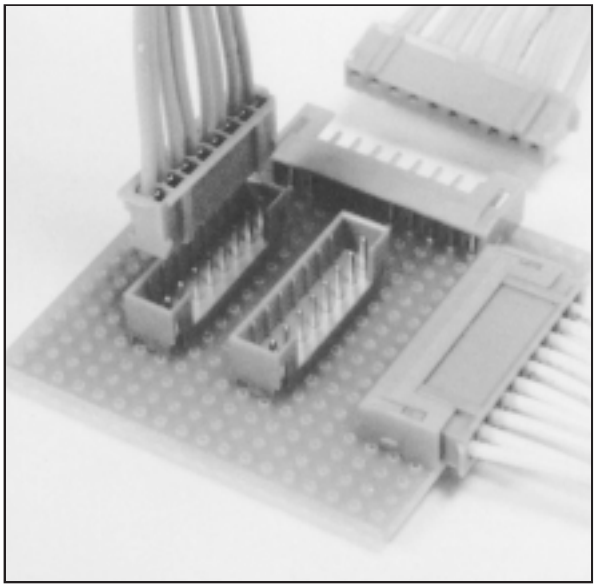
Contact Finish Code
- 1 – 0.1μm (.000004") thick gold plating min.

Cover Style
- C – Closed End (TX2)
- D – Daisy Chain (TX1)

Dimensions in mm (inches).

IL-S SERIES CONNECTORS

2.0mm (.079") Contact Spacing, PCB-to-Cable (Crimp Type) Connectors



IL-S Series connectors are low profile connectors with 2.0mm (.079") contact spacing for PCB-to-Cable applications.

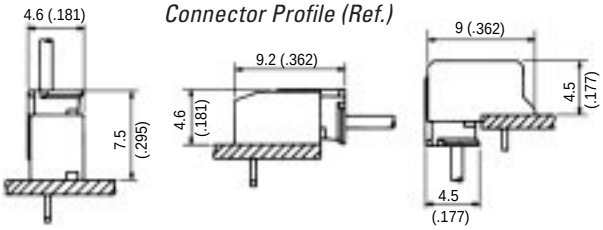
High reliable crimp termination socket contacts permit fast and simple semi-automatic termination, resulting in labor and cost savings.

IL-S Series connectors are ideal for use in VTR, television, audio and other consumer electronic products. Additional applications include OA equipment, computers, measuring equipment, telecommunications, and vending machines.

FEATURES

- Box type pin header prevents mismating
- Highly reliable socket contacts
- Both semi-automatic crimp termination machine and hand crimping tool are available
- Design prevents flux wicking
- Pin headers are available in straight, right angle and bottom through hole types

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	2 to 15 (Bottom type – 2 to 12)
Contact Spacing	2.0mm (.079"), single row
Current Rating	3 Amps
Operating Voltage	300 VAC, 400 VDC
Dielectric Withstanding Voltage	1,000 VAC r.m.s. (one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Applicable Wire	#24 to #28 AWG, stranded
Applicable PCB Thickness	1.2 to 1.6mm (.047" to .063")
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	6-6 Nylon (UL94V-O, Light Brown)
Pin Contact	Brass/Tin plating over Nickel
Socket Contact	Phosphor Bronze/Tin Plated

ORDERING INFORMATION

Pin Header — **IL-S – 5 P – S 2 T 2 – E F**

- Series
- No. of Contacts
- Contact Type
  - P – Pin
- Contact Arrangement
  - S – Single Row
- Contact Pitch
  - 2.0mm (.079")
- Termination
  - T – Straight Through Hole
  - L – Right Angle Through Hole
  - UX – Bottom Through Hole
- Applicable PCB Thickness: 1.2 to 1.6 (.047 to .063)
- Terminal Length: 3.5mm (.138")
- DIP Side Kinked (except bottom type)

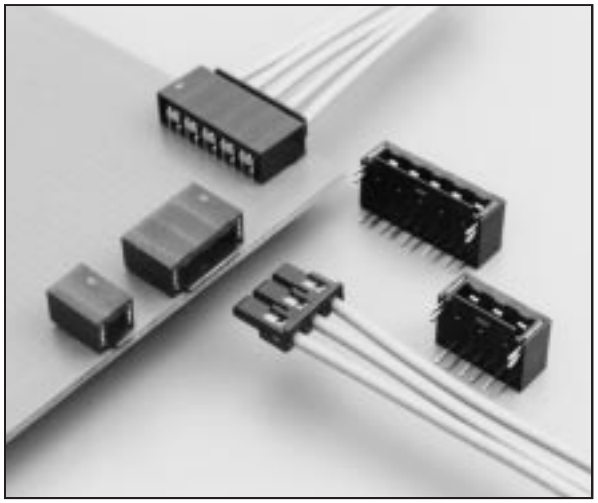
Socket Housing — **IL-S – 5 S – S 2 C 2**

- Series
- No. of Contacts
- Contact Type
  - S – Socket
- Contact Arrangement
  - S – Single Row
- Contact Spacing
  - 2.0 (.079)
- Termination
  - Crimp
- Applicable Wire Size
  - AWG #28 to #24
- Modification Code

Dimensions and specifications subject to change without notice.

KD10 SERIES CONNECTORS

2.0mm (.079") Contact Spacing, Board-to-Multi Coaxial Connectors

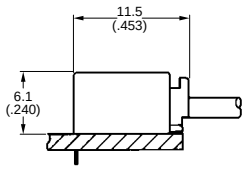


The KD10 Series is a small size multi coaxial connector suitable for middle frequency range. Two versions are available: 50 ohms and 75 ohms. The 50 ohms is ideally used for digital information equipment, telecommunication, and calculation equipment, while 75 ohms is used in video movie, radio and multimedia equipment.

FEATURES

- Low profile 6.1mm (.240") for minimized mounting space
- Characteristic impedance of 50 ohms and 75 ohms
- Kinked hold-down allows connector to be fixed on board during soldering

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	1, 3, 5 and 8
Characteristic Impedance	50 ohms/75 ohms
Frequency	DC 300 MHz
VSWR	1.3 max. DC 300 MHz
Insertion Loss	0.3 dB/DC 300 MHz
Current Rating	250mAmps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min. (with 10mm cable)
Contact Resistance	Initial (Center: 80 megohms max. Outer 30 megohms max.)
Insertion Force	One pin: 5N max. Three pins: 10N max. Five pins: 15N max. Eight pins: 20N max.
Withdrawal Force	One pin: 2N max. Three pins: 5N max. Five pins: 7N max. Eight pins: 11N max.
Operating Temperature	-55°C to +85°C
Insertion/Withdrawal	50 times

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled (6-6 Nylon)
Center Contact	Copper alloy, Gold over Nickel Plating
Outer Contact	Copper alloy, Gold over Nickel Plating
Hold-down	Copper alloy, Tin Plating

ORDERING INFORMATION

Receptacle

KD10 – RRP * – F – 0

- Series
- Termination Right Angle
- No. of Contacts
  - 1, 3, 5, 8
- Connector Type
- Termination Style
  - Solder

Cable Plug

KD10 – CA ** – 2PL – * *V

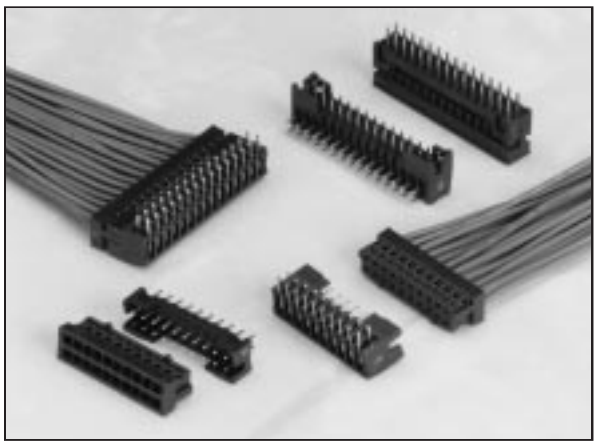
- Series
- Cable Assembly
- Cable Length
  - 60-800mm – every 20 mm
  - Longer than 800mm – every 40mm
  - 2 – Both ends harnessed
  - None – One end harnessed
- No. of Contacts
  - 1, 3, 5, 8
- Characteristic Impedance
  - D – 50 ohms
  - C – 75 ohms

* Cable assemblies only available

Dimensions and specifications subject to change without notice.

LY SERIES CONNECTORS

2.0mm (.079") Contact Spacing, PCB-to-Cable (Crimp Type) Connectors



LY Series connectors are low profile PCB-to-cable connectors used for PC peripherals. The LY Series connectors have a snap latch mechanism with a box-type housing. A polarizing feature prevents mismating.

FEATURES

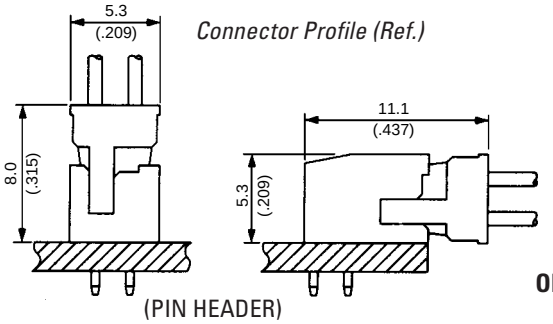
- Snap latch housing resists shock and vibration
- UL94V-0 rated insulator material
- Dual wipe stamped snap-in socket contacts
- Pin headers are available in straight and right angle PCB mounting configurations
- Both gold and tin plated contacts are available
- Polarized housing prevents mismating

GENERAL SPECIFICATIONS

Number of Contacts	4 to 44 (Even numbers only)
Contact Spacing	2.0mm (.079") Grid
Current Rating	3 Amps
Operating Voltage	250 VAC r.m.s.
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute after test)
Insulation Resistance	100 megohms min. (after test)
Contact Resistance	20 milliohms max. (after test)
Operating Temperature	-40°C to +85°C
Applicable PCB Thickness	1.6mm (.063")
Applicable Wire Size	#22 to #30 AWG (stranded)

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulators	Glass-filled 6-6 Nylon (UL94V-0, Brown)
Contacts	Phosphor Bronze Code 1. Connecting Area: Gold, 0.1μm min. (.000004") over Nickel Terminal Area: Solder (SnPb) Plating 5. Tin Plating



ORDERING INFORMATION

(PIN HEADER)

LY20 ** P – D ** 1 P *

- Series
- No. of Contacts
  - 4 to 44
- Contact Type
  - P – Pin
- Contact Arrangement
  - D – Double Row
- Termination Style
  - T – Straight Through Hole
  - LT – Right Angle Through Hole
- Terminal Length
- P – Post (Stamped Contacts)
- Finish Code
  - 1 – Connecting Area: Gold, 0.1μm (.000004") min. over Nickel
    Termination Area: Solder (SnPb) Plating
  - 5 – Tin Plating

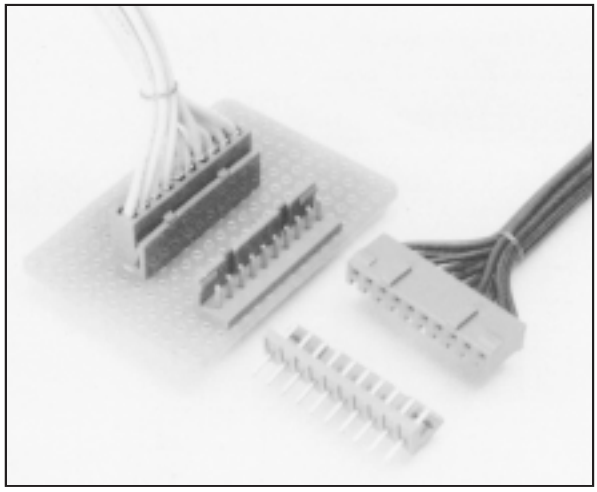
(SOCKET HOUSING) **LY10 – D C **

- Series
- Contact Arrangement
  - D – Double Row
- Socket Housing with
  - Crimp Type Contacts
- No. of Contacts
  - 4 to 44

Dimensions and specifications subject to change without notice.

IL-G SERIES CONNECTORS

2.5mm (.098") Contact Spacing, PCB-to-Cable (Crimp Type) Connectors



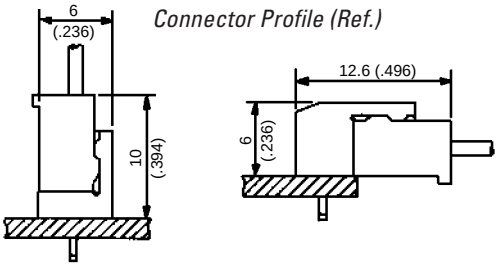
IL-G Series connectors are low profile, PCB-to-cable connectors with 2.5mm (.098") contact spacing.

The crimp contacts for socket housing can be terminated with a hand crimping tool, or a semi-automatic crimping machine for rapid, high volume terminations. IL-G Series connectors are available in socket housing, straight pin header and right angle pin header configurations.

FEATURES

- Low profile—10mm (.394") total mated height for straight connection
- Mismating-prevention structure
- Friction locking mechanism
- Prevents solder-flux contamination

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	2 to 15
Contact Spacing	2.5mm (.098"), single row
Current Rating	3 Amps
Dielectric Withstanding Voltage	1500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable PCB Thickness	1.6 to 2.6mm (.063 to .102") thick
Applicable Wire Sizes	AWG #22 to #28

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	6-6 Nylon (UL94V-0, Light Brown)
Pin Contact	Brass, Tin plated over Nickel
Socket Contact	Phosphor Bronze/Tin plated

ORDERING INFORMATION

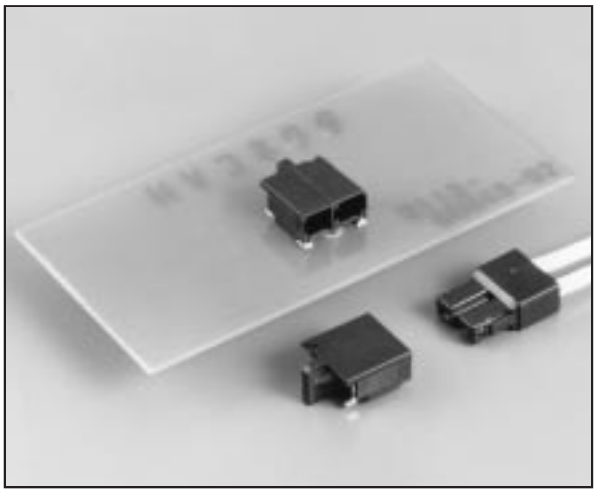
IL-G – ** * – S 3 * 2 – E

Series
No. of Contacts
2 to 15
Contact Type
P – Pin S – Socket
Contact Arrangement
S – Single Row
Contact Spacing
3 – 2.5mm (.098")
Termination
C – Crimp (Socket Housing)
T – Straight (Pin Header)
L – Right Angle (Pin Header)
PCB Thickness (Pin Header)/Wire Size (Socket Housing)
2 – 1.6 to 2.6mm (.063 to .102") PCB Thickness or
#22 AWG to #28 AWG Wire Size
Modification Code (Pin Header Only)

Dimensions and specifications subject to change without notice.

HV SERIES CONNECTORS

2.8mm (.110") Contact Spacing, PCB-to-Cable Connectors



The HV Series is a board-to-cable connector designed for backlight power sources and high voltage.

FEATURES

- Low profile, 3.7mm (.146") total mated height
- SMT Pin Header
  (supplied in embossed tape for auto-mounting)
- Metal hold-down provides retention after soldering to PCB
- Boxed type pin header design prevents mismating

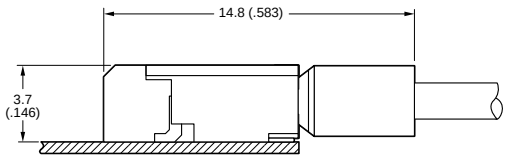
GENERAL SPECIFICATIONS

Number of Contacts	2
Contact Spacing	2.8mm (.110")
Current Rating	1 Amp
Rated Voltage	1500 VAC/DC
Dielectric Withstanding Voltage	4500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	20 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable Wire	#22 ~ #26 AWG

MATERIALS AND FINISHES

Description	Materials/Finishes
Pin Contact	Phosphor Bronze, Tin plated
Pin Insulator	PPS (UL94V-0, Light Gray)
Hold Down	Phosphor Bronze, Tin plated
Socket Housing	Glass-filled 66 Nylon (UL94V-0, Brown)
Socket Contact	Phosphor Bronze, Tin plated

Connector Profile (Ref.)



ORDERING INFORMATION

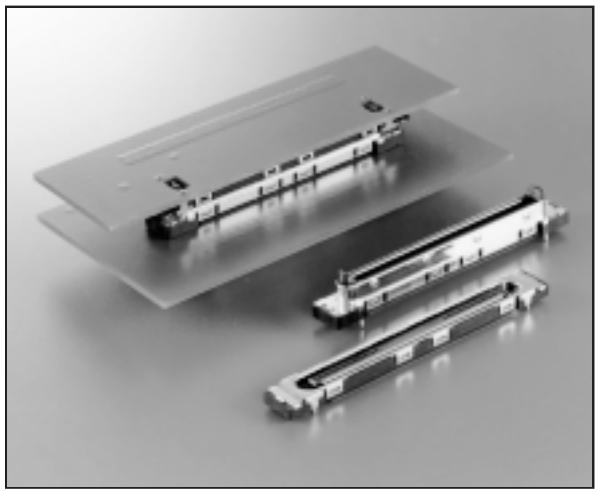
HV – 2 * – ** – E1400

Series
No. of Contacts
2
Contact Type
P – Pin
S – Socket
Termination
HF – Right Angle
CI – Socket Housing
Embossed Tape-Pin Header
E1400 – 1400 pcs. per reel

Dimensions and specifications subject to change without notice.

WD SERIES CONNECTORS

0.5mm (.020") Contact Spacing, EMI Shielded, PCB-to-PCB, SMT Connectors

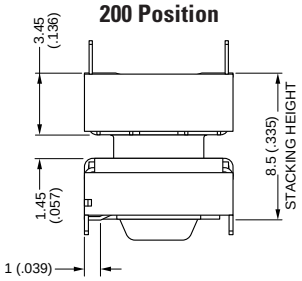


FEATURES

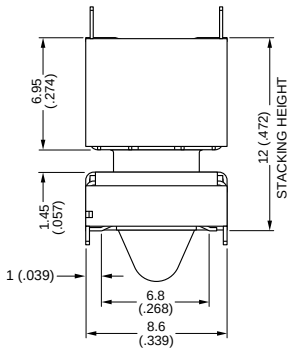
- 3.6mm (.142") receptacle mounting height and compact low profile design is ideal for high-density mounting
- Ribbon type contact (flat contact) withstands twisting
- 2-step live insertion/removal protects device circuits
- Mating guide structure absorbs up to ±1.5mm (.059") dislocation
- Built-in metal shell provides EMI shielding for plug and receptacle

Connector Profile (Ref.)

200 Position



220 Position



The WD Series connectors are high density connectors for board-to-board applications. This connector enables vertical connection between units. Specific applications can be notebook PCs, PDAs, and port replicators.

GENERAL SPECIFICATIONS

Number of Contacts	200 signal & 2 different contact lengths 220 signal, 4 power & 2 different contacts lengths
Contact Spacing	0.5mm (.020")
Current Rating	0.3 Amps signal, 3 Amps power
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	90 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

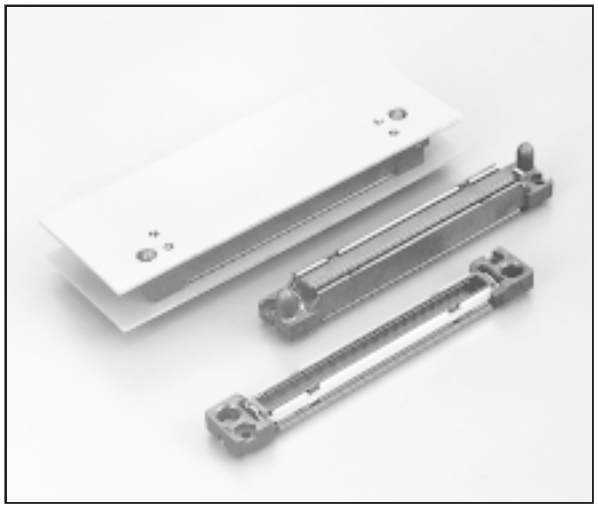
Components	Materials	Finishes
Power Contact	Copper Alloy	Contact: more than 0.1μm (.000004") Gold Plating over Nickel Connection: Tin Plating
Single Contact	Phosphor Bronze	Contact: more than 0.1μm (.000004") Gold Plating over Nickel Connection: Tin Plating
Nut	Brass	Nickel Plating (pin connectors are not plated)
Shell	Brass	Nickel Plating
Socket Insulator	Glass-filled LCP	None (UL94V-0)

Consult JAE for "Ordering Information".

Dimensions and specifications subject to change without notice.

PD1 SERIES CONNECTORS

0.6mm (.024") Contact Spacing, PCB-to-PCB SMT Connectors



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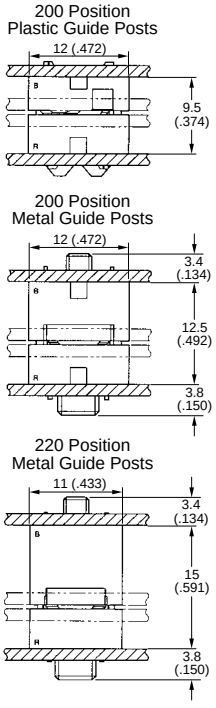
The PD1 Series connectors are 0.6mm (.024") SMT board-to-board connectors. Typically used as docking connectors in Notebook PCs and Personal Digital Assistants (PDA).

FEATURES

- 200 single row and 220 single row sizes available
- First-make/last-break signal contacts
- Guideposts for easy blind mating

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	200 position: 8 power contacts (4 each side), 192 signal contacts 220 position: 8 power contacts (4 each side), 212 signal contacts
Contact Spacing	0.6mm (.024")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	70 milliohms max.
Durability	5,000 cycles
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled LCP (UL94V-0)
Contact	Copper Alloy Connecting area: Gold flash over Phosphor Bronze Terminal area: Tin/Lead Plating
Shell	Stainless Steel
Metal Guide*	Zinc Alloy/Nickel plated

*Note: Metal Guide is optional (Must be ordered separately.)
P/N PD1-GS3 For 200 pin Receptacle
P/N PD1-GS4 For 200 pin Plug
P/N PD1-GS5 For 220 pin Receptacle
P/N PD1-GS6 For 220 pin Plug

ORDERING INFORMATION

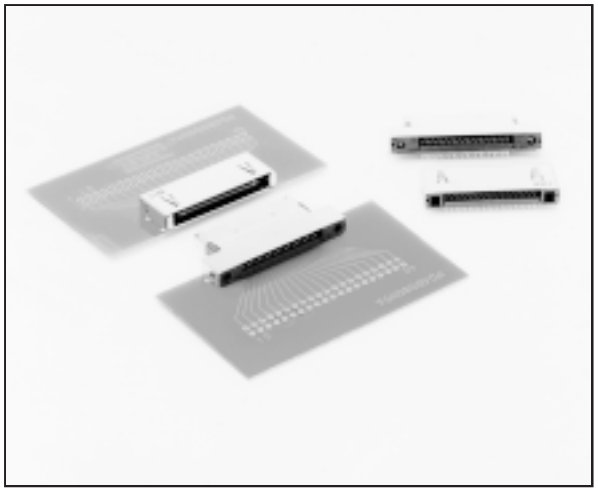
PD1 * * V 9 ***

Series
Contact Type
B – Plug
R – Receptacle
No. of Contacts
200, 220
Termination
V – Straight
Contact Finish Code
9 – Gold flash over Phosphor Bronze
Modification Code
A – Plastic Guides, 200 Position
C – Metal Guides, 200 Position

Dimensions and specifications subject to change without notice.

PD4 SERIES CONNECTORS

0.6mm (.024") Contact Spacing, PCB to PCB Connectors

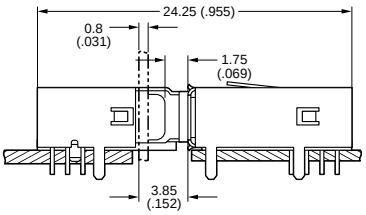


The PD4 Series are horizontal board connectors. They are designed for connections to peripherals via I/O adaptors, thereby enhancing the functionality and portability of mobile PCs.

FEATURES

- 0.6mm (.024") pitch, terminal through-hole type contact
- EMI shielded
  Plug supplied with nuts to mount to chassis (2 points) and ground terminal (2)
  Receptacle supplied with spring for ground chassis (2 points), and ground terminal (4)
- Compatible with plug & play, 2-step live insertion mechanism [Bump 0.6mm (.024")]
  (1) Power supply and 8 pins for ground [contact length 2.4mm (.094")]
  (2) 72 pins for signals (contact length 1.8mm (.071")]
- Mating guide length: Width: ±1mm (.039")
  Height: ±1mm (.039")
- Connector height: Less than 5mm (.197")— flat surface height
- Weight: Receptacle 3.1g, Plug 4.3g
- Polarity key prevents mis-mating

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	80
Contact Spacing	0.6mm (.024")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	100 milliohms max.
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Housing/Locator	Glass-filled LCP (UL94V-0)
Contact	Copper Alloy Connecting Area: Gold plating over Palladium-Nickel Terminal Area: Tin-Lead plating
Shell	SUS/terminal: Tin-Lead plating
Nut (Plug for panel)	Brass (M2)

ORDERING INFORMATION

PD4 * 080 N 9 A

Series — PD4

Contact Type
- B – Plug
- R – Receptacle

No. of Contacts
- 080

Termination Style
- N – Right Angle

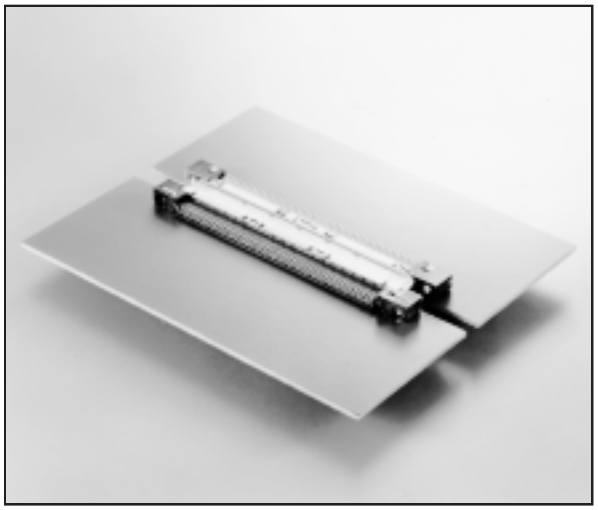
Finish Code
- 9 – Gold flash over palladium-nickel

Modification Code — A

Dimensions and specifications subject to change without notice.

KX20 SERIES CONNECTORS

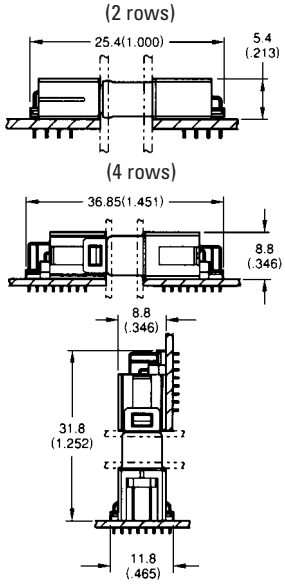
0.8mm (.031") Contact Spacing, EMI Shielded, PCB-to-PCB Connectors



FEATURES

- EMI shielding
- 0.8mm (.031") contact spacing
- First-to-make-last-to-break contacts for receptacles (4 contacts at each end)
- Mating guide
- Ribbon type contacts to prevent twisting force

Connector Profile (Ref.)



The KX20 Series of connectors are designed for high density PCB-to-PCB applications. The connectors enable horizontal and vertical (100 contacts only) connection between units.

The connectors have contact spacing of 0.8mm (.031") and are EMI shielded. They are ideal for interconnecting products such as personal computers and word processors to other units.

GENERAL SPECIFICATIONS

Number of Contacts	2 rows: 50, 80 4 rows: 100, 200, 240
Contact Spacing	0.8mm (.031")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	70 milliohms max.
Operating Temperature	-40°C to +80°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Shell	Steel/Nickel plate
Insulator	
Two Row, 50, 80 Contacts	Glass-Filled PPS/UL94V-0, Black
Four Row, 100 Contacts	Glass-Filled LCP/UL94V-0, Black
Four Row, 200, 240 Contacts	Glass-Filled LCP/UL94V-0, Black
Locator	
Two Row, 50, 80 Contacts	Glass Filled PPS/UL94V-0, Black
Four Row, 100 Contacts	Glass Filled PBT/UL94V-0, Black
Four Row, 200, 240 Contacts	Glass Filled LCP/UL94V-0, Black
Contact	Phosphor Bronze Connection Area: Gold plating, 0.1μm (.000004") min. over Palladium Nickel Terminal Area: Tin plating
Grounding Lug (Note 1)	Zinc Alloy/Tin plating
Hook Pin (Note 2)	Phosphor Bronze/Tin plating
Guide Screw	Zinc Alloy/Nickel plating

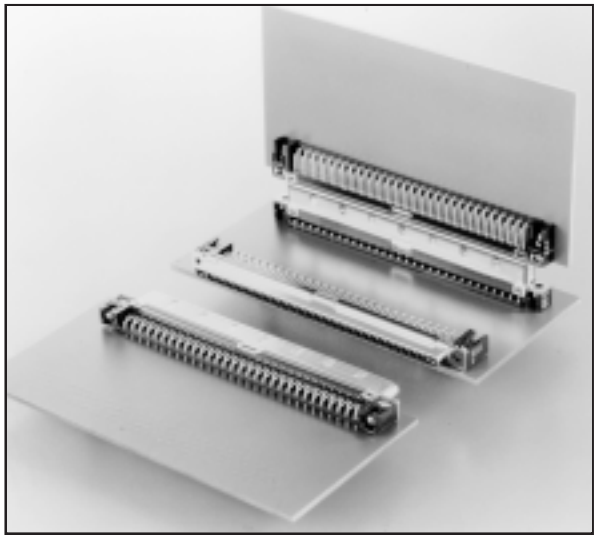
Note 1: For right angle type except 120 contacts plug.
Note 2: For right angle type.

Consult JAE for "Ordering Information".

Dimensions in mm (inches).

TX20 SERIES CONNECTORS

1.27mm (.050") Contact Spacing, EMI Shielded, PCB-to-PCB Connectors



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The TX20 Series is specifically designed to meet high density board-to-board interconnection requirements.

TX20 Series connectors enable either a horizontal or vertical connection between units without using a cable. This low profile half pitch 1.27mm (.050") connector is designed with an extremely low mounting height of 5.4mm (.212") for 10 to 120 contacts in horizontal connection.

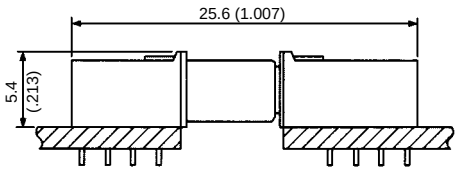
The connector features a rugged metal shell that interfaces with the unit, and the reliable ribbon style contact design protects against twisting. The metal ground lug provides excellent EMI shielding for applications that require EMI protection as well as high density.

The flexibility of this connector makes it an ideal product for notebook computers and other high density applications such as disk drives and memory devices.

FEATURES

- Contact spacing on mating side:
  1.27mm (.050") double row (10 to 120 contacts)
  1.27mm (.050") 4 rows (200 contacts)
  Contact spacing on tail side:
  1.27mm (.050") between contacts
  1.905mm (.075") between staggered rows
- Horizontal or vertical connection between boards is accomplished by combining right angle receptacles with straight or right angle plugs
- Reliable ribbon style contacts are more durable against twisting during mating or unmating
- Ground lug is provided on tail for grounding to PCB
- Eight longer contacts on the outer ends of the receptacle are extended for first to make, last to break

Connector Profile (Ref.)



Example of combined receptacle and plug

GENERAL SPECIFICATIONS

Number of Contacts	10, 26, 40, 120, 200 (Note 1)
Contact Spacing	1.27mm (.050")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min. (100 VDC)
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C

Note 1: Straight plug is available only with 120 contacts.

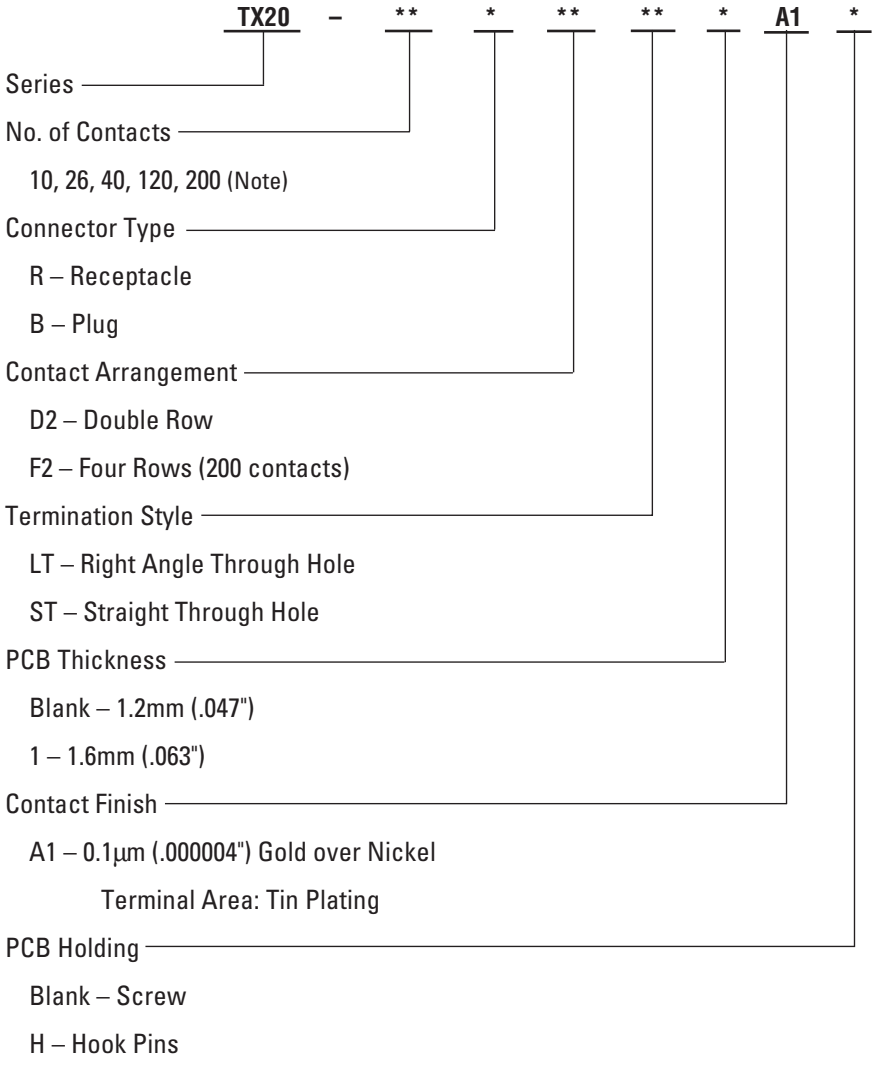
MATERIALS AND FINISHES

Description	Materials/Finishes
Shell	Steel/Nickel Plating
Insulator	Glass-filled PBT/UL94V-0, Black
Contact	Phosphor Bronze Connection area: 0.1μm (.000004") Gold over Nickel Terminal area: Tin plating
Ground Lug	Phosphor Bronze/Tin Plating (Note 2)
Hex Nut	Brass/Nickel Plating
Hook Pin	Phosphor Bronze/Tin Plating

Note 2: Zinc alloy/Nickel Plating for 200 contacts.

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

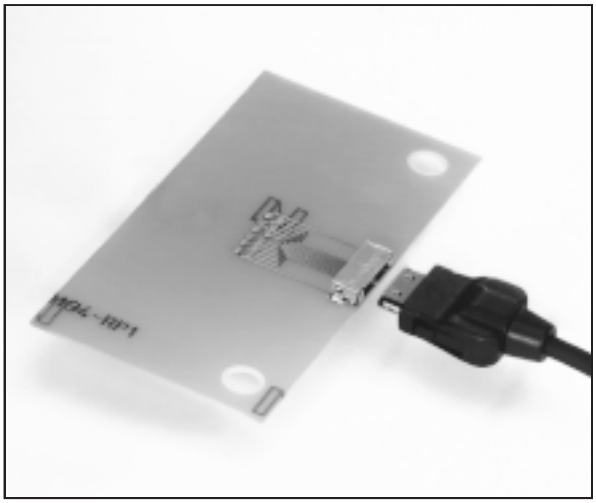


Note: Straight is available only with 120 contacts plug.

Dimensions in mm (inches).

DA1 SERIES CONNECTORS

0.6mm (.024") Contact Spacing, PCB-to-Cable Connectors

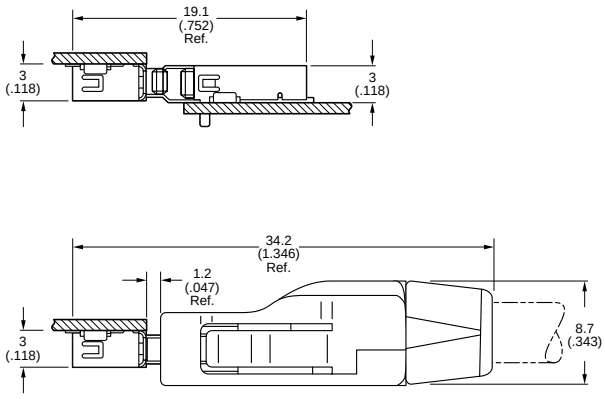


DA1 Series connectors are low profile SMT compact interface connectors for use in compact and slim mobile information terminal devices such as PDAs, HPCs, and notebook PCs.

FEATURES

- Mating height 3mm (.01"), mounting space reduced, 0.6mm (.024") pitch single line SMT interface connector
- Metal shell provides shielding against EMI and static electricity
- Side locking system
- Board mounting plug for cradle (catcher) available for 18 contact version
- Receptacles and cradles available in embossed tape for automatic SMT mounting

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	10, 18, and 26
Contact Spacing	0.6mm (.024")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	250 VAC r.m.s. (one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	50 milliohms max.
Operating Temperature	-25°C +75°C
Applicable Wire Sizes	AWG #28 max.

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Nylon (UL94V-0, Black)
Pin Contact	Copper Alloy, Gold plating over lead-nickel
Lead Contact	Tin-lead plating
Shell	Steel, Nickel plating

ORDERING INFORMATION

DA1 – * – 0 – * – 9 – ***

Series

Contact Type
- R – Receptacle
- P – Plug
- B – Cradle

No. of Contacts
- 10, 18 and 26

Termination
- H – Right angle with Hold-down (10 and 18 position only)
- L – Right angle without Hold-down (26 position only)
- M – Cable Plug

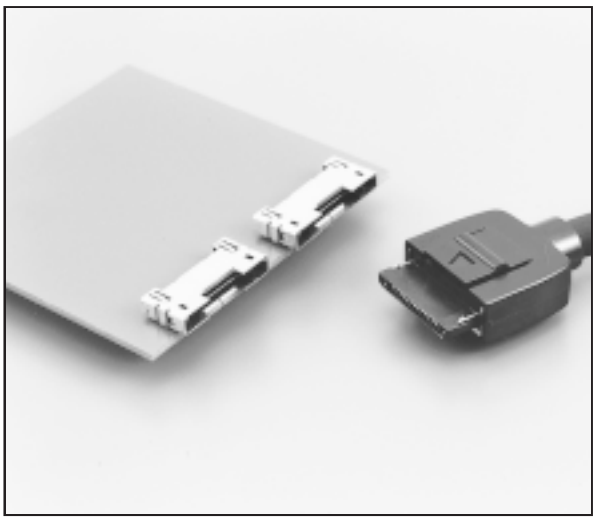
Contact Finish
- 9 – Gold plating 0.1μm (.000004") min. over Palladium Nickel

Modification Code
- Consult JAE

Dimensions and specifications subject to change without notice.

RL01 SERIES CONNECTORS

0.8mm (.031") Contact Spacing, PCB-to-Cable (Discrete Wire) Connectors



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RL01 Series connectors are low profile connectors designed for board-to-cable applications. The reduced weight and size of these RL01 connectors make them ideal for use in portable telecommunications applications such as cellular phone, notebook computers, PHS and PDA.

FEATURES

- Low profile, 3.0mm (.012") high
- Reduced mounting space, 0.8mm (.031") pitch, single row SMT interface
- EMI shielded with stainless steel shell
- Rapid, sure-locking mechanism
- Metal shell boss protects connections and assures soldered strength of PCB
- Receptacle available in embossed tape for automatic SMT mounting
- 10,000 mating cycles

ORDERING INFORMATION

RL01 – P XX X XX

Series

Connector Type
- P – Plug
- R – Receptacle

No. of Contacts
- 12, 14

Contact Type
- P – Pin
- S – Socket

Applicable Cable Diameter
- C4 – 4mm diameter
- C5 – 5mm diameter

GENERAL SPECIFICATIONS

Number of Contacts	12, 14
Contact Spacing	0.8mm (.031")
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-25°C to +75°C
Applicable PCB Thickness	1.0mm (.039")
Applicable Wire Size	AWG #26 (max.)

MATERIALS AND FINISHES

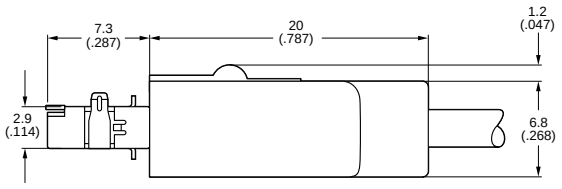
• Receptacle

Description	Materials/Finishes
Shell	Stainless Steel
Contact	Copper Alloy Connecting area: Gold Plating over Palladium over Nickel Terminal area: Tin Plating
Insulator	Glass-filled PPS (UL94V-0) Black

• Plug

Backshell	Stainless Steel
Contact	Copper Alloy Connecting area: Gold Plating over Palladium over Nickel Terminal area: Tin Plating
Insulator	Glass-filled Nylon (UL94V-0, Black)
Hood	Policarbonate
Clamp Barrel	Nickel plated
Lock Spring	Stainless Steel

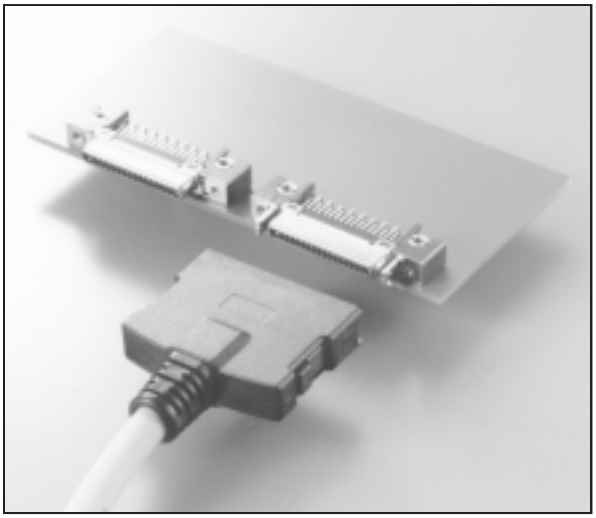
Connector Profile (Ref.)



Dimensions and specifications subject to change without notice.

TX20A SERIES CONNECTORS

1.27mm (.050") Contact Spacing, PCB-to-Cable (IDC Type) Connectors



FEATURES

- Mating side contacts are arranged on 1.27mm (.050") centers, double row
- Extremely low profile
- Right-angle through hole and SMT (right-angle and straddle) receptacle versions available
- Standard PCB front and reverse right-angle SMT versions available
- Reliable ribbon type contacts withstand twisting force of mating and unmating
- Rapid, sure-locking mechanism
- IDC termination for plugs

GENERAL SPECIFICATIONS

Number of Contacts	10, 14, 26, 36, 50, 68
Contact Spacing	1.27mm (.050"), Double row
Current Rating	0.5 Amps
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	40 milliohms max.
Operating Temperature	-40°C to +80°C
Applicable Wire	#28 AWG, discrete wires
Applicable PCB Thickness: Through Hole Type SMT Type	 1.2mm or 1.6mm (.047" or .063") 0.7mm (.028") min. 1.0mm, 1.2mm, 1.6mm (.039", .047", .063") for straddle
Applicable Panel Thickness	1.2mm (.047") max.

TX20A Series connectors are extremely low profile, high density connectors with contact spacing on 1.27mm (.050") centers. This series includes receptacles (board side), plugs (IDC termination) and hoods with a locking mechanism. This product is ideal for interface between electronic units. The ribbon type contact configuration will not fail under a twisting force during mating and unmating. The rapid locking system provides a positive "click" feel when locked. The TX20A Series is highly reliable and has excellent EMI shielding. The connectors provide flexibility in connecting between units of state-of-the-art electronic devices, such as laptop and pocket-type miniature computers.

MATERIALS AND FINISHES

• Receptacle

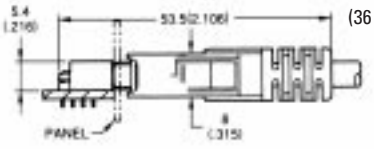
Description	Materials/Finishes
Shell	Steel/Nickel Plating
Contact	Phosphor Bronze Connecting area: Gold plated over Nickel [Gold 0.1 μm (.000004") min.] Terminal area: Tin Plating
Insulator	Glass-filled PBT (UL94V-0, Black) for through hole Glass-filled PPS (UL94V-0, Black) for SMT
Locator	Glass-filled PBT (UL94V-0, Black) (Through hole)
Hook Lug	Zinc Alloy/Nickel Plating
Ground Lug	Zinc Alloy/Nickel Plating (Through hole)
Hook Pin	Phosphor Bronze/Tin Plating (With-hook-pin type)
Spring Pin	Stainless (Straddle SMT)
Hold-Down	Phosphor Bronze/Tin Plating (Option for right angle SMT)

• Plug

Shell	Steel/Nickel Plating
Contact	Copper Alloy Connecting area: Gold plated over Nickel [Gold 0.1 μm (.000004") min.] Terminal area: Tin Plating
Base Insulator	Glass-filled Nylon (UL94V-0, Black)
Cover Insulator	Glass-filled PBT (UL94V-0, Black)
Backshell	Stainless Steel
Hood	Glass-filled PC (UL94V-0, Black)
Bushing	PVC/UL94V-0, Black
Lock Spring	Stainless Steel

Connector Profile (Ref.)

Through-hole type



(36 contacts)

Consult JAE for "Ordering Information".

Dimensions and specifications subject to change without notice.

DV2 SERIES CONNECTORS

1.905mm (.075") Contact Spacing, EMI Shielded, PCB-to-Cable Connectors

The DV2 Series was designed to meet the needs for high performance digital/analog interface between computer graphics input devices and the computer monitor. The DV2 supports Transmission Minimized Differential Signaling (TMDS), and conforms to the standard by (DDWG) Digital Display Working Group.

FEATURES

- Meets DDWG Standard
- EMI Shielded
- Digital and analog support in one connector
- Plug shell has grounding dimples, which provide EMI shielding protection

Consult JAE for "Connector Profile".

GENERAL SPECIFICATIONS

Number of Contacts	24 signal 4 coaxial contacts Analog/Digital, 24 contacts-Digital
Contact Spacing	1.905mm (.075")
Current Rating	Signal contacts: 3 Amps Coax contact: 1 Amp
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1,000 megohms min.
Contact Resistance	25 milliohms max.
Operating Temperature	-25°C to +85°C
Applicable Wire Size	Signal contact: #28 AWG Coax contact: #30 AWG, 75 ohms RGB coaxial cable

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT (White)
Location Plate	Nylon 6-6
Shell	Steel, Tin Plating
Signal Contact	Copper connecting area: Gold 0.1μm (.000004") min. over Nickel, Terminal area: Tin Lead Plating
Coaxial Contact	Inner contact: Beryllium copper Ground contact: Phosphor Bronze Connecting area: Gold 0.1μm (.000004") min. over Nickel, Terminal area: Tin Plating
Earth Lug	Brass, Tin Plating
Screw Lock	Steel, Tin Plating

ORDERING INFORMATION

DV2 – * * ***

Series

Connector Type

P – Plug, R – Receptacle

Contact Arrangement

024 – 24 Signal contacts

029 – 24 Signal contacts, 4 coaxial contacts

Mounting

N11 – with Screwlock

N12 – without Screwlock

M11 – Cable plug

Dimensions and specifications subject to change without notice.

D30/D31 SERIES CONNECTORS

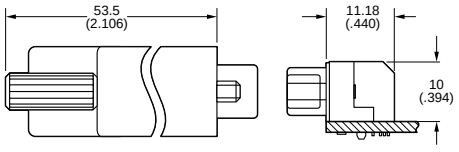
1.905mm (.075") Contact Spacing, P&D EMI Shielded PCB-to-Cable Connectors

The D30/D31 Series P&D connectors allow a monitor or flat panel to be used as an I/O hub for high frequency multimedia computer applications. D30/D31 P&D Series connectors meet or exceed the requirements of the Video Electronics Standards Association (VESA) Plug and Display standard and provide support for Transmission Minimized Differential Signal (TMDS) specified in the standard.

FEATURES

- Meets VESA P&D standard
- Eliminates the need for up to seven different connectors by combining many functions into one connector system
- 30 signal contacts and four quasi-coaxial contacts
- Signal contacts support IEEE1394 and USB serial bus standards
- Four pin quasi-coaxial circuit provides impedance control, decreases crosstalk and permits high speed video signal transmission
- EMI shielded receptacles include two levels of "first make/last break" contacts

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	30 signal contacts, 4 coaxial contacts
Contact Spacing	1.905mm (.075")
Current Rating Signal Contacts Coaxial Contacts	 3 Amps 1 Amp
Dielectric Withstanding Voltage	500 VAC r.m.s. (for one minute)
Insulation Resistance	1,000 megohms min.
Contact Resistance	25 milliohms max.
Operating Temperature	-25°C to +85°C
Applicable Wire Size Signal Contacts Quasi-Coaxial Contacts	 #22~30 AWG #30 AWG, 75 ohms RGB coaxial cable

MATERIALS AND FINISHES

• Plug

Description	Materials/Finishes
Signal Contact	Copper Connecting area: 0.76μm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating
Coaxial Contact	Copper Connecting area: 0.76μm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating
Coaxial Ground Contact	Copper Connecting area: 0.76μm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating (D31-P30: Gold flash)
Insulator	PPS (UL94V-0, Black)
Shell	Steel, Tin Plated
Clip	Copper Alloy, Tin Plating
Backshell Cover and Base	Stainless Steel
Clamp Barrel	Copper Alloy, Nickel Plating
Hood	Polycarbonate (UL94V-0, Ivory)
Screw Lock	Steel, Nickel Plating

MATERIALS AND FINISHES

• Receptacle

Description	Materials/Finishes
Signal Contact	Copper Connecting area: 0.76µm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating
Coaxial Inner Contact	Copper Connecting area: 0.76µm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating
Coaxial Ground Contact	Copper Connecting area: 0.76µm (.00030") Gold over Nickel Terminal area: Tin/Lead Plating (D31-P30: Gold flash)
Insulator	PPS (UL94V-0, Black)
Location Plate	PPS (UL94V-0)
Ground Rug	Copper Alloy, Tin Plating
Screw Lock	Steel, Nickel Plating

ORDERING INFORMATION

D3* – * 3* * – ***

Series
- D30 – D30 Series
- D31 – D31 Series

Connector Type
- P – Plug
- R – Receptacle

Contact Arrangement
- 30 – 30 Signal Contacts
- 34W4 – 30 Signal Contacts, 4 Quasi-Coaxial Contacts

Contact Type
- P – Pin
- S – Socket

Mounting Type
- A – Right Angle Through Hole (Receptacle)
- C9 – 9mm (.354") Cable Entry Diameter (Plug)
- C12 – 12mm (.472") Cable Entry Diameter (Plug)

Dimensions in mm (inches).

JL04V SERIES CONNECTORS

Waterproof, Wire Soldering Type, Circular Connectors

FEATURES

- Certified by European safety standards and UL standards

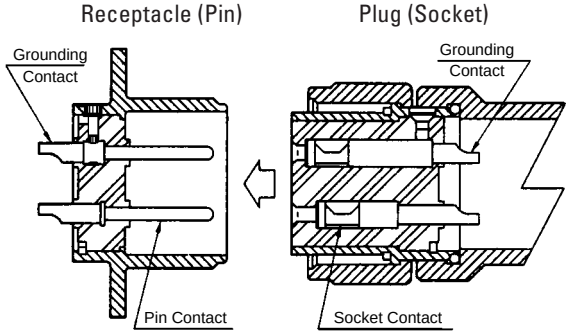
Certification Organization	Standards
TÜV	DIN VDE 0627
UL	UL-498 (E67741)

TÜV Rheinland

®

- First-to-make, last-to-break grounding contacts incorporated that connect with metallic shell to create protective earth circuit

Connector Profile (Ref.)



- IP67 class waterproof and dust-proof structure when mated
- Right angle, straight and straight without endbell (for use with conduit) plug types available
- Various contact arrangements
- Intermatable with MS connectors (Please consult JAE for details.)

JL04V Series are highly reliable circular connectors (wire soldering type) approved by TÜV as connectors satisfying European safety standards and by United States UL standards. They feature IP67 class water and dust proof (in the mated condition) structure, and a protective earth circuit with first-to-make, last-to-break grounding contacts. They are ideal for use in machine tools, servomotors, robots, and other industrial machines.

GENERAL SPECIFICATIONS

Number of Contacts	3, 4, 6, 7, 8, 9, 22 (See Note 1)			
Current Rating (Per contact)	Contact Size	Current Rating		
	#4	80 Amps max.		
	#8	46 Amps max.		
	#12	23 Amps max.		
	#16	13 Amps max.		
Rated Voltage	Refer to page xxx-xxx.			
Dielectric Withstanding Voltage	2,000 VAC r.m.s. (for one minute)			
Insulation Resistance	1,000 megohms min. (5,000 megohms min. for 28-11)			
Contact Resistance (Steady level initial)	Contact Size	Applicable Wire AWG No.	Test Current Amps.	Contact Resistance milliohms max.
	#4	#4	80	1
		#6	60	1
		#8	46	1
	#8	#10	46	2
		#12	33	2
	#12	#12	23	2
		#14	17	3
		#16	13	4
	#16	#16	13	4
		#18	10	7
		#20	7.5	8
		#22	5	15
		#24	3	15
Operating Temperature	-55°C to +125°C			
Applicable Wire Size and Cross Section	#4 2.2mm^2 max. #8 5.5mm^2 max. #12 3.5mm^2 max. #16 1.25mm^2 max. (0.5mm^2 max. for 2E10SL-3P)			
Waterproof (mated condition)	IP67 Class			
Air Tightness (Receptacle)	2.9 x 10^4 Pa (0.3 kg/cm^2), one minute			
Durability	500 Cycles			

Note 1: See page xxx-xxx for detailed availability.

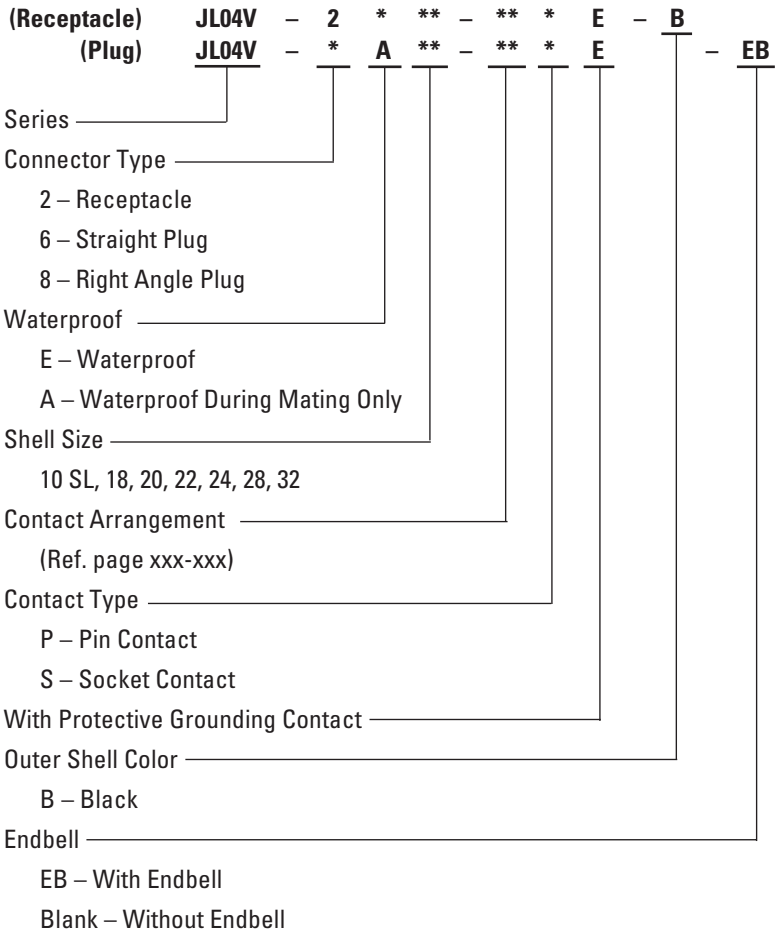
MATERIALS AND FINISHES

Description	Materials/Finishes
Shell	Aluminum Alloy/Zinc plating (Black)
Insulator	Synthetic Resin/Black (See Note)
Contact	Copper Alloy/Silver plating
Gasket	Synthetic Rubber
Retaining Ring	Copper Alloy/Zinc plating (OD chromate)
Endbell Fixing Screw	Steel/Zinc plating
Grounding Pin/Screw (Screw: 24-10 (G) only)	Copper Alloy/Nickel plating

Note: Front part of receptacle is silicone rubber.
Synthetic resin for contact arrangement 28-11 only.

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION



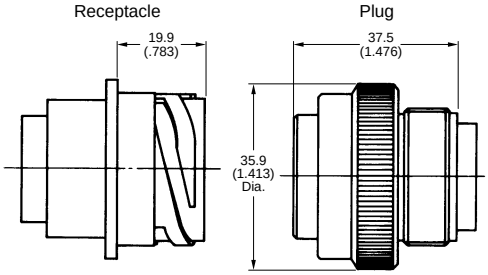
JL05 SERIES CONNECTORS

Waterproof, Circular Connectors

FEATURES

- Five insert guide keys for easy mating and unmating
- First-to-make/last-to-break contacts
- IP55F class waterproof structure

Connector Profile (Ref.)



The JL05 Series connectors conforms to JISB6015 specifications. JL05 is a circular, waterproof connector using IP55F structure. There is a one-touch locking mechanism for ease in mating and unmating. With first-to-make/last-to-break contacts, you are ensured a good circuit protection. Their ideal application are machining tools, servomotors, robots, and other industrial machines. The JL05 Series has two types of panel mount connectors. One option is waterproof only in the mated condition (JL05-2A/JL05-6A) and the other option is fully waterproof by itself (JL05-2L/JL05-6A).

GENERAL SPECIFICATIONS

Rated Current	Contact Size	#20 5A	#16 13A	#12 23A	#8 46A
Rated voltage		INST	A		D
	DC.V AC.Vr.m.s.	250 200	700 500		1,250 900
Dielectric Withstanding Voltage	AC.Vr.m.s.	1,000	2,000		2,800
Insulation Resistance	5,000 MΩ min. waterproof when mated 1,000 MΩ min. single waterproof structure				
Contact Resistance	Contact Size mΩ max.	#20 15	#16 4	#12 2	#8 0.6
Operating Temperature	-55°C ~ +125°C				
Humidity	Relative Humidity: 85% max.				

No. of Contacts		1 ~ 28	29 ~ Ground
Dielectric Withstanding Voltage	AC. V r.m.s.	1,500	2,000
Rated Voltage	AC. V r.m.s.	250	500

MATERIALS AND FINISHES

Shell	Aluminum Zinc Plating
Coupling Nut	Aluminum Olive Drab or Black
Insulator	Synthetic Resin (UL94V-0)
Front Insulator (Single Waterproof type)	Synthetic Rubber
Contact	Copper Alloy, Silver Plating
O-Ring	Synthetic Rubber
Retaining Ring	Copper Alloy, Zinc Plating
Stop Ring	Stainless Steel
Wave Spring	Stainless Steel
Earth Lug	Copper Alloy, Silver Plating

Dimensions and specifications subject to change without notice.

ORDERING INFORMATION

• JL05-A

JL05 – 6 A 24 – 10 P C * – * – FO

- Series
- Shell Style
- ??
- Shell Size
- Contact Arrangement
- Contact Type
  - P – Pin Contact
  - S – Socket Contact
- Crimp
- Alternate Insert Position
  - V, W, X, Y, Z
- Color
  - A66 – Olive Drab
  - A72 – Black
- Modification Code
  - FO – Without Contacts

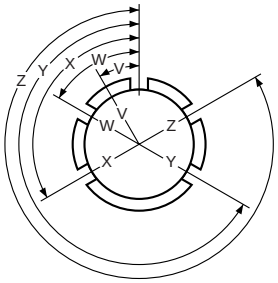
• JL05-L

JL05 – 2 L 24 – 10 P * – *

- Series
- Shell Style
  - Waterproof
- L – Single Waterproof
  - (Pin contacts only)
- A –Waterproof when mated
- Shell Size
- Contact Arrangement
- Contact Type
  - P – Pin Contact
- Alternate Insert Position
  - V, W, X, Y, Z
- Color
  - A66 – Olive Drab
  - A72 – Black

ALTERNATE INSERT POSITIONS (POLARIZATION)

The position of the guide key of the shell changed by a certain angle in relation to the standard insert position is indicated by the symbols V, W, X, Y and Z. Use this table for reference when instructing since the changeable angle will differ depending on the contact arrangement. This diagram shows the contact pin arrangement as viewed from the pin side coupling.



No. of Contacts	Polarization					
	Arrangements	V°	W°	X°	Y°	Z°
4	22-22	45	—	160	—	300
5	18-11	35	—	170	265	—
7	20-15	30	80	—	—	280
	24-10	30	80	—	—	280
8	22-23	25	85	—	—	—
9	24-11	—	35	110	190	325
10	18-1	—	70	145	260	290
17	20-29	—	80	—	—	280
19	18-19A	—	80	110	250	280
	22-14	—	75	150	—	285
24	24-28	—	80	110	250	280
30	20-30A	—	80	110	250	280
36	28-36B	—	80	110	250	280
37	28-21	—	80	110	250	280
58	24-52A	—	80	110	250	280
73	28-73A	—	80	110	250	280

Dimensions and specifications subject to change without notice.

JB1 SERIES CONNECTORS

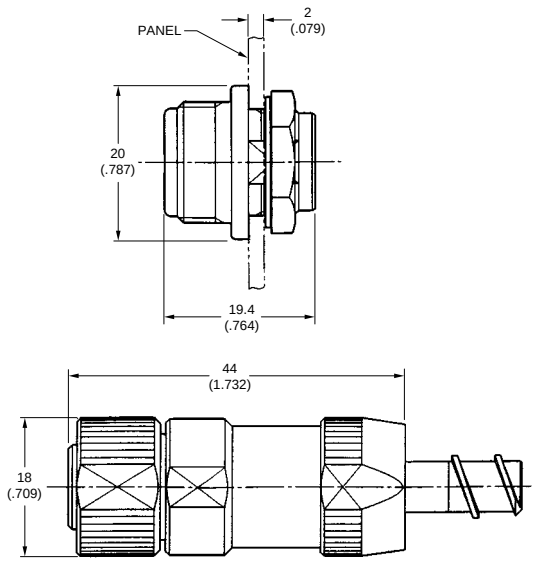
General Purpose Waterproof, Miniature Circular Connectors

The JB1 Series are circular, crimp connectors that are waterproof when in the mated condition. Applications for this series include various industrial equipment, and test & measurement equipment.

FEATURES

- Compact circular connector for EMI protection
- Earth lug on plug can be grounded by attaching it to the shield line of the cable
- Crimp contacts
- Waterproof when mated in accordance with IP67 specification

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

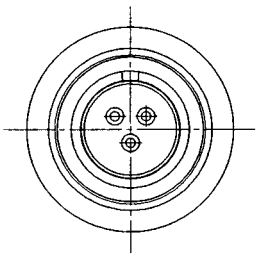
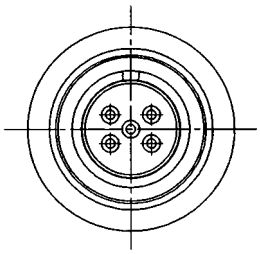
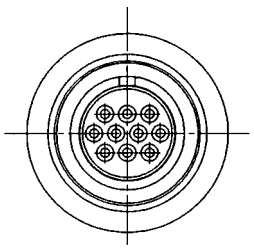
Number of Contacts	3, 5, 10
Current Rating	3 Amps per contact
Rated Voltage	Less than 300 VAC r.m.s.
Dielectric Withstanding Voltage	900 VAC r.m.s. (for one minute)
Operating Temperature	-55°C to +85°C
Applicable Wire Size	AWG #22 to 28

MATERIALS AND FINISHES

Components	Receptacle (body & relay)	Plug
Housing	Synthetic resin	Synthetic resin
Shell	Zinc alloy (Nickel plated)	Zinc alloy (Nickel plated)
End Bell	Aluminum alloy (Nickel plated)	Aluminum alloy (Nickel plated)
Ground Nut	Zinc alloy (Nickel plated)	Zinc alloy (Nickel plated)
O-Ring	Nitrile rubber	Nitrile rubber
Bushing	Nitrile rubber, ethylene propylene rubber	Nitrile rubber, ethylene propylene rubber
Contact	Copper alloy (Gold plated)	Copper alloy (Gold plated)

JB1 SERIES CONNECTORS

General Purpose Waterproof, Miniature Circular Connectors

Arrangement	3 Contacts	5 Contacts	10 Contacts
Contact Arrangement (View from Pin Insert Mating Side)			
Size x No. of Contact	#22 x 3	#22 x 5	#22 x 10
Current Rating	3 Amps	3 Amps	3 Amps
Rated Voltage	300 VAC r.m.s.	300 VAC r.m.s.	300 VAC r.m.s.
D.W.V. (for one minute)	900 VAC r.m.s.	900 VAC r.m.s.	900 VAC r.m.s.
Applicable Wire	#22 ~ #28 AWG	#22 ~ #28 AWG	#26 ~ #28 AWG

ORDERING INFORMATION

JB1 * * * * L *

Series

Shell Style
- C – Jam Nut
- D – Straight Plug
- H – Interconnecting Receptacle

Shell Size
- B – 10

No. of Contacts
- 3, 5, 10

Contact Type
- P – Pin, S – Socket

Contact Form
- L – #22 Contact

Modification No.
- 1 – Receptacle
- 2 – Plug, Anti-oil (Note 1)
- 5 – Weatherproof (Note 1)

Note 1: Cable plugs are waterproof only in the mated condition.

Dimensions in mm (inches).

JB3 SERIES CONNECTORS

General Purpose Waterproof, Miniature Circular Connectors

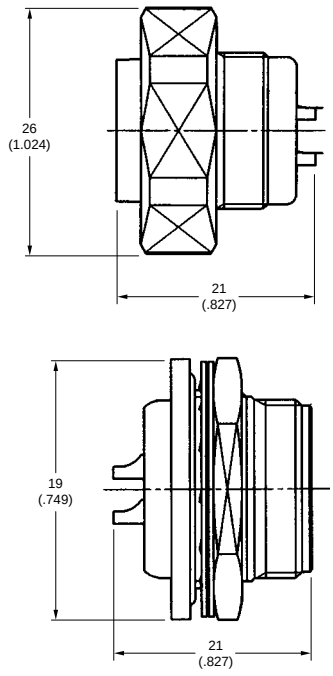
• • • • • • • • • • • • • • •

The JB3 Series is a waterproof circular connector with solder contacts for excellent resistance to harsh environments. Uses include FA equipment and outdoor electronic devices.

FEATURES

- Jam nut receptacle allows easy panel mounting
- Front insulator has synthetic rubber for waterproofing
- Cable plug is waterproof when assembled
- Solder contacts

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	3, 4, 8
Current Rating	For 3 and 4 contact: 10 Amps per contact For 8 contact: 5 Amps per contact
Rated Voltage	AC500V, DC700V
Dielectric Withstanding Voltage	For 3 contact: 2,000 VAC r.m.s. (for one minute) For 4 and 8 contact: 1,500 VAC r.m.s. (for one minute)
Operating Temperature	-25°C to +85°C
Connection	Solder (Condition: 350° ± 10°C, 3 seconds ±1 second)
Insertion/Removal Life	100 times

MATERIALS AND FINISHES

Components	Receptacle	Plug
Shell	Zinc alloy (Nickel plating)	—
Front Insulator	Synthetic rubber	Synthetic resin
Rear Insulator	Synthetic rubber	Synthetic resin
Contact	Copper alloy (Gold plating)	Copper alloy (Gold plating)
Jam Nut	Copper alloy (Nickel plating)	—
Plate Washer	Copper alloy (Nickel plating)	—
Internal Tooth Washer	Copper alloy (Nickel plating)	—
O-Ring	Synthetic rubber	Synthetic rubber
Barrel	—	Zinc alloy (Chrome plating)
Coupling Nut	—	Copper alloy (Nickel plating)
Spacer	—	Synthetic resin
Hood	—	Synthetic resin
Adapter	—	Synthetic resin

ORDERING INFORMATION

JB3 * T * * * 1

Series — JB3

Shell Style —
- E – Straight Plug (without endbell)
- C – Jam Nut Receptacle

Connector Size — T

No. of Contacts —
- 03 – 3
- 04 – 4
- 08 – 8

Contact Type —
- M – Pin, F – Socket

Contact Size —
- G – #12, K – #20

Modification — 1

Dimensions and specifications subject to change without notice.

SRCN SERIES CONNECTORS

Low Cost, General Purpose Miniature Circular Connectors

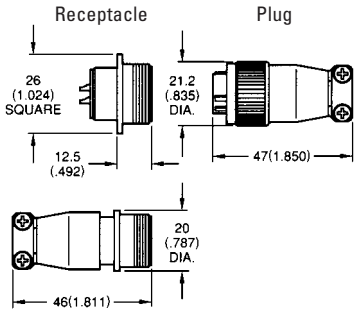
SRCN Series connectors are low cost, light weight, general purpose, circular connectors with soldering termination, recognized under the Component Program of Underwriter Laboratories, File No. E-67741 (S). Three styles are available for making connection between cables, and between cable and panel: Straight Plug, Cable Connecting Plug and Box Mounting Receptacle. Both pin and socket inserts are available in each style.

Applications include broadcast and communication systems, medical equipment, telecommunications, measurement equipment, business machines, computers and peripherals, automation equipment, tooling, controlling devices, vending machines, electronic entertainment equipment and other electronic equipment.

FEATURES

- Miniature, lightweight, solid construction
- General purpose
- Low cost connector
- Product approved by UL standard: File No. E-67741 (s)
- Highly reliable contact finish
- Stable connections
- Positive polarization with five keys and keyways

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	#16: 3, 7, 10, 16 #20: 5, 10, 16, 24
Current Rating	5 Amps max. for #20 contact 10 Amps max. for #16 contact
Operating Voltage	250 VAC r.m.s., max. 350 VDC max.
Operating Temperature	-25°C to +85°C
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	1000 megohms min. (with 500 VDC)
Contact Resistance	5 milliohms max.
Durability	500 cycles

MATERIALS AND FINISHES

Description	Materials/Finishes
Shell, Barrel, Endbell, Coupling Nut, Clamp	Aluminum alloy, Nickel plated (satin)
Insulator	Synthetic resin, UL94V-O (Green)
Contact	Copper alloy, Silver plated
Retaining Ring	Copper alloy, Nickel plated
Set Screw, Clamp Screw	Steel, Nickel plated

SRCN SERIES CONNECTORS

Low Cost, General Purpose Miniature Circular Connectors

ORDERING INFORMATION

SRCN 6 A 13 – 3 P

Series

Shell Style

1 – Cable Connecting Plug

2 – Box Mounting Receptacle

6 – Straight Plug

Class

A – General Purpose

Shell Size

13, 16, 21, 25

No. of Contacts

3, 5, 7, 10, 16, 24

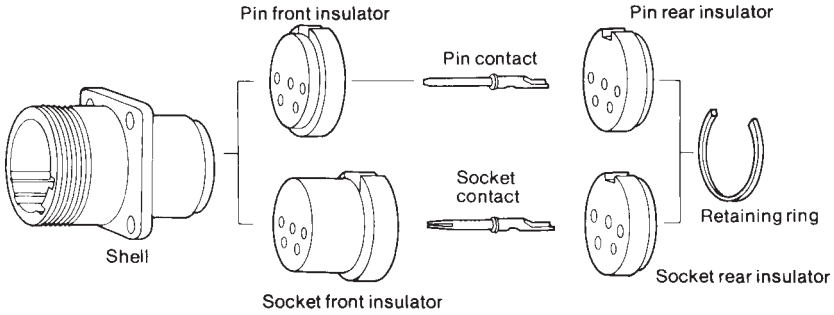
(Refer to Contact Arrangement Chart)

Contact Type

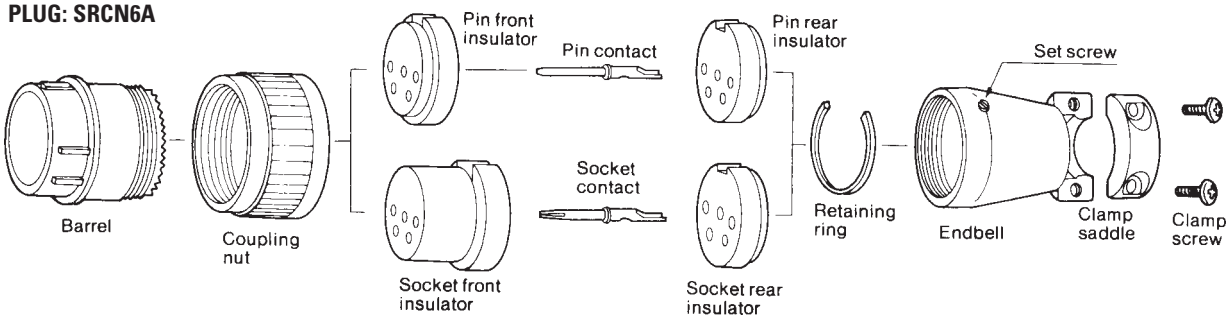
P – Pin

S – Socket

RECEPTACLE: SRCN2A



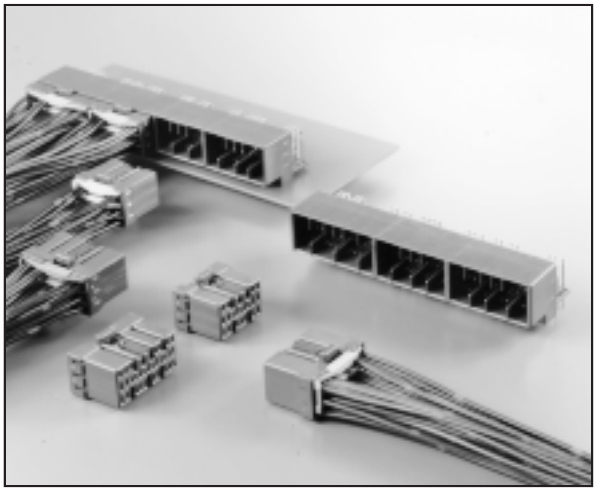
PLUG: SRCN6A



Dimensions in mm (inches).

MX7 SERIES CONNECTORS

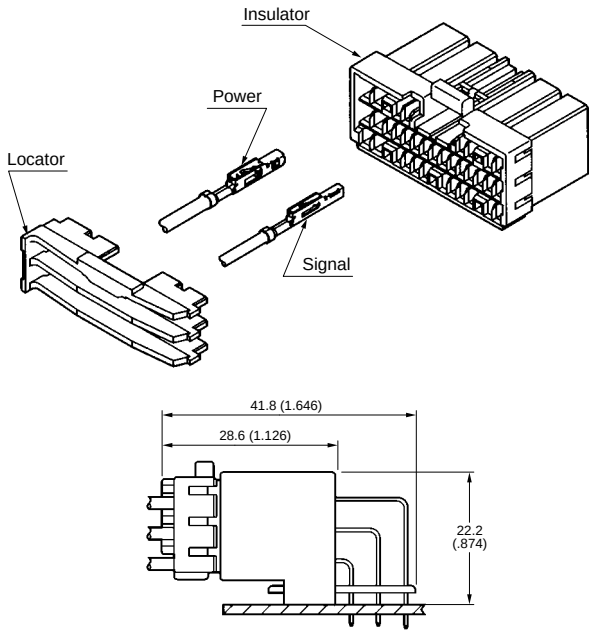
025 Crimp Contacts, PCB-to-Cable Connectors



FEATURES

- Signal contacts (5 Amps) and Power contacts (7 Amps) are housed in the same connector
- Mechanical lock assures positive mating
- Double locking mechanism prevents contact from dislodging
- Several wire terminated sockets are coupled with a pin header mounted on a board
- Designed for Engine Control Unit

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	Pin: 35, 48, 93, 109, 119 Socket: 20, 26, 28, 30, 35
Contact Spacing	Signal: 2.3mm (.091") Power: 3.0mm (.118")
Current Rating	Signal: 5 Amps, Power: 7 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	3 milliohms max.
Applicable PCB Thickness	1.6mm (.063")
Operating Temperature	-40°C to +85°C

Applicable Wire (Stranded)

Contact Type	Signal		Power
Wire Type JIS	AVS	AVSS	AVS, AVSS
Conductor Cross Section Area	0.3~0.5mm^2	0.3~0.85mm^2	0.5~1.25mm^2
AWG	#22-#20	#22-#18	#20-#16
Insulation Outer Diameter	ø1.4~ø2.1mm (ø.055~ø.083")		ø1.6~ø2.6mm (ø.063~ø.102")

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PBT (Dark Gray)
Socket	PBT (Dark Gray)
Locator	Glass-filled PBT (Dark Gray)
Pin Contact	High Conductive Copper Alloy/Tin Plating or Gold (Connecting points)
Socket Contact	High Conductive Copper Alloy/Tin Plating or Gold (Connecting points) with Solder (SnPb terminal area) Plating over Nickel
Retainer	Glass-filled PBT (20 Position: White, 26/35 Position: Light Blue, 28 Position: Orange, 30 Position: Green

Note 1: Insert the number of gold plated contact for Power and Signal contacts
P*The Number of Power Contacts
S*The Number of Signal Contacts

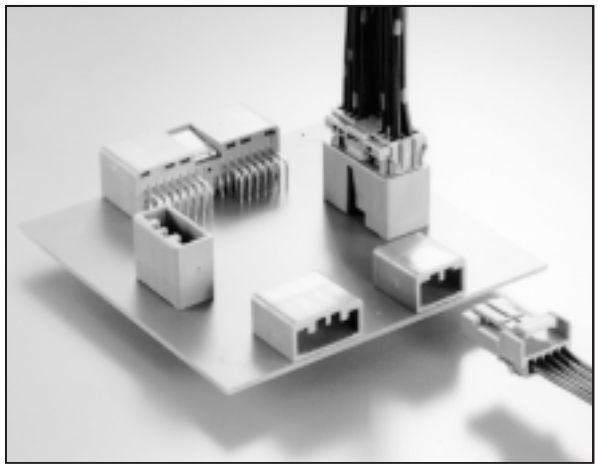
- The above shows the general group of products. Please contact JAE Customer Service when placing an order.
- Suggested screws:
  M3 tapping screws (2 or 4 grade) per JIS B1115, 1122 or 1123
- Drawing shown is for 35 positions. The stacking design varies according to the number the positions.

Consult JAE for "Ordering Information".

Dimensions and specifications subject to change without notice.

IL-AG5 SERIES AUTOMOTIVE CONNECTORS

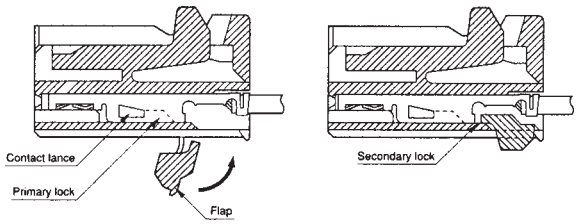
.025 Crimp Contacts, PCB-to-Cable/Cable-to-Cable Applications



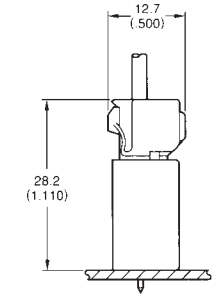
FEATURES

- Designed for automotive instrument panel applications
- Mechanical lock assures positive mating
- Unique housing configuration helps prevent mismating
- Double locking mechanism prevents dislodging of contacts

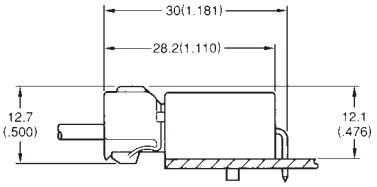
Connector Profile (Ref.)

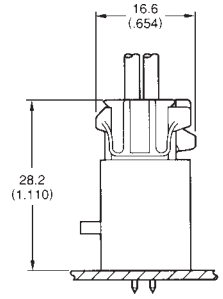


- Polarized version is available (Single row, 5 and 6 contacts only)
- Highly reliable socket contacts
- Simplified crimp-type termination

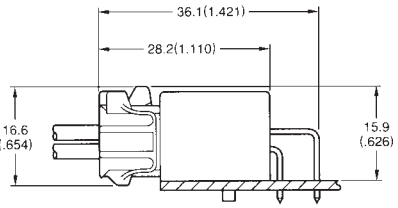


SINGLE ROW TYPE





DOUBLE ROW TYPE



GENERAL SPECIFICATIONS

Number of Contacts	5, 6, 7, 10 (single row) 14, 16, 18, 22, 30 (double row)
Contact Spacing	2.5mm (.098")
Current Rating	3 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6 to 2.4mm (.063" to .094")
Operating Temperature	-40°C to +85°C

APPLICABLE WIRE (Stranded)

Wire Type (JIS)	AV, AVS, AVSS	AVS, AVSS
AWG No.	#22 to #20	#18
Conductor Cross Section Area	0.3 to 0.5mm^2	0.85mm^2
Insulation Outer Dia.	1.4 to 2.4mm (.055 to .094")	

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT, Yellow (Green or Light Blue for polarized version)
Pin Contact	Brass/Tin Plating Cable plug pin contact: Highly conductive Copper alloy
Socket Contact	Phosphor Bronze /Tin Plating

Note: The standard finish of contacts is tin plating.
Gold plating is available as an option. Consult JAE for details.

ORDERING INFORMATION

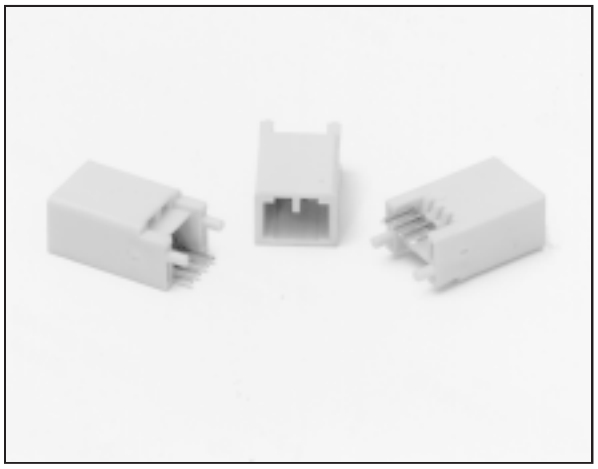
IL-AG5 – ** * * – * 3 * * – * – **

Series
No. of Contacts
Single Row – 5, 6, 7, 10
Double Row – 14, 16, 18, 22, 30
Contact Type
P – Pin S – Socket
Modification Code
K – Polarized version, 5 and 6 contacts only
Blank – Standard type
Contact Layout
S – Single Row D – Double Row
Contact Pitch
3 – 2.5mm (.098")
Termination
T – Straight Through Hole L – Right Angle Through Hole
C – Crimp
Applicable PCB Thickness (pin header)
2 – 1.6mm (.063")
Applicable Wire Size (Housing)
1 – AWG #18 to #22, Stranded
Modification Code A
Insulator Color
LB – Light Blue Blank – Green

Dimensions and specifications subject to change without notice.

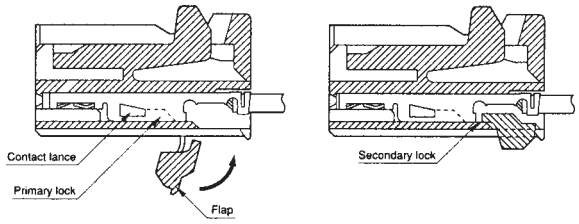
IL-AG6 SERIES AUTOMOTIVE CONNECTORS

.025 Crimp Contacts, PCB-to-Cable/Cable-to-Cable Applications



FEATURES

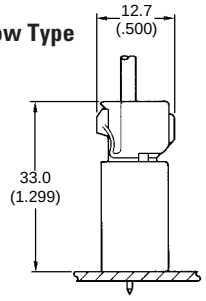
- Designed for automotive instrument panel applications
- Mechanical lock assures positive mating
- Unique housing configuration helps prevent mismating
- Double locking mechanism prevents dislodging of contacts



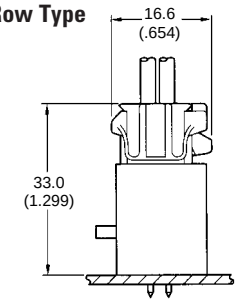
- Polarized version is available (Single row, 5 and 6 contacts only)
- Highly reliable socket contacts
- Simplified crimp-type termination

Connector Profile (Ref.)

Single Row Type



Double Row Type



GENERAL SPECIFICATIONS

Number of Contacts	4, 7, 10 (single row) 14 (double row)
Contact Spacing	2.5mm (.098")
Current Rating	3 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6 to 2.4mm (.063" to .094")
Operating Temperature	-40°C to +85°C

APPLICABLE WIRE (Stranded)

Wire Type (JIS)	AV, AVS, AVSS	AVS, AVSS
AWG No.	#22 to #20	#18
Conductor Cross Section Area	0.3 to 0.5mm^2	0.85mm^2
Insulation Outer Dia.	1.4 to 2.4mm (.055 to .094")	

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT (Green or Light Blue for polarized version)
Pin Contact	Brass/Tin Plating Cable plug pin contact: Highly conductive Copper alloy
Socket Contact	Phosphor Bronze /Tin Plating

Note: The standard finish of contacts is tin plating.
Gold plating is available as an option. Consult JAE for details.

ORDERING INFORMATION

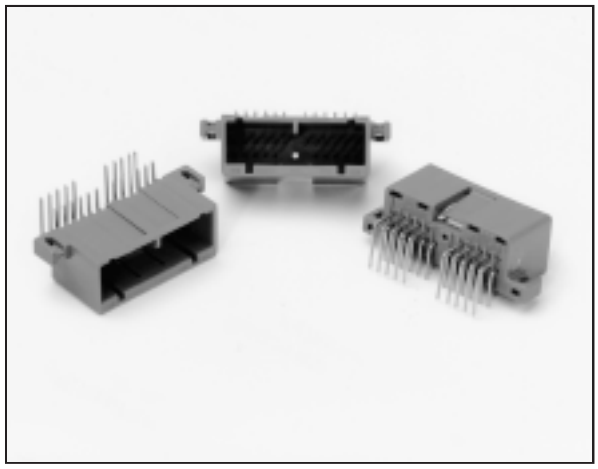
IL-AG6 – ** * * – * 3 * * – * – **

Series
No. of Contacts
Single Row – 4, 7, 10
Double Row – 14
Contact Type
P – Pin S – Socket
Modification Code
Blank – Standard type
Contact Layout
S – Single Row D – Double Row
Contact Pitch
3 – 2.5mm (.098")
Termination
T – Straight Through Hole L – Right Angle Through Hole
C – Crimp
Applicable PCB Thickness (pin header)
2 – 1.6mm (.063")
Applicable Wire Size (Housing)
1 – AWG #18 to #22, Stranded
Modification Code A
Insulator Color
Y – Yellow Blank – Green

Dimensions and specifications subject to change without notice.

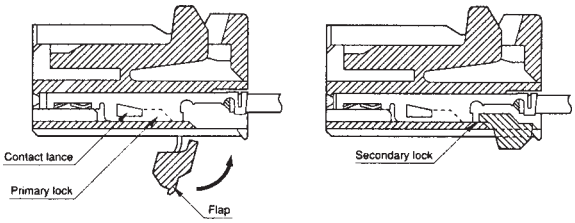
IL-AG7 SERIES AUTOMOTIVE CONNECTORS

2.5mm (.098") Contact Spacing, 025 Crimp Contacts, PCB-to-Cable



FEATURES

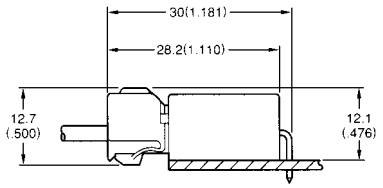
- Designed for automotive instrument panel applications
- Mechanical lock assures positive mating
- Unique housing configuration helps prevent mismating
- Double locking mechanism prevents dislodging of contacts



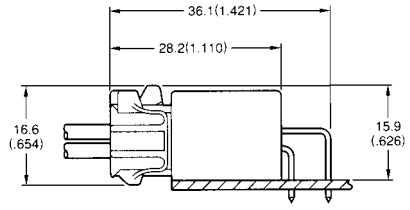
- Polarized version is available (Single row)
- Highly reliable socket contacts
- Simplified crimp-type termination
- IL-AG5 is used for socket side

Connector Profile (Ref.)

SINGLE ROW TYPE



DOUBLE ROW TYPE



GENERAL SPECIFICATIONS

Number of Contacts	5, 10 (single row) 14, 22, 30 (double row)
Contact Spacing	2.5mm (.098")
Current Rating	3 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6 to 2.4mm (.063" to .094")
Operating Temperature	-40°C to +85°C

APPLICABLE WIRE (Stranded)

IL-AG5 Socket Connector

Wire Type (JIS)	AV, AVS, AVSS	AVS, AVSS
AWG No.	#22 to #20	#18
Conductor Cross Section Area	0.3 to 0.5mm^2	0.85mm^2
Insulation Outer Dia.	1.4 to 2.4mm (.055 to .094")	

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT (Green or Light Blue for polarized version)
Pin Contact	Brass/Tin Plating
Socket Contact	Phosphor Bronze /Tin Plating

Note: The standard finish of contacts is tin plating.
Gold plating is available as an option. Consult JAE for details.

ORDERING INFORMATION

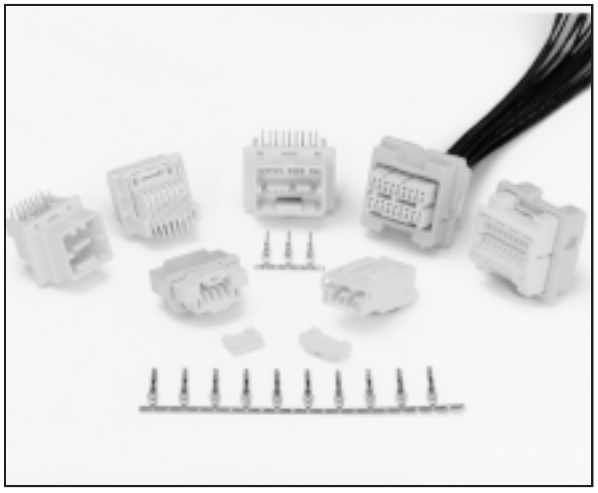
**IL-AG7 – ** * * – * 3 * * – **

Series
No. of Contacts
Single Row – 5, 10
Double Row – 14, 22, 30
Contact Type
P – Pin S – Socket
Modification Code
K – Polarized Version, 5
Blank – Standard type
Contact Layout
S – Single Row D – Double Row
Contact Pitch
3 – 2.5mm (.098")
Termination
L – Right Angle Through Hole
Applicable PCB Thickness (pin header)
2 – 1.6mm (.063")
Insulator Color
Blank – Green
LB – Light Blue (For polarized version)

Dimensions and specifications subject to change without notice.

MX10 SERIES CONNECTORS

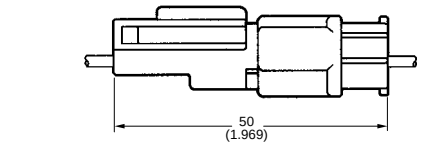
040 Contacts, PCB-to-Cable Applications

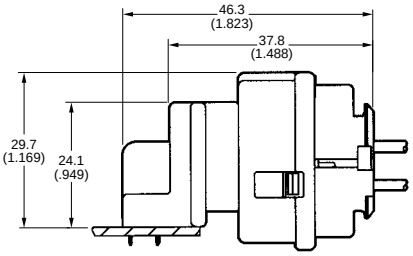


FEATURES

- High reliable connector designed specifically for air bag applications
- Perfect mechanical lock assures positive mating
- Reduced size

Connector Profile (Ref.)





The MX10 Series connectors are available in 2.5mm (.098") pitch connector for PCB-to-Cable (crimp type), and Cable-to-Cable connector versions for use in air bag applications.

GENERAL SPECIFICATIONS

Number of Contacts	Board-to-Wire: 14, 18 Cable Connecting: 4
Contact Spacing	2.5mm (.098")
Current Rating	5 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	5 milliohms max.
Applicable PCB Thickness	1.6mm (.063")
Operating Temperature	-40°C to + 85°C

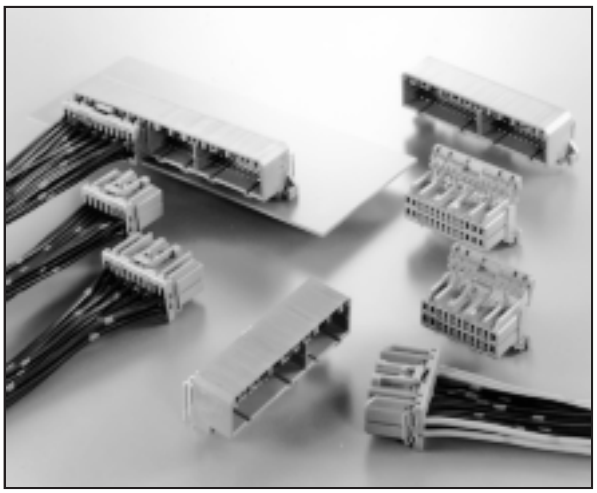
MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator/Cover	Glass-filled PBT (Yellow)
Coil Spring	SUS 304
Socket Contact Pin Short Contact	Phosphor Bronze/Selective Gold Plating
Retainer	Glass-filled PBT (Yellow)

Consult JAE for "Ordering Information".

MX5 SERIES AUTOMOTIVE CONNECTORS

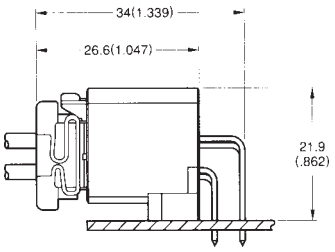
040/070 Crimp Contacts, PCB-to-Cable Applications



FEATURES

- Designed for state-of-the-art interconnections for automotive electronic equipment.
- Designed for high density packaging with numerous contacts in an engine control unit.
- Signal contacts (4 Amps) and power contacts (8 Amps) are housed in the same connector.
- Several wire-terminated sockets are coupled with a pin header mounted on a board.
- Mechanical lock assures positive mating.
- Double locking mechanism avoids contact dislodging.
- Highly reliable socket contacts.
- Simplified crimp type termination.

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	Pin: 34, 42, 48, 54, 64, 76 Socket: 12, 16, 22, 26
Contact Spacing	Signal: 3.0mm (.118") Power: 3.5mm (.138")
Current Rating	Signal: 4 Amps, Power: 8 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	5 milliohms max.
Applicable PCB Thickness	1.6mm (.063")
Operating Temperature	-40°C to +85°C

APPLICABLE WIRE (Stranded)

Contact Type	Signal	Power
Wire Type (JIS)	AVS, AVSS, AVX	
AWG No.	#24 to #18	#22 to #16, #14 (AVSS)
Conductor Cross Section Area	0.2 to 0.85mm^2	0.3 to 2mm^2 (Note)
Insulation Outer Dia.	1.2 to 2.2mm (.047 to .087")	1.4 to 2.9mm (.055 to .114")

Note: 2mm^2 for AVSS only.

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	Glass-filled PBT (Green or light blue for 34 contacts only, note 2)
Socket Housing	PBT (Green, note 2)
Contact (note 1)	Pin: Brass, Socket: Phosphor Bronze Finishes: Tin plating or Gold (connecting area) with Solder (terminal area) plating over nickel

Note 1: For pin contacts, tin plating is standard finish. Gold plated contacts can be supplied with standard contacts in the same connector. Please consult JAE for details.

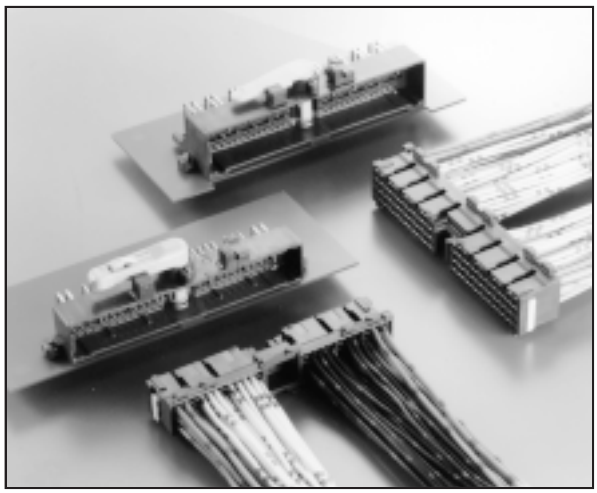
Note 2: The standard color of insulator and socket housings is green. Other colors are available. For details, please consult JAE.

Consult JAE for "Ordering Information".

Dimensions and specifications subject to change without notice.

MX6 SERIES AUTOMOTIVE CONNECTORS

040/060 Contacts, ZIF-Type, PCB-to-Cable Applications

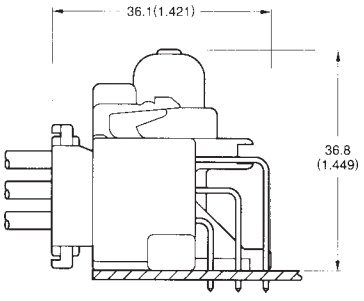


FEATURES

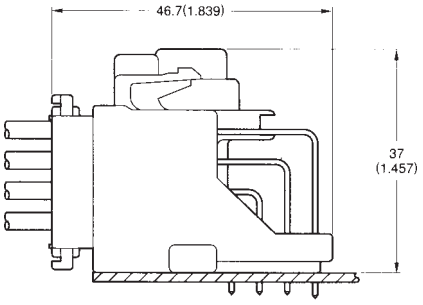
- Designed for state-of-the-art interconnections for automotive electronic equipment
- Signal contacts (5 Amps) and power contacts (9 Amps) are housed in the same connector
- Designed for high density packaging with numerous contacts such as in an engine control unit
- ZIF (zero insertion force) design
- Positive contact engagement
- Double locking mechanism avoids contact dislodging
- Highly reliable socket contacts
- Simplified crimp-type termination

Connector Profile (Ref.)

66 Contacts



96 Contacts



Consult JAE for "Ordering Information".

GENERAL SPECIFICATIONS

Number of Contacts	66, 96
Contact Spacing	Signal: 3.4mm (.134") Power: 4.0mm (.157")
Current Rating	Signal: 5 Amps, Power: 9 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6 to 2.4mm (.063 to .094")
Operating Temperature	-40°C to +90°C

APPLICABLE WIRE (Stranded)

Contact Type	Signal	Power
Wire Type (JIS)	AVS	AVS
AWG No.	#22 to #18	#18 to #14
Conductor Cross Section Area	0.3 to 0.85mm^2	0.85 to 2.0mm^2
Insulation Outer Dia.	1.4 to 2.4mm (.055 to .094")	2.0 to 3.0mm (.079 to .118")

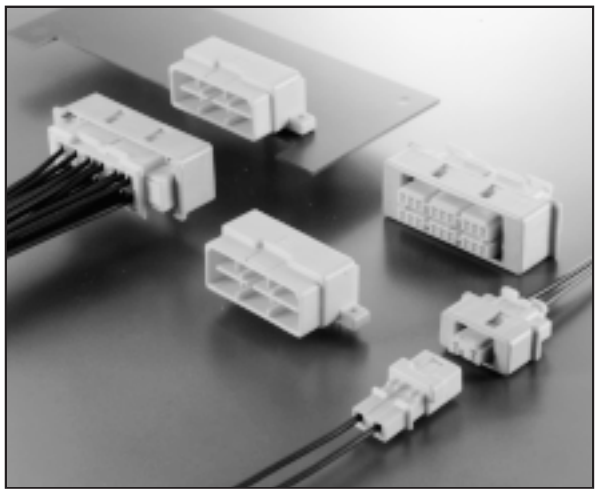
MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT (Gray)
Signal Contact	High conductive Copper Alloy/Tin plating or Gold (connecting area) with Solder (SnPb • terminal area) plating over Nickel
Power Contact	High conductive Copper Alloy/Tin plating
Cam Shaft	PPS (Beige)
Retainer	PBT (White)

Dimensions and specifications subject to change without notice.

MX9 SERIES CONNECTORS

Board-to-Cable Connectors • 7.0mm (.276") Cable-to-Cable Connectors

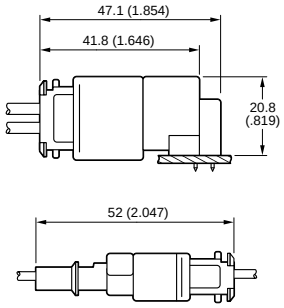


This advanced automotive connector series is designed specifically to meet the stringent reliability standards associated with inflatable safety restraints and engine control units.

FEATURES

- Reliable box contact designed with overstress feature
- Socket contacts have dual points of contact to assure stable electrical continuity
- Conductor and insulation crimps assure mechanical integrity
- Socket contacts are secured in the insulator with integral lances to avoid damage and assure reliability
- Multiple keying arrangements afford maximum versatility
- A spring loaded in the collar housing provides tactile and audible assurance of mating
- Selective gold plating on contacts assures a cost effective and electrical connection
- Positive locking mechanism and polarization assure proper mating
- Mating lever design provides increased vibration resistance and prevents accidental separation

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	2 (cable-to-cable) 18 (cable-to-board)
Contact Spacing	7.0mm (.276") 2 position 3.5mm (.138") 18 position
Current Rating	4 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6mm (.063")
Operating Temperature	-40°C to +80°C

Applicable Wire (Stranded)

Wire Type (Jis)	AVX, AVS	AVX, AVS, AVSS, CAVS
AWG No.	#19	#20
Conductor Cross Section Area	0.75mm^2 (.00116^2)	0.75mm^2 (.00116^2)
Insulation Outer Diameter	2.2mm (.087")	2.2mm (.087")

MATERIALS AND FINISHES

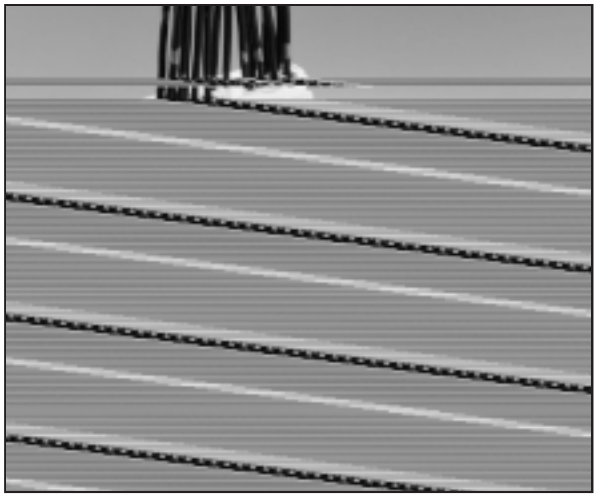
Description	Materials/Finishes
Insulator	PBT (UL94HB, Yellow)
Pin Contact	Copper Alloy, selective Gold plating

Consult JAE for "Ordering Information".

Dimensions and specifications subject to change without notice.

EX5-R SERIES AUTOMOTIVE CONNECTORS

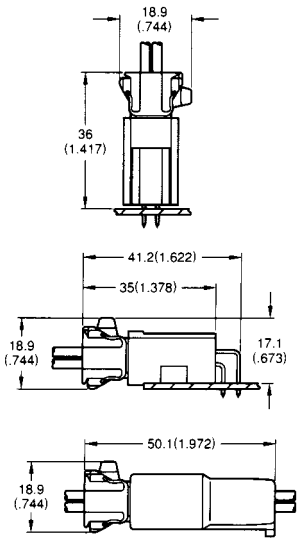
070 Crimp Contacts, PCB-to-Cable/Cable-to-Cable Applications



FEATURES

- Designed for automotive audio equipment applications
- Mechanical lock assures positive mating
- Unique housing configuration helps prevent mismating and twisting force
- Double locking mechanism prevents dislodging of contacts
- Highly reliable socket contacts
- Simplified crimp type termination

Connector Profile (Ref.)



GENERAL SPECIFICATIONS

Number of Contacts	16
Contact Spacing	4.0mm (.157")
Current Rating	8 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Applicable PCB Thickness	1.6 to 2.4mm (.063" to .094")
Operating Temperature	-40°C to +85°C

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT, Light Gray (Pin housing for cable connection, 66-Nylon)
Socket Contact	Copper Alloy/Tin plating
Pin Contact	Copper Alloy/Tin plating

APPLICABLE WIRE (Stranded)

Contact Type	C1 Type		C2 Type
Wire Type	AV, AVS	AVSS	AV, AVS, AVSS
Conductor Cross Section Area	0.5 to 1.25mm^2	1.25mm^2	0.3 to 0.85mm^2
AWG No.	#20 to #16	#16	#22 to #18
Insulation Outer Dia.	2.0 to 3.0mm (.079 to .118")		1.4 to 2.4mm (.055 to .094")

ORDERING INFORMATION

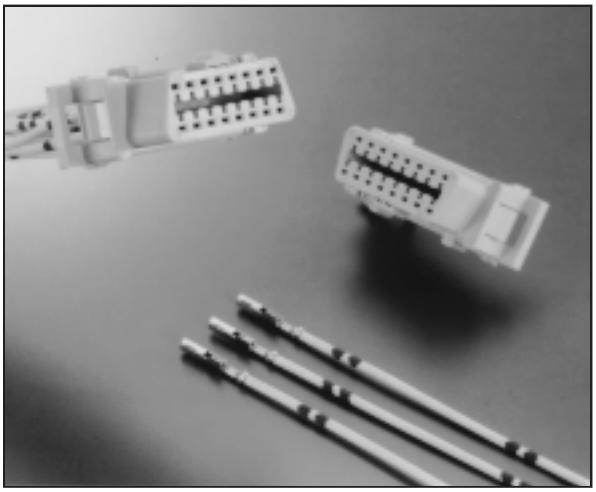
EX5-R – 16 – * * – *

Series
No. of Contacts
16
Contact Type
P – Pin S – Socket
Termination Style
L – Right Angle Through Hole
T – Straight Through Hole
C – Crimp
Modification Code

Dimensions and specifications subject to change without notice.

MX8 SERIES CONNECTORS

4.0mm (.157") Contact Spacing, SAEJ1962 Diagnostic Connector



FEATURES

- Diagnostic connector meets SAEJ1962 Specification

GENERAL SPECIFICATIONS

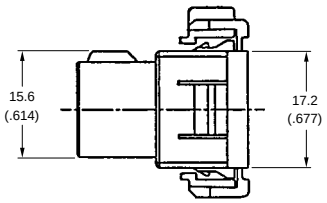
Number of Contacts	16
Contact Spacing	4.0mm (.157")
Current Rating	10 Amps
Dielectric Withstanding Voltage	1000 VAC r.m.s. (for one minute)
Insulation Resistance	100 megohms min.
Contact Resistance	10 milliohms max.
Operating Temperature	-40°C to +85°C
Applicable AWG	#18-#22

MATERIALS AND FINISHES

Description	Materials/Finishes
Insulator	PBT
Contact	Copper Alloy/Tin Plating

Consult JAE for "Ordering Information".

Connector Profile (Ref.)

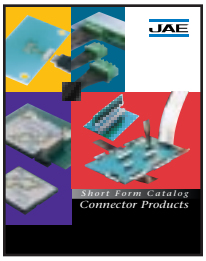


Dimensions and specifications subject to change without notice.

Alphabetical Product Index

• Please consult JAE for verification of product availability.

Short Form Catalog
Connector Products



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Printed in U.S.A. 10M0300 SF1