D-SUBMINIATURE PIN-IN-PASTE CONNECTORS

OVERVIEW

The D-Subminiature connectors are one of the most popular I/O solutions, addressing segments such as Telecommunications, Industrial, Instrumentation and Medical. Thanks to this very complete D-Subminiature range, FCI is one of the most experienced suppliers. Now we are at the forefront once again in bringing you Pin-in-Paste (Through Hole Reflow) versions.

Pin-in-Paste technology (PIP) allows the use of Through Hole product in SMT manufacturing processes. The connectors are automatically or manually placed on the board, and then soldered in the same operation as the SMT components. Thanks to the Pin-in-Paste technology, the mechanical strengths of the Through Hole Technology soldering is maintained – still an important requirement for connectors nowadays in many industrial or telecom applications.

FEATURES & BENEFITS

- Time-saving
  - Pin-in-Paste connectors can be automatically positioned on the board using automatic pick and place processes (vacuum nozzle or gripper) thanks to an improved true positioning whereas traditional solder to board processes require a manual placement
- Higher quality
  - Pin-in-Paste connectors is a more stable process than wave soldering as it does not need constant adjust once set-up
  - Less control time after reflow process and less re-work time for repairing
- Fast and easy move from a wave soldering to a reflow process. No re-design of the board in Pin-in-Paste:
  - Same layouts
  - Same hole diameters for signal hole contacts
- Higher robustness in Pin-in-Paste:
  - Thanks to the through hole pins and metal pegs. Makes it possible to eliminate wave soldering
  - For applications using a few remaining components requiring wave soldering, FCI D-Subminiature Pin-in-Paste can help to avoid wave soldering completely

CONNECTOR DESIGN

OVERVIEW

In order to achieve optimum soldering results, FCI launches dedicated Pin-in-Paste connectors. These connectors are fully adapted to Pin-in-Paste processing in all aspects, including plastic material, metal peg, housing design, pin length, and packaging.

PLASTIC MATERIAL

The FCI D-Subminiature Pin-in-Paste connectors are molded in high temperature plastic able to withstand a temperature exposure up to 260°C peak for 10 to 30 seconds in a convection infrared or vapor-phase reflow oven.

METAL PEG

To ensure electrical continuity and lowinsertion forces, a specific metal peg has been designed. These metal pegs significantly increase the connection robustness after soldering.

HOUSING DESIGN

Standoffs are specificallydesigned around the metal pegs to avoid any paste interaction between the back housing and the PCB. Consequently, the paste can spread around the metal peg, keeping the connector in its correct and original position.

PIN LENGTH

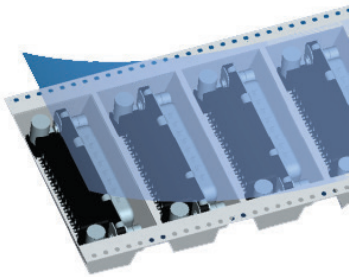
The termination length beyond the bottom of the PCB is shorter than traditional solder-to-board products. Thus, the risk of pushing out the solder paste when setting the pin into the PCB hole is very much limited. The solder paste will not stick on the pin tip or even fall off completely, but stays around the pin for free flow during soldering. FCI uses pin lengths corresponding to the PCB thickness +0.4mm. For a 1.6mm PCB thickness, the pin length is 2.0mm.

PACKAGING

The FCI D-Subminiature connectors can be packaged in different ways depending on existing installed processes.

- Tray Packaging
  - Ideal for manual placing and low volume applications

- Tape and Reel packaging
  - With or without pick-up caps: fully compatible with automatic pick and place processes like grippers or vacuum nozzles, formedium and high volume applications



For more information,
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or visit us at www.fci.com

D-SUBMINIATURE
PIN-IN-PASTE CONNECTORS

DELTA D SIGNAL RIGHT ANGLE PIN-IN-PASTE

- In compliance with DIN 41652:
  - Reflow type: JSTD-020C
  - Packaging: IEA-481-B
  - Plating: BELLCORE CO GR-1217

TECHNICAL INFORMATION

MATERIALS

- Shell: Steel, nickel plated
- Housing: Thermoplastic HT UL94V-O
- Contacts: Copper alloy
  - Active part: Gold over nickel
  - Termination: Matt tin over nickel
- Accessories: Brass
  - Front accessories: Nickel
  - Metal pegs: Tin over nickel

ELECTRICAL PERFORMANCE

- Current rating: 5A
- Insulation resistance: ≥5000MΩ
- Contact resistance: <10mΩ
- Dielectric withstanding voltage: 1000V RMS

ENVIRONMENTAL

- Operating temperature range: -55°C to 125°C

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500 min.

SPECIFICATIONS

- Product lead free in accordance to RoHS 2002/EC/95

ORDERING INFORMATION

D – 09 – P – 13A – 6 – RV – 12 – LF

RoHS compatible
EU directive 2002/95/EC

Series

No Of Contacts
09
15
25
37

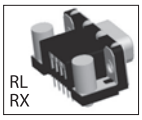
Contacts	X
Pin	P
Socket	S

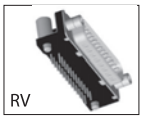
Packaging	XX
Tray for manual positioning	09
Tape and Reel for automatic pick and place	12

High performance class
(> 500 mating/unmating)

Mounting Options	XX
Insert M3 + metal peg + electrical continuity	RL
Insert UNC 4-40 + metal peg + electrical continuity	RX
Female screw UNC 4-40 + metal peg + electrical continuity	RV

Termination				
Type	Foot-print/ Pitch	Termination Length	PCB Thickness	XXX
Right angle – Europe Standard	10.4/ 2.54mm	2.0mm	1.6mm	13A
Right angle – US standard	8.08/ 2.84mm	2.0mm	1.6mm	13B





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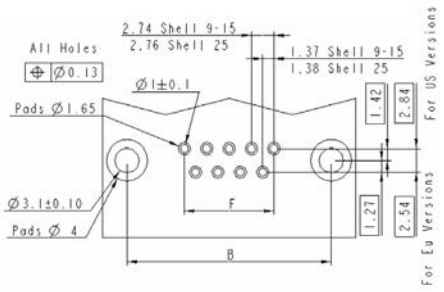
ADDITIONAL INFORMATION

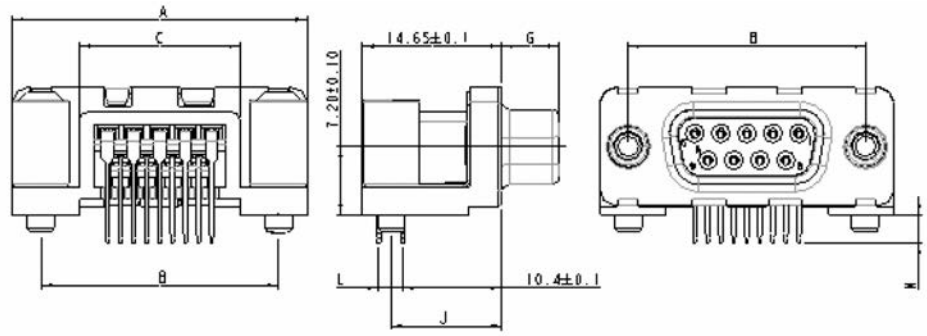
RECOMMENDED LAYOUTS AND PAD DIMENSIONS

Contacts	B±0.10	F	G
09	24.99	10.96	8.22
15	33.32	19.18	16.44
25	47.04	33.12	30.36
37	63.50	49.68	46.92

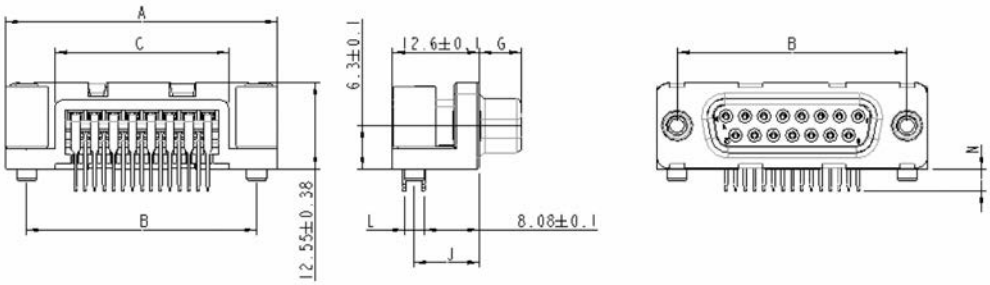


SPECIFIC DIMENSIONS

Europe Style



US Style



Contacts		A±0,38	B±0,12	C±0,10	G-0/+0.25	J±0,10	L±0,10	N±0,30	
						Termination 13	Termination 33	Termination Length	
								I3A 33E	I3B
09	P	30.81	24.99	16.96	5.90 -0/+0.15	11.67	9.50	2.00	2.90
	S	30.81	24.99	16.96	6.05	11.67	9.50	2.00	2.90
15	P	39.14	33.32	25.18	5.90 -0/+0.15	11.67	9.50	2.00	2.90
	S	39.14	33.32	25.18	6.05	11.67	9.50	2.00	2.90
25	P	53.03	47.04	39.12	5.70	11.67	9.50	2.00	2.90
	S	53.03	47.04	39.12	6.05	11.67	9.50	2.00	2.90
37	P	69.32	63.50	55.68	5.70	11.67	9.50	2.00	2.90
	S	69.32	63.50	55.68	6.05	11.67	9.50	2.00	2.90

Dimensions in mm

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DELTA D SIGNAL STRAIGHT PIN-IN-PASTE

- In compliance with DIN 41652:
  - Reflow type: JSTD-020C
  - Packaging: IEA-481-B
  - Plating: BELLCORE CO GR-1217

TECHNICAL INFORMATION

MATERIALS

- Shell: Steel, nickel plated
- Housing: Thermoplastic HT UL94V-O
- Contacts: Copper alloy
  - Active part: Gold over nickel
  - Termination: Matt tin over nickel
- Accessories: Brass, bright tin over nickel

ELECTRICAL PERFORMANCE

- Current rating: 5A
- Insulation resistance: ≥5000MΩ
- Contact resistance: <10mΩ
- Dielectric withstanding voltage: 1000V RMS

ENVIRONMENTAL

- Operating temperature range: -55°C to 125°C

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500 min.

SPECIFICATIONS

- Product lead free in accordance to RoHS 2002/EC/95

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D-SUBMINIATURE
PIN-IN-PASTE CONNECTORS

BASE PART NUMBER

D - 09 - P - 24A - 6 - RV - 12 - LF

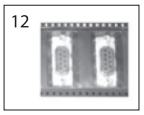
RoHS compatible EU directive 2002/95/EC

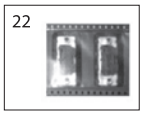
Series

No Of Contacts
09
15
25
37
50

Contacts	X
Pin	P
Socket	S

High performance class (> 500 mating/unmating)

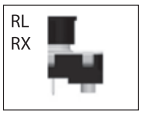


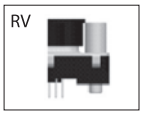


Packaging	XX
Tray for manual positioning	09
Tape and reel for automatic pick and place and gripper device (not available in 37 and 50 ways)	12
Tape and Reel and pick-up cap for vacuum nozzle device (not available in 37 and 50 ways)	22

Termination				
Type	Footprint/ Pitch	Termination Length	PCB Thickness	XXX
Straight version	6.0/2.84mm	2.0mm	1.6mm	24A
Straight version	6.0/2.84 mm	2.9mm	2.4mm	24B

Mounting Options	XX
Insert M3 + metal peg + electrical continuity	RL
Insert UNC 4-40 + metal peg + electrical continuity	RX
Female screw UNC 4-40 + metal peg + electrical continuity	RV





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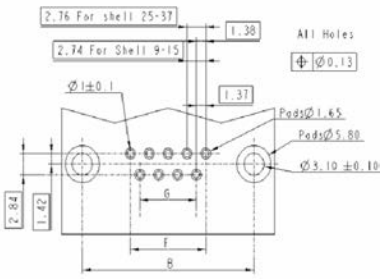
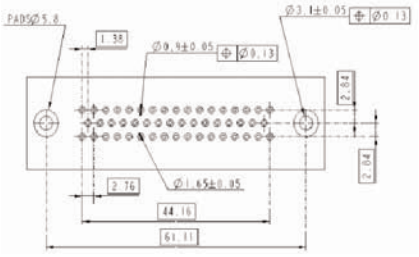
Contacts	B±0.10	F	G
09	24.99	10.96	8.22
15	33.32	19.18	16.44
25	47.04	33.12	30.36
37	63.50	49.68	46.92

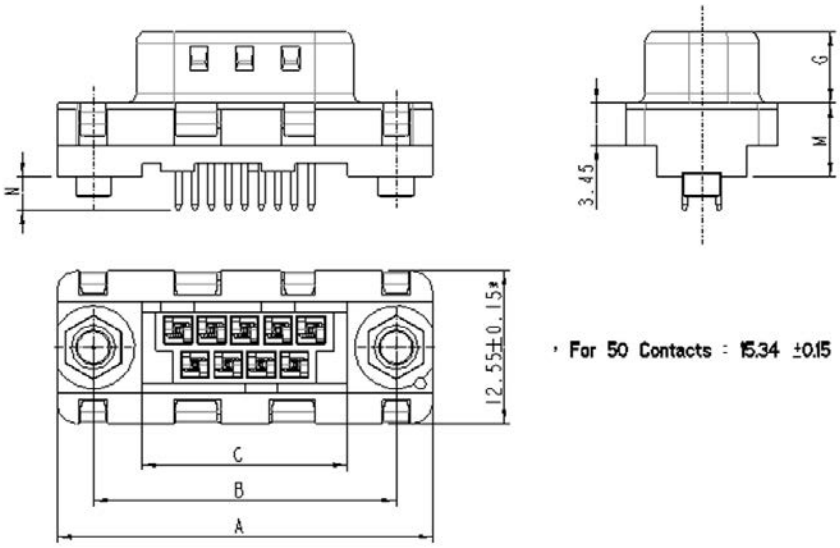
9, 15, 25 & 37 contacts



50 contacts



SPECIFIC DIMENSIONS



Contacts		A±0,38	B±0,12	C±0,10	G-0/+0.25	M±0,10	N±0,30	
							Termination Length	
							24A	24B
09	P	30.81	24.99	16.96	5.90 -0/+0.15	6.00	2.00	2.90
	S	30.81	24.99	16.96	6.05	6.00	2.00	2.90
15	P	39.14	33.32	25.18	5.90 -0/+0.15	6.00	2.00	2.90
	S	39.14	33.32	25.18	6.05	6.00	2.00	2.90
25	P	53.03	47.04	39.12	5.70	6.00	2.00	2.90
	S	53.03	47.04	39.12	6.05	6.00	2.00	2.90
37	P	69.32	63.50	55.68	5.70	6.00	2.00	2.90
	S	69.32	63.50	55.68	6.05	6.00	2.00	2.90
50	P	67.10	61.11	54.11	5.70	6.00	2.00	2.90
	S	67.10	61.11	54.11	6.05	6.00	2.00	2.90

Dimensions in mm

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