

D-SUBMINIATURE PIN-IN-PASTE CONNECTORS

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, Amphenol 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

- Through hole pins, HT insulator and metal pegs design followed in PiP
- Unlike SMT, PiP requires no specific and complex design in order to achieve co-planarity
- 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
- Less control time after reflow process and less re-work time for repairing
- Same PCB layouts and hole diameters of signal hole contacts are maintained
- Pin-in-Paste connector has a more stable process than wave soldering as it does not need constant adjust once set up
- Thorough hole technology is maintained in Pin-in-Paste

BENEFITS

- Supports Reflow soldering
- 20% lower price compared to SMT
- Time-saving
- Time-saving
- Fast and easy switchover from a wave soldering to a reflow process
- Higher quality
- Higher robustness in Pin-in-Paste than SMT

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CONNECTOR DESIGN

OVERVIEW

In order to achieve optimum soldering results, Amphenol 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 Amphenol 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 low insertion forces, a specific metal peg has been designed. These metal pegs significantly increase the connection robustness after soldering.

HOUSING DESIGN

Standoffs are specifically designed 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

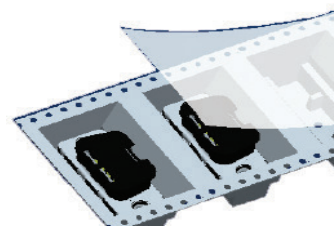
The termination length beyond the bottom of the PCB is shorter than traditional solder-to-board products. Thus, the risk of pushing out the solder paste when setting the pin into the PCB hole is very much limited. The solder paste will not stick on the pin tip or even fall off completely, but stays around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



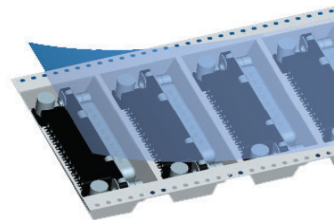
PLASTIC MATERIAL

The Amphenol 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, for medium and high volume applications



▶ 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-0
- Contacts: Copper alloy
- Active Part: Gold over nickel
- Termination: Matt tin over nickel
- Accessories: Brass
- Front Accessories: Nickel
- Metal Pegs: Tin over nickel

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500min.

ELECTRICAL PERFORMANCE

- Current Rating: 5A
- Insulation Resistance: $\geq 5000M\Omega$
- Contact Resistance: $< 10m\Omega$
- Dielectric Withstanding Voltage: 1000V RMS

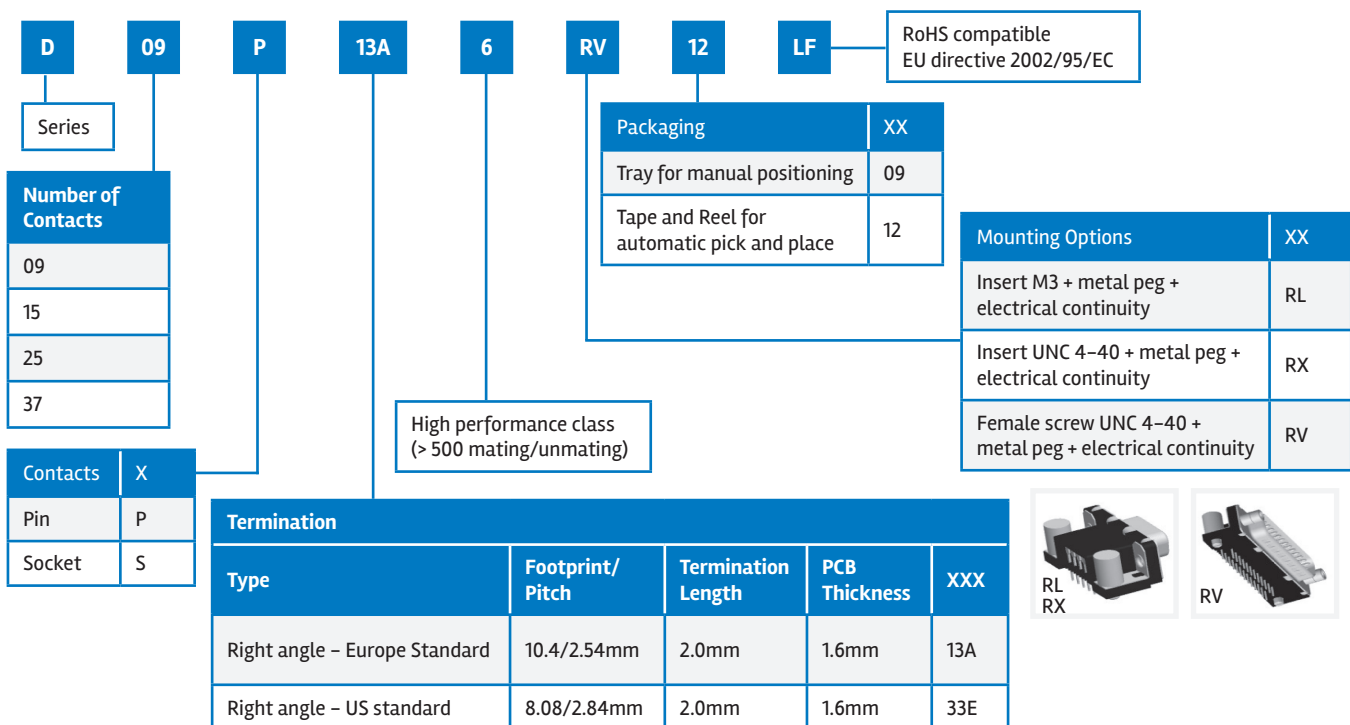
SPECIFICATIONS

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

ENVIRONMENTAL

- Operating Temperature Range: $-55^{\circ}C$ to $125^{\circ}C$

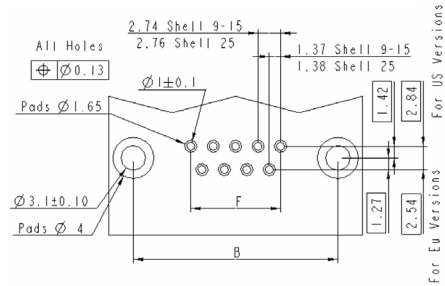
ORDERING INFORMATION



ADDITIONAL INFORMATION

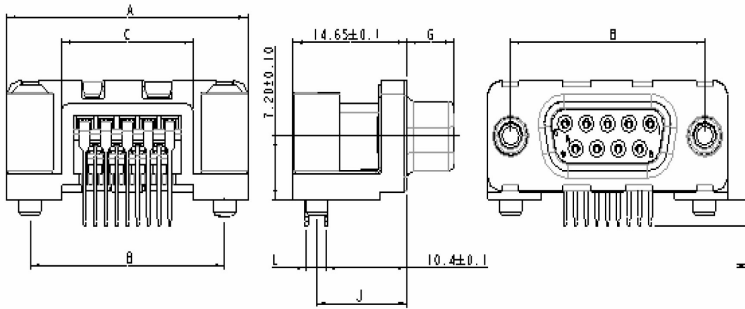
RECOMMENDED LAYOUTS AND PAD DIMENSIONS

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

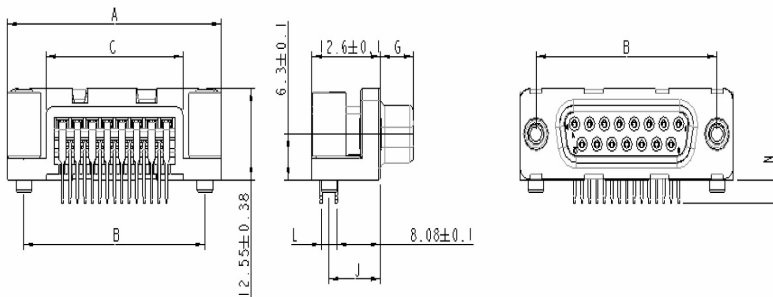


SPECIFIC DIMENSIONS

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 13A	Termination 33E	Termination 13A	Termination 33E	Termination 13	
										13A/33E	13B
09	P	30.81	24.99	16.96	5.90 ^{-0/+0.15}	11.67	9.50	2.54	2.84	2.00	2.90
	S	30.81	24.99	16.96	6.05	11.67	9.50	2.54	2.84	2.00	2.90
15	P	39.14	33.32	25.18	5.90 ^{-0/+0.15}	11.67	9.50	2.54	2.84	2.00	2.90
	S	39.14	33.32	25.18	6.05	11.67	9.50	2.54	2.84	2.00	2.90
25	P	53.03	47.04	39.12	5.70	11.67	9.50	2.54	2.84	2.00	2.90
	S	53.03	47.04	39.12	6.05	11.67	9.50	2.54	2.84	2.00	2.90
37	P	69.32	63.50	55.68	5.70	11.67	9.50	2.54	2.84	2.00	2.90
	S	69.32	63.50	55.68	6.05	11.67	9.50	2.54	2.84	2.00	2.90

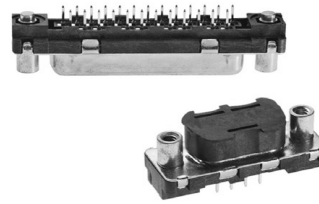
Dimensions in mm

▶ D-SUBMINIATURE PIN-IN-PASTE CONNECTORS

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-0
- Contacts: Copper alloy
- Active Part: Gold over nickel
- Termination: Matt tin over nickel
- Accessories: Brass, bright tin over nickel

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500 min.

ELECTRICAL PERFORMANCE

- Current rating: 5A
- Insulation resistance: $\geq 5000M\Omega$
- Contact resistance: $< 10m\Omega$
- Dielectric withstanding voltage: 1000V RMS

SPECIFICATIONS

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

ENVIRONMENTAL

- Operating Temperature Range: $-55^{\circ}C$ to $125^{\circ}C$

BASE PART NUMBER

D	09	P	24A	6	RV	12	LF	RoHS compatible EU directive 2002/95/EC
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Series

Number of Contacts	
09	
15	
25	
37	
50	

Contacts	X
Pin	P
Socket	S

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

High performance class
(> 500 mating/unmating)

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

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

RL
RX

RV

