

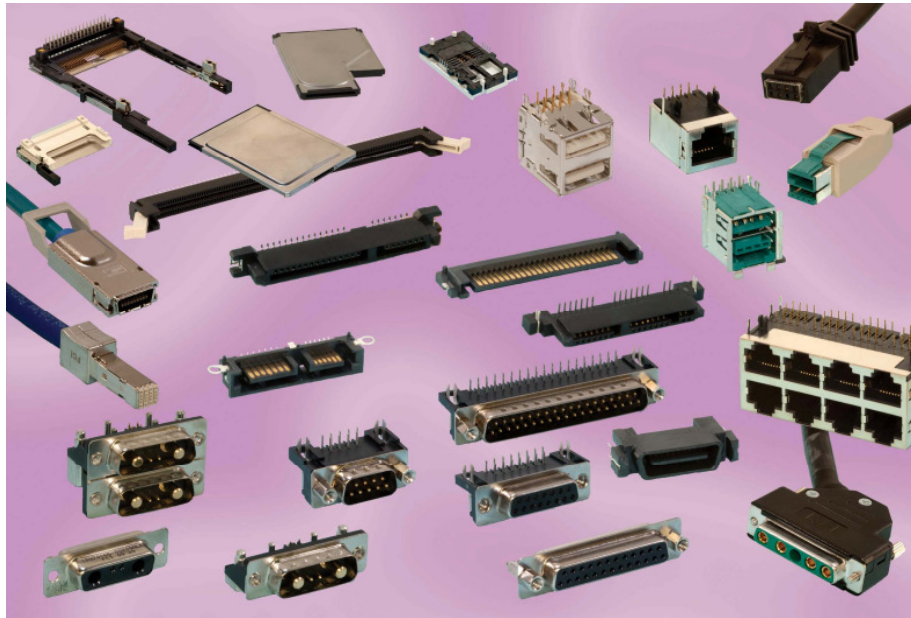


CONNECTI/ONS

D-SUB PIN IN PASTE

December 2009

Where does IO-connections stand for?



- FCI's I/O connector solutions:
 - high-density
 - high-speed interfaces
- Applications:
 - networking, storage, and memory, power distribution, media card systems, etc
- Industry standards:
 - Ethernet, SFF, Infiniband, USB, PCMCIA™ or HDMI™, Compact Flash™, SAS, SATA, etc.
- Custom solutions:
 - Cable assemblies.

CONNECTI/ONS

What products is IO Connections comprised of?



Data & Multimedia I/O's



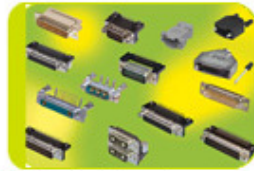
- ▶ HDMI™
- ▶ USB
- ▶ Modular Jacks
- ▶ Latch-N-Lok™

High Speed I/O's



- ▶ DensiShield™ Systems
- ▶ Eyemax®
- ▶ Multilane SAS and SATA Connectors

D-Sub



- ▶ Standard Density
- ▶ High Density
- ▶ Cable Connectors
- ▶ Power Connectors
- ▶ **see more**

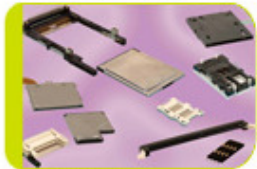
Cable Assemblies



- ▶ DensiShield™ I/O System
- ▶ Eyemax® - Infiniband Cable Assembly
- ▶ Fiber Optics
- ▶ Metral® Cable Assembly
- ▶ **see more...**

CONNECTI/ONS

Memory & Media Card Systems



- ▶ Smartcard
- ▶ PCMCIA™
- ▶ ExpressCard™
- ▶ DDR Memory
- ▶ Flash memory products

Storage Interface



- ▶ Serial Attached SCSI (SAS) Connectors
- ▶ Serial-ATA (SATA) Connectors
- ▶ eSATA Connectors
- ▶ iVDR Connectors
- ▶ **see more...**

More information can be found on a dedicated website at www.fci.com/io

- ▶ Product selector tables;
- ▶ Data sheets;
- ▶ Product presentations;
- ▶ 3D view models & 2D drawings;
- ▶ Product specifications;
- ▶ Distributor inventory information;
- ▶ etc

- Communication
- Industrial and Instrumentations

...mainly daughter card applications using D-sub!

What is Pin In Paste?

- Pin In Paste is a through hole technology to solder connectors on boards by using a reflow process (SMT) instead of a traditional wave soldering or press-fit.

Product advantages

Time saving:

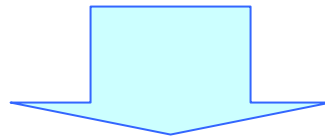
- Pin In Paste connectors can be automatically positioned on the board using automatic pick and place processes (vacuum nozzle or gripper) whereas solder to board requires a manual placement.
- Compared with press-fit, PIP requires no manual additional operation.

Higher quality :

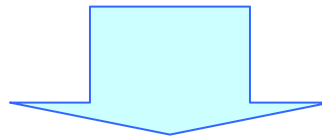
- Pin In Paste is a more stabilized process all along the time compared with solder to board.
- Less control time and less re-work time for repairing.

Why Pin In Paste versus Surface Mount Technology ?

- Pin In Paste Dsub connectors at FCI are derived from the solder to board design providing robustness and pre-existing performing true positioning.
- Surface Mount Technology Dsubs require a specific and complex design in order to achieve performing co-planarity generating higher costs.



- Consequence : the average connector price is lower in Pin In Paste than SMT - 20 % on average.



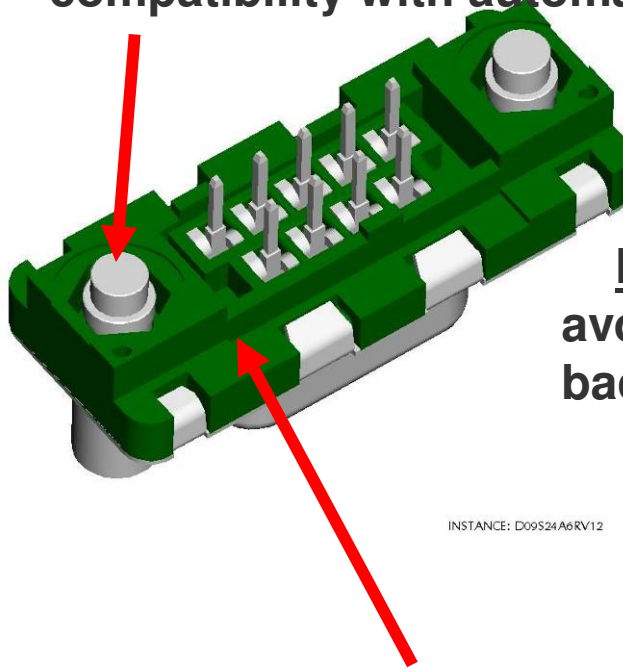
- As the process cost for a Dsub PIP and a SMT is 100 % equivalent, the total applied cost for a Pin In Paste is lower than SMT !**

- **Why Pin In Paste versus Surface Mount Technology ?**
 - **Fast and easy move from a wave soldering/press-fit to a reflow process**
 - **Surface Mount Technology Dsubs require a specific PCB design**
 - **No significant re-design of the board for PiP :**
 - **same lay-out**
 - **same hole diameters for signal contacts !**
 - **Higher robustness in Pin In Paste :**
 - **Thanks to the through hole pins and metal pegs.**
 - **Easier control and repairing possible**
 - **After reflow visual inspection is easier in PiP than SMT,**
 - **Easy repairing in PiP**

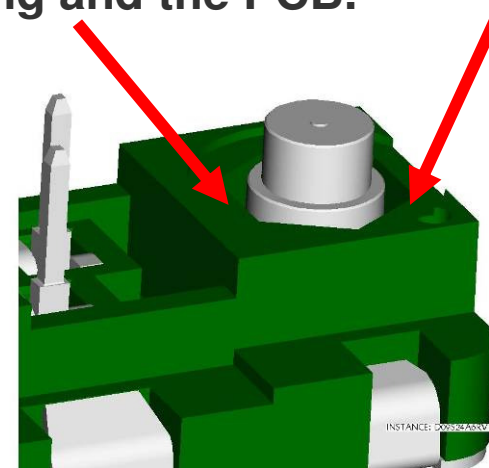
Straight versions :

Low insertion force

Specific metal pegs allowing low insertion forces for a full compatibility with automatic pick and place processes.



Enlarged area around the metal peg to avoid paste interaction between the plastic back housing and the PCB.



High temperature plastic compatible with standard reflow process temperatures.

Straight version: Three packaging for three processes

- 1 - Standard tray packaging for manual positioning

*Low
volume
applications*

	Pin count				
	9	15	25	37	50
Pin	D09P24A6RV09LF	D15P24A6RV09LF	D25P24A6RV09LF	D37P24A6RV09LF	D50P24A6RV09LF
Socket	D09S24A6RV09LF	D15S24A6RV09LF	D25S24A6RV09LF	D37S24A6RV09LF	D50S24A6RV09LF

- 2 - Tape and reel packaging and Pick-up cap for vacuum nozzle
Higher connector price due to additional high temperature cap.

*Medium
volume
applications*

	Pin count				
	9	15	25	37	50
Pin	D09P24A6RV22LF	D15P24A6RV22LF	D25P24A6RV22LF		
Socket	D09S24A6RV22LF	D15S24A6RV22LF	D25S24A6RV22LF		

- 3 - Tape and reel packaging for pick and place with gripper
For medium and high volume applications (lower price than solution 2 : no pick-up cap)

*Medium &
high
volume
applications*

	Pin count				
	9	15	25	37	50
Pin	D09P24A6RV12LF	D15P24A6RV12LF	D25P24A6RV12LF		
Socket	D09S24A6RV12LF	D15S24A6RV12LF	D25S24A6RV12LF		

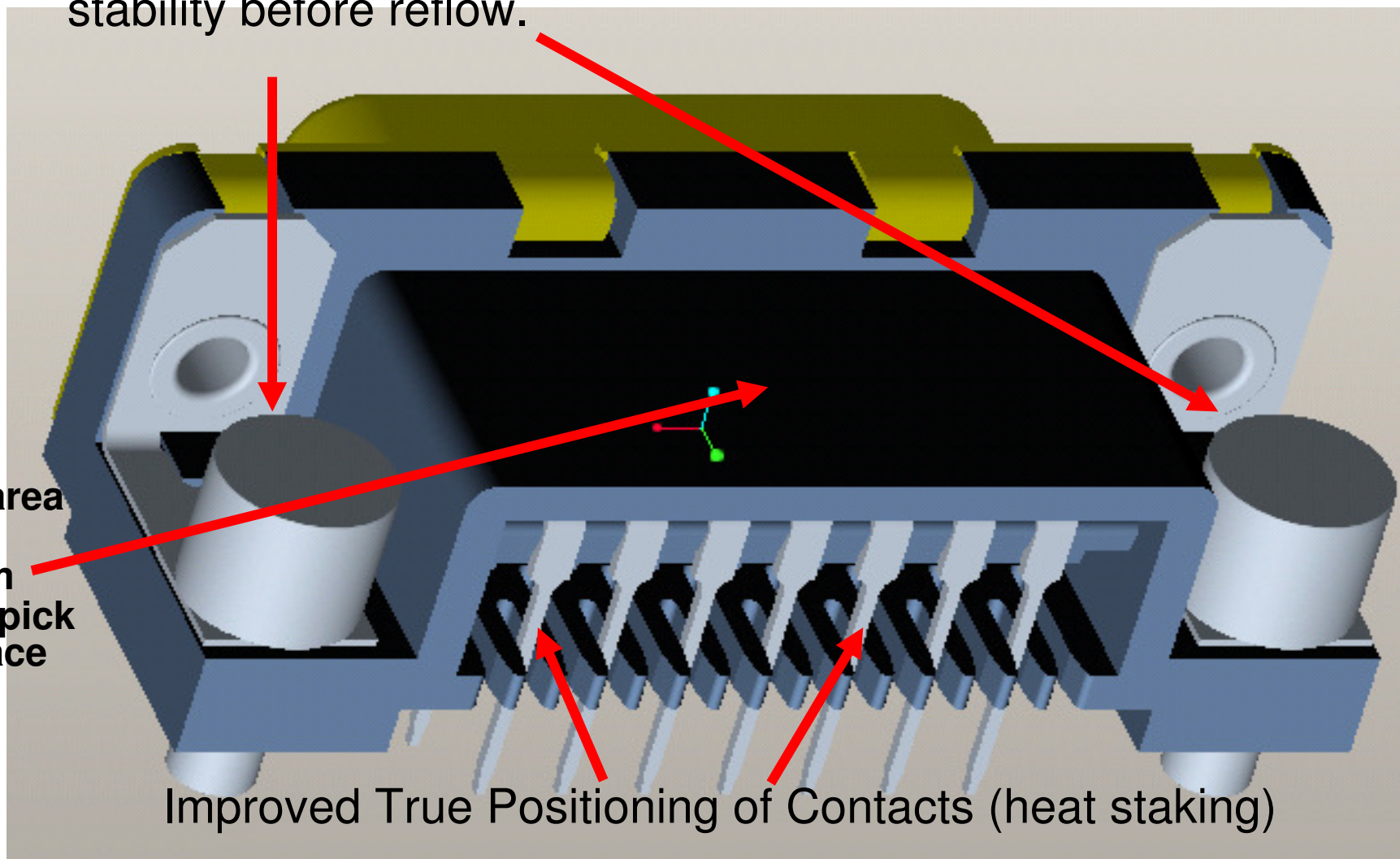
Note : Female screw lock and threaded insert accessories available.

Dsub PiP – Right angle version

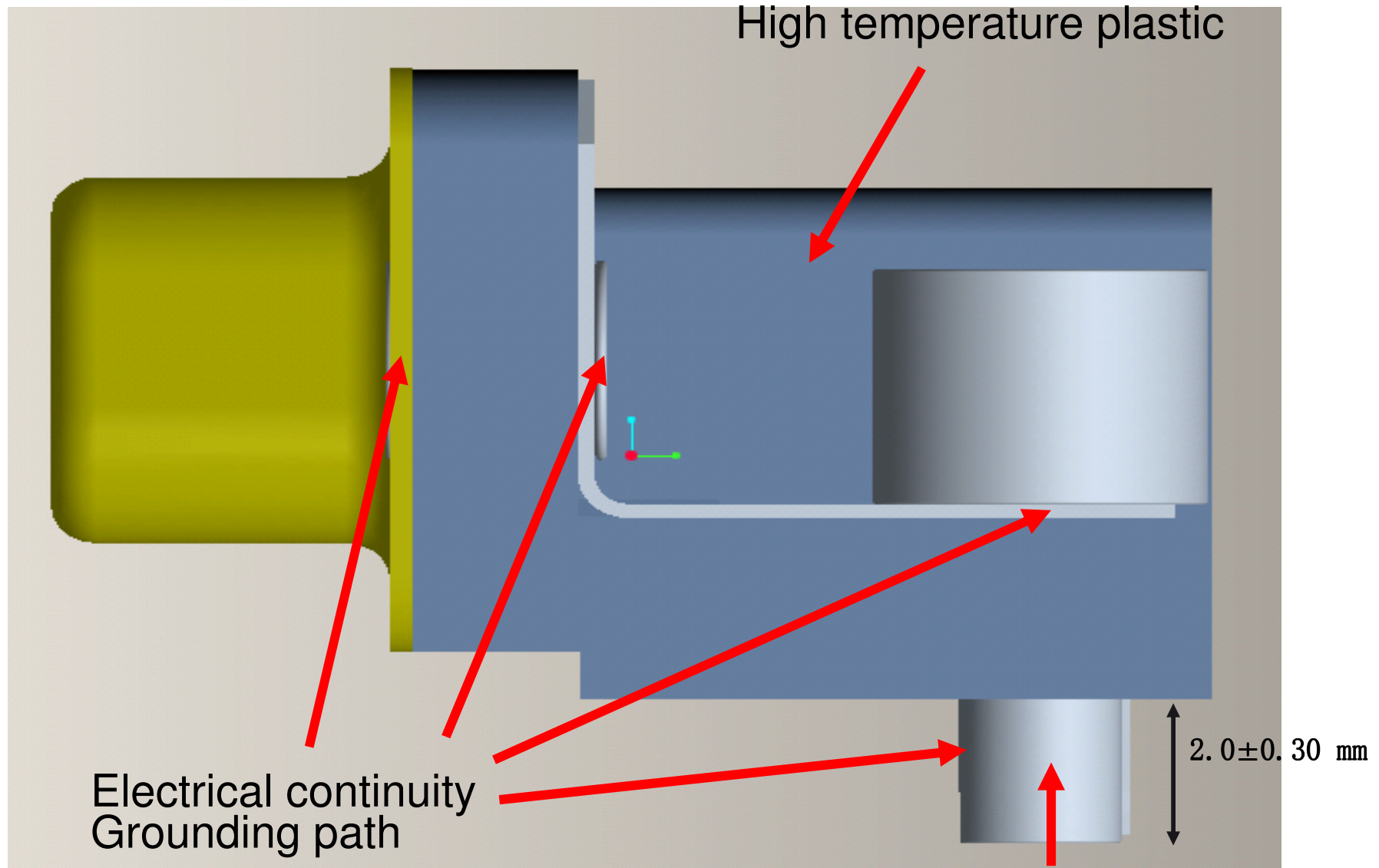


Balancing Weight for stability before reflow.

Large area for vacuum nozzle pick and place



Dsub PiP – Right angle version



Dsub PiP – Right angle version



Right angle version: Two packaging for three processes

- 1 - Standard tray packaging for manual positioning

Low volume applications

		Pin count				
		9	15	25	37	50
Europe std	Pin	D09P13A6RV09LF	D15P13A6RV09LF	D25P13A6RV09LF	D37P13A6RV09LF	
	Socket	D09S13A6RV09LF	D15S13A6RV09LF	D25S13A6RV09LF	D37S13A6RV09LF	
US standard	Pin	D09P33E6RV09LF	D15P33E6RV09LF	D25P33E6RV09LF	D37P33E6RV09LF	
	Socket	D09S33E6RV09LF	D15S33E6RV09LF	D25S33E6RV09LF	D37S33E6RV09LF	

- 2 - Tape and reel packaging for vacuum nozzle and gripper.

Medium & high volume applications

		Pin count				
		9	15	25	37	50
Europe std	Pin	D09P13A6RV12LF	D15P13A6RV12LF	D25P13A6RV12LF	D37P13A6RV12LF	
	Socket	D09S13A6RV12LF	D15S13A6RV12LF	D25S13A6RV12LF	D37S13A6RV12LF	
US standard	Pin	D09P33E6RV12LF	D15P33E6RV12LF	D25P33E6RV12LF	D37P33E6RV12LF	
	Socket	D09S33E6RV12LF	D15S33E6RV12LF	D25S33E6RV12LF	D37S33E6RV12LF	

Note 1: Female screw lock and threaded insert accessories available.

Note 2: 37 pos Delta D PiP recently added to the above range, ready for mass production

Note 3: 15, 26 and 44 pos high density Dsub PiP versions are launched now

■ SMT D-sub connectors

- Tyco

- Erni

... each supplier has its own footprint and pads : no compatibility drives customers to a sole source situation.

■ PiP D-sub connectors

- Amphenol

- Harting

- FCT

- Erni

- ... Footprint compatible : Multiple sources possible.

■ Pin In Paste provides standard solutions and compatible footprints!

Dsub signal PiP – Available package for promotion



- Dedicated Dsub Pin-in-Paste section on FCI website
- Updated Dsub web catalogue
- Dsub Pin-in-Paste Paper brochure
- Press Release
- Sample box
- Samples through sample room

- FCI offers a large choice of PiP Dsub connectors...
 - Straight and Right angle versions, signal connectors
 - Full power connectors (3W3, 5W5, please consult us)
 - Signal high density right angle socket (15, 26 and 44 pos, please consult us)
 - ... with a large choice of packaging compatible with existing processes at customers ...
 - Standard tray for manual positioning,
 - Tape and Reel packaging for vacuum nozzle and gripper.
 - ... to help our customers to significantly reduce the total applied cost of the applications, by avoiding the traditional wave soldering or press-fit operations.

THANK YOU

