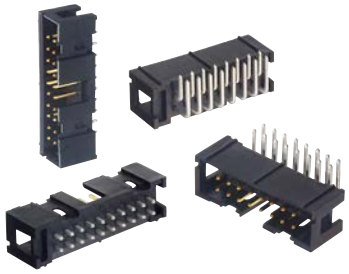
QUICKIE™ CABLE-TO-BOARD CONNECTORS FOR PIN-IN-PASTE PROCESSES

OVERVIEW

Quickie™ is FCI's brand for cable-to-board connectors in 2.54mm pitch. The Quickie™ product range includes IDC Receptacles, IDC Board Connectors, Shrouded Low Profile Headers and Shrouded Eject Latch Headers.

FCI is adding four new series of Quickie Headers to its product range, dedicated to Pin-in-Paste soldering processes. This brochure gives additional information for the correct use of Quickie PiP connectors in the application process.



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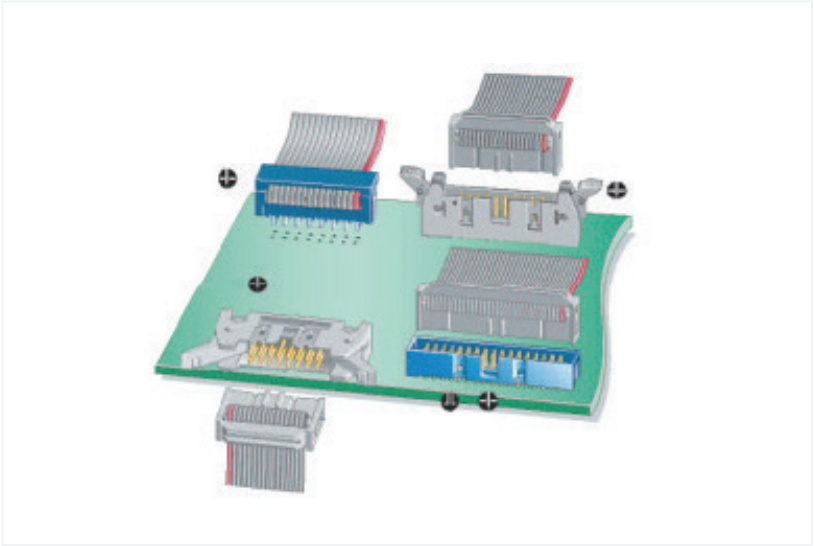
PIN-IN-PASTE



Pin-in-Paste (PiP) technology allows the use of TMT products in SMT manufacturing processes. The connectors are automatically or manually placed on the board, then soldered in the same operation as the SMT components. Despite this, the mechanical strenght of the TMT soldering is maintained – still an important requirement for connectors nowadays in many industrial or automotive applications.

PART NUMBER

8 – DIGIT PART NUMBER	–	PLATING	TOTAL POSTIONS	OPTION	LF

Shrouded superslim header

10056844	Vertical
10056845	Right Angle

6, 8, 10, 14, 16 20, 26, 30, 34, 40	

0.76 µm Gold on mating area, tin on soldier side	1

Tube without pick-up cap	U
Tape with pick-up cap (availability according to TA-893)	A

For more information,
please contact: Communications@fci.com
or visit us at www.fci.com

APPLICATION DESIGN GUIDELINES

For application in a Pin-in-Paste process, FCI recommends the application design guidelines below.

STENCIL DESIGN

The stencil design is crucial for a good solder joint. It determines the quantity of paste and the position of the paste print on the board. Each PCB hole has its own stencil aperture with enough spacing in between in order to have separate solder deposits.

This prevents solder robbing from one hole to another and guarantees the correct quantity of solder paste for each hole. The print position is slightly asymmetrical so as to optimise the flow of molten solder paste.

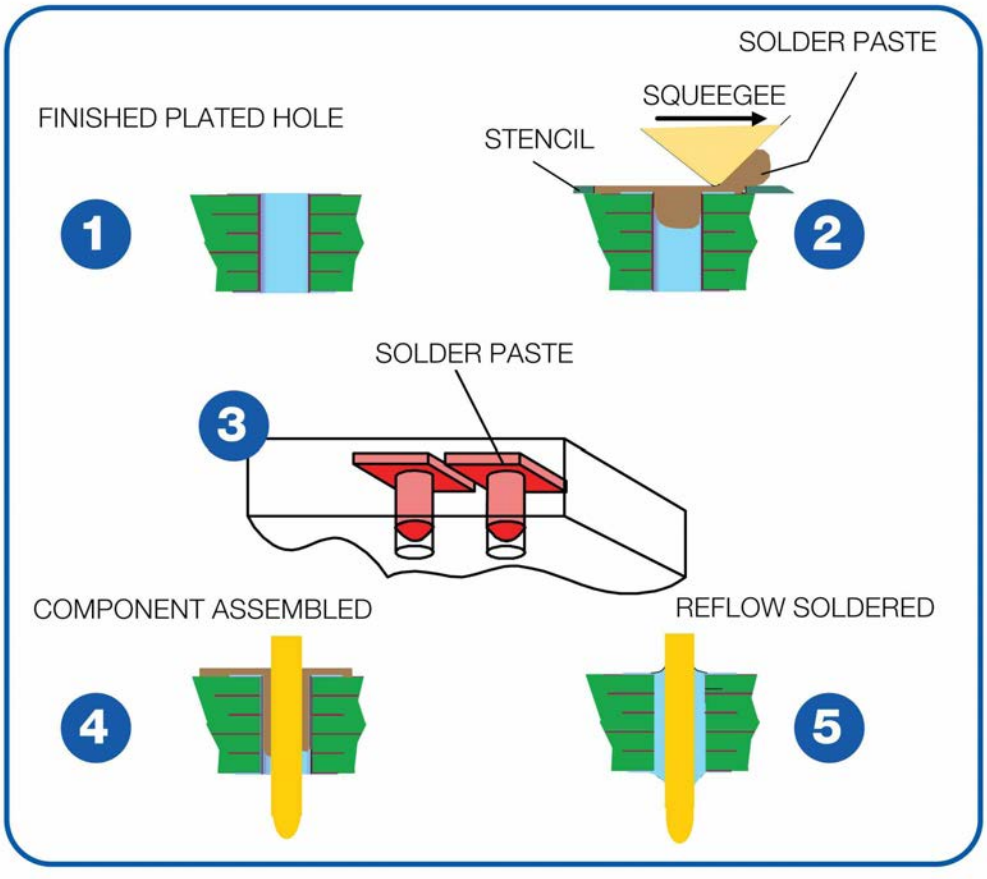
PASTE APPLICATION

The quantity of paste for each hole depends on the soldering process parameters and the degree of hole filling. For the squeegee, FCI recommends a 45° angle. You can use a smaller angle for an even greater degree of hole filling. The squeegee moves in parallel with with the shorter sides of the stencil apertures.

BOARD LAYOUT

Please use a hole of 1.00 mm ± 0.05 mm for an optimum paste deposit. For automatic pick-and-place, lean towardsthe upper end of the tolerance.

Refer also to TA-894 for further information.



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CONNECTOR DESIGN

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

PLASTIC MATERIALS

Quickie PiP headers are moulded in high temperature thermoplastic and are able to withstand temperature exposure up to 260 °C peak for 10 to 30 seconds in a convection, infrared or vapour-phase reflow oven.

PIN LENGTH

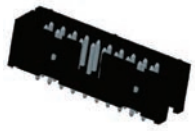
The connector lead length beyond the bottom of the PCB is shorter than for traditional TMT products. Thus, the risk of pushing out the solder paste when inserting the pin into the PCB hole is very much limited. The solder paste will not stick on the pin tip or even fall off completely, but stays around the pin for free flow during soldering. FCI uses a solder tail length of 2 ± 0.2 mm for Quickie Headers for a standard PCB of 1.6 mm thickness.

MECHANICAL PERFORMANCE

Standoffs raise the housing body slightly above the PCB surface and thus allow the molten solder paste to flow freely from its printed position into the board hole and around the pin. The standoffs are correctly positioned for a good solder paste deposit around the pin. Please respect the stencil design guidelines below in order to avoid paste deposit around the standoffs.

SPECIFICATIONS

For combining SMT and TMT components not only in the soldering process, but also in the assembly process, FCI proposes a choice of pick-and-place packaging for PIP connectors. The most common part numbers are available in tape-on-reel packaging, all others in tube.



TECHNICAL INFORMATION

MATERIALS

- Housing: High temperature thermoplastic
- Colour: Black
- Flammability rating: UL94V-0
- Pin: Phosphor bronze
- Plating: Gold and tin over 1.27µm nickel

ELECTRICAL PERFORMANCE

- Current rating: 3A continuous
- Insulation resistance: 10,000ΩM min.
- Dielectric withstanding voltage: 1,500V

ENVIRONMENTAL

- Operating temperature range: -65°C to +125°C

MECHANICAL PERFORMANCE

- Pin retention: 20 N min.

RoHS INFORMATION

- This product is RoHS compatible according to the European Union Directive 2002/95/IEC

SPECIFICATIONS

- File no. E66906
- File no. LR46923
- Product drawing: By 8-digit base part number
- Product specification: BUS-12-055
- Tape-on-Reel specification: TA-893
- Application specification: TA-894
- Reflow profile: TA-842
- Compatible with IR reflow soldering process

BWBQUICKCTB0613EA4

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