# SOFIX® – A fully shielded front IO solution
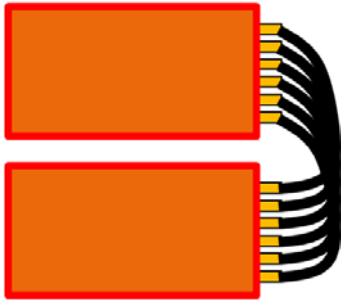
Product Presentation

SOFIX®

Product Description

- SOFIX® is a front IO interconnection system comprised of R/A headers and cable plugs, suitable for the distribution of power or signal;

- SOFIX® is designed for telecom applications and complies to the relevant IEC standards for building practices and shielding requirements.
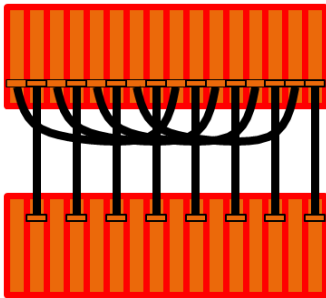
SOFIX®
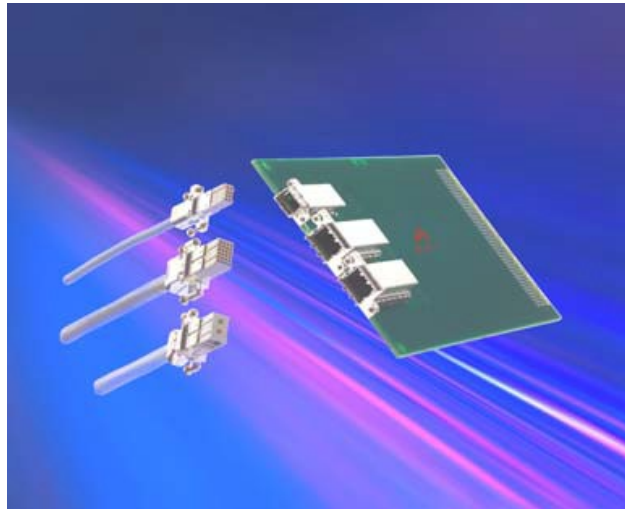
Target Applications

Between Plug-in units in same subrack / shelf
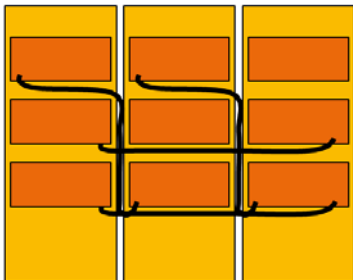
L < 1m

- ■ "Cable Backplane" applications.
- ■ Small PCB edge and panel length usage
    - Allows Many Separate I/O's from one panel
- ■ Maintaining shielding on subrack level.

Jumpering between Subracks / Shelves

L < 3m

- ■ From one interface board per subrack
- ■ Example: For system upgrade capability

Between Cabinets

L < 5m

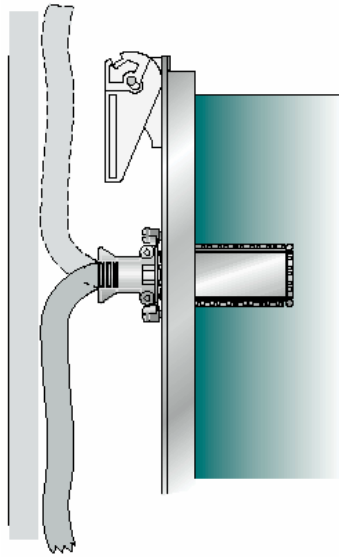- ■ High system flexibility / easy upgrade
- ■ "EMC-proof"

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Example CompactPCI® Serial Applications

- Fully shielded down to PCB level;
- High density:
    - Up to 96 lines per 10 cm (20 mm slot-pitch) and 45 lines per 10 cm (15 mm slot-pitch);
    - Connector pitches of 17.5 and 25 mm;
- Standard termination styles:
    - STB or PIP for PCB connectors;
    - IDC or solder for cable plug;
- Robust design with multi directional cable exit.
- Applicable in systems with shielding on sub-rack level;
- Supports applications with high bandwidth per slot;
- Surface mount compatible termination to PCB;

- Supports a wide range of interfaces:
    - Standard termination styles:
- Supports a wide range of cable
    - (Twisted Pair, coax, power);
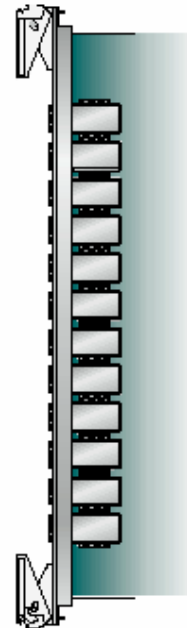- Flexibility in cable routing.
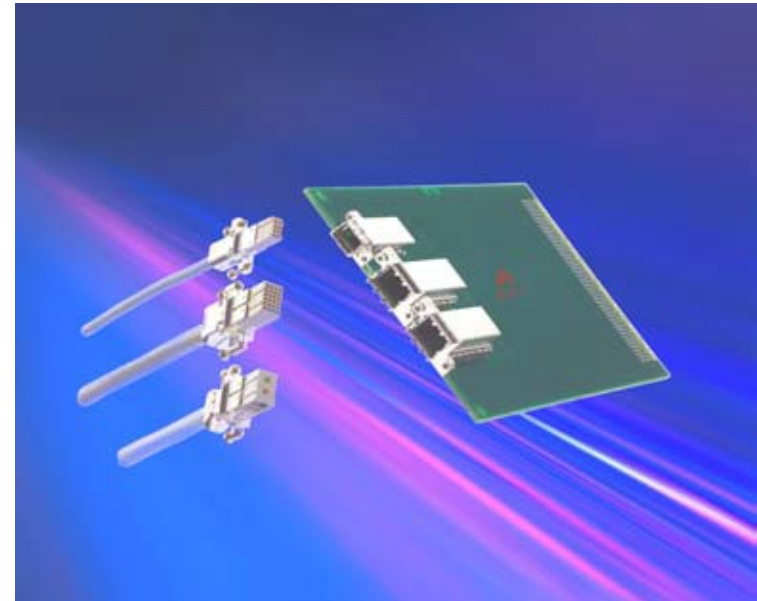
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Density

As little as 38 mm between cabinet door and board panel

Requires less board space than d-sub

8 pcs 24-pos in < 265mm

12 pcs 8-pos in < 265mm

Robust

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EMC

360 degrees shielded (X-section cable plug shown)

Outer ferrule

Zinc Cover

Shield

Zinc Cover

Inner Ferrule

System with sub-rack level shielding

Plug Cover

Cable Shield

System Ground

Board Panel (System Ground)

Header Cover (System Ground)

ix

ix

ix

ix

Ix = System Ground Interconnection
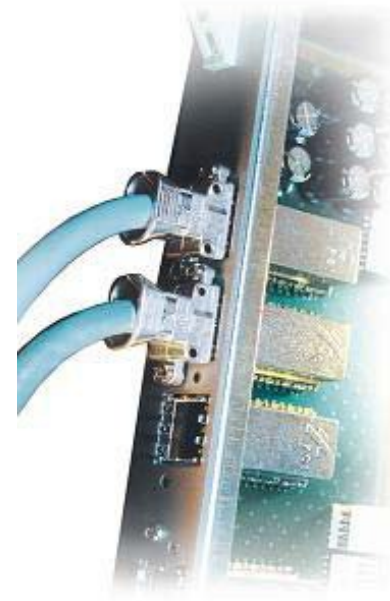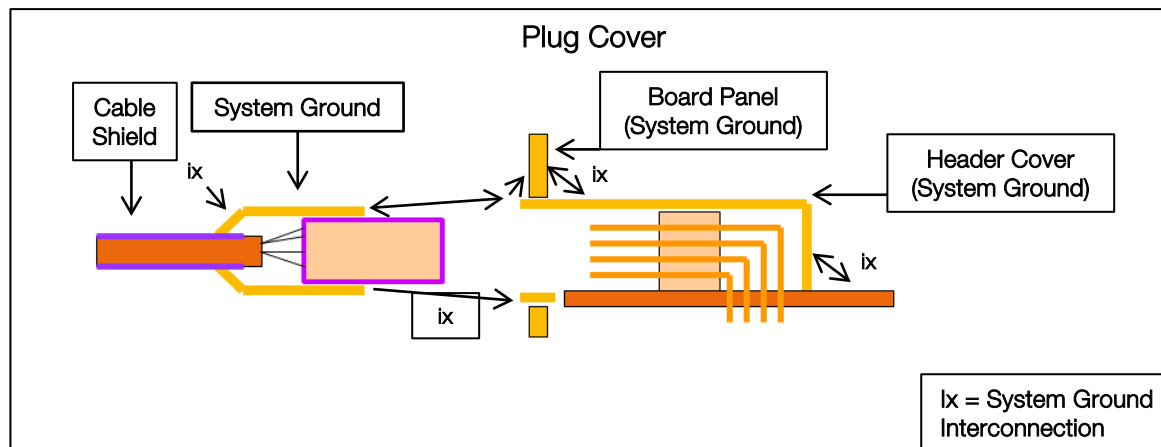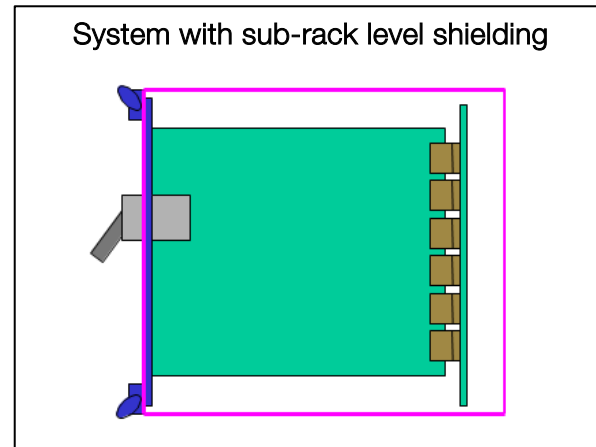
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Board Connectors

- SOFIX® PCB connectors are available as kits:
    - A kit consists of a R/A header, contact springs and a shield cover assembly;
- 2 sizes of PCB connectors
    - 2x4 (signal):
        - STB or PIP
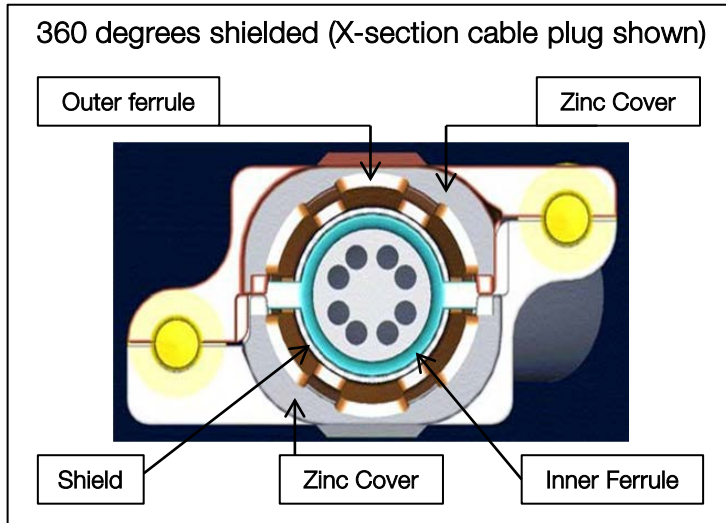   - 15 mm slot pitch;
            - 17.5 mm connector pitch
    - 4x6 (signal) or 1x2 (power):
        - STB or PIP (signal)
        - STB (power)
            - 20 mm slot pitch;
            - 25 mm connector pitch

Cover Assembly

R/A Signal Header

Contact Springs
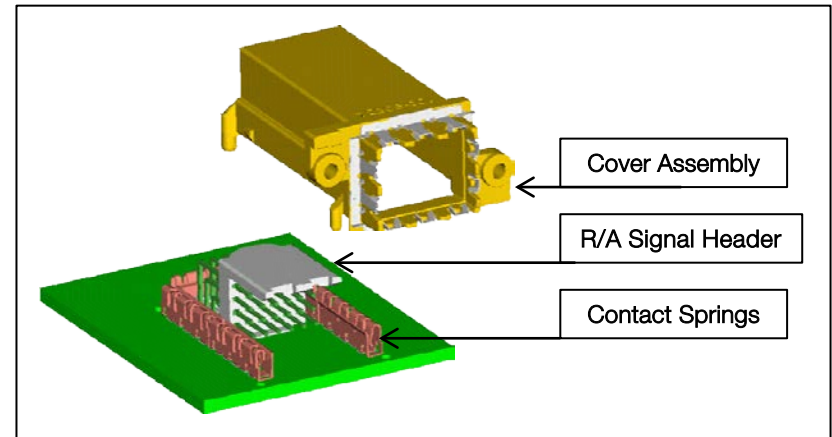
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Cable Connectors

- SOFIX® Cable connectors are available as kits;
- AWG sizes 24 - 26 with alternative wire sizes and cable diameters optionally (crimp ferrules);
  - max cable OD: 7 mm (2x4)
  - max cable OD: 9 mm (4x6)
  - AWG 28-30 alternatively
- Crimp ferrules available in various sizes to accommodate wide range of cables.

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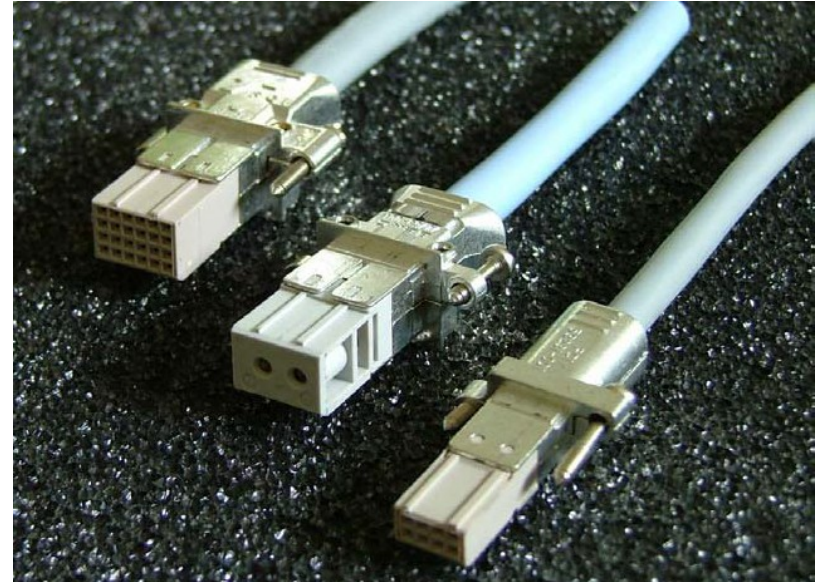
2x4 Cable Plug

- 2x4 Cable Connectors are available as kits;

- AWG sizes 24 - 26 with alternative wire sizes and cable diameters optionally (crimp ferrules);
    - IDC version for Twisted Pair;
    - Solder versions for twin coax or quad coax;
    - Solder version for high speed

- Active latch to panel (torx screws);

- 17.5 mm connector pitch;

- 15 mm plug in unit pitch.

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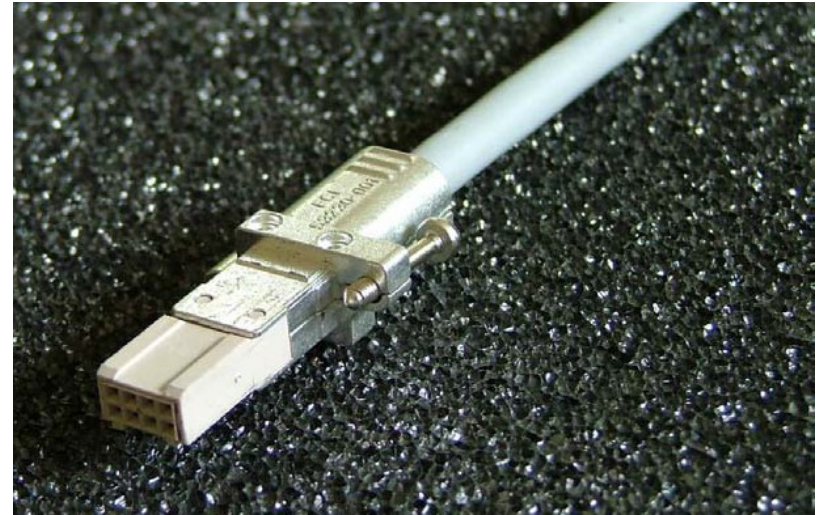
4x6 Cable Plug

- 4x6 Cable Connectors are available as kits;

    - IDC version for Twisted Pair;

    - Solder version for high speed

        - Order crimp ferrules separately to support wide range of cable diameters;

- Active latch to panel (torx screws);

- 25 mm connector pitch;

- 20 mm plug in unit pitch.

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High Speed
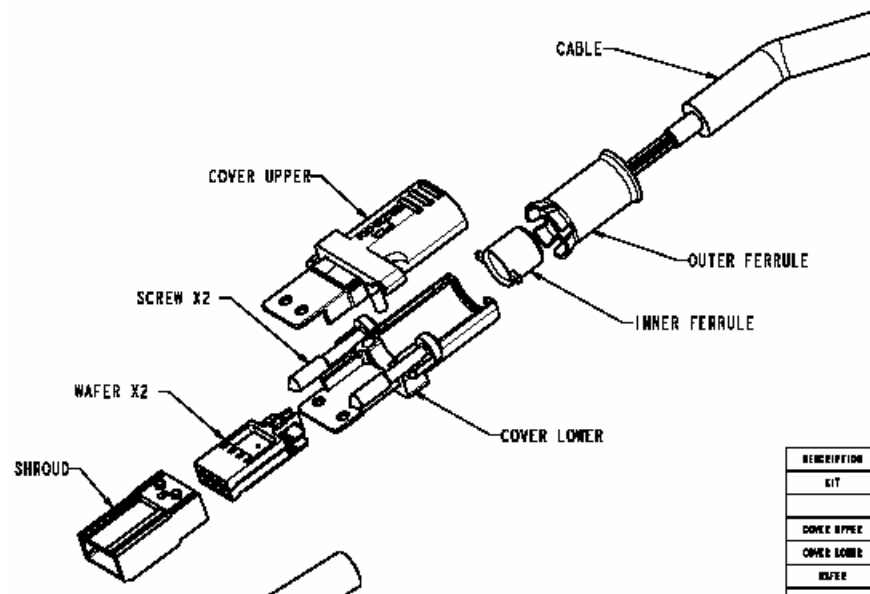
- For gigabit applications (like 1000 BaseT) a 2x4 signal cable connector is available:

  - Cable is soldered to (custom) design wafers that also allow termination to signal-ground;

  - Requires careful selection of proper cable design.

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72 Position

- For low speed, high density applications a 3x24 signal cable connector is available

    - IDC version for Twisted Pair;

    - IDC cable termination;

    - Reduced shielding performance (down to faceplate level instead of PCB);

    - Mates with 72 position R/A header;

    - 55 mm connector pitch;

    - 20 mm plug in unit pitch.

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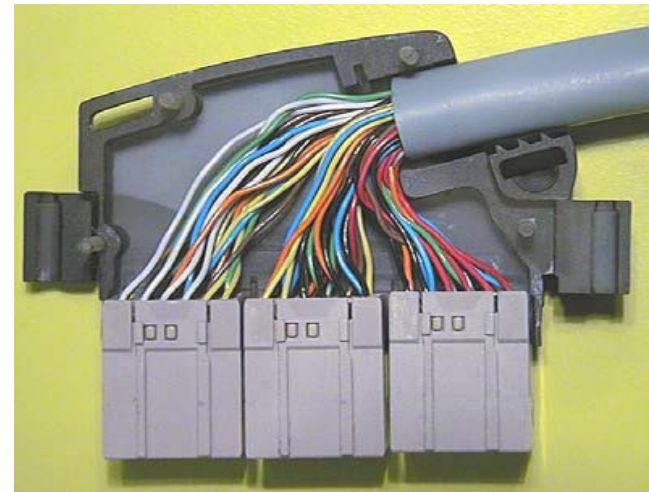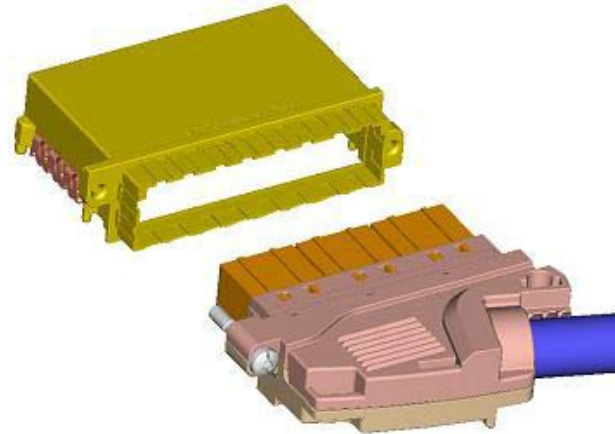
Documentation

- Customer drawings; visit: www.fci.com Application Specification;

  - Board connectors: GS-20-049

  - Cable connectors: GS-20-030 & GS-20-050

- Product Specification:

  - Board connectors: GS-12-307 cable connectors: GS-20-308

- Signal Integrity Test Report; Shielding Effectiveness Test Data.

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Documentation

	SOFIX® Cable Connectors			
	2x4 signal	4x6 signal	3X24 signal	power
Twisted Pair (IDC)	72861-201LF	HM1C16D2J110EBLF	10013881-201LF	na
Coax twin (Solder)	72862-201LF	na	na	na
Coax quad (Solder)	10008166-001LF	na	na	na
Gigabitlink (Solder)	53389-001LF	na	na	
Power	na	na	na	72824-201LF

	SOFIX® Board Connectors			
	2X4 signal	4x6 signal	3X24 signal	power
Solder To Board	72860-201LF	72844-201LF	10022805-201LF	72846-205LF
Pin In Paste	52088-202LF	72858-702LF	na	na

X) Loadings and mating pin length according to customer drawing
Y) Mating pin length according to customer drawing
Z) Board thickness variants, see customer drawing

Related Technologies

Pin In Paste Processing

Product Presentation
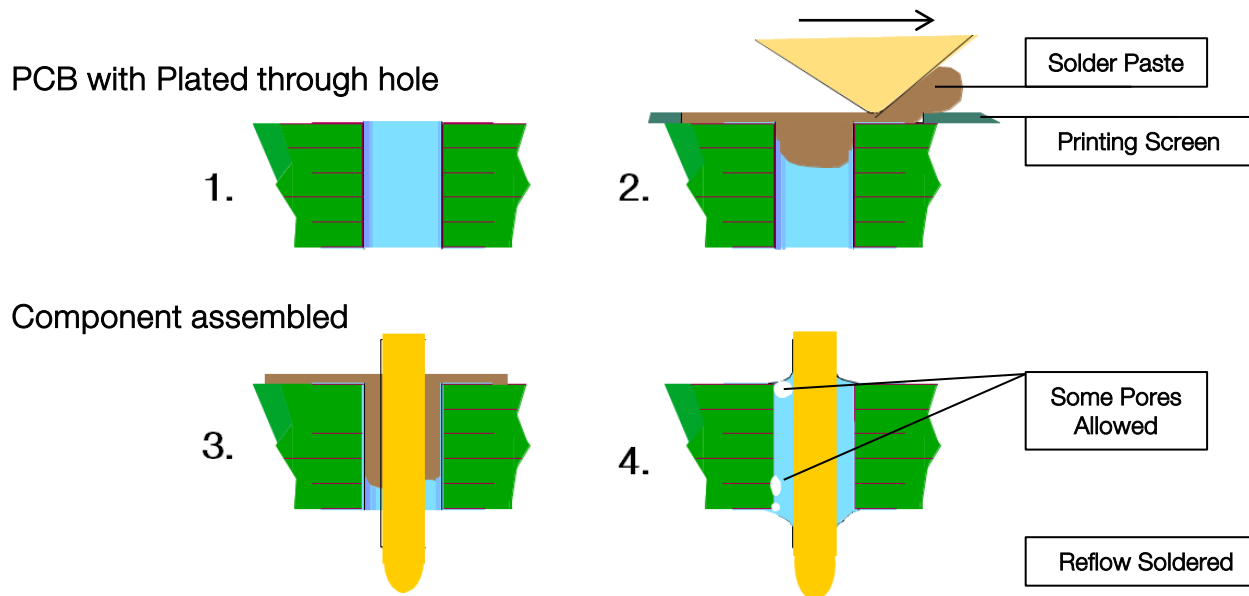
FCi

Related Technologies

Pin in Paste Processing – PIP

"Conventional" through-hole device is secured to PCB by reflowing solder paste instead of wave soldering.

Allows for fully automated assembly of the PCB's.

= Reduction in applied cost

- Elimination of manual processes.
- Reduction of through-put time & Inventory.
- Increase of production yield.
- Elimination of wave solder / press-fit equipment.

PCB with Plated through hole

1.

2.

Solder Paste

Printing Screen

Component assembled

3.

4.
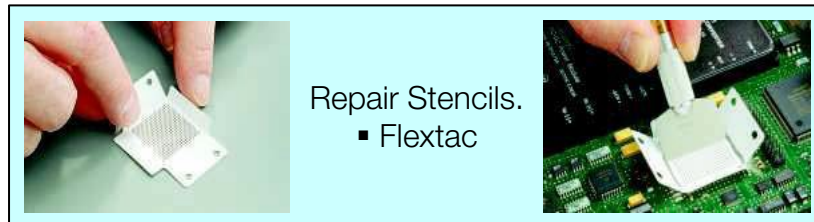
Some Pores Allowed

Reflow Soldered

Related Technologies

Pin in Paste for Connectors

- PCB connectors packaged in Tray or Tape-on-Reel for automated handling in standard (odd form factor) SMT pick and place equipment.

    - Fuji, Universal, Assembleon etc.

- Connector area of PCB is screen-printed with solder paste in the same step (with the same stencil) as screen printing paste for other SMT components.

- Connector can be picked up with vacuum Nozzle or gripper. Pick and place machine vision system identifies reference points, and places connector. Standard machines can provide 20N+ to resist any friction from tails entering holes.

- Product will resist lead-free soldering temperatures (up to 260C).

- Heating gets to solder joints through the top cover, and through the PCB holes.

- Rework possible, similar to BGA products.

    - Melt solder joints by Local heating with hot air via a shield can.

    - Clean solder residue from PCB.

    - Re-apply solder paste with rework stencil Re-fit connector by hand.

    - Reflow by application of local heat via a shield can.

Solder Rework
www.metcal.com\

Repair Stencils.
  - Flextac

THANK YOU