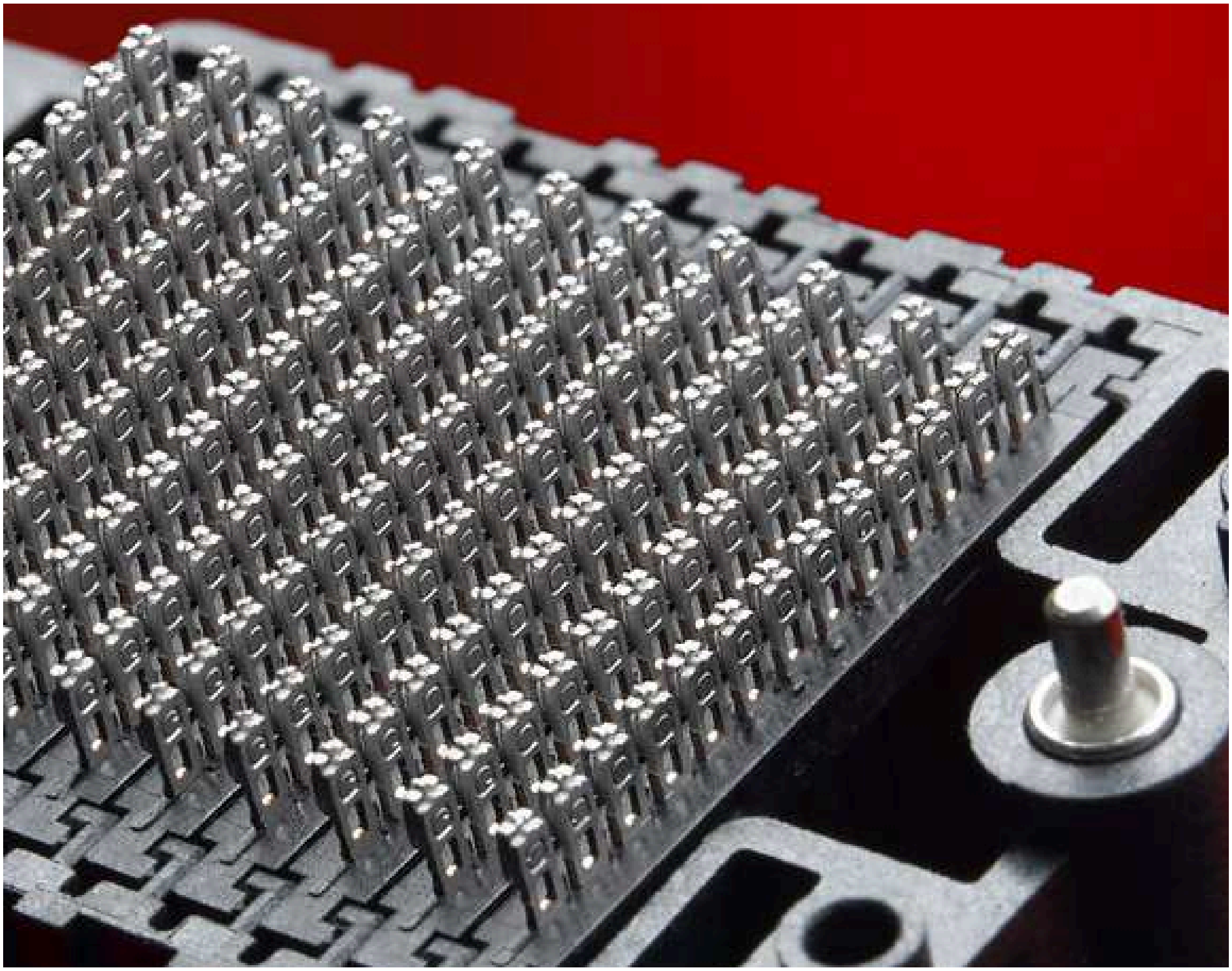
APPLICATION SPECIFICATION

Solder Joint Pass / Fail Criteria
For Molex Connectors



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REVISION:	ECN INFORMATION:	TITLE:	SHEET No.
D	EC No: UCP2013-2460 DATE: 2012 / 12 / 17	Solder Joint Pass / Fail Criteria for Solder Charge Type Connectors	1 of 12

DOCUMENT NUMBER:	CREATED / REVISED BY:	CHECKED BY:	APPROVED BY:
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1.0 SCOPE

This application note is intended to define and describe the range of acceptable solder joint formations for interconnect connector systems that utilize the Molex solder charge technology.

2.0 SOLDER JOINT FORMATION CRITERIA DESCRIPTIONS

a) Target

- The solder charge solder joint terminations are uniform in size and shape and have 360 degree wetting to the PCB pad.

b) Preferred Solder Joint Formation

- Solder charge fully wets primary side** of terminal AND flows through and wets secondary side of terminal AND exhibits 360 degree pad wetting AND is uniform in shape.

c) Acceptable

- No solder bridging.
- No open solder joints.
- Solder charge has wet the primary side** of terminal AND exhibits 360 degree wetting of the terminal base and PCB pad.

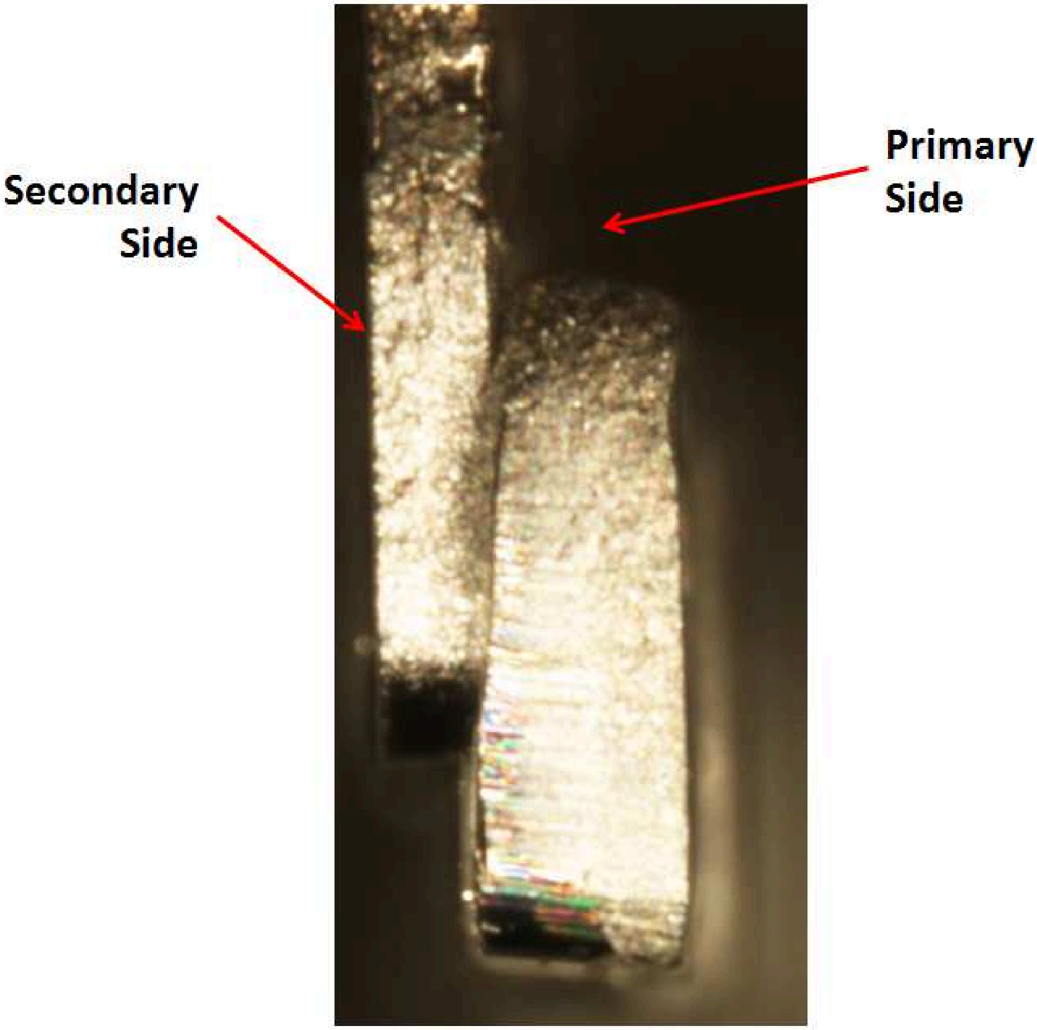
d) Unacceptable / Defect

- Solder Bridge - Visual or X-ray examination indicates solder bridging.
- Open - Visual or X-ray examination indicates open solder joints.
- Insufficient - Solder joint formation where the smallest diameter of the solder joint is located between the terminal and the PCB pad.

e) Process Indicator

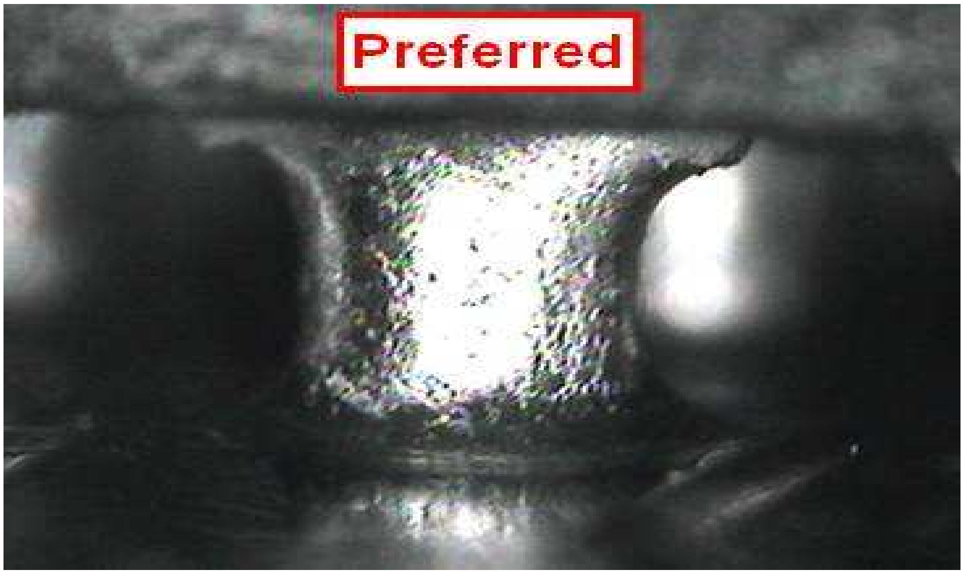
- Solder joint terminations are not uniform in size and shape.
- Incomplete reflow of the solder charge.

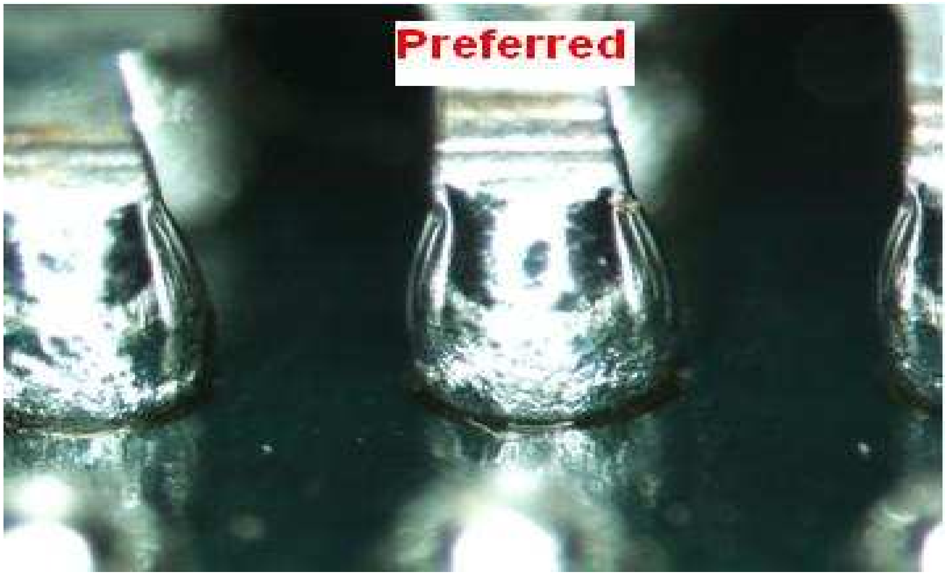
**Note: Primary side of the terminal is the side that the solder charge is mounted to before reflow soldering.



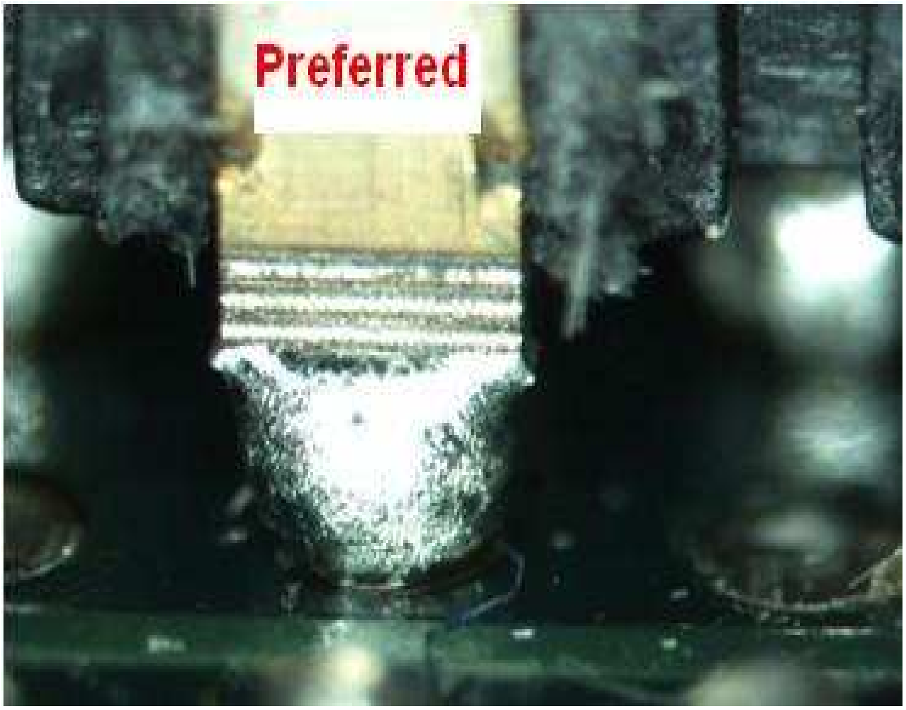
3.0 PREFERRED SOLDER JOINT FORMATIONS

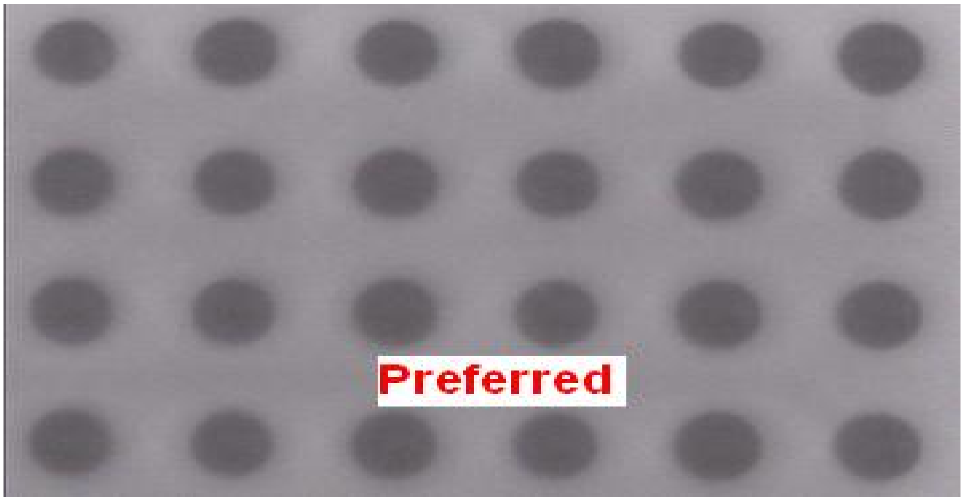
Solder charge fully wets primary side of terminal AND flows through and wets secondary side of terminal AND exhibits 360 degree pad wetting AND is uniform in shape.





3.0 PREFERRED SOLDER JOINT FORMATIONS (cont)

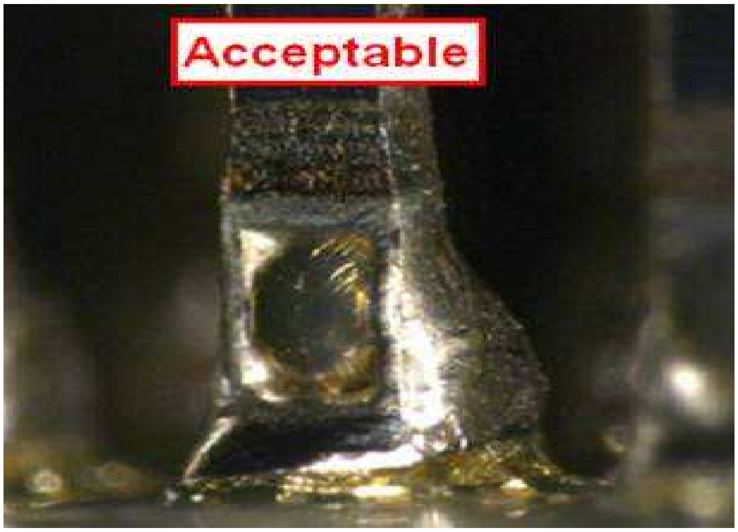


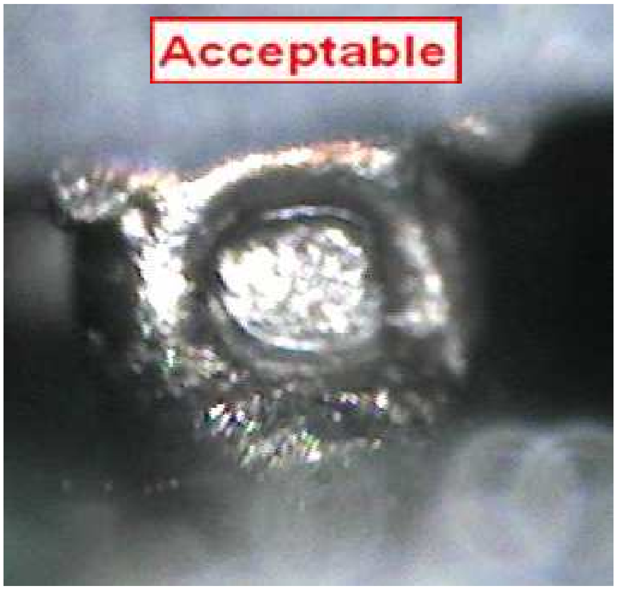


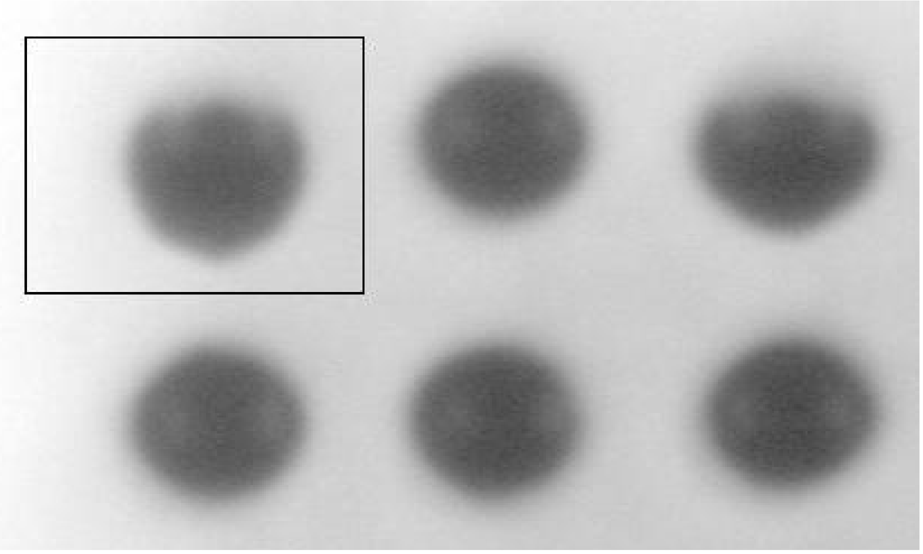
5Dx X-ray image of a preferred solder joint formation

4.0 ACCEPTABLE SOLDER JOINT FORMATION

Solder charge has wet the primary side of terminal and exhibits 360 degree wetting of the terminal base and PCB pad.



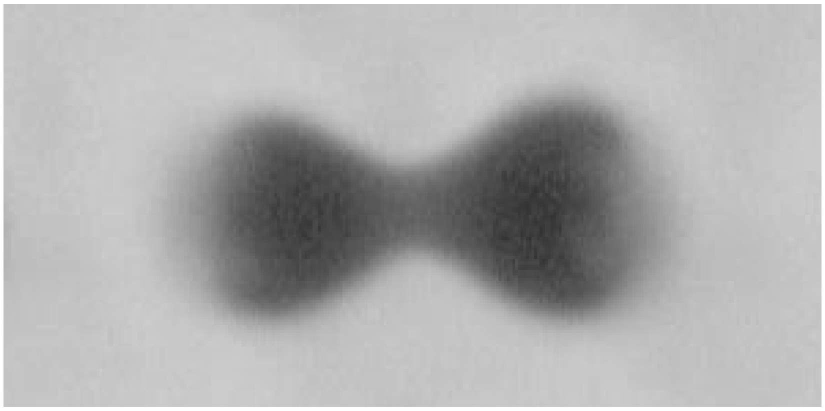




5Dx X-ray image of an acceptable solder joint formation

5.0 UNACCEPTABLE / DEFECT SOLDER JOINT FORMATIONS

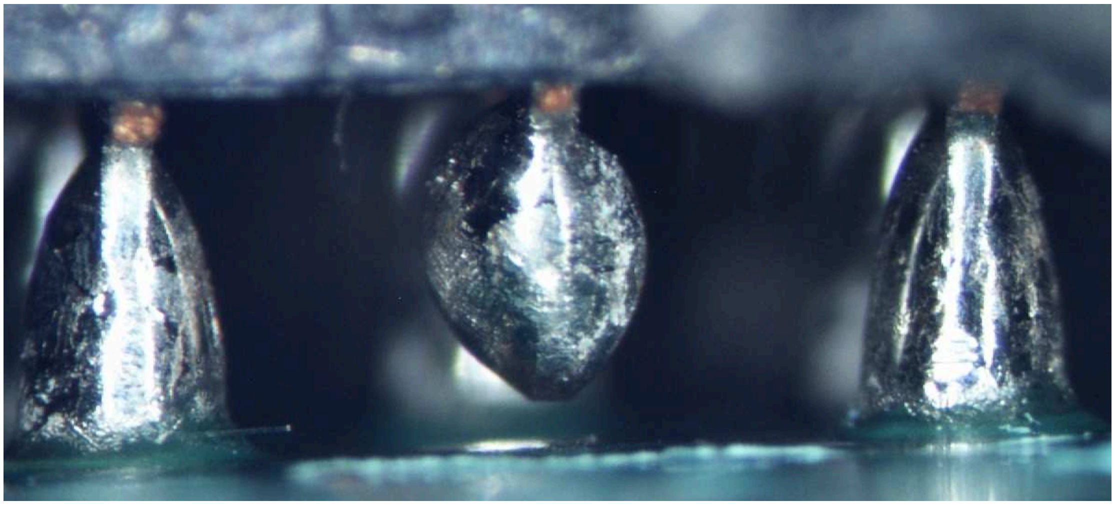
SOLDER BRIDGE - Visual or X-ray examination indicates solder bridge formation.

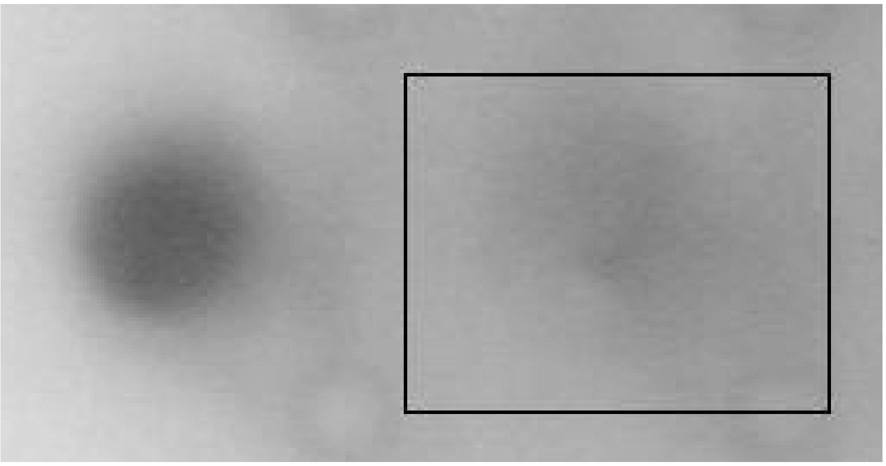


5Dx X-ray image of a solder bridge formation

5.0 UNACCEPTABLE / DEFECT SOLDER JOINT FORMATIONS (cont)

OPEN - Visual or X-ray examination indicates open solder joints.

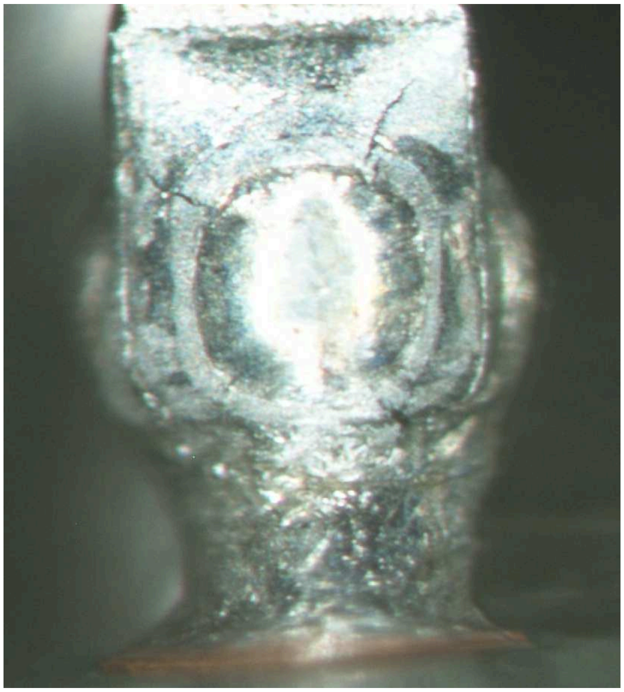


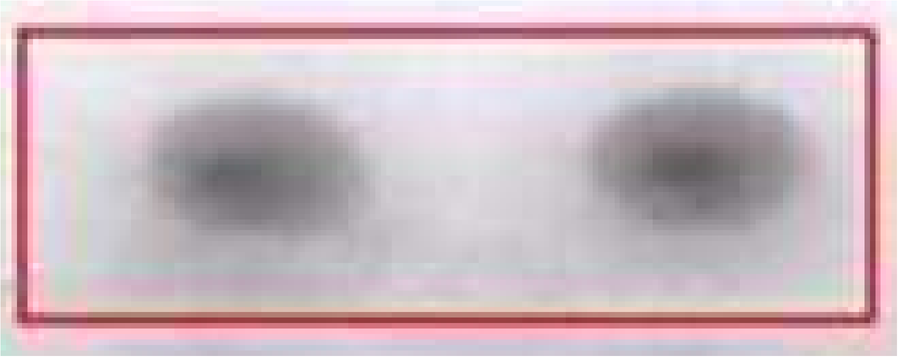


5Dx X-ray image of an open solder joint formation

5.0 UNACCEPTABLE / DEFECT SOLDER JOINT FORMATIONS (cont)

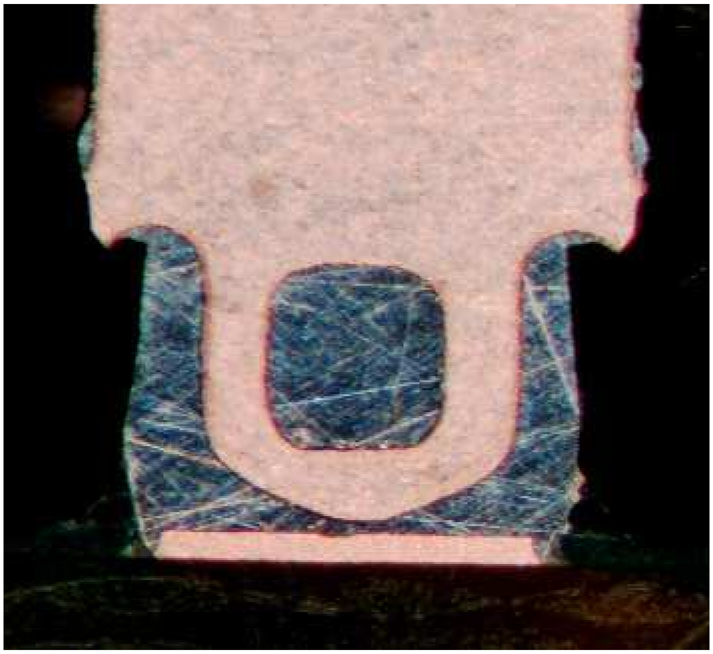
INSUFFICIENT - Visual or X-ray examination indicates insufficient solder joint.

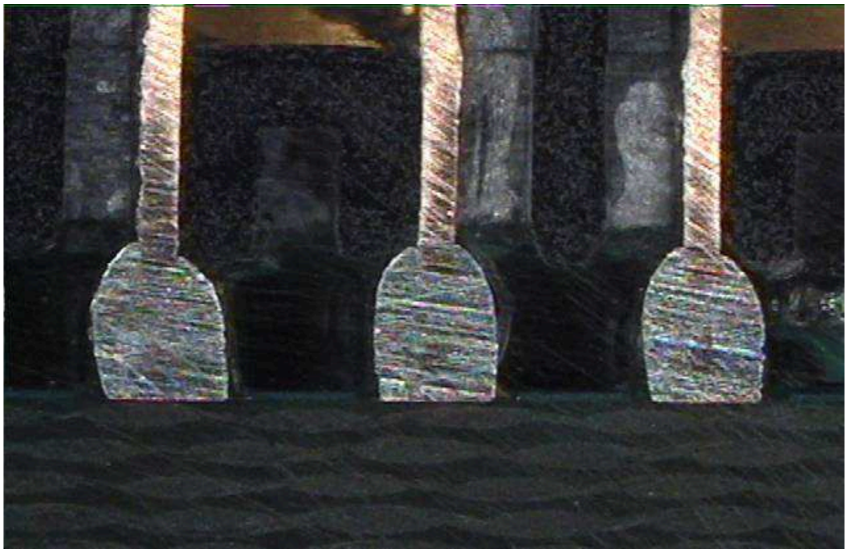




5Dx X-ray image of an insufficient solder joint formation

6.0 CROSS SECTION IMAGES OF PREFERRED SOLDER JOINT FORMATION





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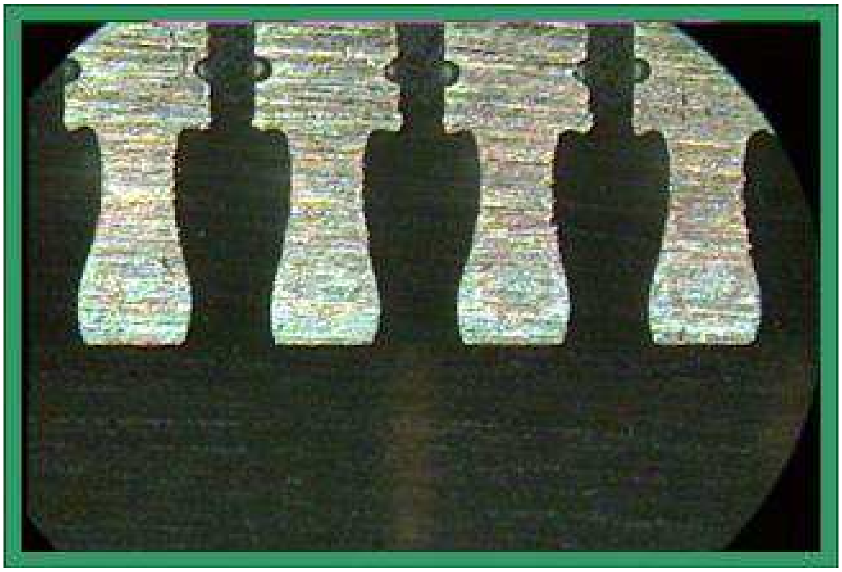

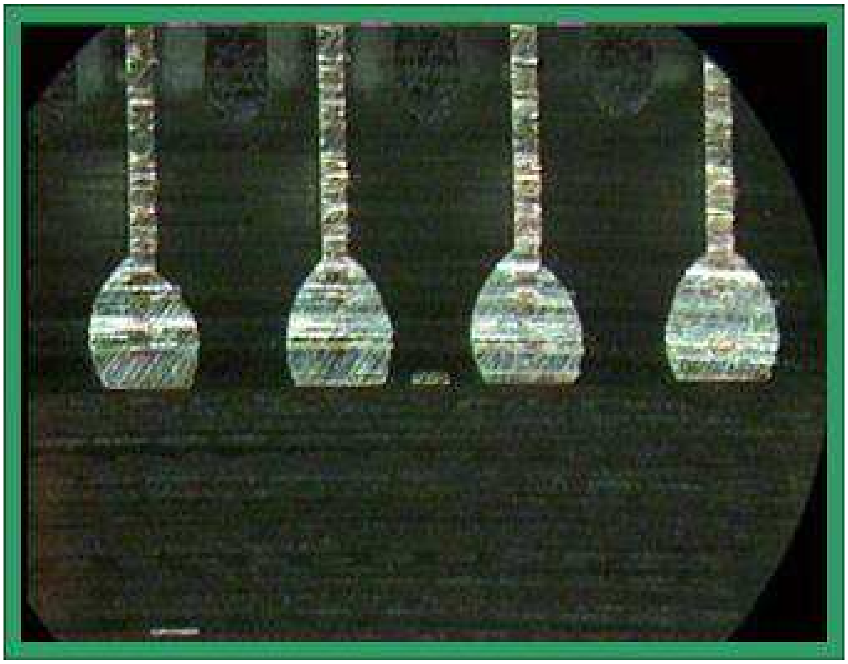

6.0 CROSS SECTION IMAGES OF ACCEPTABLE SOLDER JOINT FORMATION