REFLOW MATTE TIN (RMT) PLATING 245C AND 260C TESTING

1.0 SCOPE

This Test Summary covers the Dip and Look Solderability testing and the Lead Free Reflow Exposure testing for Reflow Matte Tin (RMT) plating. Testing was performed using a 245C +/- 5C and 260C +/- 5C solder pot temperature and a 245C +/- 5C and 260C +/- 5C peak reflow oven temperature.

2.0 PRODUCT DESCRIPTION

2.1 PRODUCT NAME

A. MINI-FIT JR. SERIES BANDOLIER PINS
B. MINI-FIT JR. SERIES HEADER ASSEMBLIES
C. C-GRID SERIES BANDOLIER PINS
D. C-GRID SERIES ASSEMBLIES
E. KK SERIES BANDOLIER PINS
F. KK SERIES ASSEMBLIES

2.2 PLATING TYPE THICKNESS

A. REFLOW MATTE TIN (RMT)
B. 60 MICROINCHES MINIMUM REFLOW MATTE TIN (RMT) OVER 50 MICROINCHES MINIMUM NICKEL

3.0 REFERENCE DOCUMENTS

IPC/EIA/JEDEC J-STD-002 Solderability Tests for Component Leads, Terminations, Lugs, Terminals and Wires.
IPC/EIA/JEDEC J-STD-004 Requirements for Soldering Fluxes
IPC/EIA/JEDEC J-STD-006 Requirements for Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications
JEDEC JESD22-B102 Solderability
SMES-152
ES-40000-5013 Connector Heat Resistance Specification

4.0 OTHER REFERENCE MATERIAL

See appendix 1 for images of test results

5.0 TEST OBJECTIVE

To determine if lead free processing temperatures have any negative affects on RMT plating during a dip and look solderability test with a solder pot temperature of 245C +/- 5C and 260C +/- 5C and to determine if a 245C +/- 5C and 260C +/- 5C peak reflow oven temperature causes RMT plating to discolor, blister, candle wick, or any other visual defect.

6.0 CONCLUSION

All of the samples tested passed testing at both 245C +/-5C and 260C +/- 5C. RMT plating is an acceptable alternative plating to standard bright tin for use during lead free reflow soldering and wave soldering using 245C +/-5C and 260C +/- 5C peak temperatures.

7.0 TEST PROCEDURES

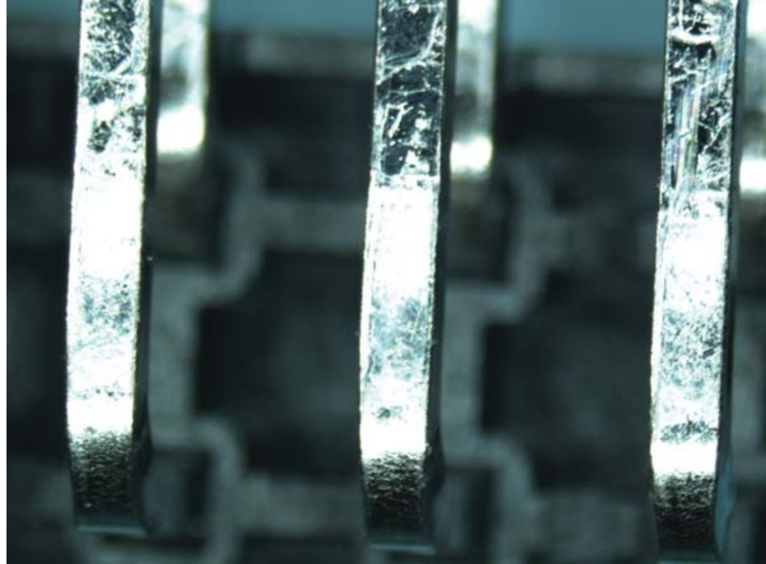
7.1 DIP AND LOOK SOLDERABILITY TEST

Mini-Fit and C-Grid bandolier pins and completed Mini-Fit and C-Grid assemblies were tested using the dip and look solderability procedure outlined in SMES-152 using a solder pot temperature of 245C +/-5C and 260C +/-5C.

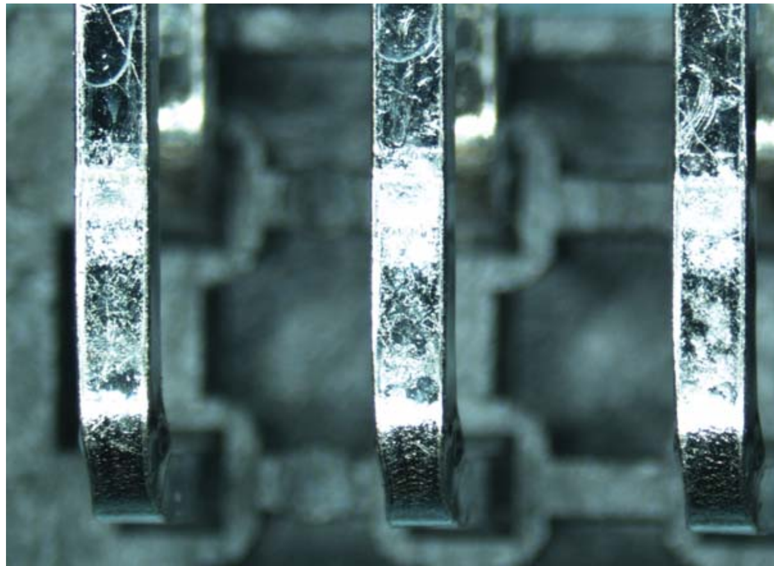
7.2 LEAD FREE REFLOW EXPOSURE

Mini-Fit and C-Grid bandolier pins and completed Mini-Fit and C-Grid assemblies were processed through a reflow oven using an air atmosphere and a peak reflow temperature of 245C +/- 5C and 260C +/-5C as outlined in ES-40000-5013. Bandolier pins and completed assemblies were secured to the PCB using Kapton tape and no solder paste was used.

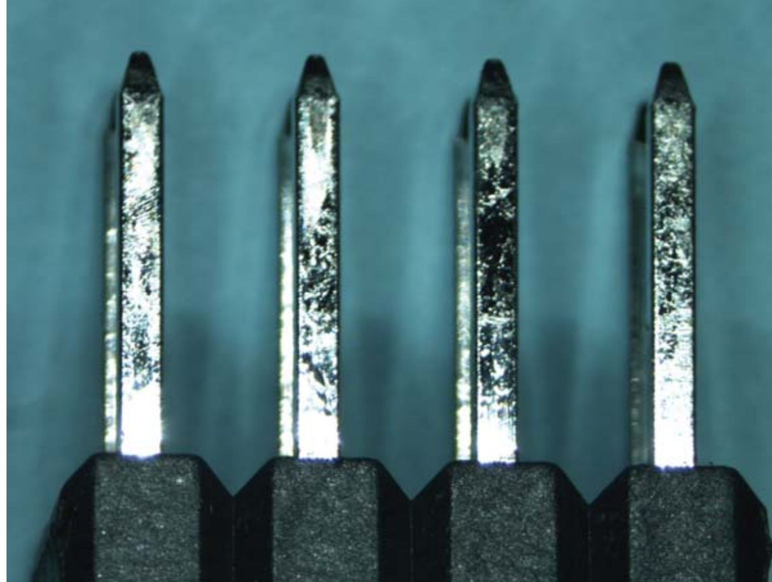
APPENDIX 1



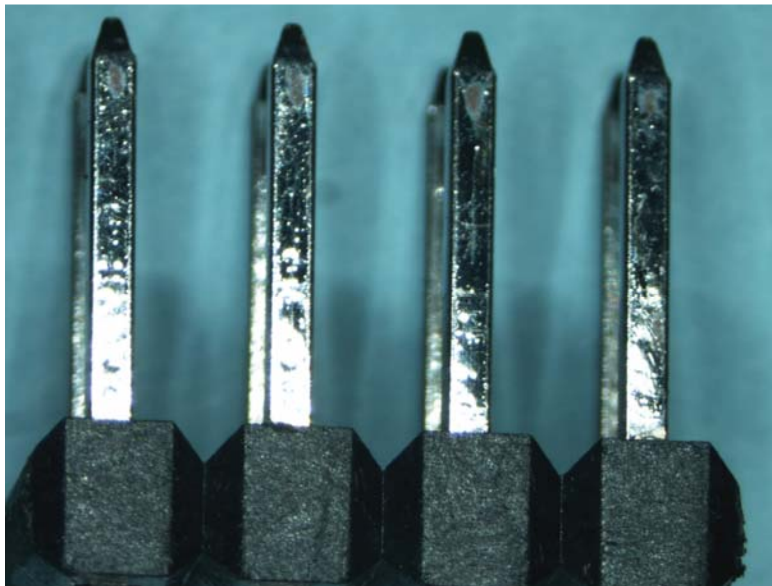
Mini-Fit assembly BEFORE lead free reflow exposure 260C



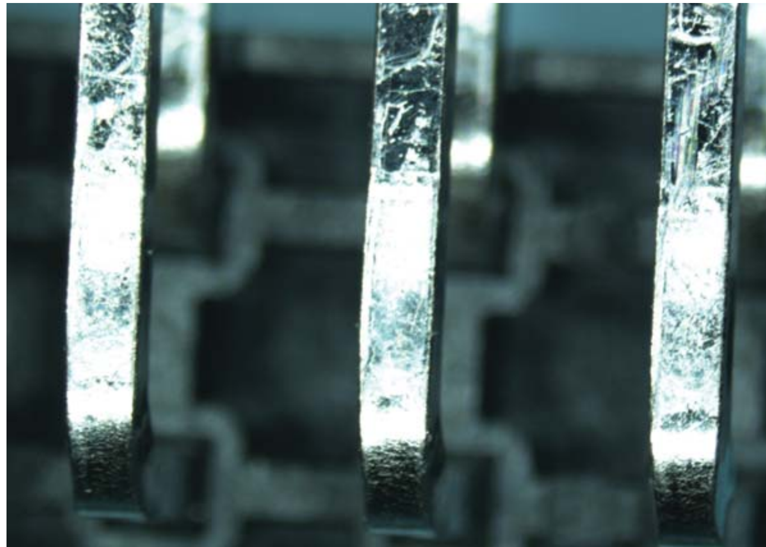
Mini-Fit assembly AFTER lead free reflow exposure 260C



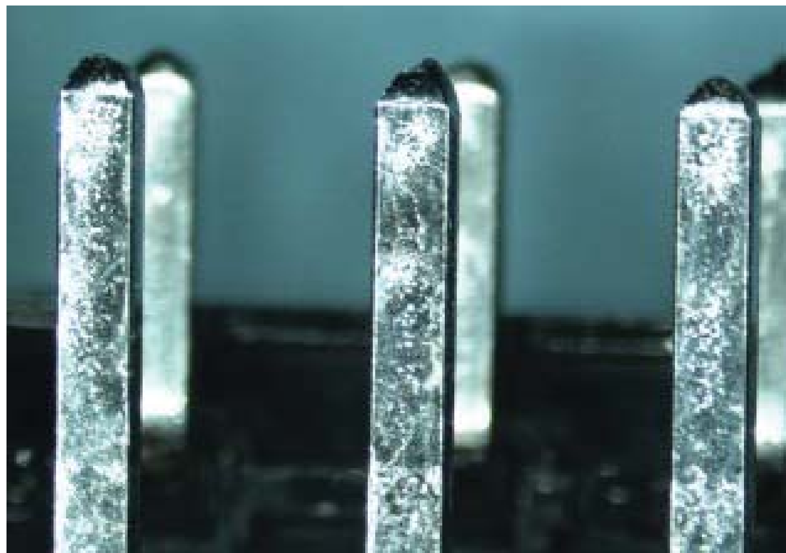
C-GRID assembly BEFORE lead free reflow exposure 260C



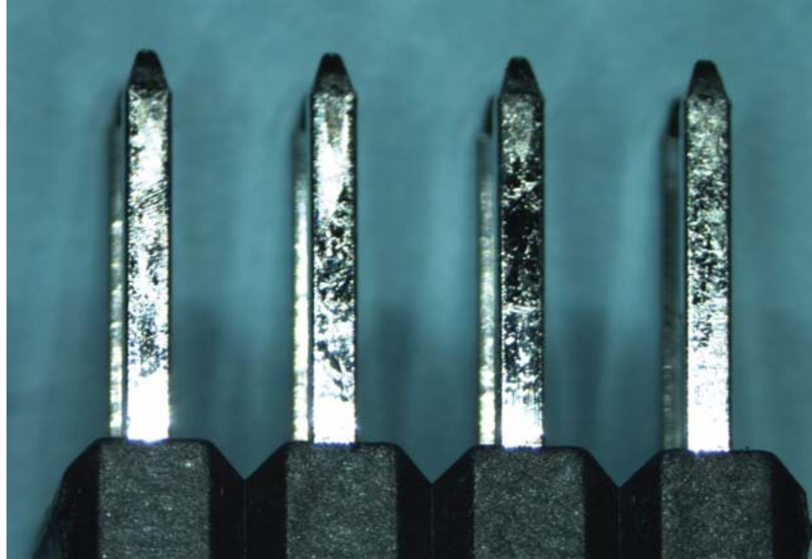
C-GRID assembly AFTER lead free reflow exposure 260C



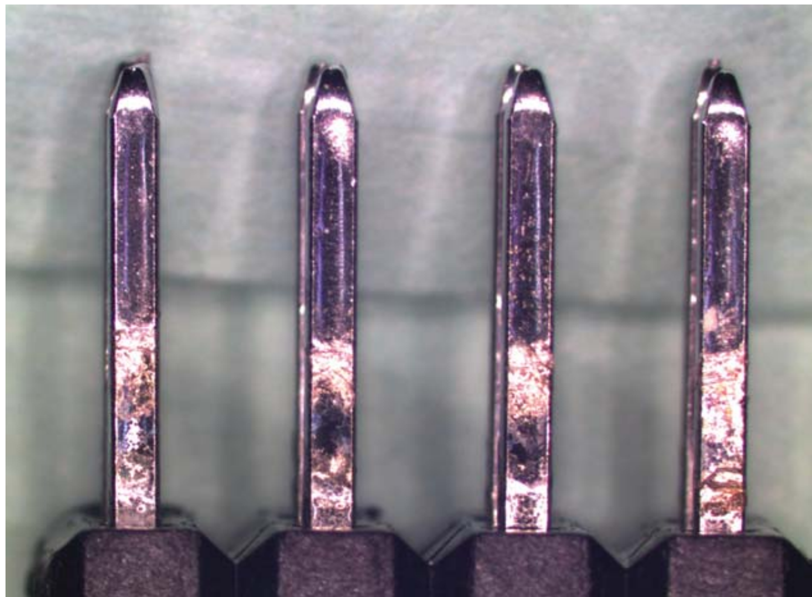
MINI-FIT assembly BEFORE dip and look solderability testing 260C



MINI-FIT assembly AFTER dip and look solderability testing 260C



C-GRID assembly BEFORE dip and look solderability testing 260C



C-GRID assembly AFTER dip and look solderability testing 260C