

## 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  $245C \pm - 5C$  and  $260C \pm - 5C$  and to determine if a  $245C \pm - 5C$  and  $260C \pm - 5C$  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.

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### 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.

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Mini-Fit assembly BEFORE lead free reflow exposure 260C



Mini-Fit assembly AFTER lead free reflow exposure 260C

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C-GRID assembly BEFORE lead free reflow exposure 260C



C-GRID assembly AFTER lead free reflow exposure 260C

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



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

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



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

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