

# ROHID Anti-whisker formation of leadfree plating

#### 1. The Applicable Product

BD82031FVJ-GE2

#### 2. Evaluation Package

| No | Item                     | Item Information                    |  |
|----|--------------------------|-------------------------------------|--|
| 1  | Subject                  | LSI product of Leadfree plating     |  |
| 2  | Type of Terminal Plating | Sn                                  |  |
| 3  | Plating Grain Size       | 2μm to 10μm                         |  |
| 4  | Bath type                | Akyl sulfonic acid, Electro plating |  |
| 5  | Matt or Bright           | Matt                                |  |
| 6  | Under Plating            | None                                |  |
| 7  | Type of Frame            | Cu Alloy frame                      |  |

#### 3. Compliance standerds

Tin Whisker Acceptance Test Requirements (NEMI Tin Whisker Users Group, July 28, 2004)

#### 4. Test Flow

| No | Test Flow            | Test Condition                       |  |
|----|----------------------|--------------------------------------|--|
| 1  | Preparation          | MP. condition                        |  |
| 2  | Pre Inspection       | SEMx250, Top/Side/Forming Section    |  |
| 3  | Preconditioning-1    | Storage at ambient temp. for 4 weeks |  |
| 4  | Preconditioning-2    | 215°C Reflow, 255°C Reflow           |  |
| 5  | Applying Stress      | 1. 30°C, 70% RH, 4,000hr             |  |
|    |                      | 2. 60°C, 87% RH, 4,000hr             |  |
|    |                      | 355/+85°C, 2,000cyc                  |  |
|    |                      | 4. 30°C, 70%, Bias, 4,000hr          |  |
| 6  | Screening Inspection | x 50, Top/Side/Forming Section       |  |
| 7  | Detailed Inspection  | SEMx250, Top/Side/Forming Section    |  |

### 5. Test Result

Criteria: Not allow, the whisker is larger than 40µm between lead to lead.

| No | Preconditioning-1                      | Preconditioning-2       | Stress Condition        | Result:Pn/n |
|----|--|-------------------------|-------------------------|-------------|
|    |  |                         |                         | (pcs)       |
| 1  | Storage at ambient temprature. 4 weeks | None                    | 30°C, 70% RH 4,000hr    | 0/96        |
| 2  |  |                         | 60°C, 87% RH 4,000hr    | 0/96        |
| 3  |  | 215°C Reflow Simulation | 30°C, 70% RH 4,000hr    | 0/96        |
| 4  |  |                         | 60°C, 87% RH 4,000hr    | 0/96        |
| 5  |  | 255°C Reflow Simulation | 30°C, 70% RH 4,000hr    | 0/96        |
| 6  |  |                         | 60°C, 87% RH 4,000hr    | 0/96        |
| 7  |  | 215°C Reflow Simulation | –55/+85°C 2,000cyc      | 0/96        |
| 8  |  | 255°C Reflow Simulation | –55/+85°C 2,000cyc      | 0/96        |
| 9  |  | 215°C Reflow Assembly   | 30°C, 70%, Bias 4,000hr | 0/96        |

Therefore, wisker is no problem.

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