Anti-whisker formation of leadfree plating

1. The Applicable Product

BR93G66FVJ-3GTE2

2. Evaluation Package

No	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	Alkyl 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	M.P. condition
2	Pre Inspection	SEM x 250, 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 3. -55/+85°C, 2,000cyc 4. 30°C, 70%, Bias, 4,000hr
6	Screening Inspection	x 50, Top/Side/Forming Section
7	Detailed Inspection	SEM x 250, 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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