

## **Product Change Notice**

**Issue Date: 12 March 2013**

### **Change Type:**

Change 1: Change of platform from ceramic to metal leadframe at a newly qualified supplier for Quad Flat (Minipak) package family.

Change 2: Alternative second source for testing Quad Flat (Minipak) package.

### **Parts Affected:**

Refer to Appendix A.

### **Description and Extent of Change:**

All the affected part will be manufactured to the same electrical specification according to the published datasheet. Avago Technologies will ensure that appropriate process controls and monitors are in place at the new contract manufacturer to continue providing customers with high quality products. The contract manufacturers will be given proper training and certified to Avago Technologies' standards of manufacturing process operations.

### **Reasons for Change:**

Due to business exit for present supplier of the Minipak ceramic package assembly and assurance of supply to meet market demands.

### **Effect of Change on Fit, Form, Function, Quality, or Reliability:**

The device specification will remain the same, which will ensure product electrical performance remains the same. Electrical characterization and reliability qualification was performed on representative products to ensure normal parametric distribution, consistent electrical performance, and reliability.

There will be a slight change in the product outline dimensions in moving from ceramic to lead frame. Please review page 2 for details. However there will be no impact to stencil and package footprint for the pcb.

### **Effective Date of Change:**

Product shipments using this change will begin on or around May 2013, but initiation of the change may be spread over approximately 6 months. Timing of shipment of the changed part will vary by part number depending on qualification completion, customer demand, and inventory levels.

The last time buy (LTB) for the ceramic package will be between March to May 2013 and the last time ship (LTS) will be between June to end November 2013. For availability of samples please contact your Sales Region representatives accordingly.

### **Qualification Data:**

Qualification data has been generated and approved.

## Dimension Comparison between Ceramic substrate and lead frame

Current	New
Device: MMIC and Diode Ceramic package	Device: MMIC and Diode Leadframe package
Top and side view	Top and side view
<p style="text-align: center;">Top view</p> <p style="text-align: center;">Side view</p> <p style="text-align: center;">Dimensions are in millimeters (inches)</p>	<p style="text-align: center;">Top View</p> <p style="text-align: center;">Side View</p> <p style="text-align: center;">Dimensions are in millimeters (inches)</p>
Device: Diode Ceramic Package	Device: Diode Leadframe Package
Bottom view	Bottom view
<p style="text-align: center;">Bottom view</p>	<p style="text-align: center;">Bottom View</p>
Device: ATF/MGA Ceramic and Leadframe Package	
<p style="text-align: center;">Bottom view</p>	

These changes have been reviewed and approved by Avago Technologies engineers and managers per Avago Technologies procedure: Change Control and Customer Notification, A-5962-6052-80, 5957-0258-80 and 971-5507-82

Please contact your Avago Technologies field sales engineer or Contact Center (<http://www.avagotech.com/contact/>) for any questions or support requirements. Please return any response as soon as possible, but not to exceed 30 days.

- 1 Qualification Report for
- 2 Alternate Assembly Sources & Lead Frame Package
- 3 (PCN: V13-004-480035-0A )

### 3.1.1 Qualification Results:

All devices (except ESD & solderability) are subjected to MSL1 preconditioning (JESD22-A113) prior to each stress test condition shown in table below:

168hrs WHTS 85°C/85%RH + 3x Pb Free reflow 260°C peak

Stress Test	Stress Condition	Duration	Number of Devices (each qual vehicle)	Results
MSL1 verification	168hrs WHTS 85°C/85%RH + 3x Pb Free reflow 260°C peak	After 3x reflow	75pcs	Passed
TMSK (Thermal Shock)	-65/150°C, 10 minutes dwell	500x	75pcs	Passed
HTOL <sup>1</sup>	Vf = 0.7V with junction temperature of 150°C Avg. Power = 30 mW	336hrs	180pcs	Passed
WHTOL <sup>1</sup>	85°C/85%RH, Vf = 0.7V	336hrs	180pcs	Passed
ESD	MM	40V <sup>1</sup> 25V <sup>2</sup>	36pcs	Passed
	HBM	600V <sup>1</sup> 200V <sup>2</sup>	36pcs	Passed
Solderability	Steam age 8 hour, lead free 245C, 5 sec	1x	66pcs	Passed

### Qual Vehicle

<sup>1</sup>HMPS-2825

<sup>2</sup>ATF-551M4

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## Appendix A

ATF-331M4-BLK	HMPP-389T-TR2
ATF-331M4-TR1	HMPS-2820-BLK
ATF-331M4-TR2	HMPS-2820-TR1
ATF-541M4-BLK	HMPS-2820-TR2
ATF-541M4-TR1	HMPS-2822-BLK
ATF-541M4-TR2	HMPS-2822-TR1
ATF-551M4-BLK	HMPS-2822-TR2
ATF-551M4-TR1	HMPS-2825-BLK
ATF-551M4-TR2	HMPS-2825-SG1G
HMPP-3860-BLK	HMPS-2825-TR1
HMPP-3860-TR1	HMPS-2825-TR1SE
HMPP-3860-TR2	HMPS-2825-TR2
HMPP-3862-BLK	MGA-725M4-BLK
HMPP-3862-TR1	MGA-725M4-TR1
HMPP-3862-TR2	MGA-725M4-TR2
HMPP-3865-BLK	QFET-3002-BLK
HMPP-3865-TR1	QFET-3002-TR1
HMPP-3865-TR2	QFET-3005-BLK
HMPP-3890-BLK	QFET-3005-TR1
HMPP-3890-TR1	QFET-3009-BLK
HMPP-3890-TR2	QFET-3009-TR1
HMPP-3892-BLK	QFET-3010-BLK
HMPP-3892-TR1	QFET-3010-TR1
HMPP-3892-TR2	QFET-3013-TR1G
HMPP-3895-BLK	QFET-3028-TR1
HMPP-3895-TR1	QMPS-0001-BLK
HMPP-3895-TR2	QMPS-0001-TR1
HMPP-389T-BLK	QMPS-0001-TR2
HMPP-389T-TR1	

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