PCN: V11-016-E47540-MA

Product Change Notice

Issue Date: July 29, 2011

Change Type:

Receivers
- Change to improved mold compound
- Change to alternate photo diode source
- Change of Lead frame base material

Transmitters
- Change to improved mold compound

Description and Extent of Change:

1. Qualify improved mold compound to achieve better moisture sensitivity level (from MSL 4 to MSL 3)

Parts Affected:

HFBR-1505AFZ	HFBR-1525EZ	QFBR-1585Z
HFBR-1505AZ	HFBR-1526Z	QFBR-T081Z
HFBR-1505CFZ	HFBR-1527Z	QFBR-T501Z
HFBR-1505CZ	HFBR-1528Z	QFBR-T515EZ
HFBR-1506AFZ	HFBR-1531Z	QFBR-T518Z
HFBR-1506AMZ	HFBR-1532Z	QFBR-T519Z
HFBR-1515BFZ	HFBR-1533Z	QFBR-T521Z
HFBR-1515BZ	HFBR-1537Z	QFBR-T531Z
HFBR-1517Z	QFBR-1548Z	QFBR-TT02Z
HFBR-1520Z	QFBR-1549Z	QFBR-TT03Z
HFBR-1521Z	QFBR-1551Z	QFBR-TT06Z
HFBR-1522Z	QFBR-1561Z	QFBR-TT09Z
HFBR-1523Z	QFBR-1570Z	QFBR-521TZ
HFBR-1524Z	QFBR-1573Z	QFBR-T631Z

2. **Qualify improved mold compound to achieve better moisture sensitivity level (from MSL 4 to MSL 3) and**
3. **Qualify new leadframe base material to improve matching of coefficient of thermal expansion**

Parts Affected:

HFBR-2505CFZ	HFBR-2532Z	QFBR-R531Z
HFBR-2505CZ	HFBR-2533Z	QFBR-TR04Z
HFBR-2521Z	HFBR-2541Z	QFBR-TR05Z
HFBR-2522Z	QFBR-2548Z	QFBR-TR10Z
HFBR-2523Z	QFBR-2551Z	QFBR-5591Z
HFBR-2523Z-00A	QFBR-2573Z	QFBR-5592Z
HFBR-2524Z	QFBR-521RZ	QFBR-5594Z
HFBR-2531Z	QFBR-R521Z	QFBR-5595Z

4. **Qualify alternate photo diode supplier and improved mold compound:**

Parts Affected:

QFBR-R518Z	HFBR-2526Z
HFBR-2510Z	HFBR-2536Z

Reasons for Changes:

1. Improved mold compound:
   to improve moisture sensitivity level from MSL 4 to MSL 3 and to harmonize the mold compound in use. The improved mold compound has been qualified and used in other Avago products since 2007.

2. New leadframe base material:
   to improve the matching of coefficient-of-thermal-expansion. Lead frame layout remains unchanged. All other 650nm transmitters from Avago have been qualified and shipped with this lead frame material for more than 15 years.

3. New photodiode:
   to qualify alternative photo diode supplier. The alternate supplier and its photo diode is already qualified and used in other Avago products since 2007.

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

Reliability qualifications have been performed to ensure product reliability before the implementation date. Detailed product characterizations were performed to ensure product compliance to datasheet.

Effective Date of Change:

The approximate dates for sample availability, qualification completion and effective date of change for the above changes are shown in the table below. Timing of shipment, on or after the Target Date of the changed part will vary by part number depending on customer demand, and inventory levels.

Sample availability	Qualification completion	Target Date of change
Samples are available	WW1130	WW1145

Qualification Plan:

	Test	Reference	Condition	Test Points	HFBR-1521Z		HFBR-1527Z		HFBR-2521Z		HFBR-2526Z	
					Result	Assessment	Result	Assessment	Result	Assessment	Result	Assessment
MSL-3	Moisture Level Definition (MLD) MSL – 3	JEDEC 020D.1	24hrs bake @125°C, 192 +5/-0 hrs soak at 30°C /60%RH, 1x wavesolder 260°C/+ 5°C, 10s	SAM: check Delamination @ 0hrs and after solder	0/11	Pass	0/11	Pass	0/11	Pass		
MSL-4	Moisture Level Definition (MLD) MSL – 4		24hrs bake @125°C, 96 +5/-0 hrs soak at 30°C /60%RH, 1x wavesolder 260°C/+ 5°C, 10s								0/11	Pass
TMCL	Temperature Cycling (TMCL)	MIL-STD-883 Method 1010	Ta = -40°C to +100°C	200cyc, 500cyc, and 1000cyc @ 25°C	0/33	Pass	0/33	Pass	0/33	Pass	0/33	Pass
uB85/85	TX: Unbiased Damp Heat (UB85/85)	MIL-STD-202 Method 103	Ta= 85°C, RH=85% Vcc=5,25V,	168hrs, 500hrs and 1000hrs @ 25°C	0/22	Pass	0/22	Pass				
B85/85	RX: Biased Damp Heat (B85/85)								0/22	Pass	0/22	Pass
HTOL	High Temperature Operating Life (HTOL)	Section 5.18 (GR-468-CORE)	Ta = 85°C, Vcc=5,25V	168hrs, 500hrs and 1000hrs @ 25°C	0/22	Pass	0/22	Pass	0/22	Pass	0/22	Pass
MS/MV	Mechanical Shock (MS)[1]	MIL-STD-883 Method 2002B	1500g (peak), 0.5ms, 5 pulses/surface, 6 surfaces	Post MS/MV	0/11	Pass	0/11	Pass	0/11	Pass	0/11	Pass
	Mechanical Vibration (MV)[1]	MIL-STD-883 Method 2007A	20 – 2000HZ, 20 G 4min/cycle, 4cycle/axis, 3 axis		0/11	Pass	0/11	Pass	0/11	Pass	0/11	Pass

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.

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.