



PCN: V09-001-E47540-MA

Product Change Notice

Issue Date: 12 January 2009

Change Type:

Minor

Parts Affected:

Refer to Appendix I for detail.

Description and Extent of Change:

Add a diode in the Transmitter Optical Sub-Assembly (TOSA) to enhance VCSEL's susceptibility against stray Electro-static Discharge event (ESD-HBM). Refer to Appendix II for detail.

Reason for Change:

Enhance product ESD performance.

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

There will be no change to the fit, form, or function of the product. The device specification will remain the same, which will ensure no change in the product's optical and electrical performance. Appropriate electrical and optical characterization and reliability qualification have been performed on the representative products to ensure consistent electrical and optical performance, as well as reliability.

Effective Date of Change:

Product shipments using this change will begin on or after 20 April, 2009. Timing of shipment of the changed part will vary by part number depending on qualification completion, customer demand, and inventory levels.

Actions to be taken by Customer

1. Qualification data-packs are available through your Avago Technologies Field Sales Representative.
2. Sample requests shall be placed by your Avago Technologies Field Sales Representative through the Avago Technologies FOMFGS ordering system.
3. Sample requests must specify the PCN# stated above, the Avago Technologies part number, quantity, date required, ship to address, and the customer engineering contract name.

Qualification Data:

1) Module Reliability Test

A qualification plan is detailed below to address the reliability performance of the devices under full module stress conditions. The vehicle to be used for this qualification is AFBR-5710PZ.

Cell	Test	Reference	Condition	Quantity required	Test Points	Result
1	High Temp. Operating Life (HTOL)	Section 5.18 (GR-468-CORE)	Ta = 85°C, Vcc = 3.3V	Eval – 22 Control - 6	168, 500 hrs, 1000hrs @25°C	0/22 @1000 hrs
2	Biased Damp Heat (B85/85)	MIL-STD-202 Method 103	Ta= 85deg C, RH=85% Vcc= 3.3V	Eval – 11 Control – 3	168, 500 hrs, 1000hrs @25°C	0/11 @1000 hrs
3	High Temperature Storage	GR-468-CORE	Ta = 100°C	Eval – 11 Control – 3	168, 500 hrs, 1000hrs @25°C	0/11 @1000 hrs
4	Temp. Cycling (TMCL)	MIL-STD-883 Method 1010	Ta = -40°C to +100°C 250 cycles for provisional release 500 cycles for full release	Eval – 11 Control – 3	100, 250 cycles, 500cycles @25°C	0/11 @ 500 cycles
5	HBM (ESD)	MIL-STD-883 Method 3015	1000V,2000V	Eval – 6 Control - 3	1000V, 2000V	0/6 @ 2000V
6	MM ESD	JEDEC A115A	200V	Eval – 6 Control - 3	200V	0/6 @ 200V
7	Contact Discharge ESD	IEC61000-4-2	8000V, Live Traffic Test Discharge to exposed surfaces	Eval – 6 Control - 3	8000V	0/6 @2000V
8	Air Discharge ESD	IEC61000-4-2	15000V Live Traffic Test Discharge to LC patch cords	Eval – 6 Control - 3	15000V	0/6 @15000V
9	Manufacturing Verification Build		20 TMCL + 48hrs HTOL	200	@25degC	0/200

2) Module Characterization Data

A module characterization plan to demonstrate performance over-temperature and over voltage is detailed below. The test vehicle for this test is AFBR-5710PZ.

	Conditions	Sample Size	Results
Product Characterization Datasheet parameters i) Over temperature ii) Over Supply voltage	i) -40, 25, 85degC ii) 3.15, 3.30, 3.47V	Min of 9 units	1 st Mar 2008

APPENDIX I

Parts Affected:

MM 1G LC SFP Fiber Optics Transceivers

AFBR-5701ALZ	AFBR-5715ALZ	AFBR-5715SZ-H3C
AFBR-5701APZ	AFBR-5715APZ	HFBR-5701CLP
AFBR-5701LZ	AFBR-5715APZ-AL1	HFBR-5701CLP-001
AFBR-5701PZ	AFBR-5715APZ-NS1	HFBR-5701L
AFBR-5705ALZ	AFBR-5715APZ-RL	HFBR-5701LP
AFBR-5705APZ	AFBR-5715LZ	HFBR-5710L
AFBR-5705LZ	AFBR-5715PZ	HFBR-5710LP
AFBR-5705PZ	AFBR-5715PZ-AL1	HFBR-5710LP-CN1
AFBR-5705PZ-BN2	AFBR-5715PZ-AR1	HFBR-5710LP-H3C
AFBR-5705PZ-NT2	AFBR-5715PZ-BN1	HFBR-5710LPQ
AFBR-5705PZ-NT4	AFBR-5715PZ-BN2	HFBR-5710LPQ-E5
AFBR-5710ALZ	AFBR-5715PZ-ER1	QFBR-5730L
AFBR-5710APZ	AFBR-5715PZ-FD	QFBR-5732L
AFBR-5710APZ-AL1	AFBR-5715PZ-FD1	QFBR-5738L
AFBR-5710LZ	AFBR-5715PZ-HP1	QFBR-5747LP
AFBR-5710PZ	AFBR-5715PZ-JU1	QFBR-5749LP
AFBR-5710PZ-3C1	AFBR-5715PZ-LU1	QFBR-5752L
AFBR-5710PZ-AL1	AFBR-5715PZ-NT1	QFBR-5754P
AFBR-5710PZ-CN1	AFBR-5715PZ-NT3	QFBR-5756P
AFBR-5710PZ-FD	AFBR-5715PZ-NT5	QFBR-5767LP
AFBR-5710PZ-FJ1	AFBR-5715PZ-SC1	QFBR-5787L
AFBR-5710PZ-NK1	AFBR-5715PZ-TE1	QFBR-5788LP
AFBR-5710SZ-H3C	AFBR-5715PZ-TE2	QFBR-5797L
QFBR-5797LK	AFBR-5710LZ-TP1	

MM 1G MTRJ/LC PTH Fiber Optics Transceivers

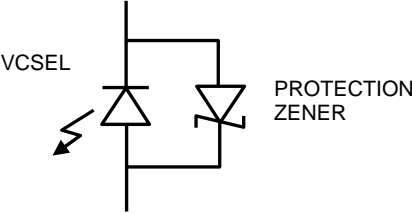
HFBR-5911ALZ	HFBR-59L1AGE	HFBR-59L1AQL
HFBR-5911LZ	HFBR-59L1AGEZ	QFBR-5940LZ
HFBR-5912EZ	HFBR-59L1AL	HFBR-5915LZ
HFBR-59L1ALZ		

MM 3V 1x9 Gbs Vcsel Fiber Optics Transceivers

HFBR-53A3VFMZ	HFBR-53A5VFMZ	QFBR-5319Z
HFBR-53A5VEMZ	HFBR-53A5VSEMZ	

APPENDIX II

PROTECTION CIRCUIT



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.