

Product Change Notice

Issue Date: 3rd April 2009

Change Type:

MAJOR CHANGE

Please be advised that Avago Technologies is making the following product change on the effective date noted for the products listed below:

1. Assembly Related Change: Change to different contract manufacturer.
2. Assembly Related Change: Lead plating material.
3. Mark and Pack Related Change: Encapsulant and Housing material.

Parts Affected:

The categories of products affected by the change are:

PLCC 4 Bicolor LED
PLCC 4 Tricolor LED

Please refer to Addendum for detailed part numbers affected by this change.

Description and Extent of Change:

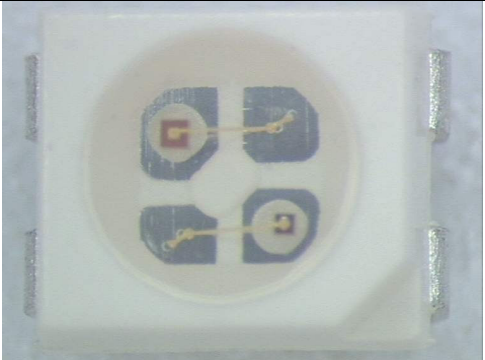
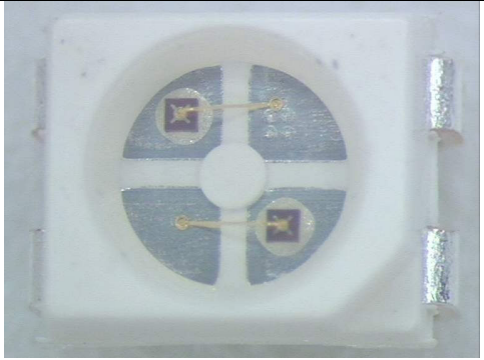
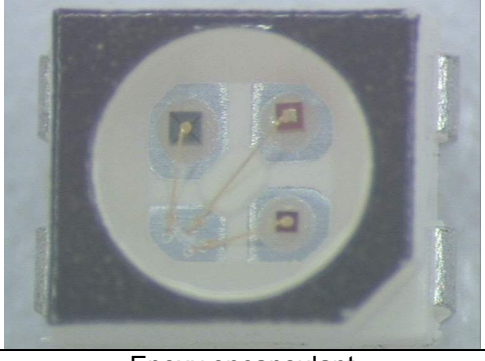
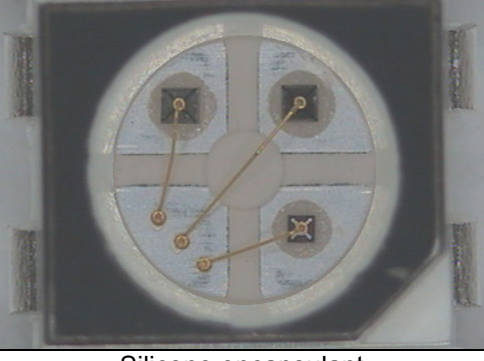
1. Change manufacturing site from Malaysia to Taiwan.
2. Products built in Taiwan will have Silver (Ag) terminal finish while products built in Malaysia have Tin (Sn) terminal finish.
3. Product encapsulant material will be changed from epoxy to silicone with improved Product Housing material.

Reasons for Change:

1. To ensure consistency of supply and on-time delivery to customer.

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

There is no change on fit and function. There will be change in form due to the change of terminal finish to Ag plated leads and change of encapsulant from epoxy to silicone with improved housing material. The surface appearance difference shown below.














	Malaysia	Taiwan
PLCC 4 Bicolor LED		
PLCC 4 Tricolor LED		
	Epoxy encapsulant	Silicone encapsulant

Effective Date of Change:

Effective from 4th May 2009, shipments will be from the new manufacturing sites. During this period, Avago will continue to ship LED from Malaysia site. There may be mixed shipments between current site and new sites.

Parts identification:

(i) Parts manufactured in Taiwan will state "Made In: Taiwan" as indicated below.

(1P)Item: HSMF – A2xx – xxxxx		AVAGO TECHNOLOGIES Standard Label L50002 RoHS Compliant Halogen Free e4 Max Temp: 260 C MSL 2a
(1T)Lot: ZZZZZZZZ000		(Q)QTY: 2000 
LPN: UT9210159		CAT: T1T1 
(9D)MFG Date: 16 – FEB – 2009		BIN: CB VF: 
(P)Customer Item:		
(V)Vendor ID:		(9D)Date Code: 0908 
Dept ID: CMTLED		Made In: TAIWAN 

Qualification Data:

Test	Reference	Sample Size	Decision Point	Result
Temperature Cycling -55/100°C 15/5/15min	Avago Req.	168	1000x	Pass
Humidity Power Temperature Cycling 25/65°C, 95%RH, 3/6/3hrs, 5min On, 5min Off, If=30mA (AlInGaP), If=16mA (InGaN)	Avago Req.	84	100x	Pass
Temperature Humidity Storage Life Ta=85°C, 85%RH	Avago Req.	168	1000hrs	Pass
Temperature Humidity Operating Life Ta=85°C, 85%RH, If=18mA (AlInGaP), If=8mA (InGaN)	JESD22-A101	168	1000hrs	Pass
Temperature Humidity Reverse Bias Ta=85°C, 85%RH, Vr=5V	Avago Req.	96	1000hrs	Pass
High Temperature Operating Life Ta=55°C, If=30mA (AlInGaP), If=18mA (InGaN)	JESD22-A108	168	1000hrs	Pass
High Temperature Storage Ta=100°C	JESD 22-A103	84	1000hrs	Pass
Low Temperature Storage Ta=-40°C	JESD22-A119	84	1000hrs	Pass
Low Temperature Operating Life Ta=-40°C, If=30mA (AlInGaP), If=20mA (InGaN)	JESD22-A108	84	1000hrs	Pass
Resistance to Soldering Heat 260°C for 10 sec	JESD 22-B106	30	2x	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.

Addendum

PLCC 4 Bicolor LED :

HSMF-A201-A00J1	HSMF-A206-A00J1	HSMF-A241-A00J1	QSMF-A252-G0MJ1
HSMF-A201-HZDJ1	HSMF-A211-A00J1	QSMF-A216-GTBM1	QSMF-A253-G0MJ1
HSMF-A202-A00J1	HSMF-A212-A00J1	QSMF-A237-JN0M2	QSMF-A254-A00J1
HSMF-A203-A00J1	HSMF-A222-A00J1	QSMF-A239-A00J1	QSMF-A256-A00J1
HSMF-A204-A00J1	HSMF-A223-TM0J1	QSMF-A243-BMBJ1	
HSMF-A205-A00J1	HSMF-A226-A00J1	QSMF-A249-F00J1	

PLCC 4 Tricolor LED :

HSMF-A341-A00J1	HSMF-A355-G33J1	QSMF-A367-FP9J1	QSMF-A369-FP9J1
HSMF-A342-A00J1	QSMF-A365-L99J1	QSMF-A368-F99J1	



Major Change Release Sign-Off Sheet and Checklist

Type of Change	PCN: <u>V09-002-SD475420-1A</u>	Auto Customers Affected?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> Product	Major Change #: <u>2009-1</u>	PPAP Required?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
<input type="checkbox"/> Process	Product Type: <u>UOT TLED PLCC 4</u>	PPAP Level (if required):	1	
<input type="checkbox"/> Equipment	Initiator: <u>Moy Wai Hoong</u>		2	
<input checked="" type="checkbox"/> Location	Business Unit: _____		3	<input checked="" type="checkbox"/>
<input type="checkbox"/> Material			4	
			5	

Description of Change and Reason (Note differentiating details):
 Change manufacturing site from Malaysia to Taiwan.

Conditions and Restrictions:

Customer Notification Required? Yes No

Manufacturing	Team Member: MOY WAI HONG	Date completed	Date to be completed
Pre-production run(s), yields, problems, etc.		13 March 09	
Production testing, inspection yields analysis complete		13 March 09	
Cost analysis		20 March 09	
Inventory plan, build schedule			30 April 09
Product -5 changed		N/A	
Incoming materials: -P1, -P5, etc. changed		N/A	
Die procurement -D9s created/revised		N/A	
Other specs updated : package outline, flowchart, in-process tests/inspections, material list, etc.		N/A	
FMEA & QC Flow Chart completed/revised		2 March 09	
First date code with change: <u>4th May 09</u>			4 th May 09
Build/shipment makes(with/without change) : ship parts from both source until 1 July 09			1 July 09
Do not ship old units after: 1 July 09			1 July 09
Disposition of non-shippable material.			1 July 09
Product characterization data (electrical, optical, dimensional, mechanical, reliability, etc.)		2 March 09	
PPAP package ready for field notification (if PPAP required)			30 April 09
MV (manufacturing verification)		10 February 09	
Design Guideline Checklist, military products		N/A	
Design Documentation updated, military products		N/A	
Nintei package updated		N/A	
GSE requirements compliance			10 April 09
Quality	Team Member: ANG KEW LEOK	Date completed	Date to be completed
Quality/Reliability Critique (including reliability qualification results)		27 March 09	
OQA Notification		N/A	
Major/Minor decision, PCN reviewed, customer ready data			20 April 09
Regulatory notification and approval (UL, VDE, TUV, etc.) Is there a new suffix to part #?		N/A	
Infant mortality screen complete		N/A	
Marketing	Team Member: LOON KAH YAN, LIM BOON HOOI	Date completed	Date to be completed
Data sheet change		No Change	
Customer notification			April 09

Signatures to start 90-day clock	
WW Product Marketing:	_____ Signature/Date
WW Product Quality:	_____ Signature/Date
WW Product Manufacturing:	_____ Signature/Date

Approval to implement major change	
WW Product Marketing Manager:	_____ Signature/Date
<input type="checkbox"/>	All customer concerns have been addressed.
<input type="checkbox"/>	Exceptions are attached.

PCN Signoff Sheet

Notification Date : 3rd April 2009

Title : Change Manufacturing Site From Malaysia to Taiwan for PLCC4 Bicolor and Tricolor LED

	Signature	Date
Initiator Of PCN	_____ (MOY WAI HONG)	_____
Product Line Manager	_____ (SEAH KEH CHIN)	_____
Product Engineering Manager	_____ (SEAH KEH CHIN)	_____
QA Manager	_____ (MARINA CHAN)	_____
Business Process Manager	_____ (NG WEI TYNG)	_____
Marketing Program Manager	_____ (LOON KHA YAN)	_____
Product Marketing Manager	_____ (LIM BOON HOOI)	_____