



PCN: V14-005-00475504-OA

Product Change Notice

Issue Date: 26 November 2014

Change Type / Parts Affected:

Change Type #1: Alternate LED supplier

Parts Affected: All devices in APDS-913x, APDS-993x and all associated options and special parts

APDS-9130	ADSP-9930	APDS-9130-140	APDS-9930-140
	APDS-9930-001	APDS-9130-200	APDS-9930-160
	APDS-9930-002		APDS-9930-200
	QPDS-T930		APDS-9930-100R
	QPDS-T932		APDS-9930-130
	QPDS-T935		

Change Type #2: Alternative supplier for stacked PCB

Parts Affected: APDS-9x30-200 options

APDS-9130-200	APDS-9930-200
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Description and Extent of Change:

Alternate supply for material

Reasons for Change:

Qualification of an alternate LED supplier and stacked PCB supplier provides assurance of raw material supply. It minimizes the risk of single supplier dependency.

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

The product specifications will remain the same. Electrical characterization and reliability qualification has been performed on representative products to insure normal parametric distribution, consistent electrical performance, and reliability.

Effective Date of Change:

This change will be effective from date code D/C 1516 onwards. Timing of shipment of the changed part will vary by part number depending on customer demand and inventory levels.

1. Change On LED:

The photos below show the internal layout of the product for both LEDs. The slant wall of new LED is due to different wafer fabrication process, and doesn't affect electrical performance of the product. There's no change to the dimensions of the package.

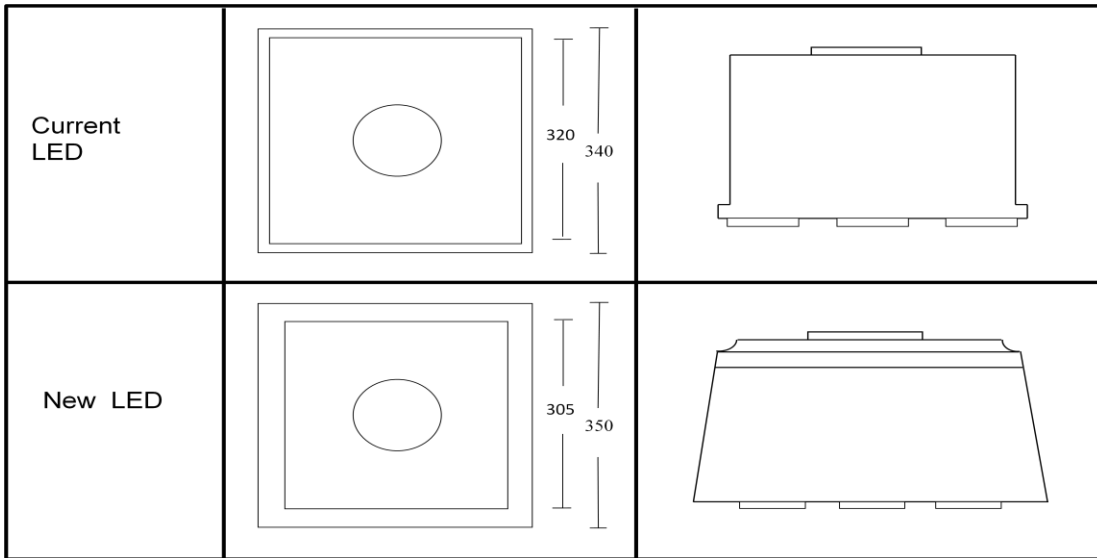


Figure 1: Internal layout comparison between current LED and new LED.

The change does not affect the performance and reliability of the package. There is no change to the datasheet.

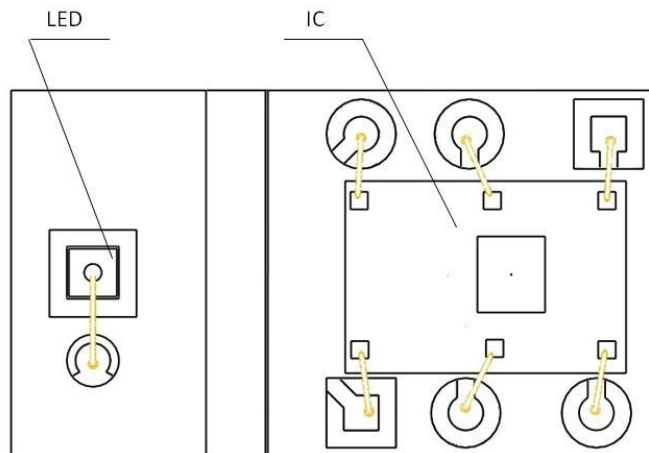


Figure 2: Internal layout drawing of APDS-9930.

The reliability data for new LED is shown below.

Test Name	Test Conditions	Duration	Units Tested	Results
Pre-condition	1. Soak samples for 192 hrs at 30°C/ 60%RH (for MSL level 3) 2. 3x convection reflow at 260°C 3. 5 T/C at -40/100°C	192 hrs	308	0 failure
Temperature Cycle	-40°C to 100°C: 15 minutes dwell, 5 minutes transfer.	500 cycles	77	0 failure
Temperature Humidity Bias	85°C / 85 %RH, Vcc = 3.5 V, Vled = 4.5 V	500 hours	77	0 failure
High Temperature Operating Life	Ta= 85°C, Vcc = 3.5 V, Vled = 4.5 V	500 hours	77	0 failure
Low Temperature Operating Life	Ta= - 40°C, Vcc = 3.5 V, Vled = 4.5 V	500 hours	77	0 failure

2. Change on Stacked PCB:

The photos below shows the exterior package of the current devices produced, and compared to the new changed part.

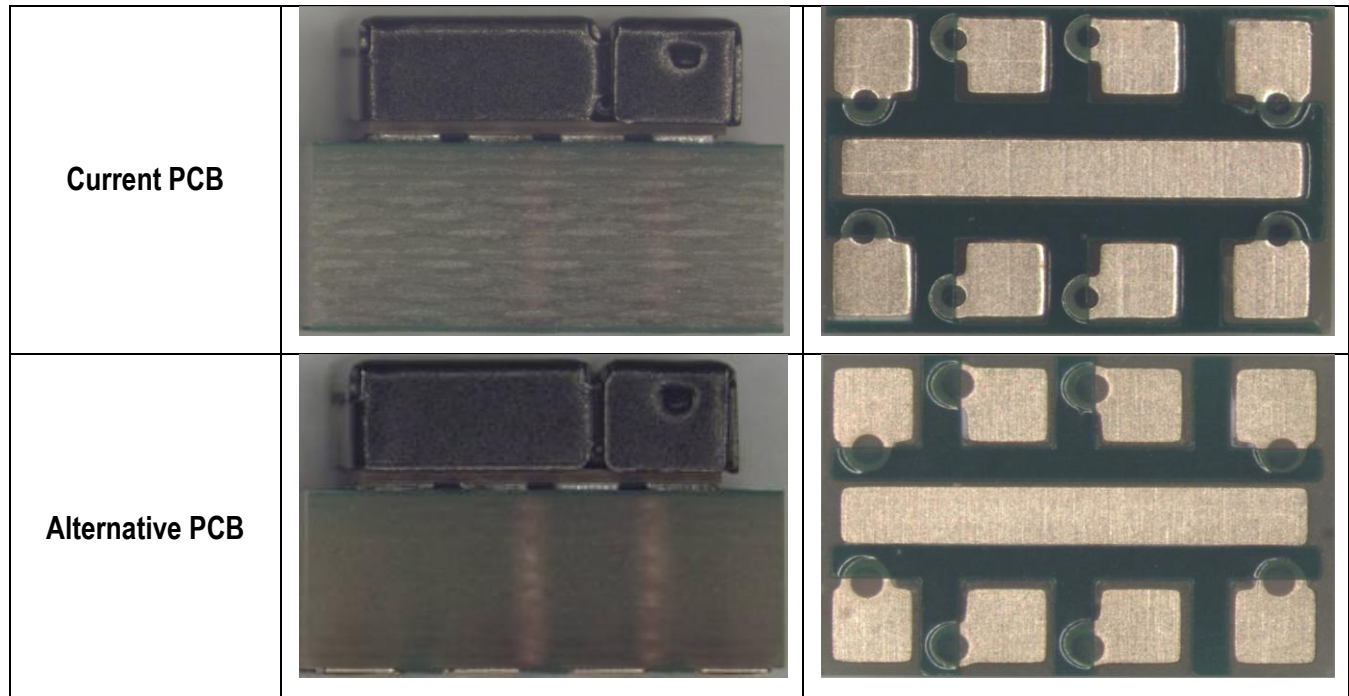


Figure 1: Comparison of the current and new PCBs.

The change does not affect the size and dimension of the package. There is no change to the datasheet.

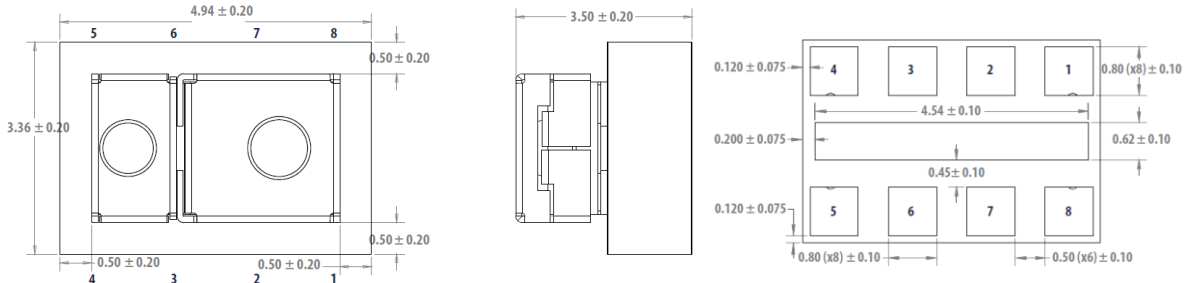


Figure 2: Physical dimension of the package (in mm) which was extracted from product datasheet.

The reliability data for new stacked PCB is shown in the table below.

Test Name	Test Conditions	Duration	Units Tested	Results
Pre-condition	1. Soak samples for 192 hrs at 30°C/ 60%RH (for MSL level 3) 2. 3x convection reflow at 260°C 3. 5 T/C at -40/100°C	192 hrs	322	0 / 322
Temperature Cycle	-40°C to 100°C: 15 minutes dwell, 5 minutes transfer.	500 cycles	154	0 / 154
Temperature Humidity Bias	85°C / 85 %RH, Vcc = 3.6 V, Vled = 5 V, led current 100mA, 8 pulses PGain 4x	1000 hrs	56	0 / 56
High Temperature Storage Life	125°C	1000 hrs	56	0 / 56
High Temperature Operating Life	Ta= 85°C, Vcc = 3.6 V, Vled = 5 V, led current 100mA, 8 pulses PGain 4x	1000 hrs	56	0 / 56
Solderability	Steam Aging 1 hr Dip and Look Solder temp 245 °C (SnAgCu paste) Immersion time : 5 sec	Na	15	0 / 15

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.