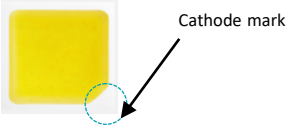
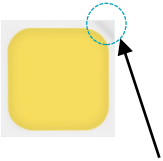


# **Product Change Notice**

- **Products : LM302Z+ (SPMWH3326FP\*\*\*\*\*)**  
**CCTs : 27/30/35/40/50/57/6500K**
- **Change : Change production site**  
**Scheduled to start manufacturing in April. 2020**

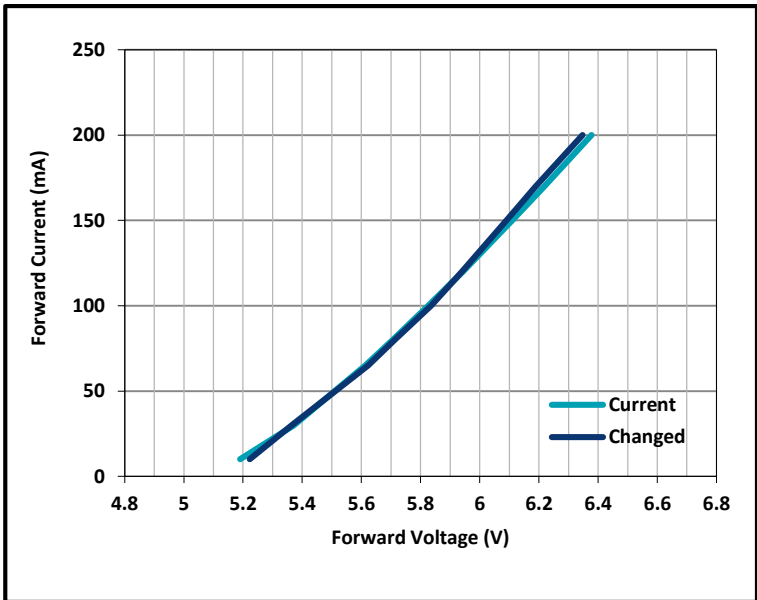
# Overview

Production site		Xiamen	Shenzhen
Material	Chip	Epi-up	Same
	L/F	EMC	Same
Electrical Performance		160lm/W@Ra80 5000K 25°C	Same
LES Size		2.6 x 2.6 mm	Same
Dimension		3.0 x 3.0 x 0.65 mm	Same
Radiation diagram		120°	Same
LM80		10Khrs Report will be distributed (20' Jan)	
Product Code		SPMWH3326MP*****	Same
Appearance			 <p><b>No need to change foot print</b> Position of Cathode mark is changed. (Refer to 4page)</p>

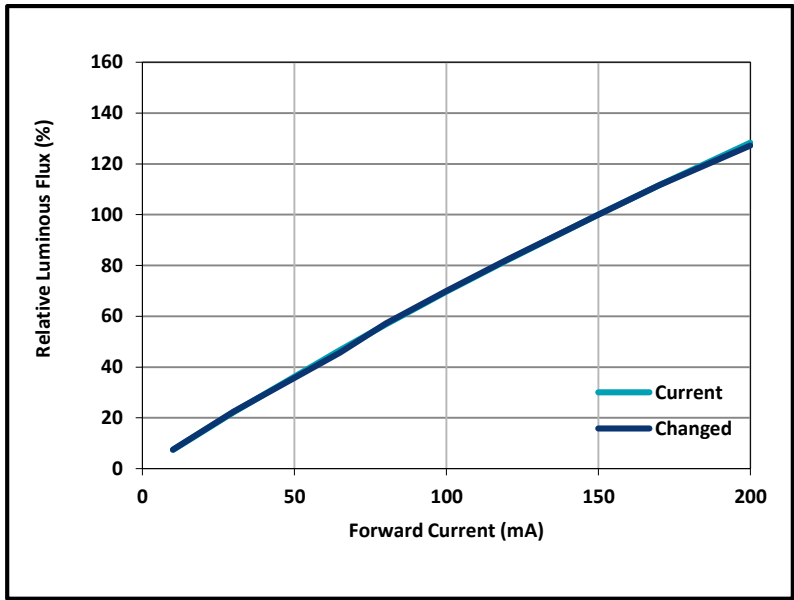
# 1. Electrical Performance

## ■ No change Electrical Performance

Forward Current vs. Forward Voltage

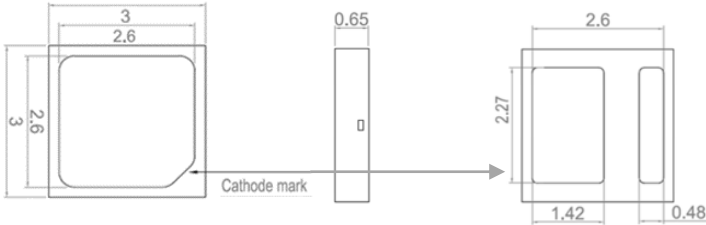
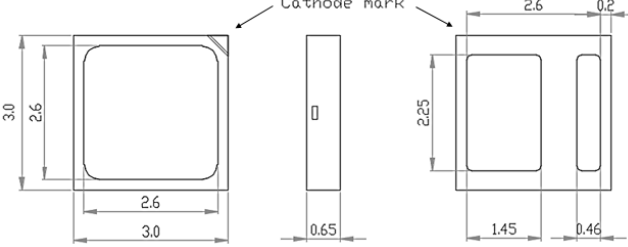
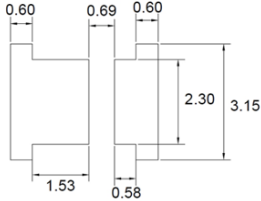
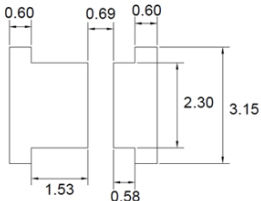


Relative Luminous vs. Forward Voltage  
(150mA 100%)



# 2. Dimension

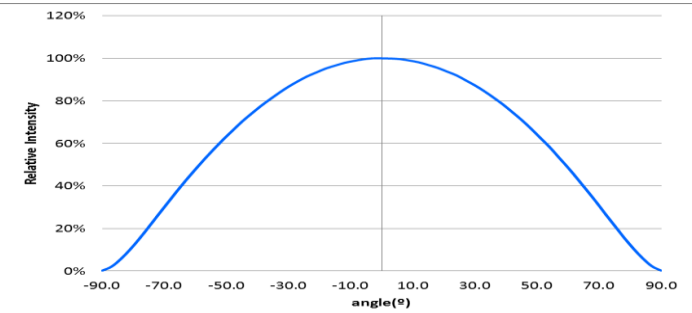
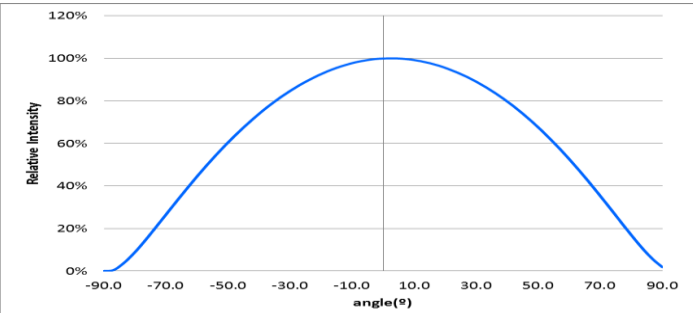
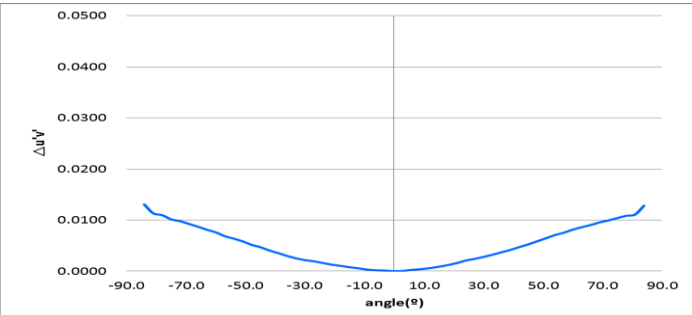
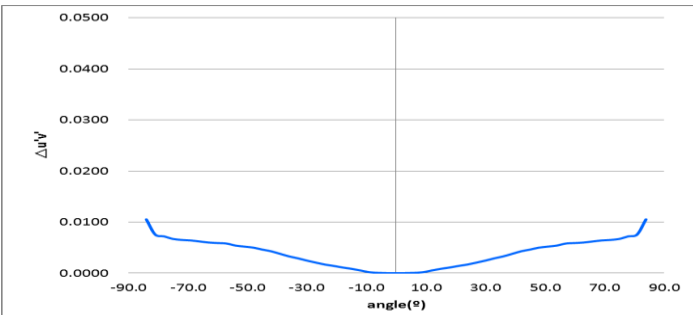
■ No need to change foot print. Position of Cathode mark is changed.

	Current	Changed
PKG Size		
Foot Print	 <p>[RECOMMENDED PCB SOLDER PAD]</p>	 <p>[RECOMMENDED PCB SOLDER PAD]</p>

Tolerance is  $\pm 0.1$  mm

# 3. Radiation diagram

## ■ No change Radiation diagram & Color Over Angle

	Current	Changed
Radiation diagram	 <p>Graph showing Relative Intensity (%) on the y-axis (0% to 120%) versus angle (°) on the x-axis (-90.0 to 90.0). The curve is a symmetric bell shape peaking at 100% at 0 degrees.</p>	 <p>Graph showing Relative Intensity (%) on the y-axis (0% to 120%) versus angle (°) on the x-axis (-90.0 to 90.0). The curve is a symmetric bell shape peaking at 100% at 0 degrees.</p>
Color Over Angle	 <p>Graph showing <math>\Delta W</math> on the y-axis (0.0000 to 0.0500) versus angle (°) on the x-axis (-90.0 to 90.0). The curve is a symmetric U-shape with a minimum of 0.0000 at 0 degrees.</p>	 <p>Graph showing <math>\Delta W</math> on the y-axis (0.0000 to 0.0500) versus angle (°) on the x-axis (-90.0 to 90.0). The curve is a symmetric U-shape with a minimum of 0.0000 at 0 degrees.</p>

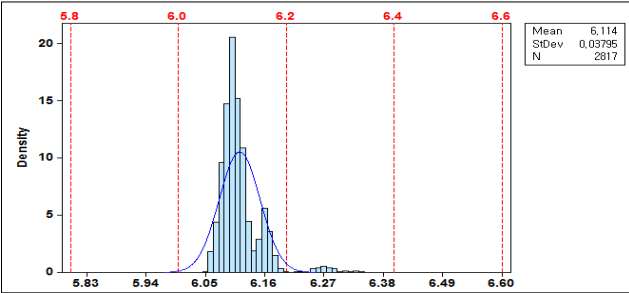
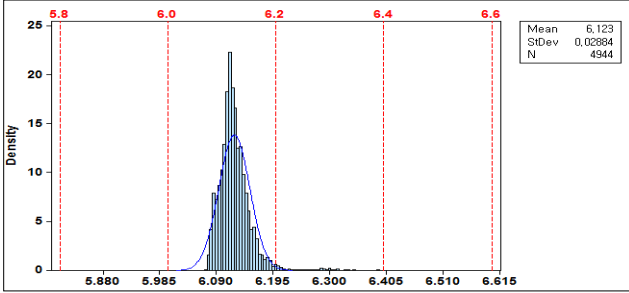
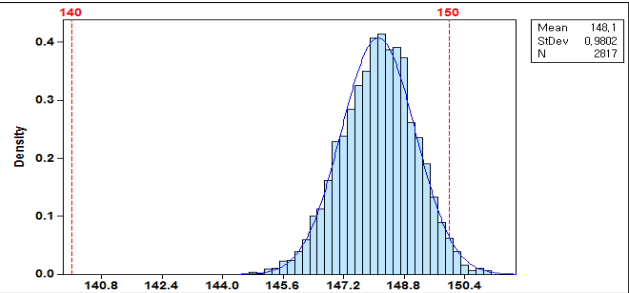
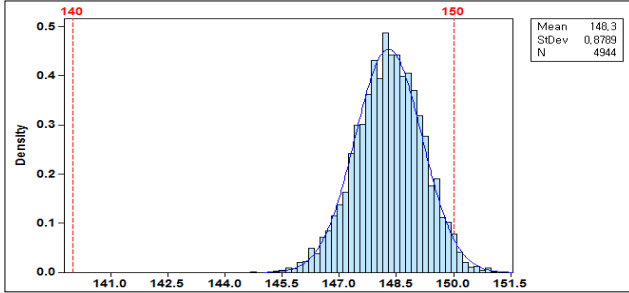
# 4. Reliability

Test item	Test Condition	Test Time or cycle	Sample Q'ty
High Temperature Life Test	85 °C, max IF	1000 h	22
High Temperature Humidity Life Test	85 °C, 85 % RH, max IF	1000 h	22
High Temperature Storage	120 °C	1000 h	11
High Temperature Humidity Storage	85 °C, 85 % RH	1000 h	11
Powered Temperature Cycle Test	-40 °C / 10 min ↔ 85 °C / 10 min, sweep 20 min cycle on/off: each 5 min, max IF	1000hrs	22
Thermal Cycle	-45 °C / 15 min ↔ 125 °C / 15 min → Hot plate 180 °C	500 cycles	100
ESD (HBM)	R1:10 MΩ, R2:1.5 kΩ, C:100 pF, V: ±5 kV	5 times	30
ESD (MM)	R1:10 MΩ, R2:0, C:200 pF, V: ±0.5 kV	5 times	30
Vibration Test	20~2000~20 Hz, 200 m/s <sup>2</sup> , sweep 4 min X, Y, Z 3 direction, each 1 cycle	4 cycles	11
Mechanical Shock Test	1500 g, 0.5 ms 3 shocks each X-Y-Z axis	5 cycles	11
Sulfur Test	25°C 75%RH, H2S 15ppm	504h	22

**Thank you**

# Appendix I. Mass production results

■ No different Vf, Lm flux

	Current	Changed
Vf	 <p>Mean 6.114 StDev 0.03795 N 2817</p>	 <p>Mean 6.123 StDev 0.02884 N 4944</p>
Lm	 <p>Mean 146.1 StDev 0.9802 N 2817</p>	 <p>Mean 148.3 StDev 0.8789 N 4944</p>