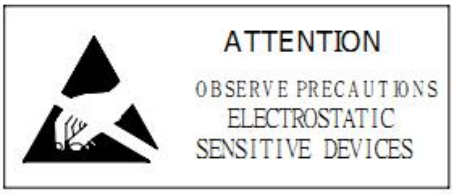
SHENZHEN BEST LED OPTO-ELECTRONIC CO.,LTD

TOP LED:5050UBC48D6L12
(5050SMD LED-0.2W Blue LED)

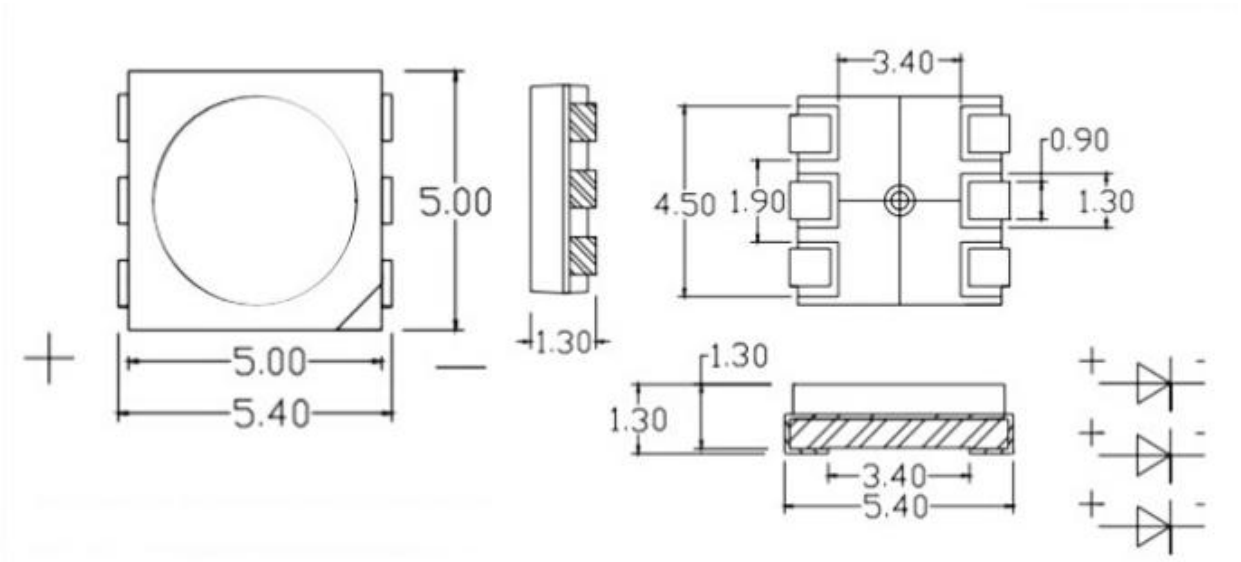


CUSTOMER APPOVED SIGNATURES	SALES APPROVED	APPROVED BY	CHECKED BY	PREPARED BY

1. Features

- Color :480nm Blue LED
- Chip Material:InGaN
- Lens: Water clear
- High reliability,High radiant intensity
- Low forward voltage
- Meet ROHS, Green Product
- Compatible With Infrared Reflow Solder And Wave Solder Process

2. Package Profile & Soldering PAD Suggested



Notes: 1. All dimensions are in millimeters ;
2. Tolerance is ± 0.10 mm unless otherwise noted.
3. The mark is cathode.

3. Absolute Maximum Ratings At Ta=25℃

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	200	mW
Pulse Forward Current	IFP	300	mA
Forward Current	IF	60	mA
Reverse Voltage	VR	5	V
Junction Temperature	Tj	100	°C
Operating Temperature	Topr	-40 ~ +80	°C
Storage Temperature Range	Tstg	-40 ~ +100	°C
Soldering Temperature	Tsol	260	°C
Electro-Static-Discharge(HBM)	ESD	1000	V
Service life under normal conditions	Time	80000	H
Warranty	Time	5	Years
Antistatic bag	Piece	4000	Bag

***Pulse Forward Current Condition:Duty 1% and Pulse Width=10us.**

***Soldering Condition:Soldering condition must be completed with 3 seconds at 260**°C

4. Electrical Optical Characteristics At Ta=25℃

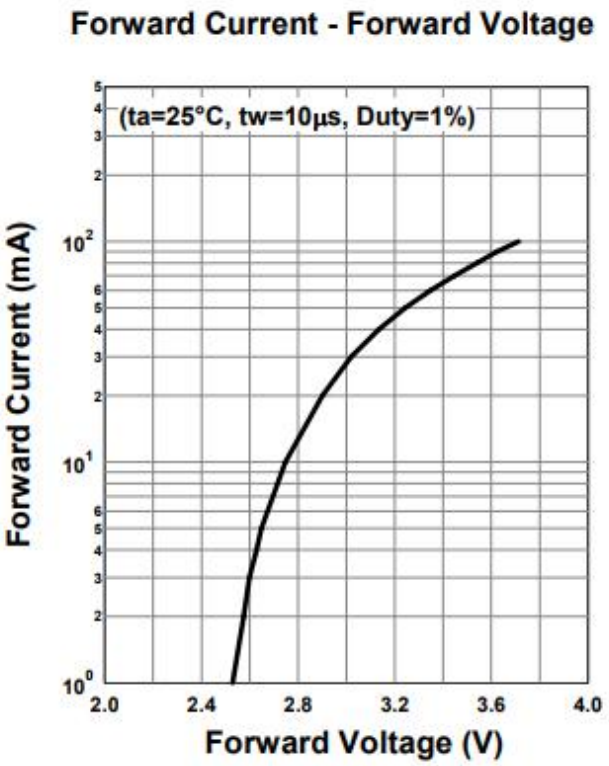
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Forward Voltage	VF	2.8	3.0		V	IF=60mA
		3.0	3.2			
Luminous Intensity	IV	5		6	lm	IF=60mA
		6		7		
Peak Wavelength	λP		475		nm	IF=60mA
Dominant Wavelength	λD	475	480		nm	IF=60mA
		480	485			
Half Width	Δλ		15		nm	IF=60mA
Viewing Half Angle	2θ1/2		±60		deg	IF=60mA
Reverse Current	IR			5	uA	VR=5V

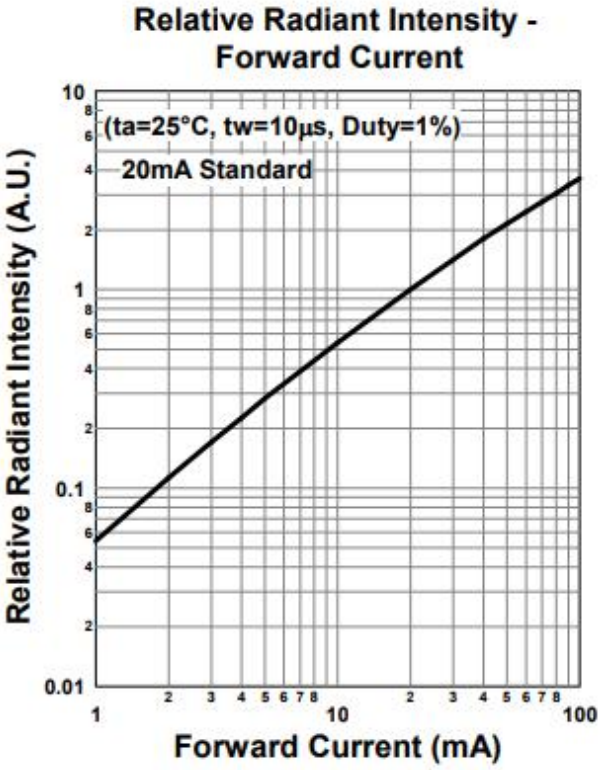
***Luminous Intensity is measured by ZWL600.**

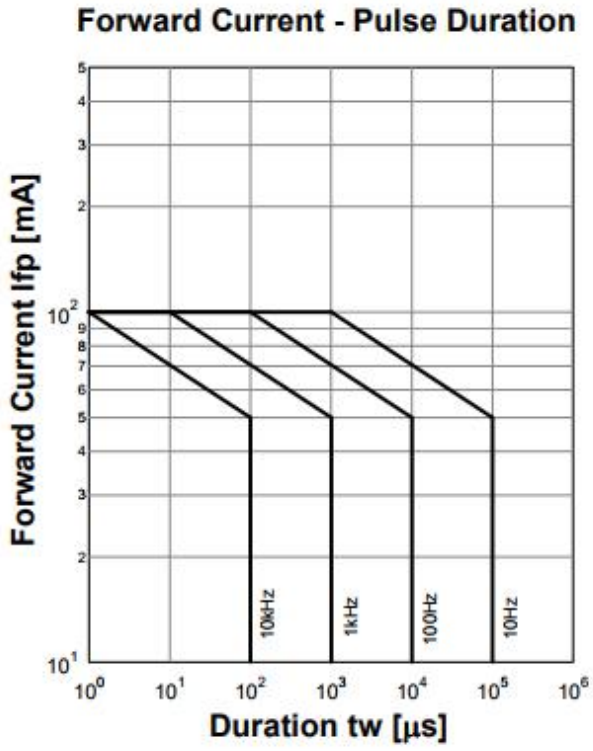
***θ1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.**

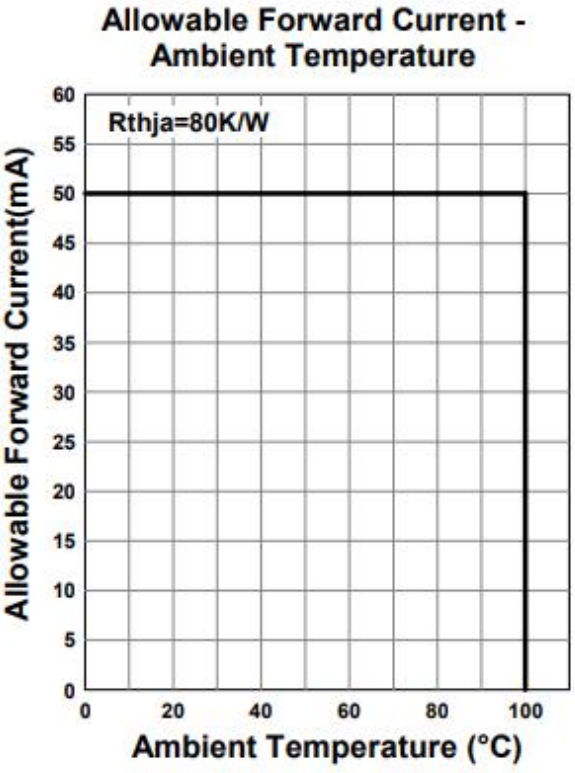
***λP is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.**

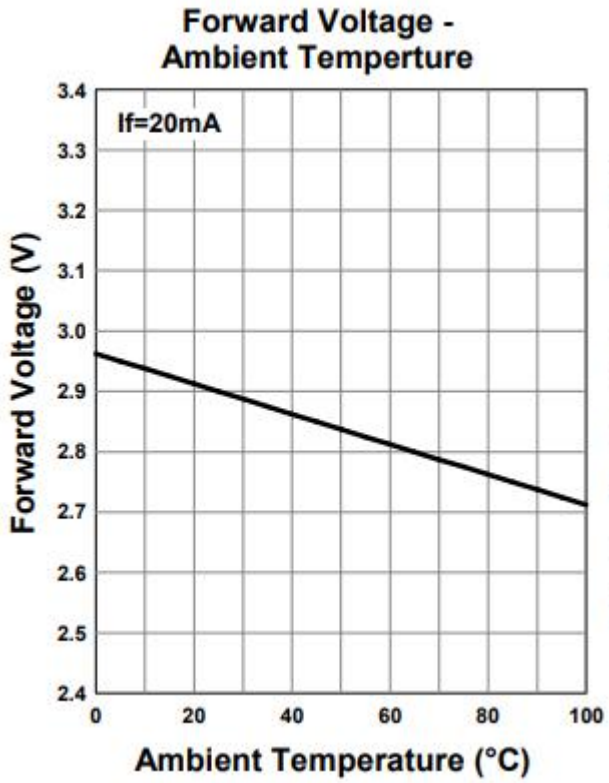
5. Typical Electrical-Optical Characteristics Curves

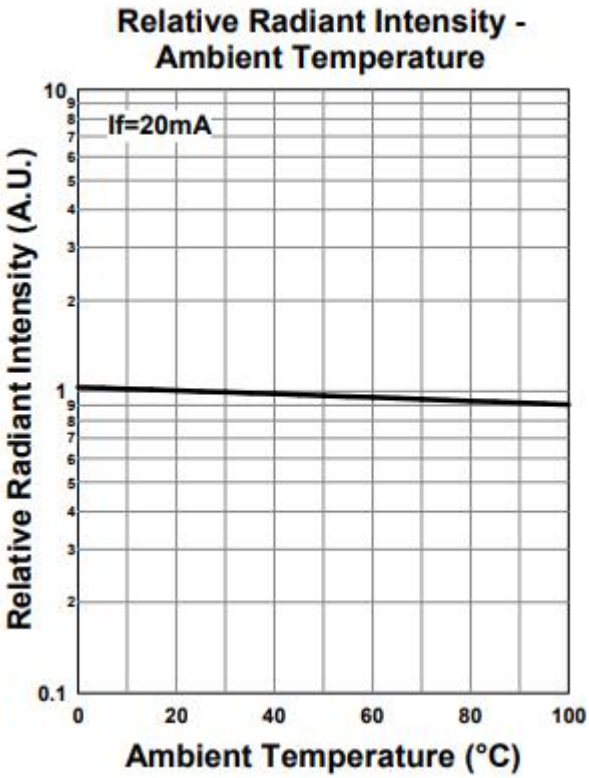


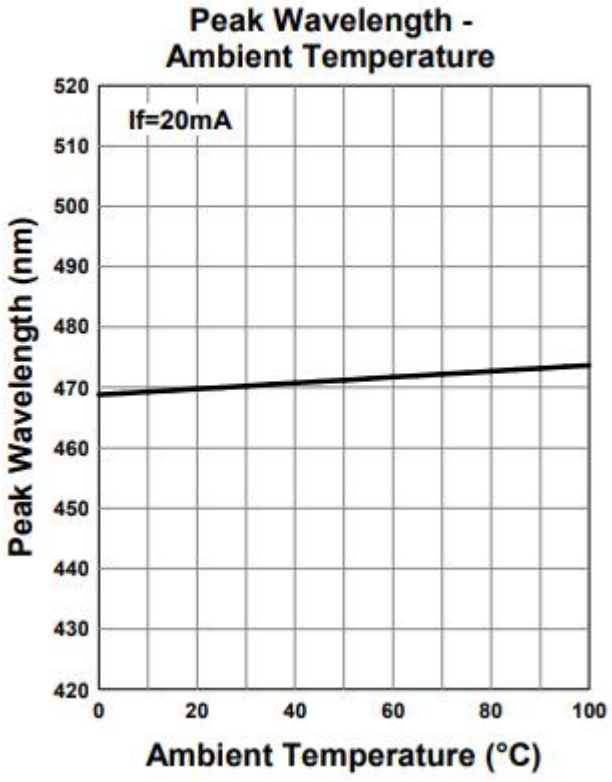


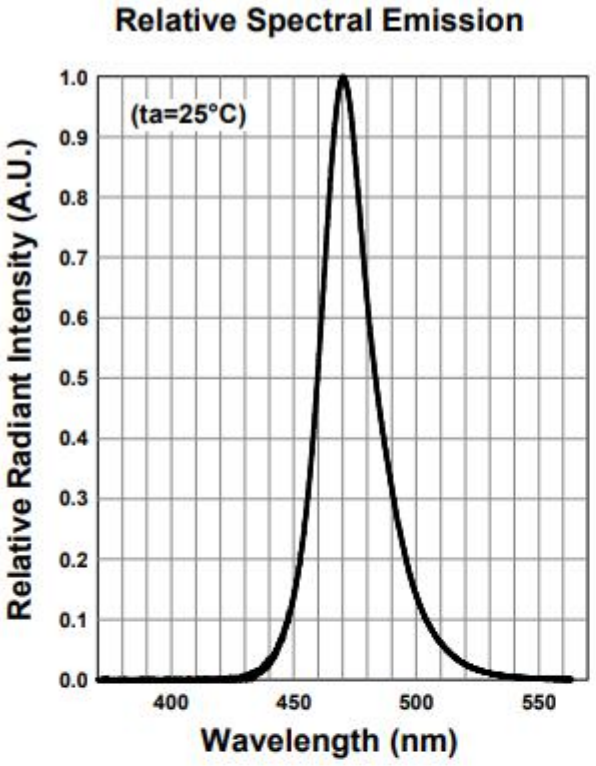


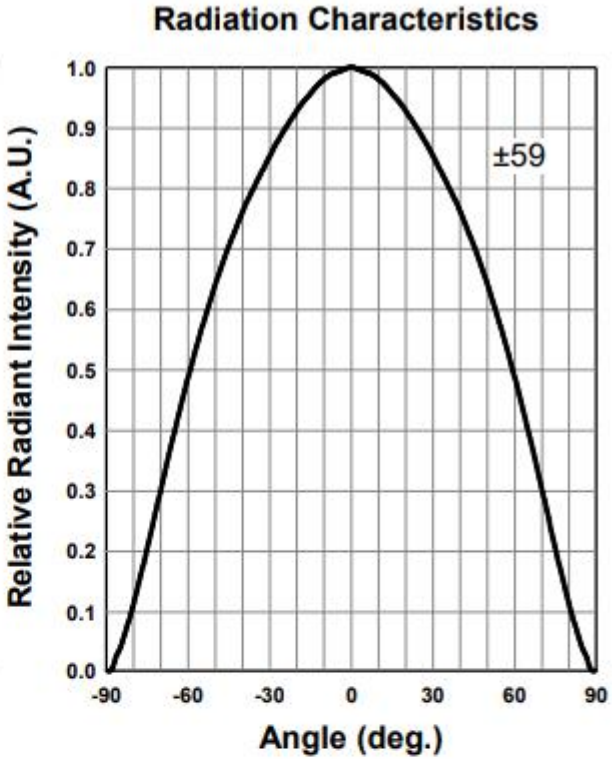


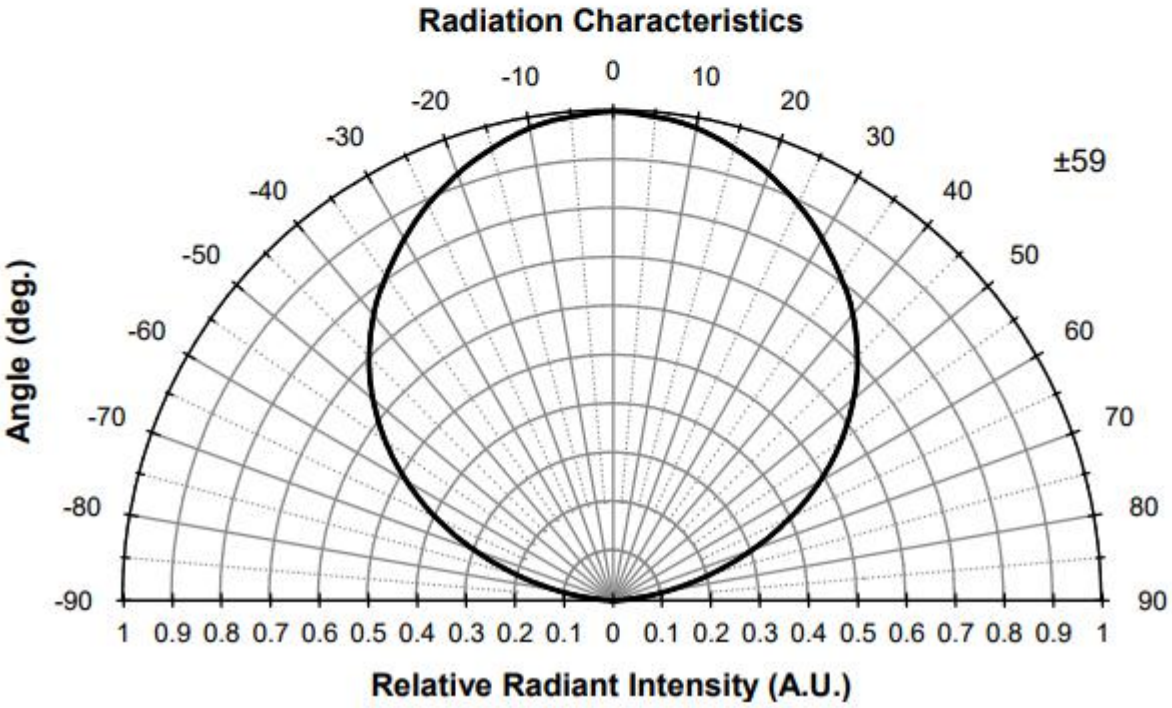

Forward Voltage -
Ambient Temperture
If=20mA
Forward Voltage (V)
3.4
3.3
3.2
3.1
3.0
2.9
2.8
2.7
2.6
2.5
2.4
0
20
40
60
80
100
Ambient Temperature (°C)


Relative Radiant Intensity -
Ambient Temperature
If=20mA
Relative Radiant Intensity (A.U.)
10
1
0.1
0
20
40
60
80
100
Ambient Temperature (°C)


Peak Wavelength -
Ambient Temperature
If=20mA
Peak Wavelength (nm)
520
510
500
490
480
470
460
450
440
430
420
0
20
40
60
80
100
Ambient Temperature (°C)

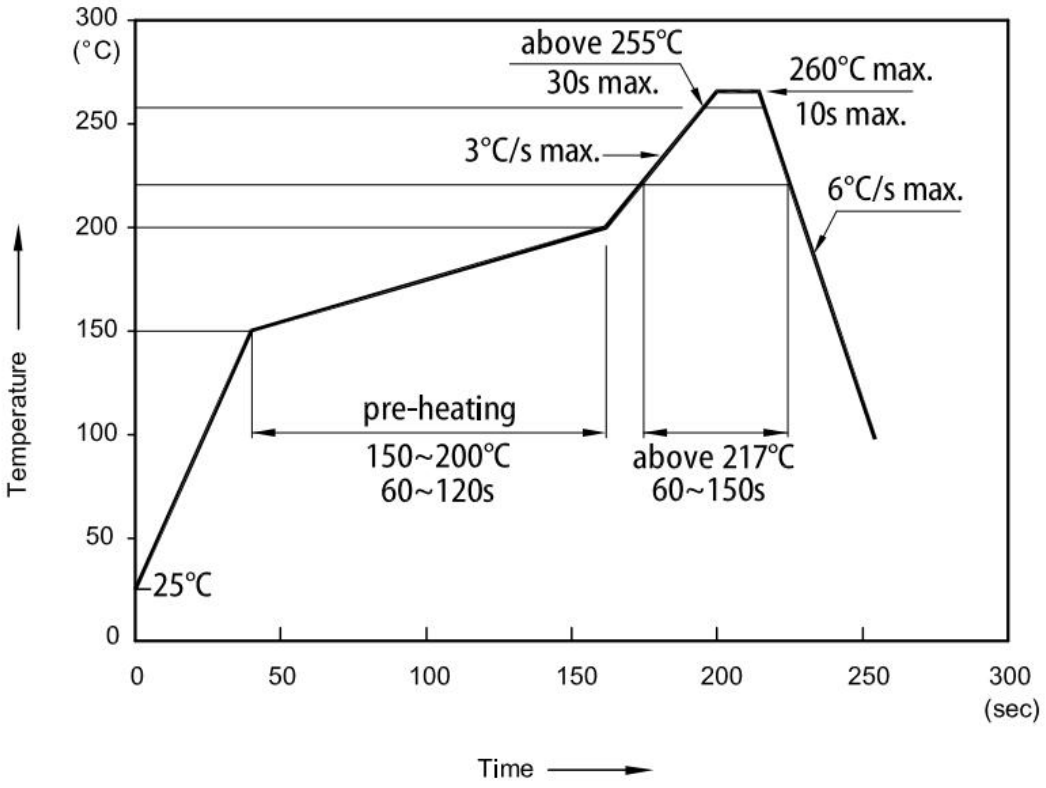

Relative Spectral Emission
(ta=25°C)
Relative Radiant Intensity (A.U.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
400
450
500
550
Wavelength (nm)


Radiation Characteristics
±59
Relative Radiant Intensity (A.U.)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
-90
-60
-30
0
30
60
90
Angle (deg.)


Radiation Characteristics
0
-10
10
-20
20
-30
30
-40
40
-50
50
-60
60
-70
70
-80
80
-90
90
±59
Angle (deg.)
1 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
Relative Radiant Intensity (A.U.)

6. Cautions

6-1 Reflow soldering profile for LEAD-FREE SMD process



Notes:

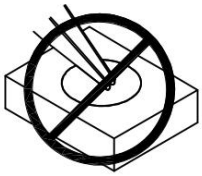
1. **Don't cause stress to the LEDs while it is exposed to high temperature.**
2. **The maximum number of reflow soldering passes is 2 times**
3. **Reflow soldering is recommended. Other soldering methods are not recommended as they mightcause damage to the product**

6-2 HANDLING PRECAUTIONS

Compare to epoxy encapsulant that is hard and brittle,silicone is softer and flexible.Althouth its characteristic significantly reduces thermal stress, it is more susceptible to damage by extemal mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools.

2. Do not directly touch or handle the silicone lens surface.It may damage the intemal circuitry.



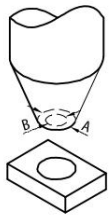
3. Do not stack together assembled PCBS containing exposed LEDS.Impact may scratch the silicone lens or damage the intemal circuitry.

4. **4-A The inner diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks**

4-B A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup

4-C The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production

4-D As silicone encapsulation is permeable to gases, some corrosive substances such as H2S might corrode silver plating of leadframe. Special care should be taken if an LED with Silicone encapsulation is to used near such substances.



5.Avoid continued exposure to the condensing moisture environment and keep the product away from rapid transitions in ambient temperature.

6.Product in the original sealed package is recommended to be assembled within 24 hours of opening.