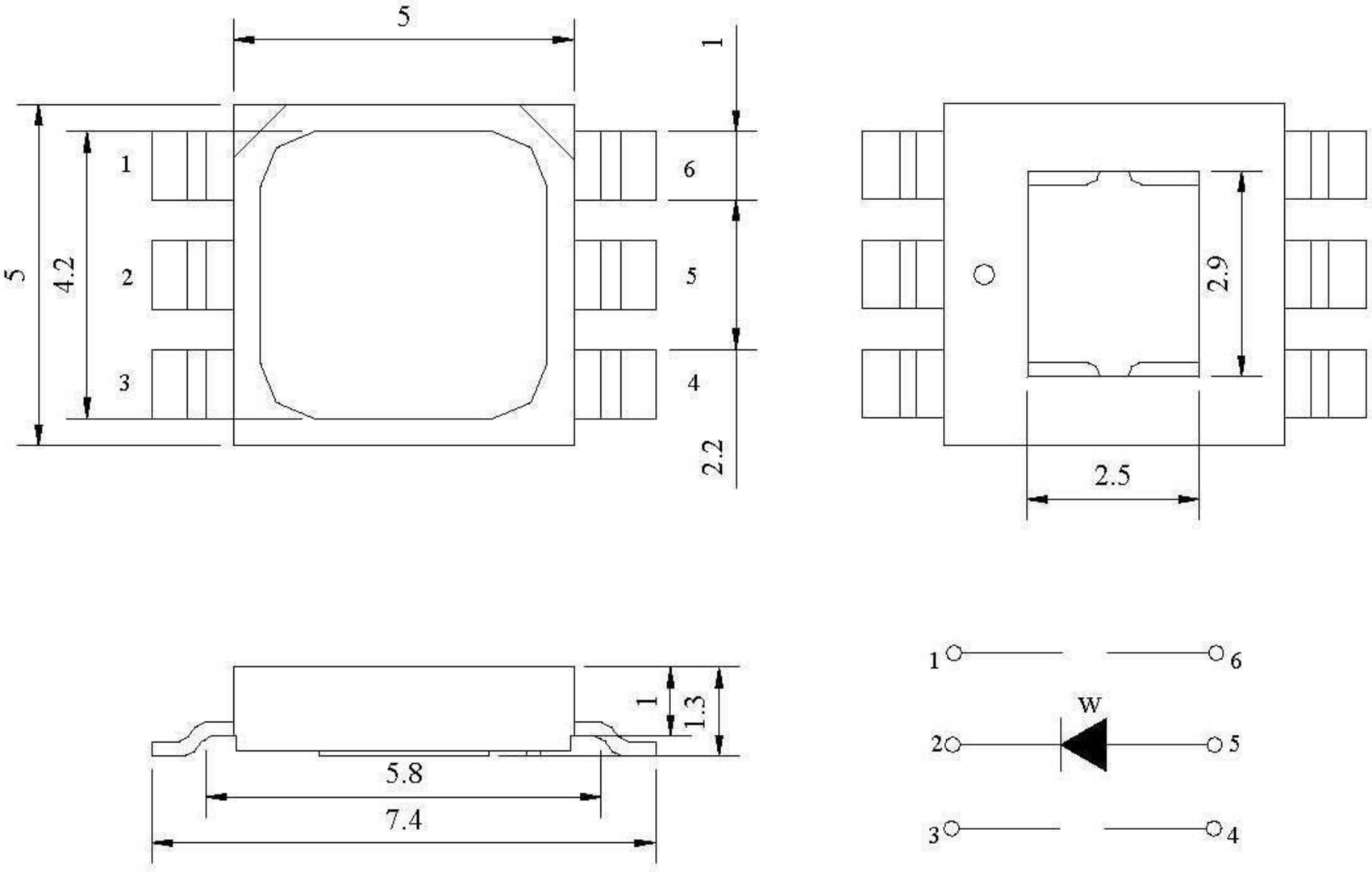
P-tec Corp.
2405 Commerce Circle
Alamosa Co. 81101
Ph:#1-719-589-3122

PL00555W-WCCWZ

0.5W WHITE HIGH POWER LED

Package Dimensions

RoHS Compliant



Notes:

1. All dimensions are in mm.
2. Tolerance is ±0.25mm unless otherwise noted.

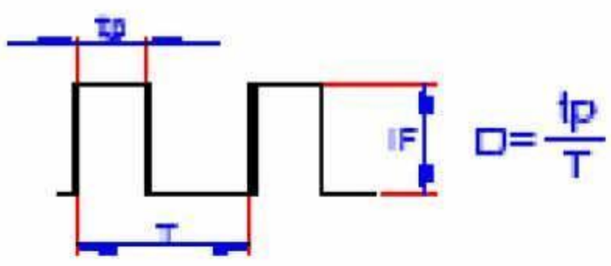
Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
PL555W-WCCWZ	InGaN/Al_2O_3	White	Water Clear

Absolute Maximum Ratings at Ta=25 ℃

Parameter	Symbol	Rating	Unit
Power Dissipation	P_D	500	mW
Reverse Voltage	V_R	5	V
D.C. Forward Current	If	150	mA
Peak Current(1/10Duty Cycle,0.1ms Pulse Width.)	If(Peak)	300	mA
Operating Temperature Range	Topr.	-40 to +75	℃
Storage Temperature Range	Tstg.	-40 to +105	℃
Soldering Temperature.	Tsld.	Reflow Soldering: 260℃ for 10 sec. Hand Soldering: 350℃ for 3 sec.	
Electric Static Discharge Threshold (HBM)	ESD	6000	V

Duty Cycle :



Notes:

1、Proper current derating must be observed to maintain junction temperature below the maximum .

2、All products not sensitive to ESD damage(6000 Volts by HBM condition).

3、Be careful with a powered up current limited power supply, because of current spikes during power up and/or connection. Best practice is to connect the LED then turn up the voltage gradually People building their own power supplies should design for minimum current spikes during power up and connection.

4、For best results the customer needs to provide proper control of the thermal path ,protect against electrical overstress conditions, and ensure that emitters are properly attached to the mcpcb/heat sink.

Electrical and Optical Characteristics:

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	Rank N	Φv	If=150mA	18	--	23.5	lm
	Rank P			23.5	--	30	
Forward Voltage	Rank V00	Vf	If=150mA	2.7	--	3.0	V
	Rank V01			3.0	--	3.25	
	Rank V02			3.25	--	3.5	
	Rank V03			3.5	--	3.75	
	Rank V04			3.75	--	4.0	
Correlated Colour Temperature	C9	CCT	If=150mA	5500	-	6000	°K
	C10			6000	-	6500	
Reverse Current		Ir	Vr=5V			50	μA
Viewing Angle		2θ 1/2	If=150mA		120		deg
Thermal Resistance Junction to Case		$R\theta_{J-C}$	If=150mA		15		℃/W

Notes: 1.The datas tested by IS tester.

2. Customer's special requirements are also welcome.

Typical Electrical/Optical Characteristic Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

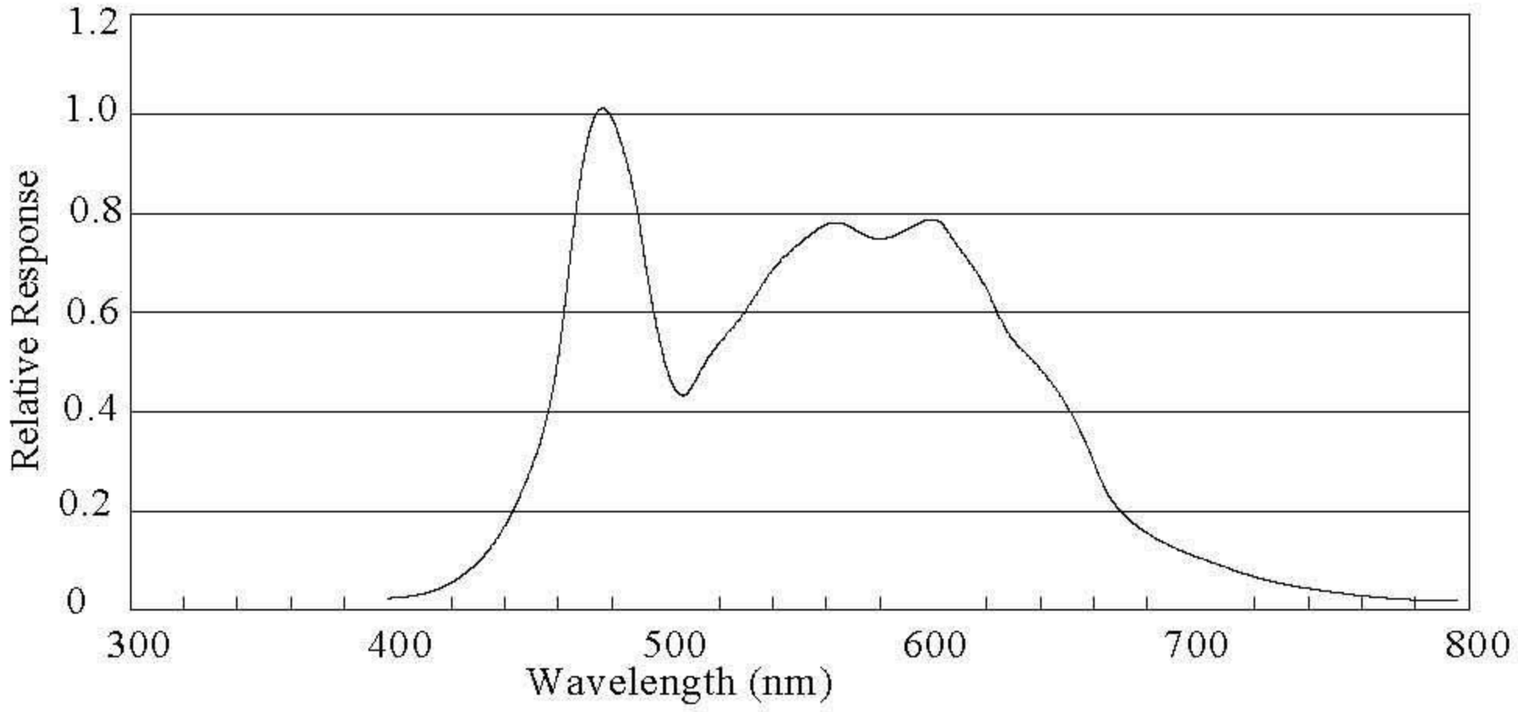
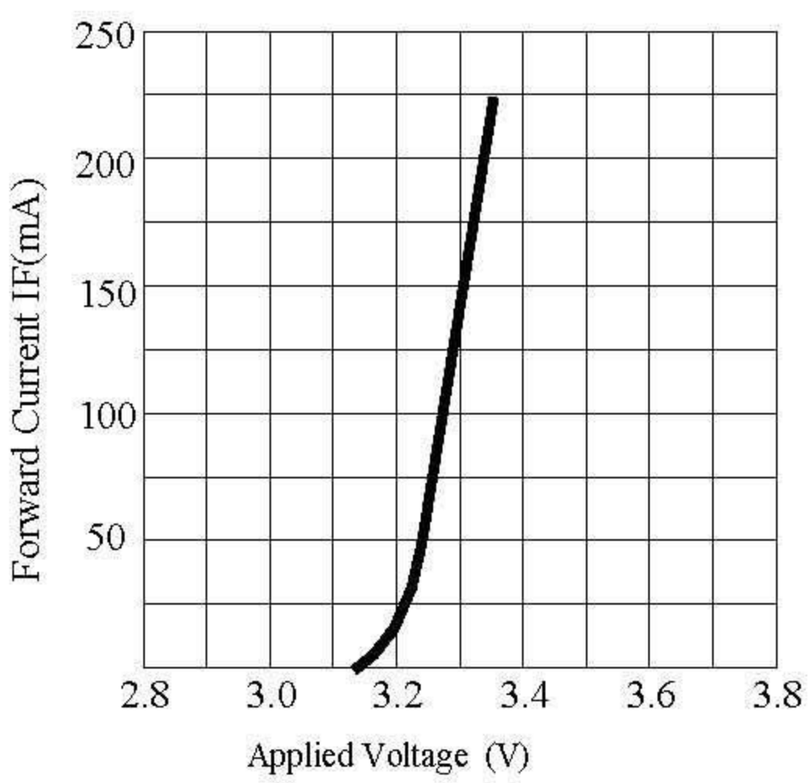
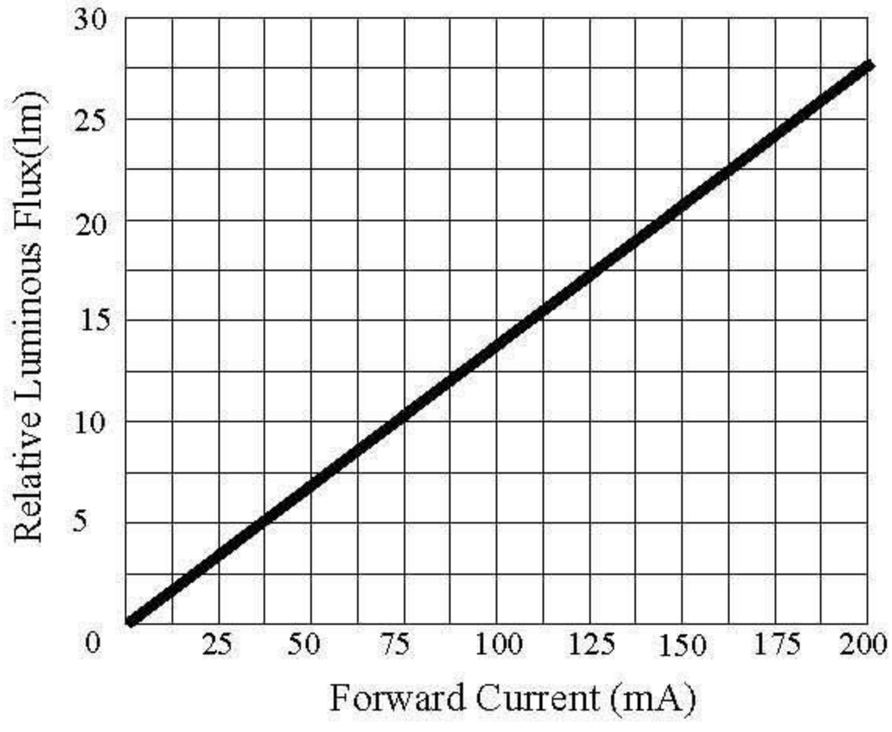


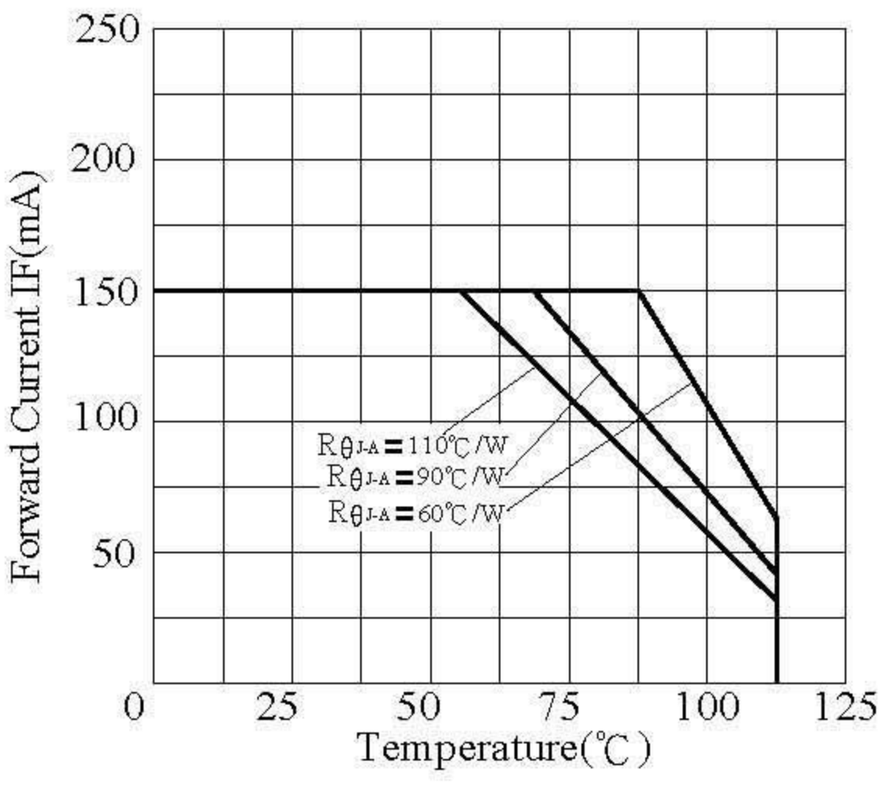
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



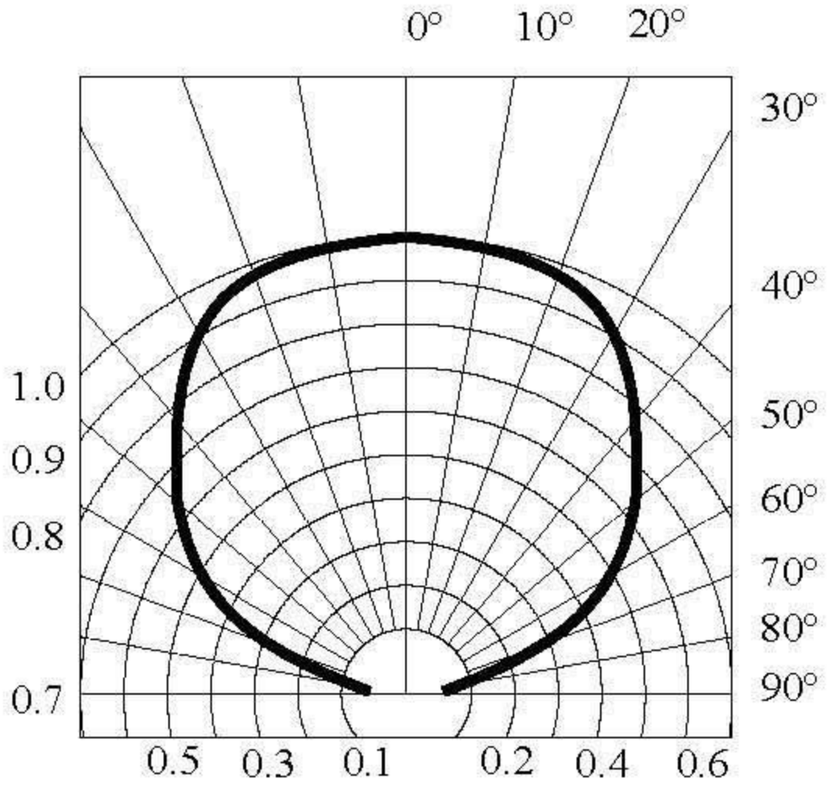
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Flux



Forward Current VS. Ambient Temperature



Radiation Diagram

PRECAUTION IN USE

Storage

Recommended storage environment

Temperature: 5°C ~ 30°C (41°F ~ 86°F)

Humidity: 60% RH Max.

Use within 7 days after opening of sealed vapor/ESD barrier bags.

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment : 60±5℃ for 24 hours.

Fold the opened bag firmly and keep in dry environment.

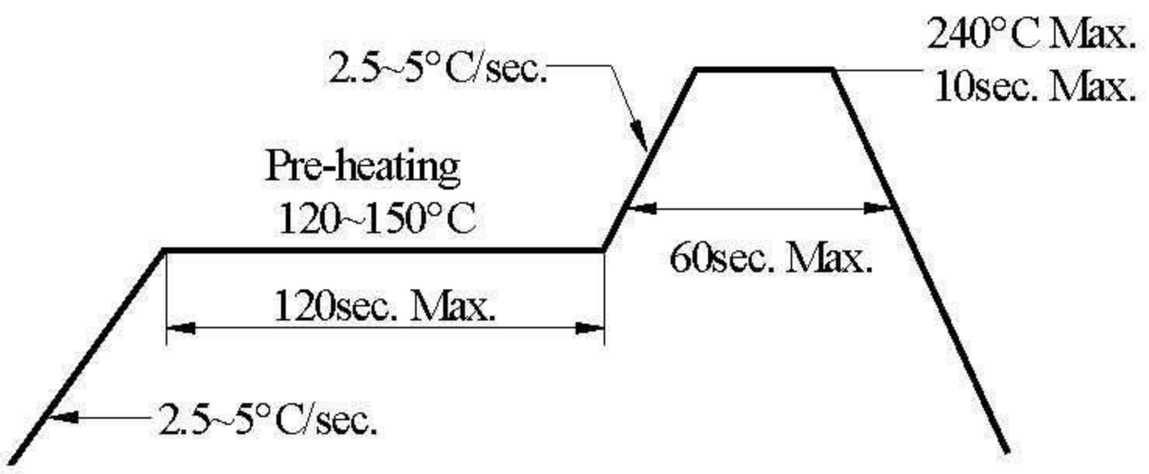
Soldering

Reflow Soldering			Hand Soldering	
	Lead Solder	Lead – free Solder		
Pre-heat	120~150℃	180~200℃	Temperature	350℃ Max.
Pre-heat time	120sec. Max.	120sec. Max.	Soldering time	3sec. Max. (one time only)
Peak temperature	240℃ Max.	260℃ Max.		
Soldering time	10sec. Max.	10sec. Max.		
Condition	refer to Temperature-profile 1	refer to Temperature-profile 2		

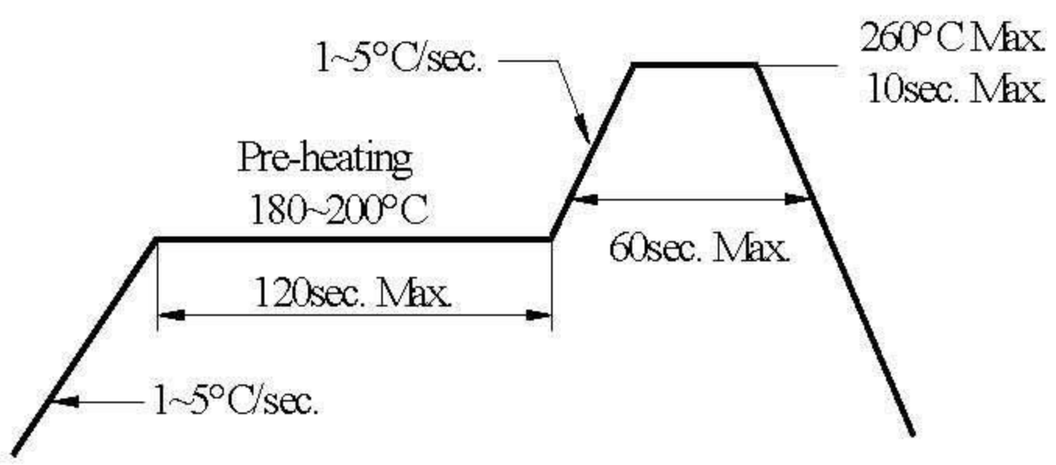
***After reflow soldering rapid cooling should be avoided.**

[Temperature-profile (Surface of circuit board)]
Use the conditions shown to the under figure.

<1 : Lead Solder>

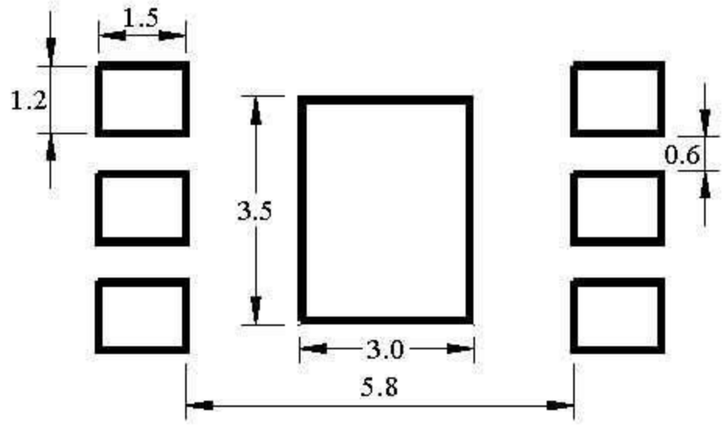


<2 : Lead-free Solder>



[Recommended soldering pad design]

Use the following conditions shown in the figure.



Unit:mm

Handling of Silicone Resin LEDs

Handling Indications

During processing, mechanical stress on the surface should be minimized as much as possible.

Sharp objects of all types should not be used to pierce the sealing compound

Figure 1

In general, LEDs should only be handled from the side. By the way, this also applies to LEDs without a silicone sealant, since the surface can also become scratched.

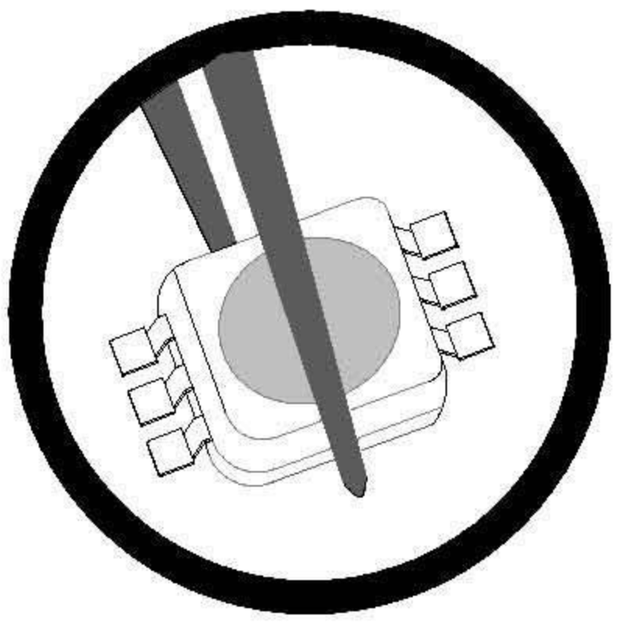


Figure 2

When populating boards in SMT production, there are basically no restrictions regarding the form of the pick and place nozzle, except that mechanical pressure on the surface of the resin must be prevented.

This is assured by choosing a pick and place nozzle which is larger than the LED's reflector area.