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SPECIFICATION

PART NO. : LP2C63-ST-RGB-SR0
1.5W RGB HIGH POWER LED



Approved by

Checked by

Prepared by

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LP2C63-ST-RGB-SR0

1.5W RGB
HIGH POWER LED

< Features >

- *Super high flux output and high luminance
- *Designed for high current operation
- *Low thermal resistance
- *No UV

< Typical Applications >

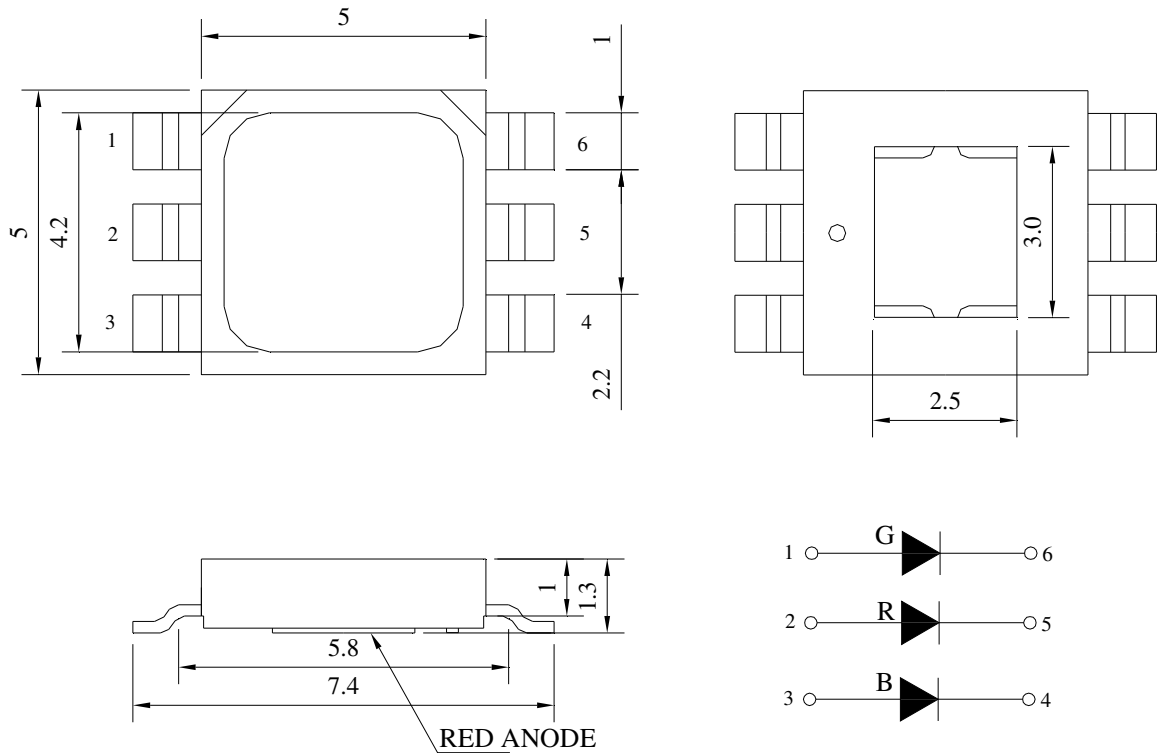
- *Reading Lights
- *Portable Flashlight
- *Uplighters and Downlighters
- *Torch Lighting
- *LCD Backlights/Light Guides
- *Decorative Lighting

Description

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
LP2C63-ST-RGB-SR0	AlGaInP/Si	Red	Water Clear
	InGaN/AL2O3	True Green	
	InGaN/ AL2O3	Blue	

Package Dimensions

Non Lens(120°) Dip Package Outlines



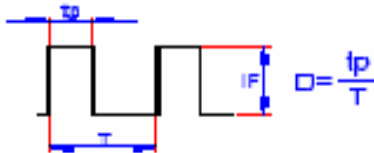
* All dimensions are in mm. *Tolerance : +/-0.25mm.

Absolute Maximum Ratings at Ta=25°C :

Parameter		Rating	Unit
Power Dissipation★	R	450	mW
	G & B	600	
LED Junction Temperature★		120	°C
Reverse Voltage★		5	V
D.C. Forward Current★		150	mA
Pulsed Forward Current ; tp ≤ 100µs,Duty cycle=0.005)*1★		300	mA
Operating Temperature Range		-40 to +75	°C
Storage Temperature Range		-40 to +105	°C
Soldering Temperature	Tsld.	Reflow Soldering: 260°C for 10 sec. Hand Soldering: 350°C for 3 sec.	
Electric Static Discharge Threshold (HBM) ★		6000	V

★ The value are based on 1 die performance.

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 Ledtech emitters are properly attached to the mcpcb/heat sink.

Red Characteristics at If=150mA (Ta=25°C) :

Parameter		symbol	value			Units
			Min.	Typ.	Max.	
Luminous Flux	FULL	Φ_v	7.0	10.5	13.9	lm
	Rank J		7.0	--	10.7	
	Rank L		10.7	--	13.9	
Dominant Wavelength	Rank R	λ_d	620	--	630	nm
Forward Voltage	Rank V01	Vf	2.0	--	2.5	V
	Rank V02		2.5	--	3.0	
View Angle		2 θ 1/2	120			deg
Thermal Resistance Junction to Case		R θ_{J-C}	10			°C/W

Green Characteristics at If=150mA (Ta=25°C) :

Parameter		symbol	value			Units
			Min.	Typ.	Max.	
Luminous Flux	FULL	Φ_v	10.7	15	23.5	lm
	Rank L		10.7	--	13.9	
	Rank M		13.9	--	18	
	Rank N		18	--	23.5	
Dominant Wavelength	Rank W	λ_d	520	--	525	nm
	Rank X		525	--	530	
	Rank Y		530	--	535	
Forward Voltage	Rank V01	Vf	3.0	--	3.5	V
	Rank V02		3.5	--	4.0	
View Angle		2 θ 1/2	120			deg
Thermal Resistance Junction to Case		R θ_{J-C}	10			°C/W

Blue Characteristics at If=150mA (Ta=25°C) :

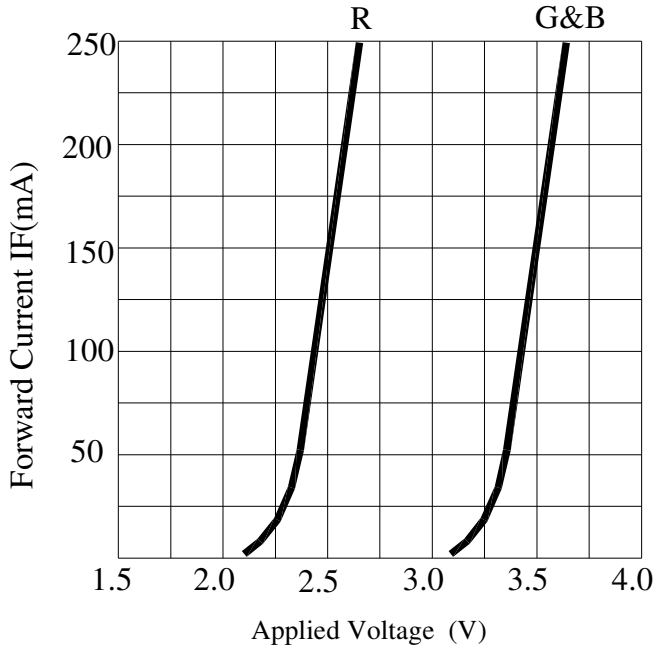
Parameter		symbol	value			Units
			Min.	Typ.	Max.	
Luminous Flux	FULL	Φ_v	2.2	5	7.0	lm
	Rank E		2.2	--	2.9	
	Rank F		2.9	--	3.8	
	Rank G		3.8	--	5.0	
	Rank H		5.0	--	7.0	
Dominant Wavelength	Rank W	λ_d	460	--	465	nm
	Rank X		465	--	470	
	Rank Y		470	--	475	
Forward Voltage	Rank V01	Vf	3.0	--	3.5	V
	Rank V02		3.5	--	4.0	
View Angle		2 θ 1/2	120			deg
Thermal Resistance Junction to Case		R θ_{J-C}	10			°C/W

Notes :

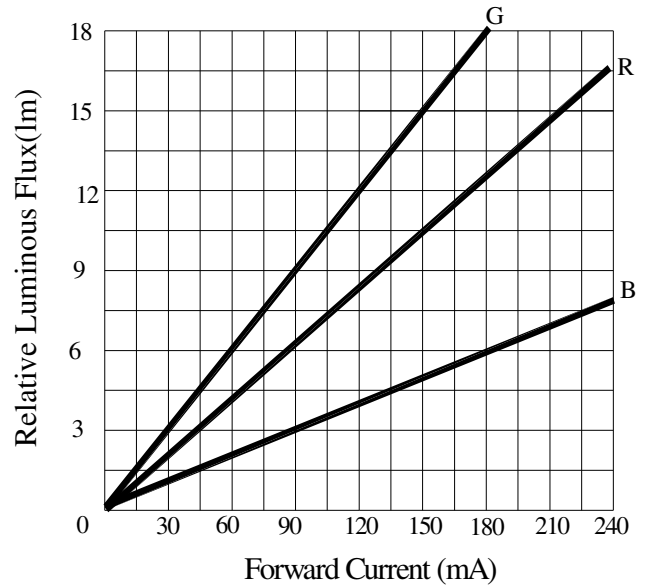
1. Flux is measured with an accuracy of $\pm 15\%$.
2. Forward voltage is measured with an accuracy of $\pm 0.15V$.
3. Wavelength is measured with an accuracy of $\pm 2nm$.

Typical Electrical/Optical Characteristic Curves

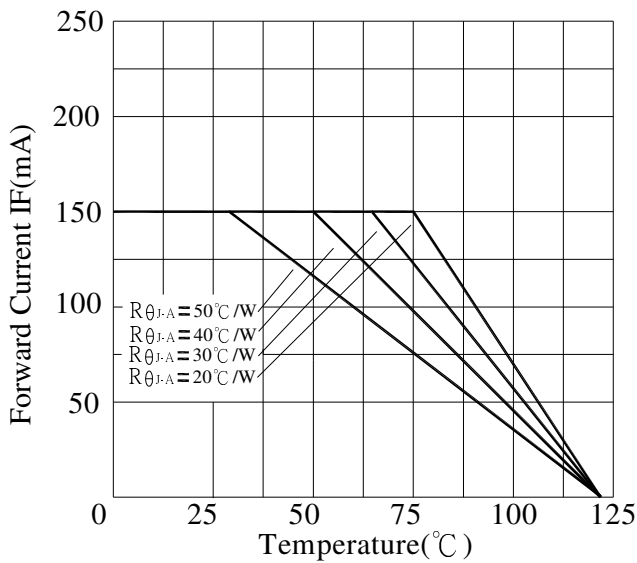
(25°C Ambient Temperature Unless Otherwise Noted)



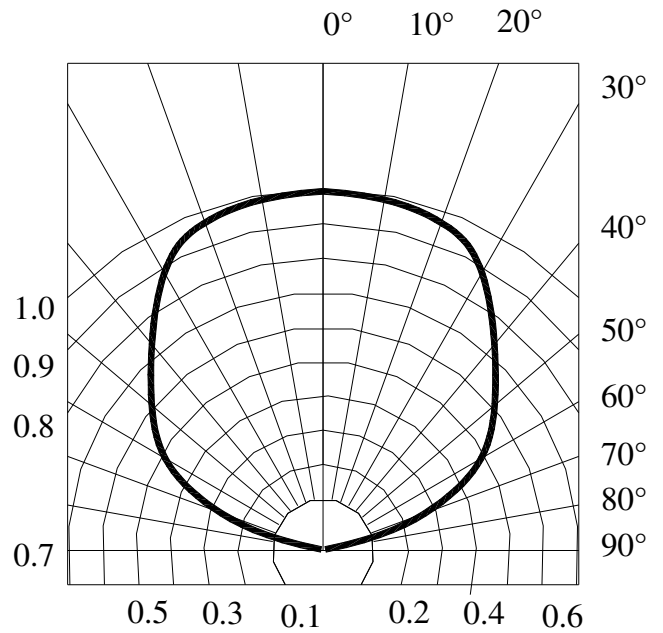
Forward Current VS. Applied Voltage



Forward Current VS. Flux



Ambient Temperature VS. Forward Current



Relative intensity VS. Ambient Temperature

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°C for 24 hours.

Fold the opened bag firmly and keep in dry environment.

Soldering

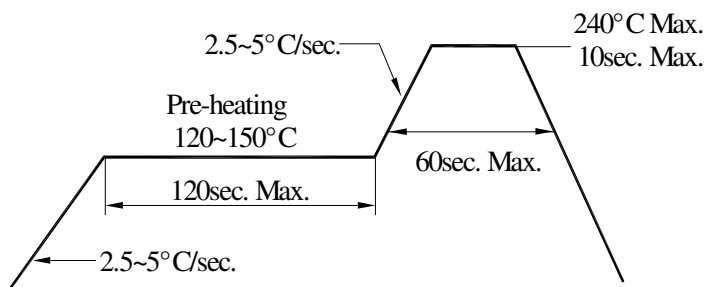
	Reflow Soldering		Hand Soldering	
	Lead Solder	Lead - free Solder		
Pre-heat	120~150°C	180~200°C	Temperature	350°C Max.
Pre-heat time	120sec. Max.	120sec. Max.	Soldering time	3sec. Max. (one time only)
Peak temperature	240°C Max.	260°C Max.		
Soldering time	10sec. Max.	10sec. Max.		
Condition	refer to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

*After reflow soldering rapid cooling should be avoided.

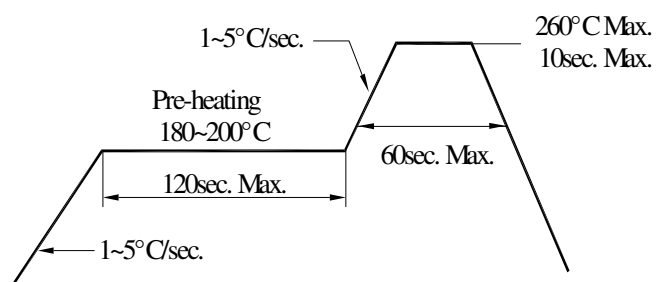
[Temperature-profile (Surface of circuit board)]

Use the conditions shown to the under figure.

< 1 : Lead Solder >

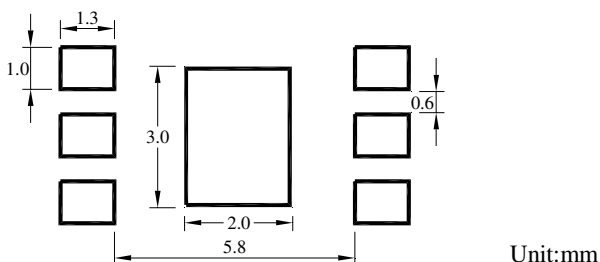


< 2 : Lead-free Solder >



[Recommended soldering pad design]

Use the following conditions shown in the figure.



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

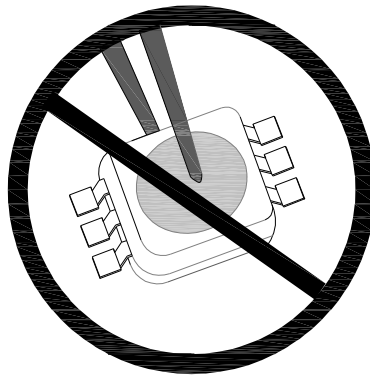


Figure 1

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.

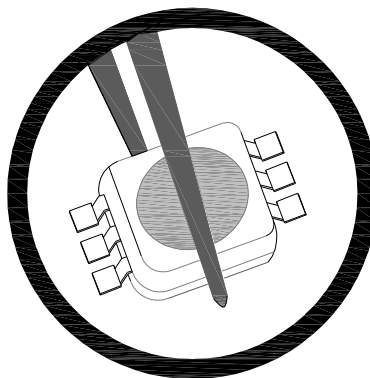


Figure 2

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.