

Features:

- High Luminous PLCC4 Top SMD LEDs
- 3.5x2.8x1.9mm Standard Directivity
- Superior Weather-resistance
- UV Resistant Silicone
- Water Clear Type



Applications

- Toys
- Audio
- Games
- Other Lighting

Absolute maximum rating (Ta=25°C)

Item	Symbol	Value		Unit
		Red	Green/Blue	
DC forward current	I_F	30	30	mA
Pulse forward current*	I_{FP}	100	100	mA
Reverse voltage	V_R	5	5	V
Power dissipation	P_D	78	108	mW
Operating temperature	T_{opr}	-30 to +85		°C
Storage temperature	T_{stg}	-40 to +100		°C
Lead soldering temperature	T_{sol}	260°C/5sec		-

*Pulse width max. 10ms. Duty ratio max. 1/10

Electrical – Optical characteristics (Ta=25°C)

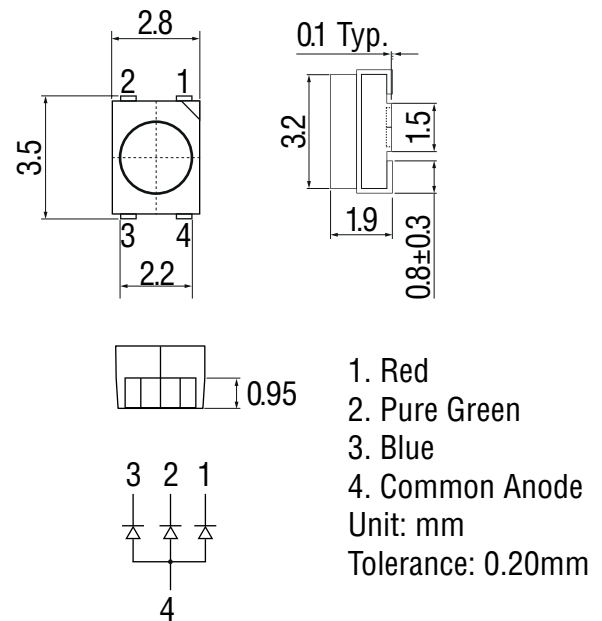
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC forward voltage ³	$V_F (R)$	$I_F = 20mA$	1.8	2.1	2.6	V
	$V_F (B/G)$	$I_F = 20mA$	2.9	3.1	3.6	V
DC reverse current	I_R	$V_R = 5V$	-	-	10	µA
Dominant wavelength ¹	$\lambda_D (red)$	$I_F = 20mA$	620	625	630	nm
	$\lambda_D (green)$	$I_F = 20mA$	520	525	530	nm
	$\lambda_D (blue)$	$I_F = 20mA$	465	470	475	nm
Luminous intensity ²	$I_V (red)$	$I_F = 20mA$	750	1000	-	mcd
	$I_V (green)$	$I_F = 20mA$	750	900	-	mcd
	$I_V (blue)$	$I_F = 20mA$	220	400	-	mcd
50% Power angle	$2\theta_{1/2}$	$I_F = 20mA$	-	120	-	deg

1 Tolerance of measurements of dominant wavelength is +1nm

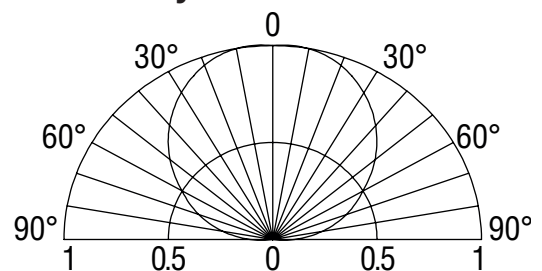
2 Tolerance of measurements of luminous intensity is +15%

3 Tolerance of measurements of forward voltage is +0.1V

Outline dimensions:



Directivity:



Precautions in use of Surface Mount LED

Storage conditions

Before opening the package:

The LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture proof the packaging with absorbent material – silica gel is recommended.

After opening the package:

Soldering should be done within 24 hours of the package being opened.

Partial contents of the package need to be re-sealed and stored between 5-40°C with humidity of less than 30%.

If the package has been opened more than a week; or the colour of the desiccant changes, components should be dried for 10-12 hours at 60 ± 3°C.

TruOpto LED electrode sections are comprised of a silver plated copper alloy. The silver surface may be affected by environments which contain corrosive gases etc. Please avoid conditions which may cause the LED to corrode, tarnish or discolour. This corrosion or discolouration may cause difficulty during soldering operations. It is recommended that the LED is used as soon as possible.

Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.

Soldering conditions

Reflow Soldering		Hand Soldering	
Pre-heat	180 to 200°C	Temperature/soldering time	350°C max. 3 sec. max. (one time only)
Pre-heat time	120 sec. max.		
Peak temperature	260°C max.		
Dipping time	5 sec. max.		
Condition	Refer to temperature-profile		

Recommended soldering conditions vary according to the type of LED

Although the recommended soldering conditions are specified in the above table, reflow, or hand soldering at the lowest possible temperature is desirable for the LEDs.

A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

All SMD LED products are available for lead-free soldering.

Occasionally there is a brightness decrease caused by the influence of heat or ambient atmosphere during air reflow. It is recommended that the nitrogen reflow method is used.

Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

Reflow soldering should not be done more than two times.

When soldering, do not put stress on the LEDs during heating.

After soldering do not warp the circuit board.