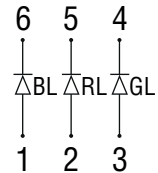
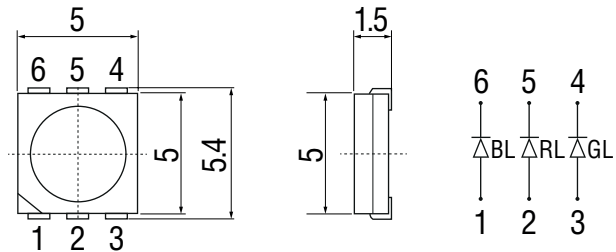




Outline dimensions:

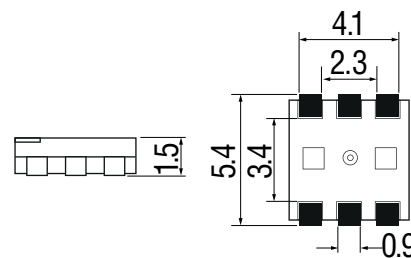


Features:

- High Luminous PLCC6 Top SMD LEDs
- 5.0x5.0x1.5mm Standard Directivity
- Superior Weather-resistance
- UV Resistant Silicone
- Water Clear Type

Applications

- Toys/Games/Audio
- Small Area Illuminations
- Back Lighting/Other Lighting



Back View

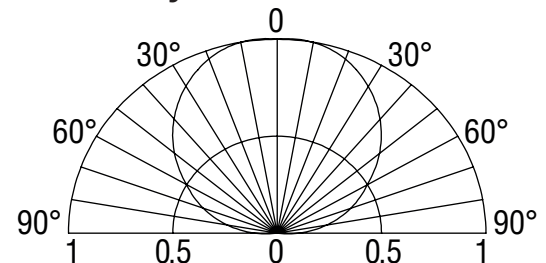
1, 2, 3: Anode
4, 5, 6: Cathode
Unit: mm
Tolerance: $\pm 0.20\text{mm}$

Absolute maximum rating ($T_a=25^\circ\text{C}$)

| Item | Symbol | Value | | Unit |
|----------------------------|-----------|----------------------------|------------|------------------|
| | | Red | Green/Blue | |
| DC forward current | I_F | 50 | 30 | mA |
| Pulse forward current* | I_{FP} | 120 | 100 | mA |
| Reverse voltage | V_R | 5 | 5 | V |
| Power dissipation | P_D | 130 | 108 | mW |
| Operating temperature | T_{opr} | -30 to +85 | | $^\circ\text{C}$ |
| Storage temperature | T_{stg} | -40 to +100 | | $^\circ\text{C}$ |
| Lead soldering temperature | T_{sol} | 260 $^\circ\text{C}$ /5sec | | - |

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

Directivity:



Electrical - Optical characteristics ($T_a=25^\circ\text{C}$)

| Item | Symbol | Condition | Min. | Typ. | Max. | Unit |
|----------------------------------|---------------------------|---------------------|------|------|------|---------------|
| DC forward voltage ³ | $V_F(R)$ | $I_F = 20\text{mA}$ | 1.8 | 2.1 | 2.6 | V |
| | $V_F(B/G)$ | $I_F = 20\text{mA}$ | 2.9 | 3.1 | 3.6 | V |
| DC reverse current | I_R | $V_R = 5\text{V}$ | - | - | 10 | μA |
| Dominant wavelength ¹ | $\lambda_D(\text{red})$ | $I_F = 20\text{mA}$ | 620 | 625 | 630 | nm |
| | $\lambda_D(\text{green})$ | $I_F = 20\text{mA}$ | 520 | 525 | 530 | nm |
| | $\lambda_D(\text{blue})$ | $I_F = 20\text{mA}$ | 465 | 470 | 475 | nm |
| Luminous intensity ² | $I_V(\text{red})$ | $I_F = 20\text{mA}$ | 750 | 1000 | - | mcd |
| | $I_V(\text{green})$ | $I_F = 20\text{mA}$ | 750 | 1120 | - | mcd |
| | $I_V(\text{blue})$ | $I_F = 20\text{mA}$ | 220 | 400 | - | mcd |
| 50% Power angle | $2\theta_{1/2}$ | $I_F = 20\text{mA}$ | - | 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

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.