

## LIGHTHOUSE LEDs

# Technical Data Sheet

|                      |                                                      |
|----------------------|------------------------------------------------------|
| <b>Product Name:</b> | PLCC-6 SMD Amber / Orange - Ultra<br>Bright 5050 LED |
| <b>Part Number:</b>  | 5050SMDORANGEAMBER                                   |
| <b>SKU:</b>          | 5050SMDORANGEAMBER                                   |
| <b>Package:</b>      | PLCC-6/5050 SMD                                      |
| <b>Date:</b>         | 2026-03-30                                           |

### Document Control

Prepared by

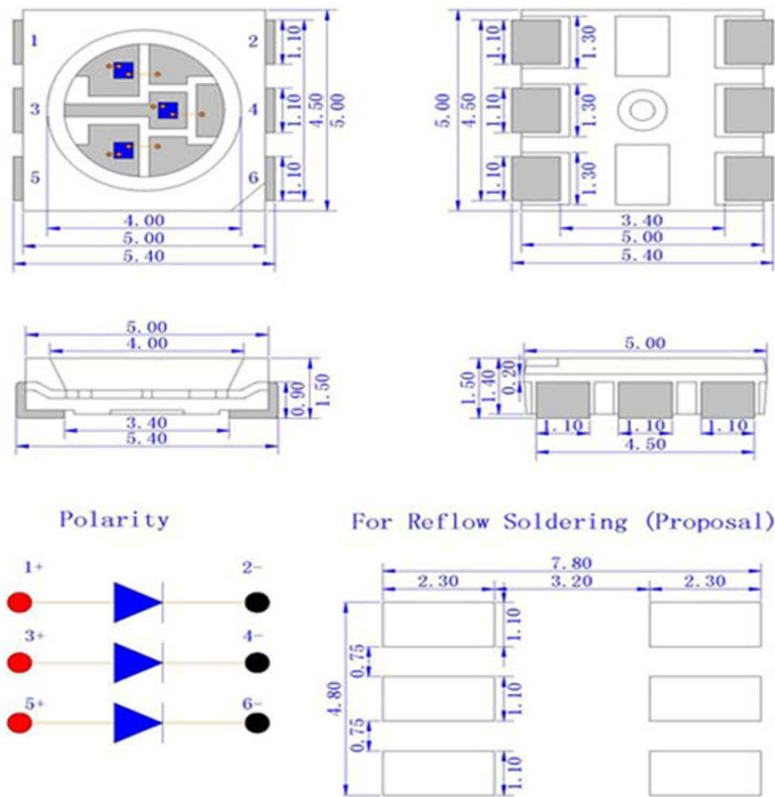
Checked by

Approved by

1. Features

- Package: PLCC-6/5050 SMD
- Color: Ultra Bright Amber/Orange
- Lens: SMD - Not Applicable
- Die Material: AlGaInP
- RoHS Compliant, Lead-Free

2. Outline Dimensions



| Unit | Tolerance | Die Material | Lens Color           | Emission Color |
|------|-----------|--------------|----------------------|----------------|
| mm   | ±0.2mm    | AlGaInP      | SMD - Not Applicable | Amber/Orange   |

### 3. Electrical / Optical Characteristics (Ta = 25°C, RH 60%)

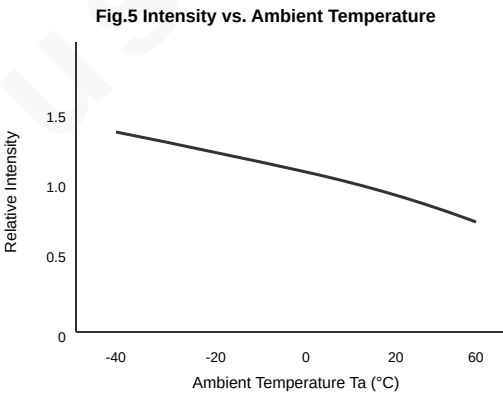
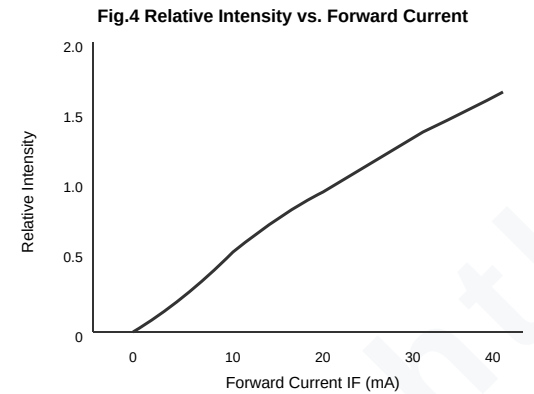
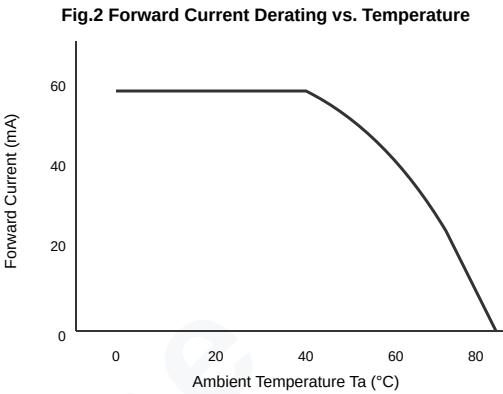
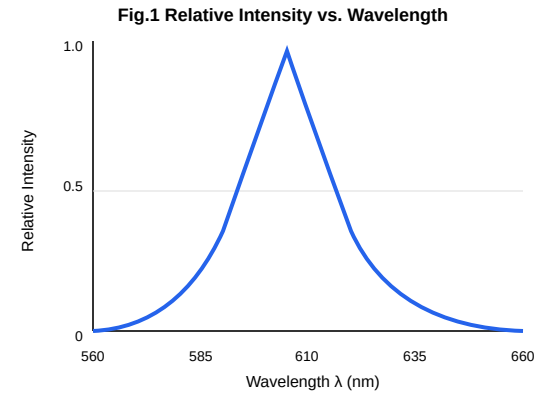
| Parameter                | Symbol | Test Condition                             | Min | Typ. | Max | Unit |
|--------------------------|--------|--------------------------------------------|-----|------|-----|------|
| Forward Voltage          | VF     | IF = 20mA each Chip/Diode - 3 Chips/Diodes | 1.9 | —    | 2.1 | V    |
| Reverse Current          | IR     | VR = 5V                                    | —   | —    | 5   | μA   |
| Luminous Intensity       | IV     | IF = 20mA each Chip/Diode - 3 Chips/Diodes | 600 | —    | 606 | mcd  |
| Viewing Angle            | 2θ1/2  | IF = 20mA each Chip/Diode - 3 Chips/Diodes | —   | 100  | —   | °    |
| Dominant Wavelength      | λd     | IF = 20mA each Chip/Diode - 3 Chips/Diodes | 600 | —    | 605 | nm   |
| Spectral Line Half-Width | Δλ     | IF = 20mA each Chip/Diode - 3 Chips/Diodes | —   | 20   | —   | nm   |

Remark: Tolerance of intensity ±15%, wavelength ±1nm, forward voltage ±0.05V. For reference only.

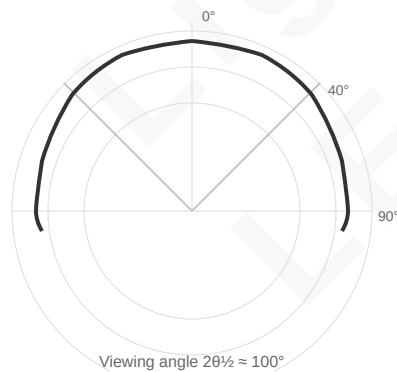
### 4. Absolute Maximum Ratings (Ta = 25°C, RH 60%)

| Parameter             | Symbol | Value                          | Unit | Remark                  |
|-----------------------|--------|--------------------------------|------|-------------------------|
| Forward Current       | IF     | 20                             | mA   | —                       |
| Peak Forward Current  | IFM    | 100                            | mA   | F=1kHz, duty cycle 1/10 |
| Reverse Voltage       | VRP    | 5                              | V    | —                       |
| Power Dissipation     | Pd     | 200                            | mW   | —                       |
| Operating Temperature | Tamb   | -40 to +85                     | °C   | —                       |
| Storage Temperature   | Tstg   | -40 to +85                     | °C   | —                       |
| Soldering Temperature | Tsol   | Reflow 260°C/5s, Hand 300°C/3s |      |                         |

## 5. Typical Electrical / Optical Characteristic Curves



**Fig.6 Spatial Distribution (Radiation Pattern)**



## 6. Reliability Test Data

| Test                     | Standard                       | Conditions                   | Duration  | Qty | Failures |
|--------------------------|--------------------------------|------------------------------|-----------|-----|----------|
| Life Test (room temp)    | JIS7021:B4                     | Ta = 25°C ±5°C, IF = 30mA    | 100 hrs   | 22  | 0        |
| High Temperature Storage | JIS7021:B10 / MIL-STD-202:210A | Ta = 85°C ±5°C               | 1000 hrs  | 22  | 0        |
| Low Temperature Storage  | JIS7021:B12                    | Ta = -35°C ±5°C              | 1000 hrs  | 22  | 0        |
| High Temp / Humidity     | JIS7021:B11 / MIL-STD-202:103D | Ta = 85°C ±5°C, RH = 85%     | 1000 hrs  | 22  | 0        |
| Thermal Shock            | JIS7021:B4 / MIL-STD-202:107D  | -10°C ↔ +100°C, 5min each    | 50 cycles | 22  | 0        |
| Temperature Cycling      | JIS7021:A3 / MIL-STD-705:105E  | -35°C ~ -25°C ~ 85°C ~ -35°C | 50 cycles | 22  | 0        |

## 7. Application Notes

- Always use a current-limiting resistor. See [lighthouseleds.com/blog/led-resistor-calculator.html](http://lighthouseleds.com/blog/led-resistor-calculator.html)
- For AC or DCC power, add a bridge rectifier. See [lighthouseleds.com/blog/bridge-rectifier-led-ac-dcc-landscape-lighting.html](http://lighthouseleds.com/blog/bridge-rectifier-led-ac-dcc-landscape-lighting.html)
- Observe polarity: longer lead = anode (+), shorter lead with flat = cathode (-).
- Do not exceed maximum forward current (20mA continuous).

Lighthouse LEDs, LLC — Medical Lake, WA 99022  
 lighthouseleds.com — support@lighthouseleds.com — 509-220-7537  
*Specifications subject to change without notice. Data is for reference only.*