

Features

- Reflow Solderable
- High Luminous Intensity and Low Power Dissipation
- Good Reliability and Long Life
- Lead Free

**RoHS
Compliant**

Applications

- Optical indicator
- Indoor display
- Backlighting in dashboard and switch
- Flat backlighting for LCD, symbol and display
- General use

Specifications

| | |
|-----------------|---------------|
| Dice material | : AlGaInP |
| Emmiting Colour | : Red |
| Lens colour | : Water Clear |

Electrical and Optical Characteristics at Ta=25°C

| Parameter | Symbol | Min. | Typ | Max | Units | Test conditions |
|---------------------|--------|------|-----|-----|-------|-----------------|
| Forward voltage | VF | 1.8 | - | 2.4 | V | IF=20mA |
| Reverse Current | IR | - | - | 10 | uA | VR=5V |
| Dominant wavelength | λd | 417 | - | 626 | nm | IF=20mA |

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Units |
|-------------------------------|--------|-------------|-------|
| Power Dissipation | Pd | 48 | mW |
| DC Forward Current | IF | 20 | mA |
| Peak Forward Current [1] | IFP | 75 | mA |
| Reverse Voltage | VR | 5 | V |
| Electrostatic Discharge (HBM) | ESD | 2000 | V |
| Operating Temperature | Topr | -40 to +85 | °C |
| Storage Temperature | Tstg | -40 to +100 | °C |

Notes:

1. 1/10 Duty cycle, 0.1ms pulse width
2. The above forward voltage measurement allowance tolerance ±0.1V
3. The tolerance of wave length: ±1nm

Selection Guide

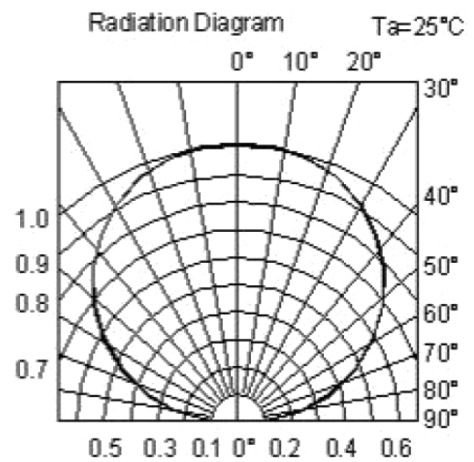
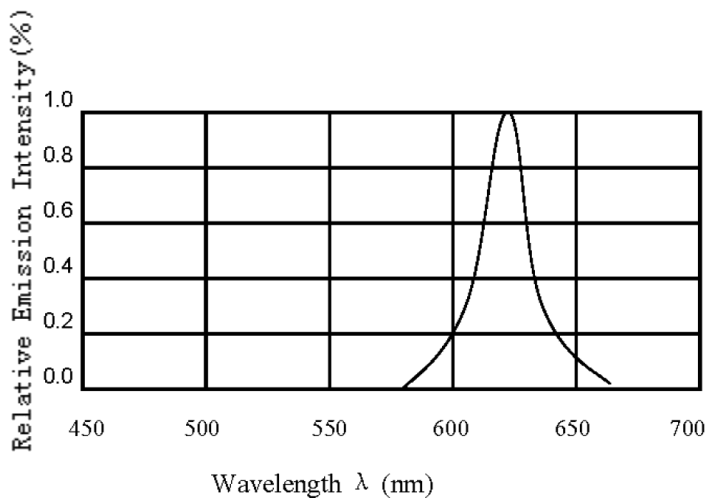
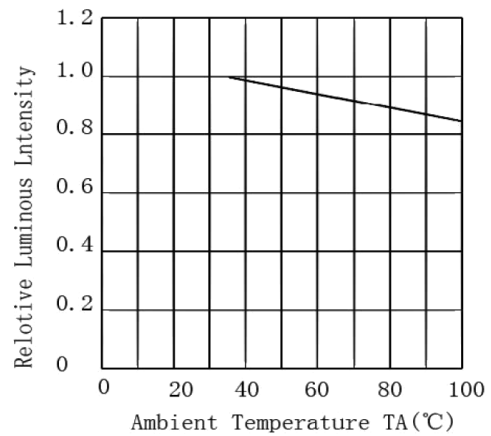
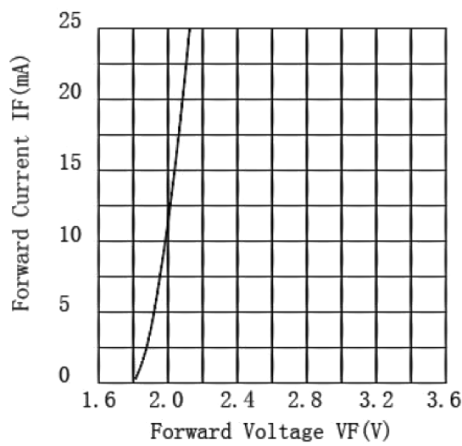
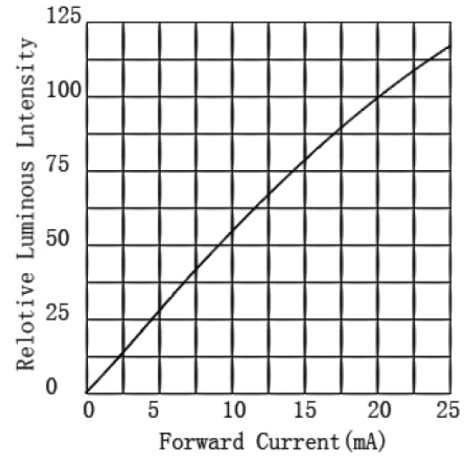
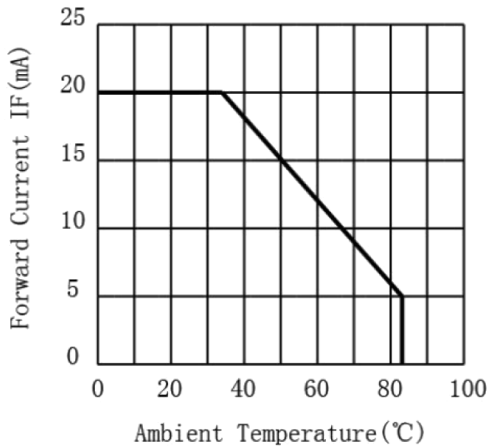
| Part Number | Chip materials | Lens Type | Luminous intensity (mcd) @ 20mA | | | Viewing Angle |
|-------------|----------------|-------------|---------------------------------|-----|-----|---------------|
| | | | Min | Typ | Max | 2θ1/2 |
| MP008277 | Red (AlGaInP) | Water Clear | 70 | - | 220 | 120 |

Note:

1. 2θ1/2 is the angle from optical centerline where the luminous intensity is 2θ1/2 the optical centerline value.
2. The above luminous intensity measurement allowance tolerance ±10%

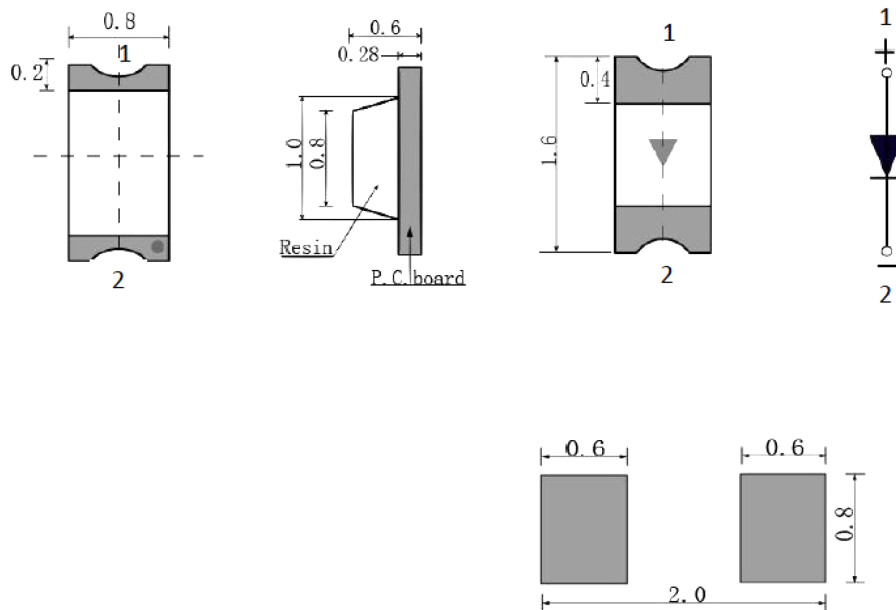
Typical optical characteristics curves

Ambient Temperature VS. Forward Current



0603 SMD Chip LED

Dimensions



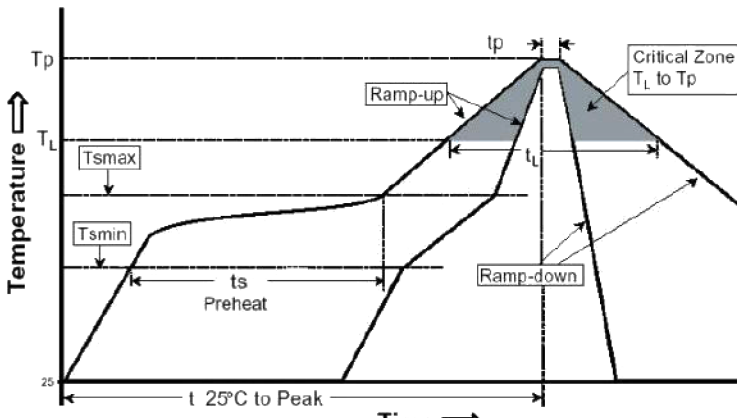
1. All dimension tolerance is ± 0.2 mm unless otherwise noted
2. All PCB and markings are subject to change without prior notice
3. Polarity mark : \blacktriangledown or T

Dimensions : Millimetres

SMT Reflow Soldering Instructions

1. High temperature welding recommended no more than 2 times
2. When soldering , do not put stress on the LEDs during heating
3. Reflow temperature distribution (Acc.to J-STD-020D)

| Profile feature | Sn-Pb Eutectic Assembly | | Pb-Free Assembly | |
|---|-------------------------|-------------|-------------------|------------------|
| | Large body | Small body | Large body | Small body |
| Average ramp-up rate (TL to Tp) | 3°C / second max. | | | |
| Preheat | 100°C | | 150°C | |
| -Temperature Min (TSmin) | 150°C | | 200°C | |
| -Temperature Max (TSmax) | 60 to 120 seconds | | 60 to 180 seconds | |
| -Time (min to max) (ts) | | | | |
| Tsmax to TL | 3°C / second max. | | | |
| -Ramp-up Rate | | | | |
| Time maintained above | 183°C | | 217°C | |
| -Temperature (TL) | 60 to 150 seconds | | 60-150 seconds | |
| -Time (tL) | | | | |
| Peak Temperature (Tp) | 225 +0/-5°C | 240 +0/-5°C | 245 +0/-5°C | 260 +0/-5°C |
| Time within 5°C of actual Peak Temperature (tp) | 10 to 30 seconds | | 10 to 30 seconds | 20 to 40 seconds |
| Ramp-down Rate | 6°C / second max. | | | |
| Time 25°C to Peak Temperature | 6 minutes max. | | 8 minutes max. | |



Soldering iron

1. When hand soldering, the temperature of the iron must be less than 350°C for 3 seconds
2. The hand solder should be done only once

Part Number Table

| Description | Part Number |
|---|-------------|
| Chip LED, Red, 626nm, 120°, 220mcd, Surface Mount | MP008277 |

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