

## Features

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

## Applications

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

**RoHS  
Compliant**

## 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     | 626  | -   | 638 | 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. Measurement Errors: Forward Voltage: ±0.1V
3. The tolerance of wave length ±1nm

## Selection Guide

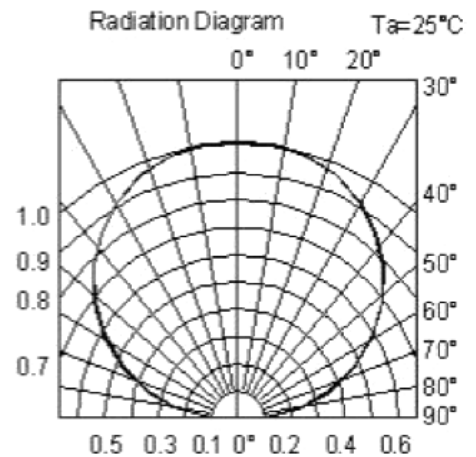
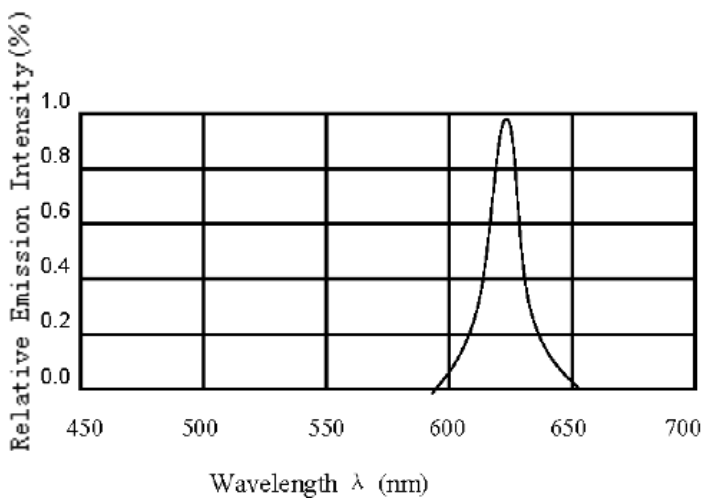
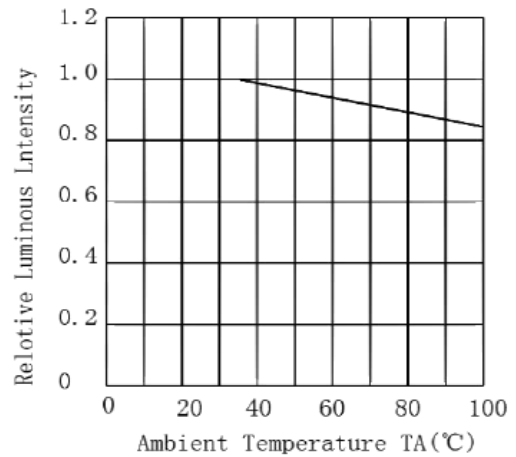
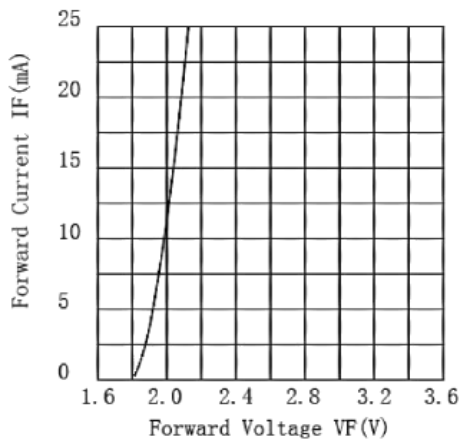
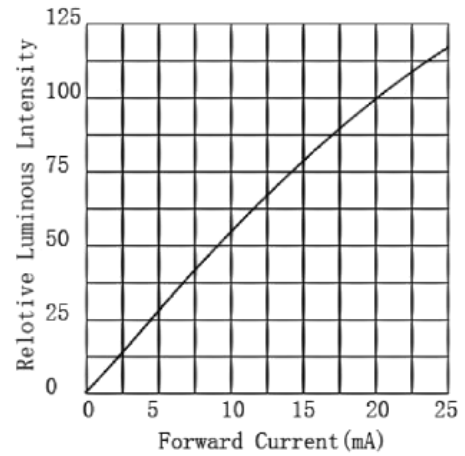
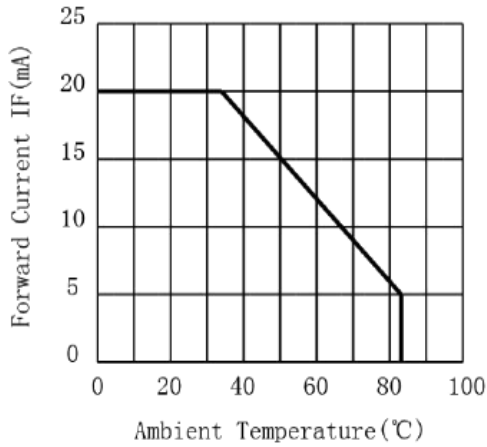
| Part Number | Chip materials | Lens Type   | Luminous intensity (mcd) @ 20mA |     |     | Viewing Angle |
|-------------|----------------|-------------|---------------------------------|-----|-----|---------------|
|             |                |             | Min                             | Typ | Max |               |
| MP008285    | Red (AlGaInP)  | Water Clear | 30                              | -   | 100 | 2θ1/2<br>120  |

Note:

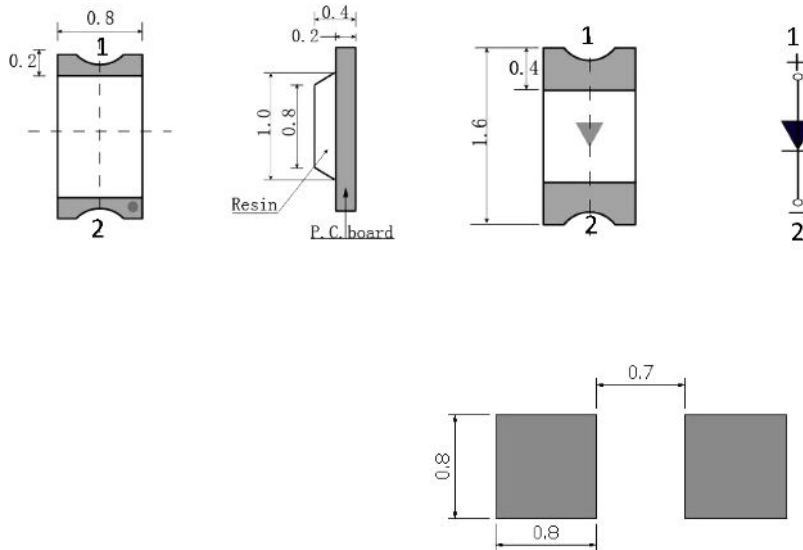
1. 2θ1/2 is the angle from optical centerline where the luminous intensity is 2θ1/2 the optical centerline value.
2. The above luminous intensity measurement allowance tolerance ±10%

## Typical optical characteristics curves

Ambient Temperature VS. Forward Current



## Dimensions



## Notes

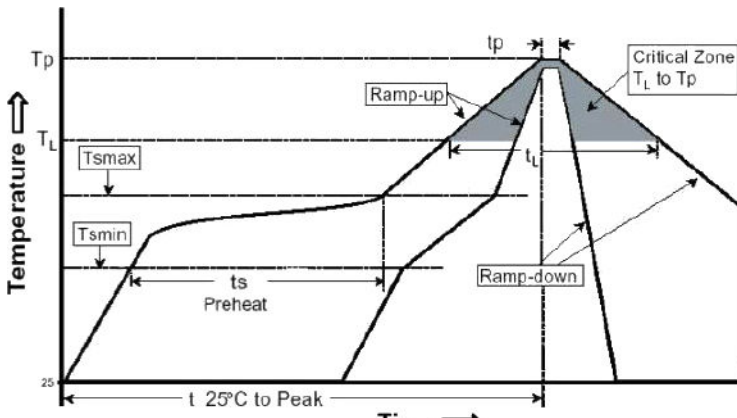
1. All dimension tolerance is  $\pm 0.2\text{mm}$  unless otherwise noted
2. All PCB and markings are subject to change without prior notice

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 (TSmx)                         | 60 to 120 seconds       |             | 60 to 180 seconds |                  |
| -Time (min to max) (ts)                         |                         |             |                   |                  |
| Tsmx to TL                                      |                         |             | 3°C / second max. |                  |
| -Ramp-up Rate                                   |                         |             |                   |                  |
| Time maintained above                           | 183°C                   |             | 217°C             |                  |
| -Temperature (TL)                               | 60 to 150 seconds       |             | 60 to 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, 638nm, 120°, 100mcd, Surface Mount | MP008285    |

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