

## Feature

- Low Power Consumption
- I.C. compatible

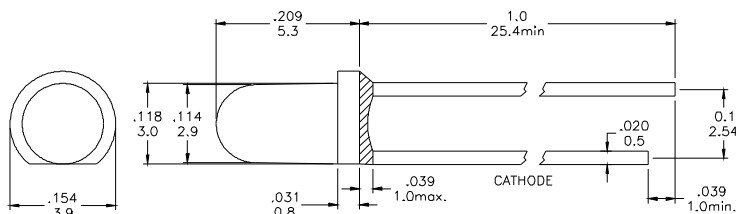
## Applications

- Commercial Outdoor Sign Board
- Front Panel Indicator
- Dot-Matrix Module
- LED Bulb

## Description

- These LEDs are Based on GaAlAs/GaAs
- Material Technology
- Emitted color:Red
- Water Transparent Lens

## Package Dimension



\* Tolerance:  $\frac{0.01}{0.25}$  Unit:  $\frac{\text{inch}}{\text{mm}}$

## Absolute Maximum Ratings at Ta=25°C

| Symbol                                                                        | Parameter                             | Max.          | Unit    |
|-------------------------------------------------------------------------------|---------------------------------------|---------------|---------|
| PD                                                                            | Power Dissipation                     | 120           | mW      |
| VR                                                                            | Reverse Voltage                       | 5             | V       |
| IAF                                                                           | Average Forward Current               | 30            | mA      |
| IPF                                                                           | Peak Forward Current (Duty=0.1, 1kHz) | 100           | mA      |
| —                                                                             | Derating Linear Form 25°C             | 0.4           | mA / °C |
| Topr                                                                          | Operating Temperature Range           | - 40 to + 85  | °C      |
| Tstg                                                                          | Storage Temperature Range             | - 40 to + 100 | °C      |
| Lead Soldering Temperature [1.6mm (0.063inch) From Body] 260°C For 5 Seconds. |                                       |               |         |

## Electrical / Optical Characteristics and Curves at Ta=25°C

| Symbol          | Parameter            | Test Condition | Min. | Typ. | Max. | Unit |
|-----------------|----------------------|----------------|------|------|------|------|
| VF              | Forward Voltage      | IF = 20 mA     |      | 1.8  | 2.0  | V    |
| IR              | Reverse Current      | VR = 5 V       |      |      | 50   | μA   |
| $\Delta \theta$ | Half Intensity Angle | IF = 20 mA     |      | 30   |      | Deg. |
| IV              | Luminous Intensity   | IF = 20 mA     |      | 150  |      | mcd. |
| $\lambda_d$     | Dominant Wavelength  | IF = 20 mA     |      | 640  |      | nm   |

## Electrical Characteristics at Ta=25°C

| Symbol    | I <sub>v</sub>     |       | V <sub>F</sub>  |         | λ D                 |         |
|-----------|--------------------|-------|-----------------|---------|---------------------|---------|
| Parameter | Luminous Intensity |       | Forward Voltage |         | Dominant Wavelength |         |
| Condition | IF = 20mA          |       | IF = 20mA       |         | IF = 20mA           |         |
| Unit      | mcd                |       | V               |         | nm                  |         |
| Binning   | Grade              | Range | Grade           | Range   | Grade               | Range   |
|           | --                 | --    | A               | 1.7~1.8 | R1                  | 635~640 |
|           | --                 | --    | B               | 1.8~1.9 | R2                  | 640~646 |
|           | --                 | --    | C               | 1.9~2.0 |                     |         |
|           |                    |       |                 |         |                     |         |
|           |                    |       |                 |         |                     |         |

Intensity: Tolerance of minimum and maximum =  $\pm 15\%$

V<sub>F</sub>: Tolerance of minimum and maximum =  $\pm 0.05\text{V}$

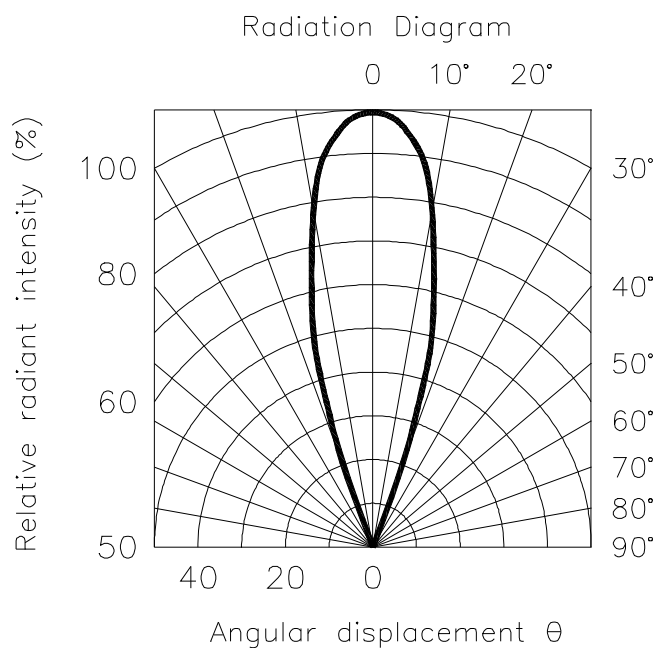
NOTE:

1. Static electricity and surge damages the LED. It is recommend to use a anti-static wrist band or anti-electrostatic glove when handing the LEDs. All devices, equipment and machinery must be properly grounded.

2. Specific binning requirements- please contact our home office

## Radiation Diagram

IF=20 mA    50% Power Angle    Angle =30°



## Red

### Typical Electro-optical Characteristic Curves (25°C Free Air Temperature Unless Otherwise Specified)

Fig 1. Forward Current vs. Forward Voltage

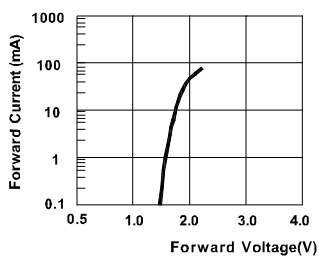


Fig 2. Relative Intensity vs. Forward Current

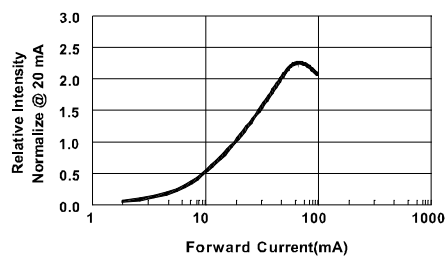


Fig 3. Forward Voltage vs. Temperature

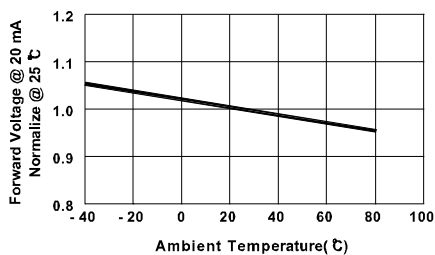


Fig 4. Relative Intensity vs. Temperature

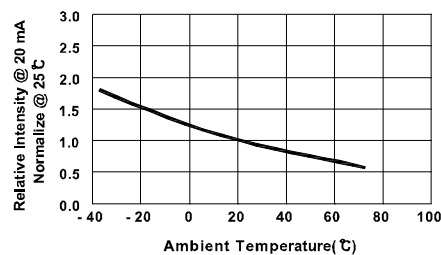


Fig 5. Relative Intensity vs. Wavelength

