

**Feature**

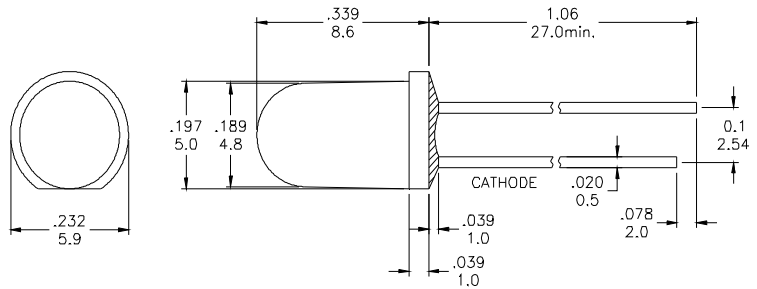
- § Low Power Consumption
- § High Intensity
- § I.C. compatible

**Applications**

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

**Description**

- § These High Intensity LEDs are Based on GaP/GaP Material Technology
- § Water Transparent Lens

**Package Dimension**


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

**Absolute Maximum Ratings at Ta = 25°C**

| Symbol  | Parameter                                | Max.          | Unit    |
|---|--|---------------|---------|
| PD  | Power Dissipation                        | 100           | 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 + 80  | °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     |      | 2.0  | 2.4  | V    |
| IR              | Reverse Current      | VR = 5 V       |      |      | 100  | μA   |
| $\Delta \theta$ | Half Intensity Angle | IF = 20 mA     |      | 30   |      | Deg. |
| IV              | Luminous Intensity   | IF = 20 mA     |      | 380  |      | mcd. |
| $\lambda p$     | Peak Wavelength      | IF = 20 mA     |      | 570  |      | 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   |
|           | BIN11              | 175~245 | C               | 1.9~2.0 | G9                  | 569~571 |
|           | BIN12              | 245~345 | D               | 2.0~2.1 | G10                 | 571~573 |
|           | BIN13              | 345~485 | E               | 2.1~2.2 | G11                 | 573~575 |
|           |                    |         | F               | 2.2~2.3 |                     |         |
|           |                    |         | G               | 2.3~2.4 |                     |         |
|           |                    |         |                 |         |                     |         |

Intensity: Tolerance of minimum and maximum = ± 15%

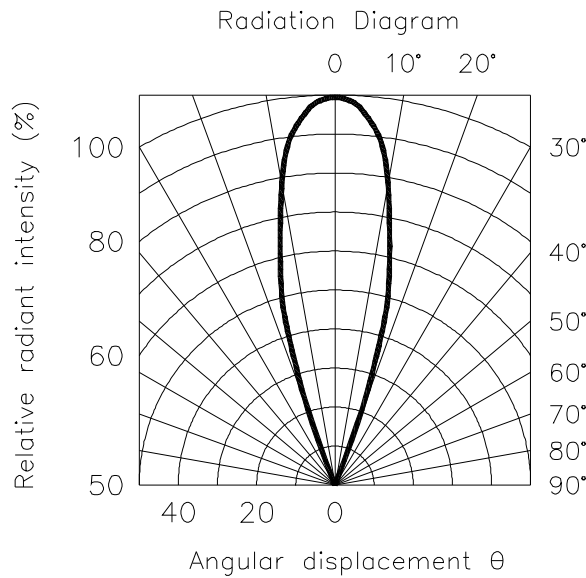
Vf: Tolerance of minimum and maximum = ± 0.05v

**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.

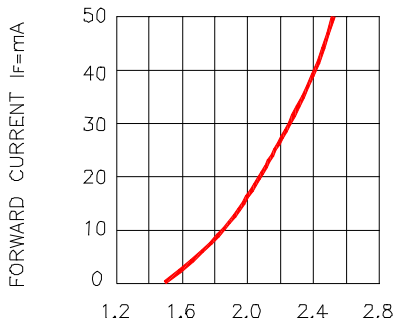
**.Radiation Diagram**

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



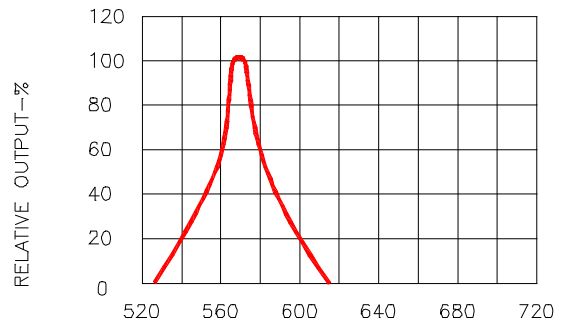


**Typical Electro-optical Characteristic Curves  
(25°C Free Air Temperature Unless Otherwise Specified)**



FORWARD VOLTAGE(V<sub>F</sub>)-VOLTS

Fig.1 FORWARD CURRENT VS FORWARD VOLTAGE



WAVELENGTH(λ)-nm

Fig.2 SPECTRAL RESPONSE

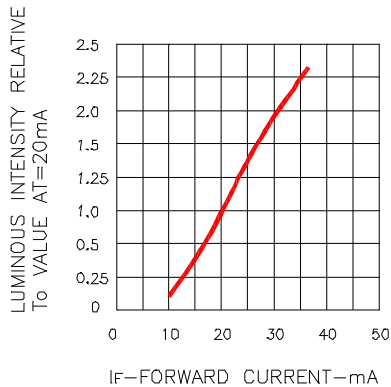


Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

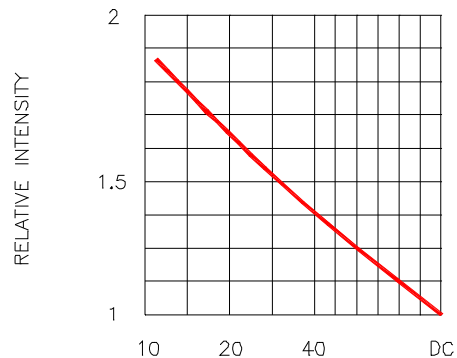


Fig.4 LUMINOUS INTENSITY VS.DUTY CYCLE

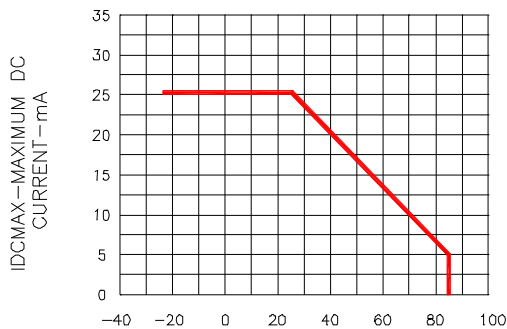


Fig .5 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE

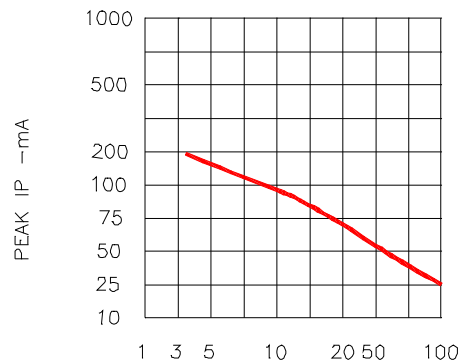


Fig.6 MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE f=1KHz)