

### Feature

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

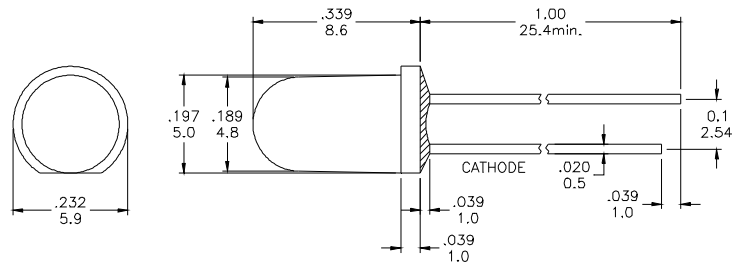
### Applications

- § Front Panel Indicator
- § Dot-Matrix Module
- § LED Bulb

### Description

- § These LEDs are Based on GaAsP/GaP Material Technology
- § Water Clear 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	- 20 to + 80	°C
Tstg	Storage Temperature Range	- 20 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	2.5	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		200		mcd.
$\lambda d$	Peak Wavelength	IF = 20 mA		620		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
	BIN 10	125~175	C	1.9~2.0	O2	620~625
	BIN 11	175~245	D	2.0~2.1	O3	625~630
	BIN 12	245~345	E	2.1~2.2		
			F	2.2~2.3		
			G	2.3~2.4		
			H	2.4~2.5		

Intensity: Tolerance of minimum and maximum = ± 15%

V<sub>f</sub>: Tolerance of minimum and maximum = ± 0.05v

NOTE:

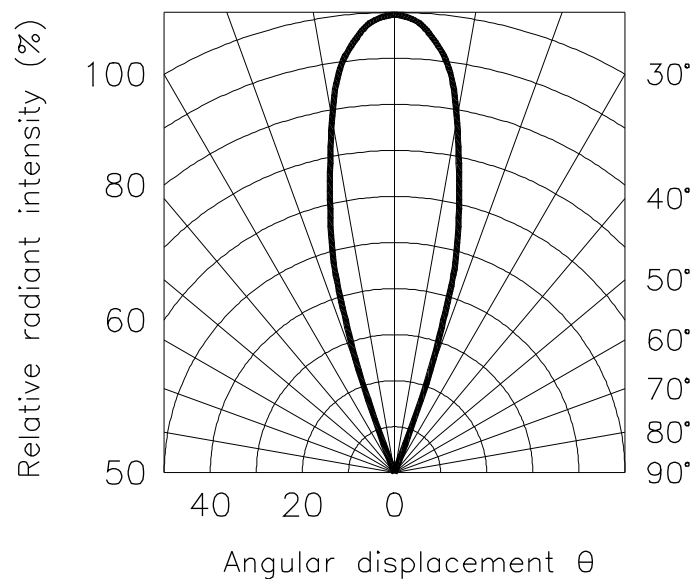
1. Static electricity and surge damages the LED. It is recommend to use a anti-static wrist band or anti-electrostatic glove when handing the LEDs. All devices, equipment and machinery must be properly grounded.

### Radiation Diagram

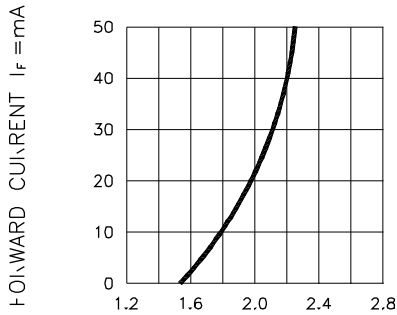
**IF=20 mA    50% Power Angle    Angle Y=30°**

Radiation Diagram

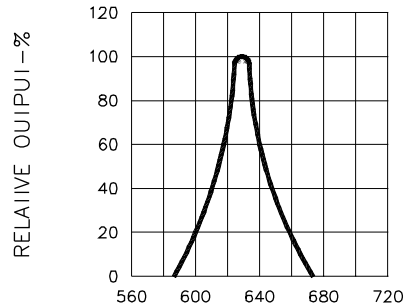
0    10°    20°



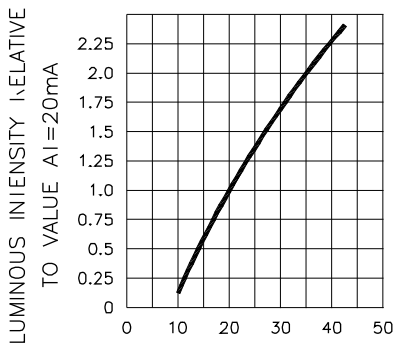
### Typical Electro-optical Characteristic Curves (25°C Free Air Temperature Unless Otherwise Specified)



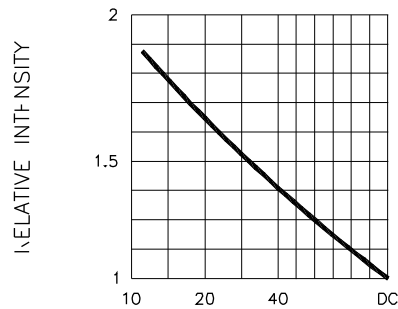
FORWARD VOLTAGE ( $V_F$ ) - VOLTS  
Fig.1 FORWARD CURRENT VS. FORWARD VOLTAGE



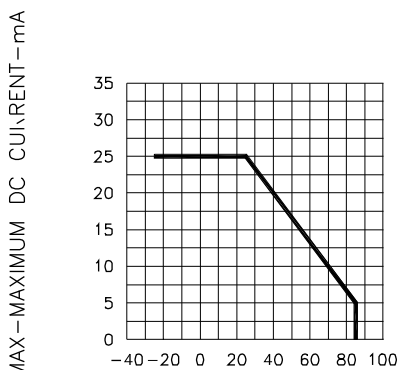
WAVELENGTH ( $\lambda$ ) - nm  
Fig.2 SPECTRAL RESPONSE



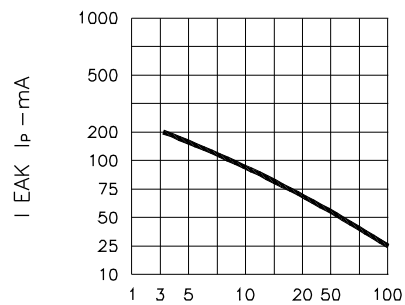
$I_F$  - FORWARD CURRENT - mA  
Fig.3 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



DUTY CYCLE % PER SEGMENT (AVERAGE  $I_F = 10$  mA)  
Fig.5 LUMINOUS INTENSITY VS. DUTY CYCLE



$T_A$  AMBIENT TEMPERATURE °C  
Fig.4 MAXIMUM ALLOWABLE DC CURRENT PER SEGMENT VS. A FUNCTION OF AMBIENT TEMPERATURE



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