

### Feature

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

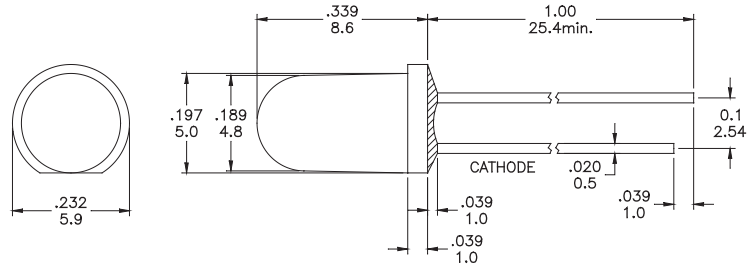
### Applications

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

### Description

- These High Intensity LEDs are Based on InGaN/Sapphire 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	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 + 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		3.5		V
IR	Reverse Current	VR = 5 V			50	μA
$\Delta \theta$	Half Intensity Angle	IF = 20 mA		15		Deg.
IV	Luminous Intensity	IF = 20 mA		12000		mcd.
X	Coordination	IF = 20 mA		0.30		
Y	Coordination	IF = 20 mA		0.30		

### Electrical Characteristics at Ta = 25 °C

Symbol	Iv		VF		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 23	9700~13600	P0	2.8~3.0	WA	Bluish White
	BIN 24	13600~19000	P1	3.0~3.2	WB	Pure White
			P2	3.2~3.4	WC	White
			P3	3.4~3.6	WD	Yellowish White
			P4	3.6~3.8		
			P5	3.8~4.0		

Intensity: Tolerance of minimum and maximum = ± 15%

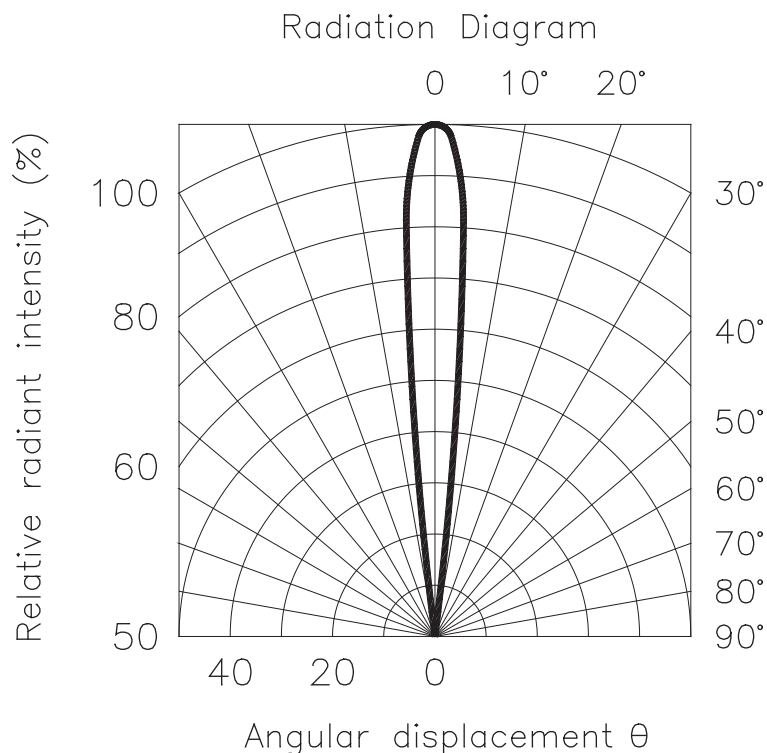
Vf: Tolerance of minimum and maximum = ± 0.05v

NOTE:

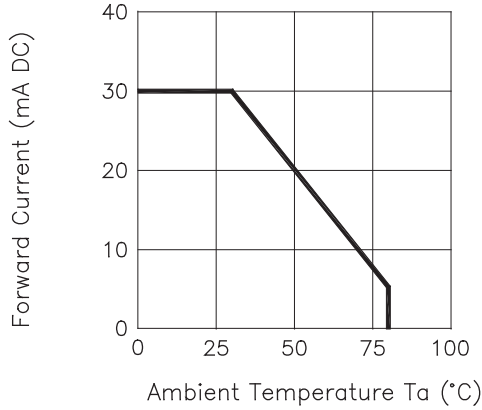
1. Static electricity and surge damages the LED. It is recommend to use a anti-static wrist band or anti-electrostatic glove when handing the LEDs. All devices, equipment and machinery must be properly grounded.

### Radiation Diagram

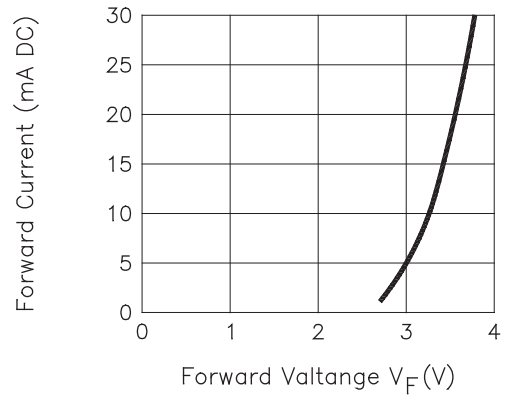
IF=20 mA    50% Power Angle    Angle = 15°



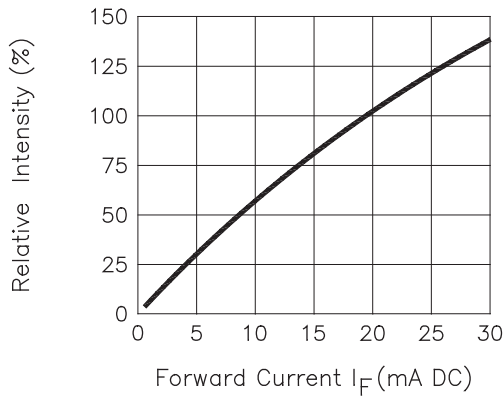
Forward Current  
Vs. Ambient Temperature



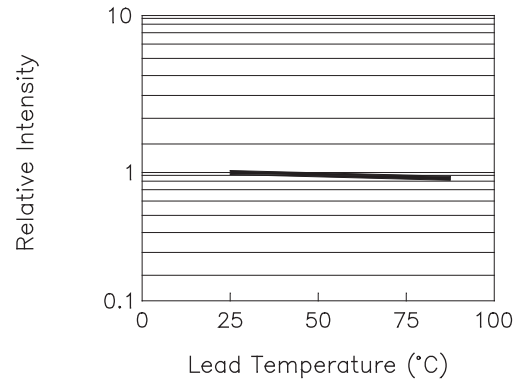
Forward Current  
Vs. Forward Voltage



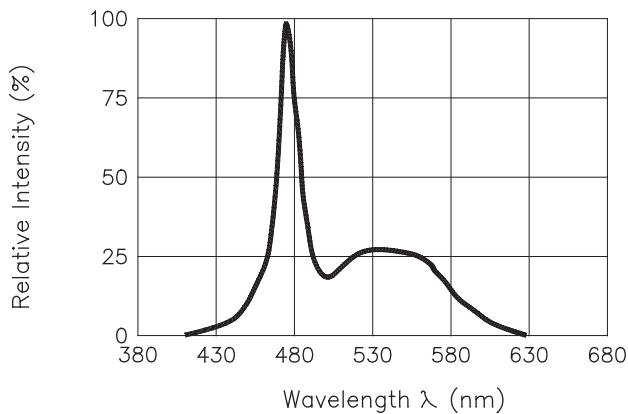
Relative Intensity  
Vs. Forward Current



Relative Intensity  
Vs. Lead Temperature  
(Pulsed 20 mA; 300us pulse,  
10ms period)



Relative Intensity Vs. Wavelength



Peak Forward Voltage  
Vs. Forward Current  
(100us test pulse,  
1% duty cycle)

