

## Features

- Low Power consumption
- General purpose leads
- Selected minimum intensities
- Available on tape and reel
- Pb free

## Descriptions

- The LED lamps are available with different colors, intensities, epoxy colors, etc

## Usage Notes:

- Surge will damage the LED
- When using LED, it must use a protective resistor in series with DC current about 20mA

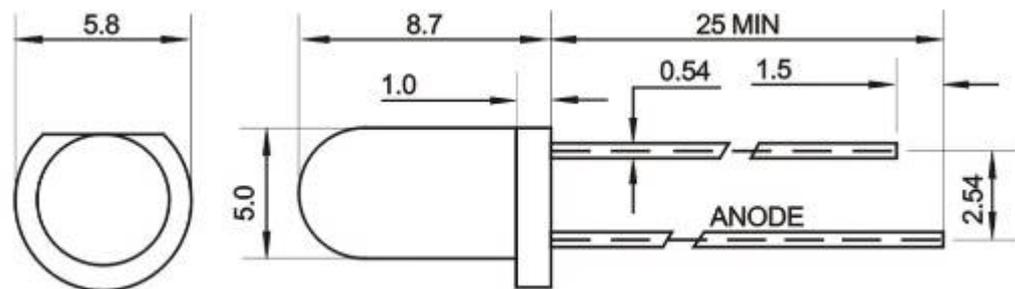
## Applications

- Status indicators
- Commercial use
- Advertising Signs

## Device Selection Guide

LED Part No.	Chip		Lens Color
	Material	Emitted Color	
5-22-CD32	GaP	Red	Color Diffused

## Package Dimensions



### Notes:

- Other dimensions are in millimeters, tolerance is 0.25mm except being specified.
- Protruded resin under flange is 1.5mm Max LED.
- Bare copper alloy is exposed at tie-bar portion after cutting.

### Absolute Maximum Rating ( $T_a=25^\circ\text{C}$ )

Parameter	Symbol	Absolute Maximum Rating	Unit
Forward Pulse Current	$I_{FPM}$	100	mA
Forward Current	$I_{FM}$	30	mA
Reverse Voltage	$V_R$	5	V
Power Dissipation	$P_D$	140	mW
Operating Temperature	$T_{opr}$	-40~+80	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-40~+100	$^\circ\text{C}$
Soldering Heat (5s)	$T_{sol}$	260	$^\circ\text{C}$

## Electro-Optical Characteristics (T<sub>a</sub>=25°C)

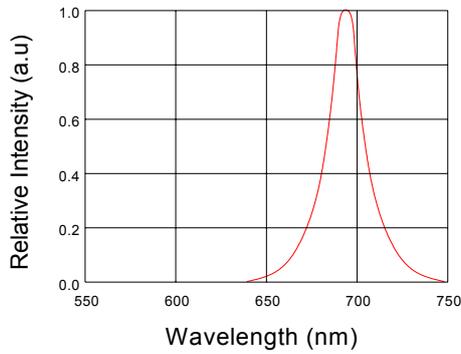
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Luminous Intensity	I <sub>v</sub>	10	20	30	mcd	IF=20mA (Note1)
<b>Viewing Angle</b>	2 θ <sub>1/2</sub>	30	40	50	Deg	(Note 2)
Peak Emission Wavelength	λ <sub>p</sub>	630	650	700	nm	IF=20mA
Spectral Line Half-Width	Δλ	15	20	25	nm	IF=20mA
Forward Voltage	V <sub>F</sub>	1.9	---	2.3	V	IF=20mA
Reverse Current	I <sub>R</sub>	---	---	10	μA	VR=5V

### Note:

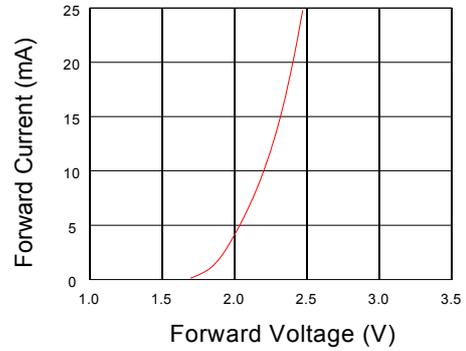
1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. θ<sub>1/2</sub> is the off-axis angle at which the luminous intensity is half the axial luminous intensity.

## Typical Electro-Optical Characteristics Curves

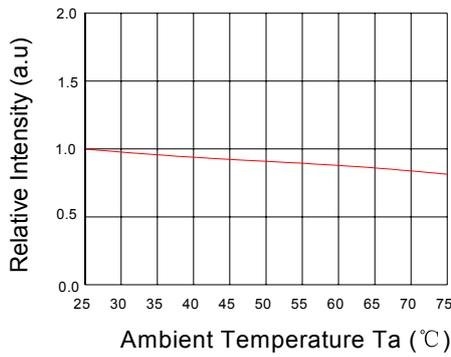
Relative Intensity VS. Wavelength



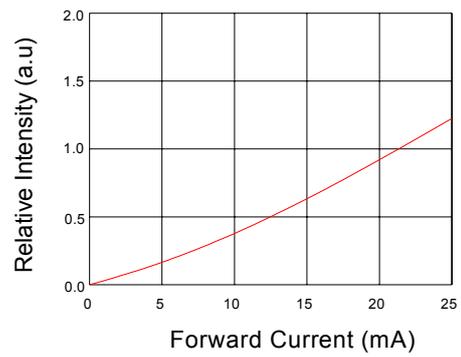
Forward Current VS. Forward Voltage



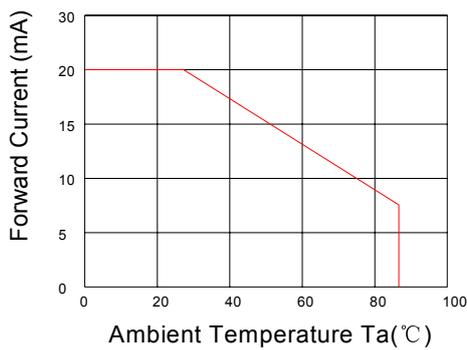
Relative Intensity VS. Ambient Temp



Forward Current VS. Relative Intensity



Forward Current VS. Ambient Temp.



Radiation Characteristics

