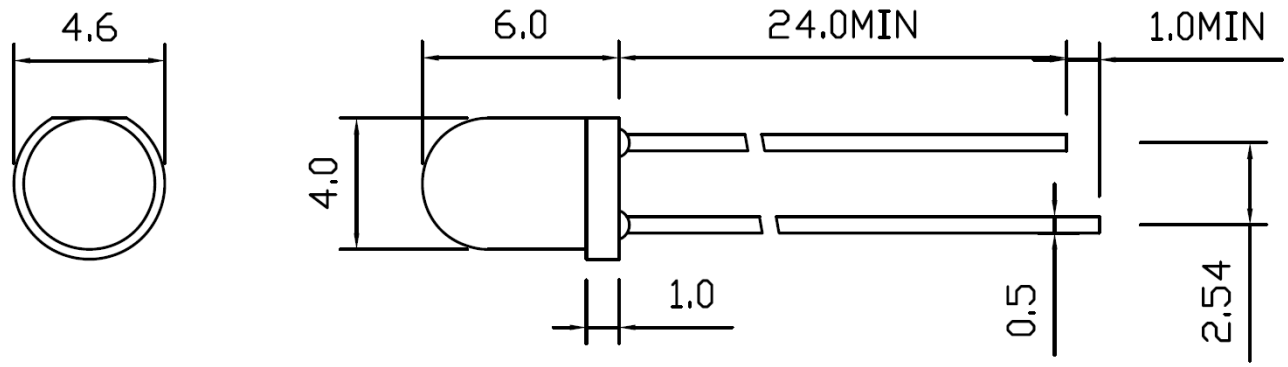
■ Features

1. Pb free.

2. The product itself will remain within RoHS compliant version.

■ Package Dimensions



Notes:

1. All dimensions are in millimeters.

2. The height of flange must be less than 1.0mm.

3. Without special declared, the tolerance is ±0.25mm.

■ Device Selection Guide

Chip Material	Emitted Color	Lens Color
InGaN	Blue	Water Clear

■ Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Maximum	Unit
Power Dissipation	Pd	102	mW
Peak Forward Current (Duty 1/10 @1KHz)	I_{FP}	100	mA
Forward Current	I_F	30	mA
Electrostatic Discharge(HBM)	ESD	2000	V
Reverse Voltage	V_R	5	V
Operating Temperature Range	Topr	-25℃ to +85℃	
Storage Temperature Range	Tstg	-40℃ to +100℃	
Lead Soldering Temperature [2.0mm from body]	Tsol	Wave Soldering : 260 ℃ for 5 sec. Hand Soldering : 350 ℃ for 3 sec.	

■ Electrical/Optical Characteristics at Ta=25℃:

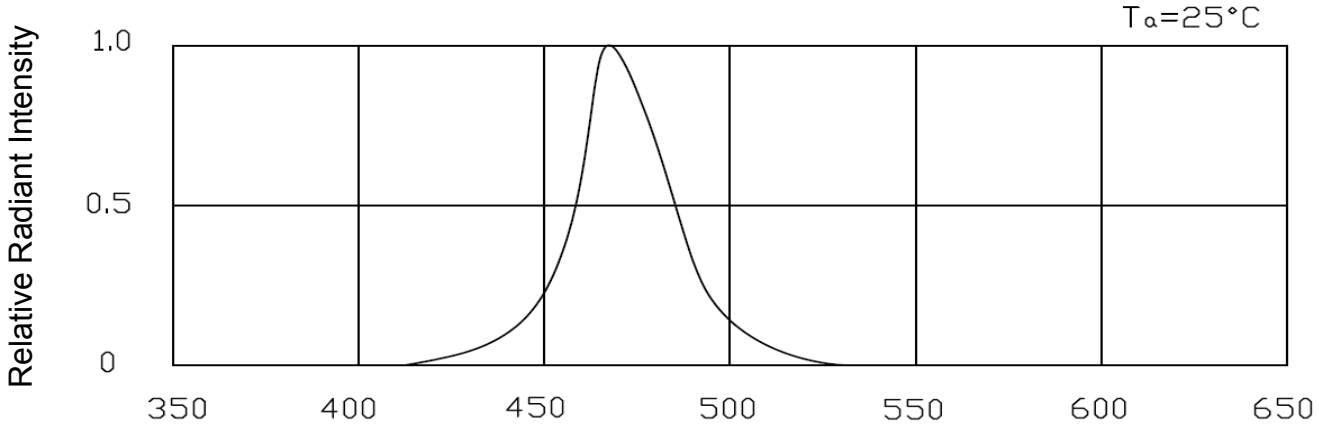
Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I_v	I_F=20mA	2000	4000	—	mcd
Dominant Wavelength	λd	I_F=20mA	460	—	475	nm
Spectral Line Half-width	△λ	I_F=20mA	—	25	—	nm
Forward Voltage	V_F	I_F=20mA	2.8	—	3.4	V
Viewing Angle	2θ1/2	I_F=20mA	—	30	—	deg
Reverse Current	I_R	V_R=5V	—	—	10	uA

Notes:

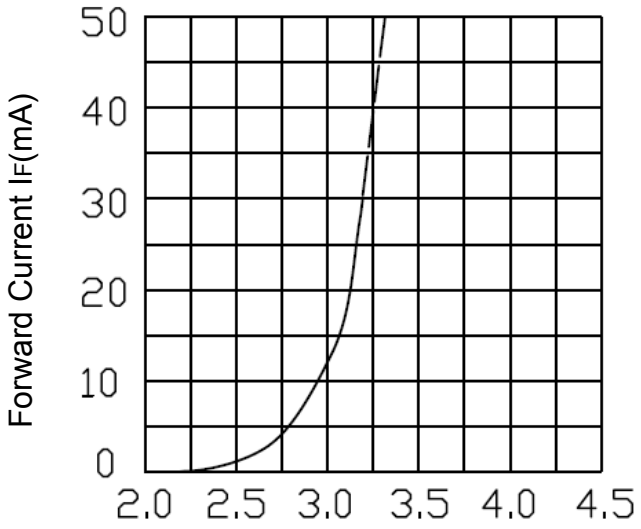
1. Tolerance of Luminous Intensity ±10%.
2. Tolerance of Forward Voltage ±0.1V.
3. Tolerance of Dominant Wavelength ±1nm.

■ Typical Electrical / Optical Characteristics Curves

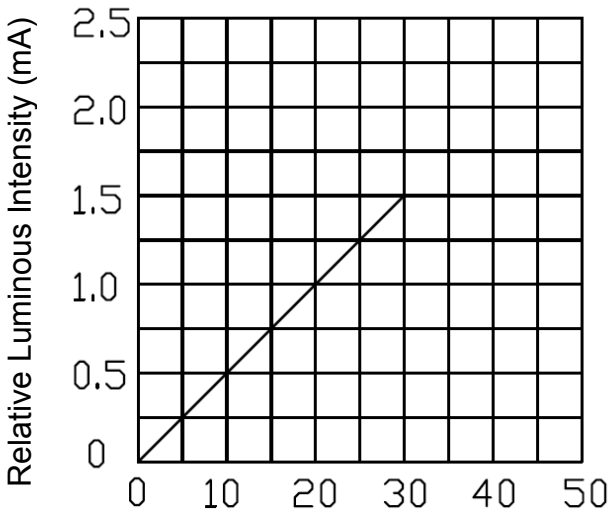
(25℃Ambient Temperature Unless Otherwise Noted)



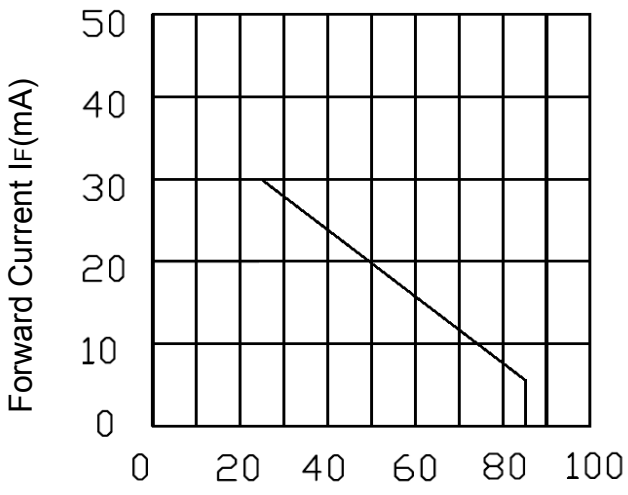
Relative Intensity Vs. Wavelength



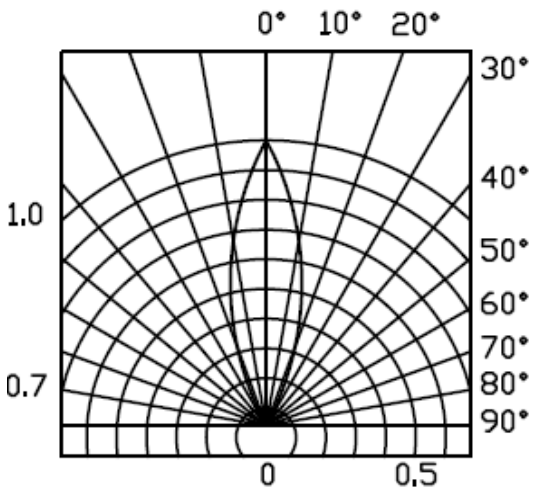
Forward Current vs. Forward Voltage



Relative Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Spatial Distribution

■ Precautions

1. Storage
   - Recommend storage environment:
     Temperature：5℃～30℃ (41°F～86°F) Relative Humidity：60% RH Max.
   - Product in the original sealed package is recommended to be assembled within 168 hours of opening.
   - If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.
     a. Baking treatment: 85±5℃ for 30 hours.
     b. Fold the opened bag firmly and keep in dry environment.
2. Cleaning
   - Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary and do not clean the LEDs by the ultrasonic.
3. Lead Forming and assembly
   - Lead forming must be done before soldering at normal temperature.
   - Pitch of LED leads and pitch of mounting holes need to be same.
   - Do not use the base of the lead frame as a fulcrum during forming.
   - The leads should be bent at point at least 3mm from the base of LED lens during lead forming.
   - During assembly, use minimum clinch force possible to avoid excessive mechanical stress
4. Temperature in use
   - Since the light generated inside the LED needs to be emitted to outside efficiently, a resin with high light transparency is used; therefore, additives to improve the heat resistance or moisture resistance (silica gel, etc) which are used for semiconductor products such as transistors cannot be add to the resin.
   - Consequently, the heat resistant ability of the resin used for LED is usually low; therefore, please be careful on following during use.
   - Avoid applying external force, stress, and excessive vibration to the resins and terminals at high temperature. The glass transition temperature of epoxy resin used for the LED is approximately 120-130℃.

- At a temperature exceeding this limit, the coefficient of liner expansion of the resin doubles or more compared to that at normal temperature and the resin is softened. If external force or stress is applied at that time, it may cause a wire rupture.

5. Soldering

- IR reflow is not suitable process for LED lamp product.
- Please be careful on the following at soldering.

  After soldering, avoided applying external force, stress, and excessive vibration until the Products go to cooling process (normal temperature), <Same for products with terminal leads>

  a. Soldering measurements:

  Distance between melted solder side to bottom of resin shall be 3mm of longer.

  b. Dip soldering:

  Pre-heat: 100℃ max. (Backside of PCB), Within 60 seconds.

  Solder wave: 260±5℃ (Solder temperature), Within 5 seconds.

  No more than one wave soldering pass.

  c. Soldering iron

  Hand soldering: 350℃ max. (Temperature of soldering iron tip), Within 3 seconds.

  Note: excessive soldering temperature and/or time might result in catastrophic failure of the LED.

6. Other

- Since the heat resistant ability of the LED resin is low, SMD components are used on the same PCB, please mount the LED after adhesive baking process for SMD components. In case adhesive baking is done after LED lamp insertion due to a production process reason, make sure not to apply external force, stress, and excessive vibration to the LED and follow the conditions below.
- Baking temperature: 120℃ max. Baking time: Within 60 seconds.

  If soldering is done sequentially after the adhesive baking, please perform the soldering after cooling down the LED to normal temperature.