

**PRODUCT SPECIFICATION**

C/N: 2781

5mm ROUND WHITE LED LAMP

| Approved By | Checked By | Prepared By |
|-------------|------------|-------------|
|             |            |             |

# *Light Emitting Diode*

5mm ROUND WHITE LED LAMP

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## **Features**

- ※ High intensity
- ※ Reliable and rugged
- ※ Low current requirement
- ※ IC compatible

## **Package Dimensions**

## **Description**

The white Lamps are made  
With InGaN/Sapphire chip and Water  
clear epoxy resin.

| <b>Part NO.</b> | <b>LED chip</b> |                | <b>Lens Color</b> |
|-----------------|-----------------|----------------|-------------------|
|                 | Material        | Emitting Color |                   |
| <b>2781</b>     | InGaN/Sapphire  | White          | Water clear       |

## **Notes:**

1. All dimensions in mm tolerance  $\pm 0.2$ mm unless otherwise noted.
2. An epoxy meniscus may extend about 1.5mm down the lead
3. Burr around bottom of epoxy may be 0.5mm max.

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### **Absolute Maximum Ratings(Ta=25°C)**

| Parameter   | Symbol | Rating    | Unit |
|---|--------|-----------|------|
| Power Dissipation   | PD     | 100       | mW   |
| Forward Current (DC)  | IF     | 30        | mA   |
| Peak Forward Current(Pulse width $\leq$ 0.1msec duty $\leq$ 1/10) | IFP    | 100       | mA   |
| Reverse Voltage   | VR     | 5.0       | V    |
| Electro-Static-Discharge  | ESD    | 1000      | V    |
| Operation Temperature Range                                       | Topr   | -25to+85  | °C   |
| Storage Temperature Range   | Tstg   | -40to+100 | °C   |
| Lead Soldering Temperature(3.0mm from body) for 5 seconds         |        | 260       | °C   |

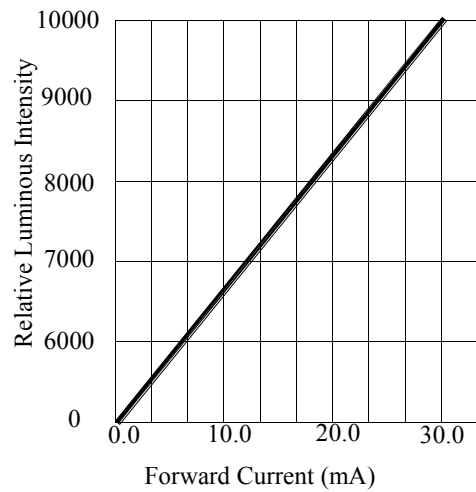
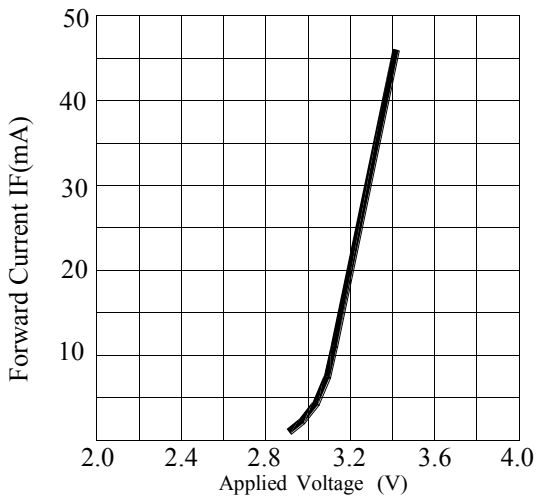
### **Typical Electrical and Optical Characteristics(Ta=25°C)**

| Parameter                    | Symbol         | Condition | Min. | Typ. | Max.  | Unit |
|------------------------------|----------------|-----------|------|------|-------|------|
| Luminous Intensity           | Iv             | If=20mA   | 7000 |      | 10000 | mcd  |
| Forward Voltage              | Vf             | If=20mA   | 2.8  | 3.2  | 3.6   | v    |
| CIE Chromaticity Coordinates | X              | If=20mA   | 0.32 |      | 0.36  |      |
|                              | Y              | If=20mA   | 0.34 |      | 0.39  |      |
| Reverse Current              | Ir             | Vr=5v     |      |      | 10    | uA   |
| Viewing Angle                | 2 $\theta$ 1/2 | If=20mA   |      | 60   |       | deg  |

# Light Emitting Diode

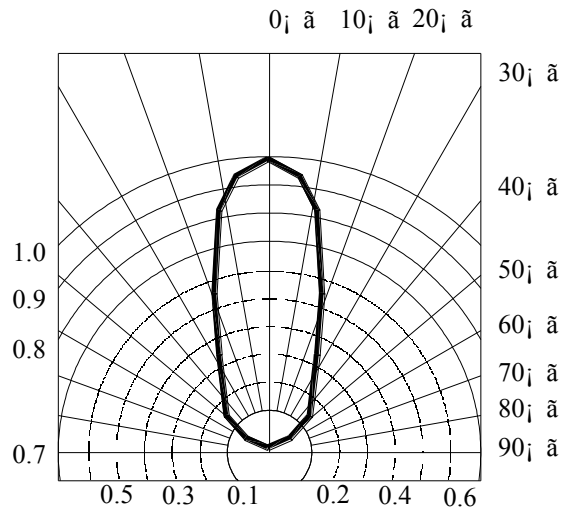
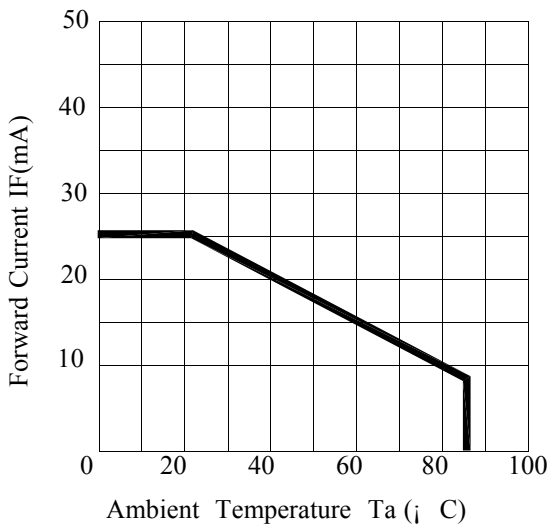
5.0mm ROUND WHITE LED LAMP

## Typical Electrical / Optical Characteristics Curves



**FORWARD CURRENT VS. APPLIED VOLTAGE**

**FORWARD CURRENT VS. LUMINOUS INTENSITY**



**AMBIENT TEMPERATURE VS. FORWARD CURRENT**

**RADIATION DIAGRAM**

## *Light Emitting Diode*

Please read the following notes before using the datasheets:

一、 If you need pin to be bent because of design:

- 1、 The lead frame can only be bent or cut when it is 3mm or above away from the colloid.
- 2、 The molding of material if needed must be finished before soldering, while molding the PIN is not allowed to be the fulcrum and must be finished by professional with fixture;
- 3、 Lead frame molding must guarantee that the space between lead is same as Circuitry Board
- 4、 High voltage static electricity could be produced while molding the Pin because of vibration friction of machine, so the machine must be reliably grounding (By way of blowing ion fan to eliminate static electricity)

二、 Soldering Condition :

- 1、 Do not conduct the electricity while soldering the LED
- 2、 Do not forces while the lead are in the heating condition.
- 3、 Max. soldering condition:

Manual soldering :

Wave soldering

Max. Power of iron: 30 W

Highest Warm up temperature : 120°C

Highest Temperature: 300 °C

Highest Dip soldering temperature 260 °C

Longest Soldering time: 3 seconds

Longest Dip soldering time: 5 seconds

Soldering position:

Dip soldering position:

3mm above from the colloid base

3mm above from the colloid base.

三、 Anti-static notice :

- 1、 All the LED instrument must be grounding
- 2、 All the people, who are possible to touch the LED must wear anti-static wrists and gloves.
- 3、 Any LED damaged by static will appear some bad characters, such as , leakage current increase, Static forward voltage decrease.

四、 Over current protection :

- 1、 Add protective resistor in series to make it work stable.
- 2、 Resistor value formula:  $R = (VCC - V_F) / I_F$  ( VCC is power supply voltage, V<sub>F</sub> is LED drive voltage, I<sub>F</sub> is forward current. )

五、 Electrical performance test and application :

- 1、 While testing V<sub>F</sub>, brightness and wavelength, the current must be set with 20mA; test V<sub>R</sub>, I<sub>R</sub> must be set with 10uA; Test I<sub>R</sub>, V<sub>R</sub> must be set with 5V.
- 2、 Whiling testing and using LED, LED must be provided with the same current and tested by constant current source, and then we can make sure the brightness and consistency of other characteristics
- 3、 LED used under the environment temperature between -30 °C ~ + 60 °C
- 4、 When the products are well sorted, please do not use it to the same products with different classes or bag Numbers (Marked in the label), so as to avoid the color and brightness difference. If it is necessary to use with mix bags, please use strictly according to the sequence of bag number. (Not recommended to use like this)