中 山 市 利 光 电 子 有 限 公 司

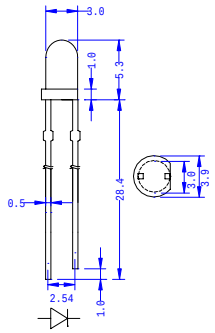
ZHONGSHAN LIGUANG ELECTRON CO., LTD

Specification for Approval **Model No.: LG-3G4HD**

■ Features:

- High intensity
- Standard T-1 3/4 diameter package
- General purpose leads
- Reliable and rugged

■ Outline Dimension



Notes: 1.All dimensions are in millimetres

2. An epoxy meniscus may extend about 1.5mm(0.059") down to the lead.

3. Tolerances unless Dimension ±0.25mm.

■ Descriptions :

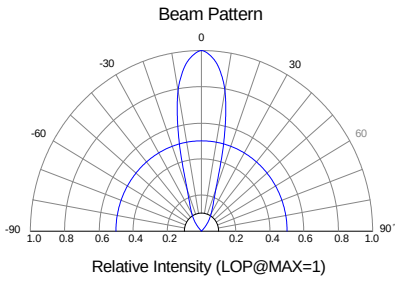
- The series is specially designed for applications requiring higher brightness
- The led lamps are available with different colors, intensitie epoxy colors,etc.

■ Absolute Maximum Rating (Ta=25℃)

Item	Symbol	Value	Unit
DC Forward Current	I_F	50	mA
Pulse Forward Current	I_{FP}	150	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	120	mW
Operating Temperature	Topr	-30 ~ +80	℃
Storage Temperature	Tstg	-40 ~ +100	℃
Sold Soldering Temperature	Tsol	260℃/3sec	-

*Pluse width Max. 10ms, duty ratio max 1/10.

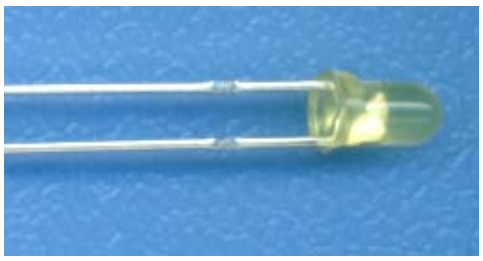
▌Directivity



■ Initial Electrical /Optical Characteristics (Ta=25℃)

Item	Symbol	Condition	Min	Typ	Max	Unit
DC Forward Voltage	V_F	IF=20mA	-	2.0	2.3	V
DC Reverse Current	I_R	VR=5V	-	-	10	μA
Domi. Wavelength	WD	IF=20mA	-	585	-	nm
Spectrum Radiation Bandwidth	△λ	IF=20mA	-	23	-	nm
Luminous Intensity	Iv	IF=20mA	500	600	-	mcd
50% Power Angle	2θ1/2	IF=20mA	-	60	-	deg

Iv Tolerance +/- 15%.



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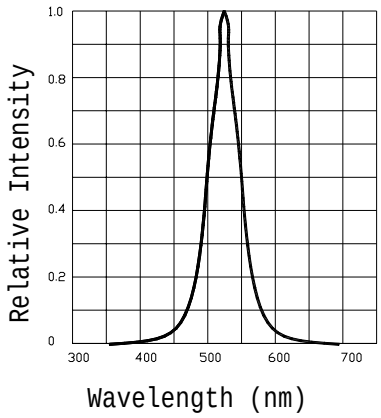
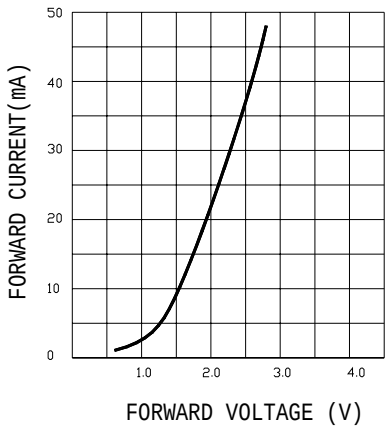
■ Typical Electro-Optical Characteristics Curves

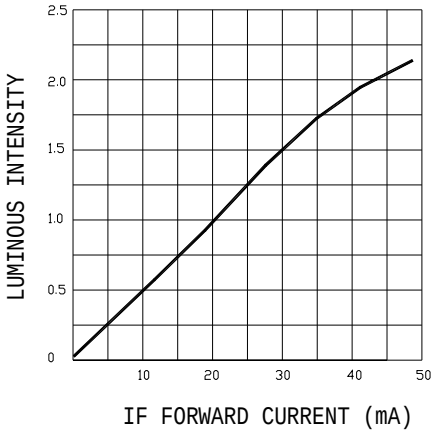
Luminous Spectrum (Ta=25℃)



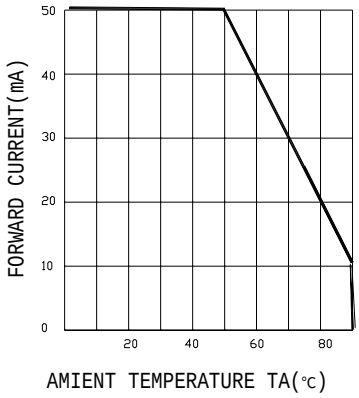
● **Forward Current Vs. Forward Voltage**



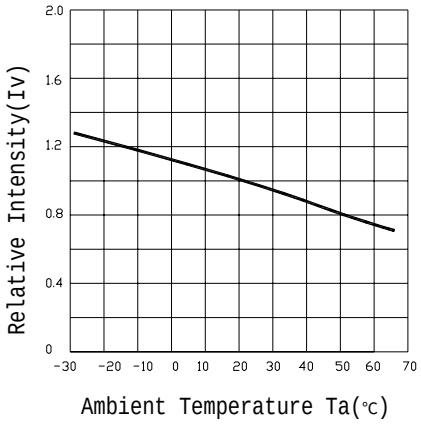
● **Relative Luminous Intensity Vs. Forward Current**



● **Forward Current Derating Curve**



● **Relative Intensity Vs. Ambient Temperature**



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■ Cautions

● **Lead Forming**

- When forming leads, the leads should be bent at a point at least 3mm from the base of the epoxy bulb. Do not use the base of the leadframe as a fulcrum during lead forming.
- Lead forming should be done before soldering.

● **Soldering conditions**

- Solder the LEDs no closer than 3mm from the base of the epoxy bulb. Soldering the LEDs beyone the tie-bar is recommended.
- Maximum Allowable Soldering Conditions

Soldering	Soldering Dipping
Soldering Iron: 30W Max Temperature: 300℃ Max Soldering Time: 3 seconds Max Position: NO Closer than 3mm from the base of the epoxy bulb.	Pre-Heat: 100℃ Max Pre-Heat Time: 60 Seconds Max Solder Bath Temperature: 260℃ Max Dipping Time: 5 Seconds Max Dipping Position: No lower than 3mm from the epoxy bulb.

- Do not apply any stress to the lead particularly when heated.

● **Static Electricity**

- Static Electricity and surge damage the LEDs. It is recommended to use a wrist band or anti-electrostatic glove when Handling the LEDs. All devices, equipment and machinery must be properly grounded.
- When inspecting own final products on which LEDs were mounted, it is recommended to check also whether the mounted LEDs are damaged by static electricity or not. It is easy to find static-damaged LEDs by light emission test at lower current(below 1mA is recommended). Damaged LEDs will show some unusual characteristics such as leak current remarkably Increases, stating forward voltage becomes lower, or the LEDs get unlighted at the low current.

● **Preventing Over Current**

In order to operate LED in stable condition, Please put protective resistors in series.
Resistor value can be determined by the formula.

$$R = \frac{Vs - Vf}{If}$$

Where Vs=Source voltage
Vf = forward voltage of LED
If=recommended current of LED (10~20mA)

● **Brightness**

- For the purpose of obtaining brightness LEDs shall be kept at the same current.
- It is useful for uniform brightness if you use larger source voltage and protective resistor.

■ 注意事项

● 弯脚

. 当将产品弯成各种形状时，弯曲点应在距离胶体底端至少 3mm 以上。在弯曲时，不要用支架做为弯曲的支点。

. 所有支架 PIN 脚的弯曲必须在焊锡前进行。

. 当固定 LED 在 PCB 板上时，线路板上的孔应完全和 LED 的 PIN 脚相对应。如果用外为强加在 LED PIN 脚上安装，它将导致 LED 所用环氧树脂恶化，降低 LED 的使用寿命。

● 焊接条件

. 焊接 LED 时距离胶体下端不要低于 3mm，推荐的做法是刚好超过 LED 支架上巴。

. 最大允许焊接条件

手动焊接	波峰焊
铬铁功率: 最大 30W 温度: 最大 300℃ 焊接时间: 最大 3 秒 位置: 距离胶体下端 3mm 以上	预热温度: 最大 100℃ 预热时间: 最长 60 秒 基本温度:计最大 260℃ 浸焊时间: 最大 5 秒 浸焊位置: 距离胶体下端 3mm 以上

. 当加热时不要用任何的压迫力到支架上。

● 防静电措施

. 静电和浪涌（电压）对 LED 的损害很大。推荐的做法是接触 LEDs 时必须戴静电手腕或防静电手套。所有装置，包括仪器和设备都必须有适当的接地。

. 当检查我们已被安装好的产品时，推荐的做法是也检查是否被安装的 LED 被静电损害。在小电流(推荐的是小于 1mA)下点亮测试，它是容易被发现的，被损害的 LED 会显示一些不寻常的特性，如漏电流明显地增加，静态顺向电压降低，或者 LED 在低电流时不发光。

● 过流保护

为了使 LED 工作稳定需串联保护电阻。
电阻计算公式如下：

$$R=\frac{Vs-Vf}{If}$$

注：Vs 为电源电压
Vf 为 LED 驱动电压
If 为顺向电流(10~20mA)

● 亮度

为了获得相同亮度，每一个 LED 须提供相同的电流。
用大的电源统一亮度时，一定要用保护电阻。