**XL-DZ304SYGD/4** **技术数据表 Technical Data Sheet**

## F3MM 绿发普绿四孔灯座



模型图仅供参考

### 特点（characteristic）：

* 外观尺寸:20.3*10.7*4.5mm
Appearance dimension : 20.3*10.7*4.5mm
* 发光颜色及胶体: 绿色/绿色胶体
Luminous color and colloid: Green Light /Green colloid
* 环保产品，符合ROHS要求
Environmental protection products meet ROHS requirements
* 湿气敏感性等级（MSL）:2级
Moisture sensitivity level（MSL） : 2 levels
* EIA规范标准包装
EIA standard packaging
* 使用寿命长
Long operating life
* 降低维护成本
Reduced maintenance costs
* 高能效、启动快
High energy efficiency, fast startup

### 应用领域（product application）

* 物联网
Internet of Things
* 医疗
medical treatment
* 转换器
converter
* 存储服务器和通信
Storage servers and communication
* 状态指示器
Status indicator
* 电子测试仪器
Electronic testing instruments






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# 电性参数

## Electrical Characteristics

### 极限参数（Absolute Maximum Ratings）（Ta=25℃）

| 项目参数 Parameter | 符号 Symbol | 数值 Value | 单位Unit |
|---|---|---|---|
| 最大功耗（Max Power Dissipation） | PD | 200 | mW |
| 最大正向电流（Max Continuous Forward Current） | IF | 20*4=80 | mA |
| 最大脉冲峰值电流（Peak Forward Current） | IFP | 80*4=320 | mA |
| 最大反向电压（Max Reverse Voltage） | VR | 5 | V |
| 抗静电能力（Antistatic ability ） | ESD | 2000 | V |
| 工作环境（Operating Temperature Range） | TOPR | -40℃～+85℃ | ℃ |
| 储存温度（Storage Temperature Range） | TSTR | -40℃～+85℃ | ℃ |
| 焊接温度/时间（Lead Soldering Temperature/Time） | TSOL | 260℃≤6S | ℃/S |

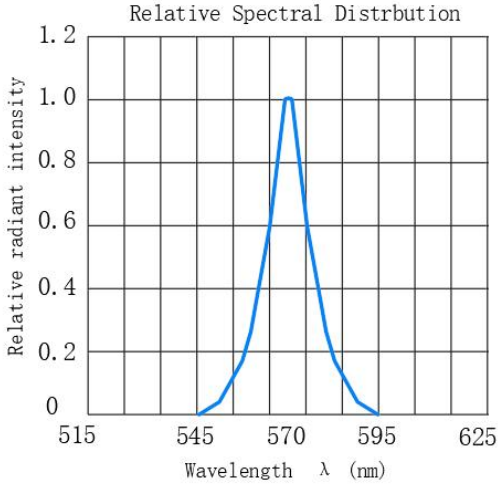
### 光电参数（Initial Electrical Optical Characteristics）（Ta=25℃）

| 项目参数 Parameter | 符号 Symbol | 最小值 Min. | 一般值 Typ. | 最大值 Max. | 单位 Unit | 测试条件 Test conditions |
|---|---|---|---|---|---|---|
| 发光强度（Luminous Intensity） | Iv | 50 | / | 300 | mcd | IF=20mA |
| 主波长（Dominant Wave Length） | λd | 560 | / | 575 | nm | IF=20mA |
| 峰值波长（Peak Wave Length） | λp | / | 570 | / | nm | IF=20mA |
| 正向电压（Forward Voltage） | VF | 1.8 | / | 2.4 | V | IF=20mA |
| 半波宽 Half wave width | Δλ | / | 20 | / | nm | IF=20mA |
| 发光角度（Viewing Angle） | 2Ø1/2 | / | 45° | / | deg | IF=20mA |
| 反向电流（Reverse Current） | IR | / | / | ≤5 | μA | VR=5V |

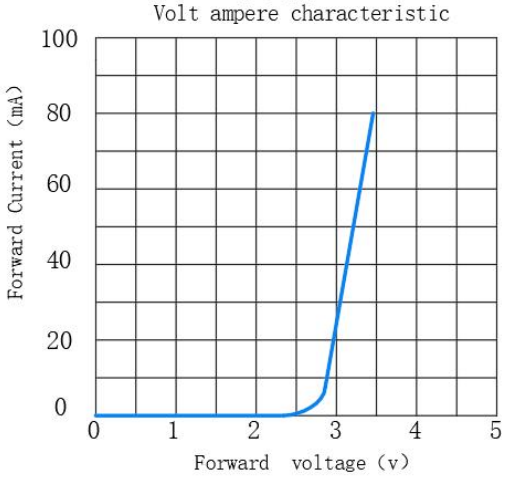
# 典型特性曲线

## Typical Characteristics Curves

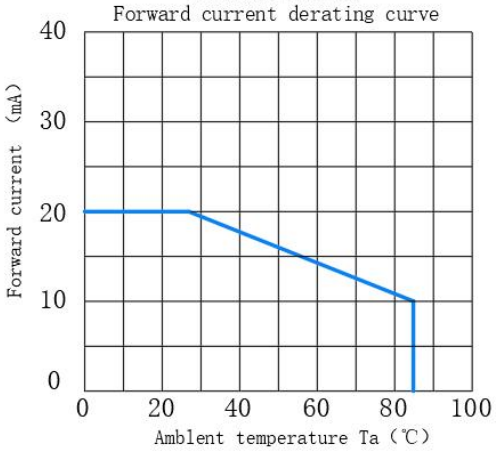
光谱分布曲线
Relative Spectral Distrbution



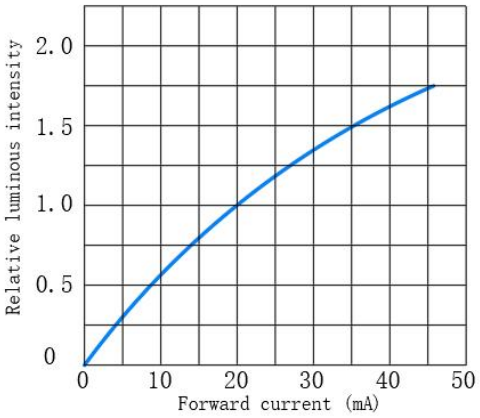

伏安特性
Volt ampere characteristic



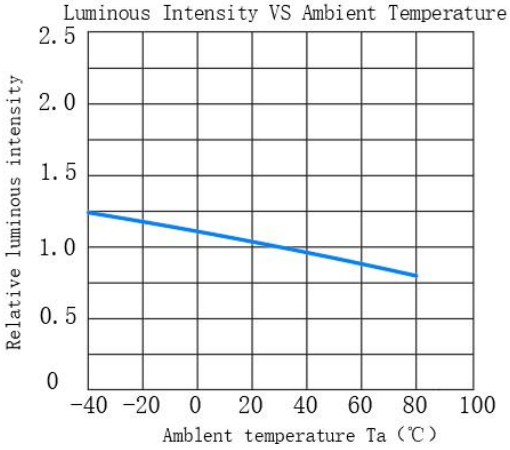

正向电流降额曲线
Forward current derating curve



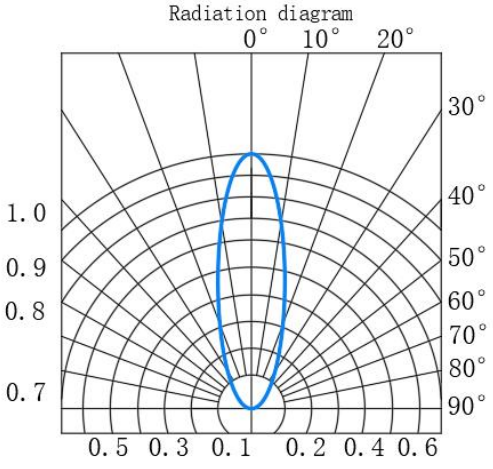

相对光强与正向电流特性
Relative Luminous VS Forward Current




光强与环境温度曲线
Luminous Intensity VS Ambient Temperature




相对辐射强度与空间角度关系
Radiation diagram




注: 如无另外注明，测试环境温度为 25 + 5 °C./Note: If not otherwise indicated, the test environment temperature is 25 + 5 °C.

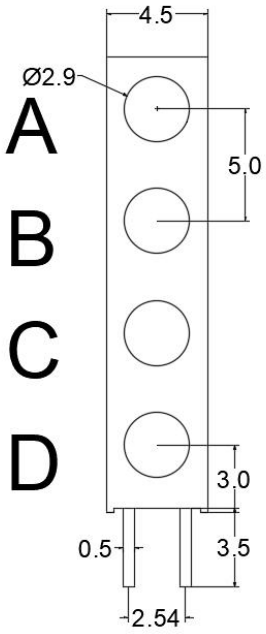
## 可靠性试验

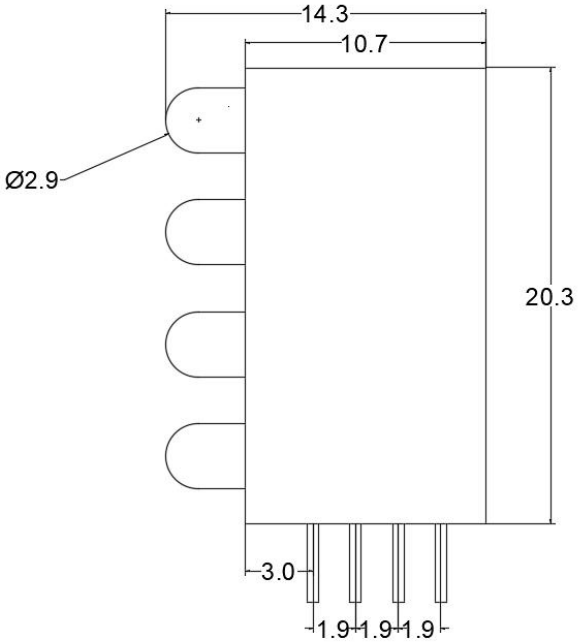
**Reliability Test Items And Conditions**

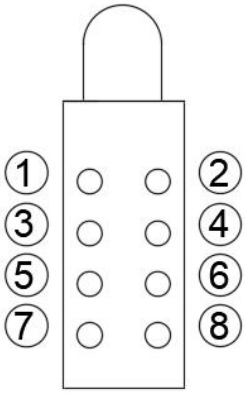
| 类别 Class | 测试项目 Test item | 测试环境 Testing environment | 测试时间 Testing time | 数量 Qty | 失效数量 Fail qty |
|---|---|---|---|---|---|
| 耐久性测试 Endurance test | 工作寿命 Working life | Ta=25℃±5℃,IF=20mA | 1000hrs | 22 PCS | 0/1 |
| | 高温高湿实验 High temperature and high humidity experiment | Ta= 85±5℃, RH= 85～90% | 1000hrs | 22 PCS | 0/1 |
| | 高温储存 High-temperature storage | 环境温度Ta= 85±5℃ | 1000hrs | 22 PCS | 0/1 |
| | 低温储存 Low temperature storage | 环境温度Ta= -40±5℃ | 1000hrs | 22 PCS | 0/1 |
| 环境测试 Environmental testing | 冷热循环 Cold and hot cycle | 100℃±5℃ ～ -40℃±5℃<br>30mins 5mins 30mins | 100 Circles | 22 PCS | 0/1 |
| | 冷热冲击 Hot and cold impact | 105℃±5℃ ～ -45℃±5℃<br>5mins 5mins | 100 Circles | 22 PCS | 0/1 |
| 机械测试 Mechanical Test | 耐焊接实验 Resistance to Soldering Heat | 焊锡温度T.sol= 250 ± 5℃ | 2times | 22 PCS | 0/1 |
| | 引脚折弯实验 Lead Integrity | Load 2.5N(0.25kgf)<br>0° ~ 90° ~0° | 3times | 22 PCS | 0/1 |

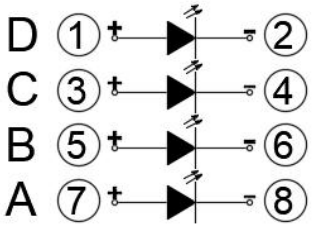
# 外形尺寸

**Outline Dimension**

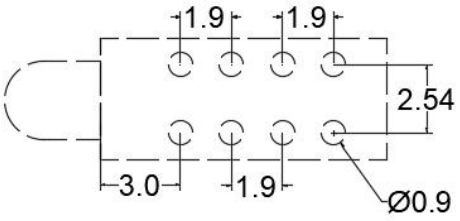



极性
Polarity




建议焊盘尺寸
Recommended Soldering Pattern

备注(Note)：

1. 标注尺寸单位为毫米
Dimensions are in millimeters.
2. 除特别标注外，所有尺寸允许公差± 0.25㎜ .
Tolerances unless mentioned are ± 0.25mm.

# 包装

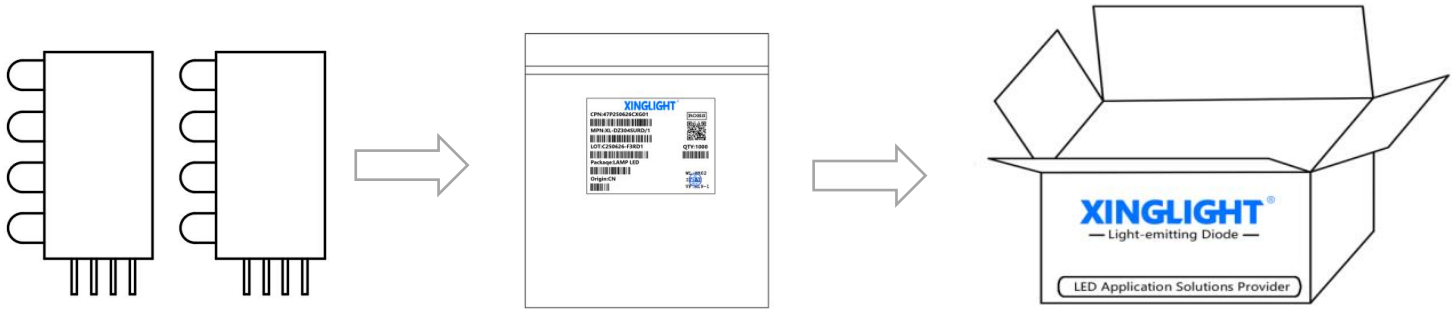
**Packaging**

*袋装

In Bags

*防潮抗静电包装

Moisture Proof and Anti-Electrostatic Foil Bag




## ◇ 标签说明 Label Expantion

CPN：批号/档位　　LOT：日期/封装颜色

MPN：型号　　VF：电压代码

WL：波长代码　　IV：亮度代码

ORIGIN：产地　　QTY：数量

PACKAQE：封装



# 使用注意事项（1）

## Precautions (1)

### 1、贮存：

**Storage**

＊ 贮存LED的环境，温度不超过30℃，相对湿度不超过70%。 建议LED在原包装箱里日期不超过三个月 进行使用，如果需加长贮存时间，建议放在干燥箱内，并加放干燥剂， 或者充入氮气。

Storage environment of LED with temperature not exceeding 30℃ and relative humidity not exceeding 70%.It is recommended that LDE be used in the original box for no more than three months. If longer storage time is required, put it in the drying box and add desiccant or filled with nitrogen.

### 2、静电：

**Static Electricity**

＊ 静电和电涌会导致产品特性发生改变，例如正向电压降低等，如果情况严重甚至会损毁产品。所以在使用时必须采取有效的防静电措施。

所有相关的设备和机器都应该正确接地，同时必须采取其他防止静电和电涌的措施。使用防静电手环，防静电垫子，防静电工作服、工作鞋、手套，防静电容器，都是有效的防止静电和电涌的措施；严禁使用普通塑料制品。建议在作业过程中，使用离子风扇来压制静电的产生。距离LED元件1英尺距离的环境范围内静电场电压小于100V

＊ Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristic such as the forward voltage becomes lower, or the LEDs do not light at the low current. even not light.

All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.Using ordinary plastic products are strictly prohibited.It is recommended to use ion fans to suppress the static electricity generation during the operation.The static field voltage is less than 100V within the ambient range of 1 foot distance from the LED element.

# 使用注意事项（2）

# Precautions (2)

**3、设计建议：**

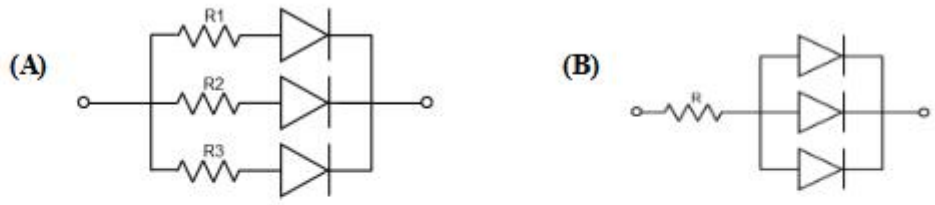
**Design Consideration**

＊ 设计电路时，通过 LED 的电流不能超过规定的最大值，同时，还需使用保护电阻，否则，微小的电压变 化将会引起较大的电流变化，可能导致产品损毁。

建议使用以下（A）电路，该电路能够很好的调节通过每个 LED 的电流； 不推荐使用（B）电路，该电路 在持续的电压驱动下，LED 的正向电压（$V_F$ ）发生变化，电流会随之而发生变化，可能使某些 LED 承受高于规定的电流值。

＊ In designing a circuit, the current through each LED must not exceed the absolute maximum rating specified for each LED. In the meanwhile, resistors for protection should be applied, otherwise slight voltage shift will cause big current change, burn out may happen.

It is recommended to use Circuit A which regulates the current flowing through each LED rather than Circuit B. When driving LEDs with a constant voltage in Circuit B, the current through the LEDs may vary due to the variation in Forward Voltage ($V_F$) of the LEDs. In the worst case, some LED may be subjected to stresses in excess of the Absolute Maximum Rating.




光电参数公差：

正向电压REF / VF： ±0.1V
亮度CAT / IV： ±15%
波长HUE / WLD： ±1nm

＊ LED 的特性容易因为自身的发热和环境的温度的改变而发生改变。温度的升高会降低 LED 的发光效率、影响发光颜色等，所以在设计时应充分考虑散热的问题。

＊Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color changed and so on. Please consider the heat generation of the LEDs when making the system design.

# 使用注意事项（3）

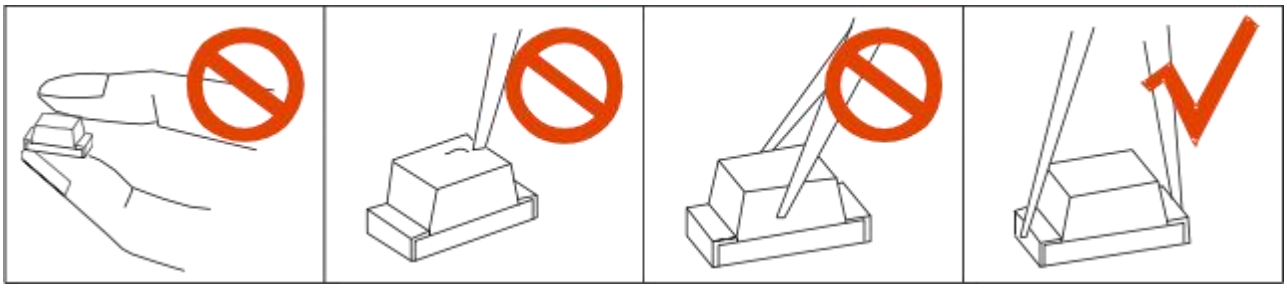
# Precautions (3)

**4、其他事项：**

**Others：**

*直接用手拿取产品不但会污染封装树脂表面，也可能由于静电等因素导致产品性能的改变。过度的压力也可能直接影响封装内部的管芯和金线，因此请勿对产品施加过度压力，特别当产品处于高温状态下，例如在回　　流焊接过程中。

*When handling the product, touching the encapsulant with bare hands will not only contaminate its surface, but also affect on its optical characteristics. Excessive force to the encapsulant might result in catastrophic failure of the LEDs due to die breakage or wire deformation. For this reason, please do not put excessive stress on LEDs, especially when the LEDs are heated such as during Reflow Soldering.



*LED 的环氧树脂封装部分相当脆弱，请勿用坚硬、尖锐的物体刮、擦封装树脂部分。在用镊子夹取的时候也应当小心注意。

*The epoxy resin of encapsulant is fragile, so please avoid scratch or friction over the epoxy resin surface. While handling the product with tweezers, do not hold by the epoxy resin, be careful.

**5、眼睛保护忠告：**

**Safety Advice For Human Eyes**

*LED 发光时，请勿直视发光光源，特别是对于一些光强较高的 LED，强光可能伤害你的眼睛。

*Viewing direct to the light emitting center of the LEDs, especially those of great Luminous Intensity, will cause great hazard to human eyes. Please be careful.