



ZHONGSHAN GOLDEN SUN OPTO-ELECTRONIC TECH.CO.,LTD.

Merchandise Spec

Customer: _____

Part Number: LED 3535 Series

date: _____

Sample number : _____

Approved Signatures (Client)		
Engineering	Examine	Sanction

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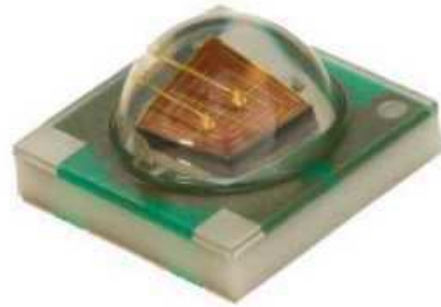
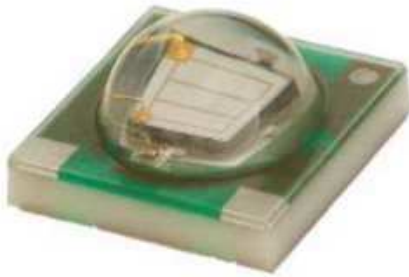
Web Site: <http://www.zsgoldensun.com>



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- . One of the best Lm/W, Lm/\$ in High-Power LED (高光效、高性价比)
- . HIGH-POWER CERAMIC PACKAGING LED – 3535 SERIES (LED-3535 单色光系列)



Product Brief (产品简介)

FEATURES AND BENEFITS (特性优点)

- . HIGH LUMEN OUTPUT AND EFFICACY (高流明和高光效)
- . DESIGNED FOR HIGH CURRENT OPERATION (高电流使用)
- . LOW THERMAL RESISTANCE (低热阻)
- . Pb-FREE REFLOW SOLDERING APPLICATION (适用无铅回流焊)

KEY APPLICATIONS (应用)

- INDOOR LIGHTING (室内照明)
- OUTDOOR LIGHTING (户外照明)
- AUTOMOTIVE (汽车应用)
- ARCHITECTURAL LIGHTING (建筑照明)
- INDUSTRIAL LIGHTING (HIGH/LOW BAY) (工业照明)
- PORTABLE TORCH (便携式手电筒)
- HOME APPLIANCE (家用电器)

产品特征

- 尺寸(mm): 3.45×3.45×1.95
- 半角±120
- 高可靠性
- 无铅回流焊
- 符合RoHS
- 包装每卷1000pcs

Features

- Size(mm): 3.45×3.45×1.95
- Half angle:±120 deg
- High reliability
- Pb-free reflow soldering application
- RoHS compliant
- Package:1000pcs/reel



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极限参数(温度=25°C) Absolute Maximum Ratings (Ta = 25°C)

参数名称 Parameter	符号 Symbol	极限参数 Absolute Maximum Rating	单位 Unit
正向电流 Forward Current	I_F	500(Green/Amber) 700(Royal Blue/Blue/Red/Crimson/IR)	mA
反向电压 Reverse Voltage	VR	5	V
工作温度 Operating Temperature	T_{OPR}	-40 ~ +85	°C
贮存温度 Storage Temperature	T_{stg}	-40 ~ +100	°C
功耗 Power Dissipation	P_D	1-2	W
静电放电(人体模式) Electrostatic Discharge (HBM)	ESD	2000	V

光电参数 (温度=25°C) Typical Electrical & Optical Characteristics (Ta = 25°C)

颜色 Color	产品名称 Part number	主波长/峰值波长 Dominant Wavelength or Peak Wavelength(nm)	测试电流 Forward Current	正向电压 Forward Voltage (V)			光通量/辐射功率 Luminous Flux (lm) or Radiometric Power (mW)		
				Min.	Max.	Typ.	Min.	Max.	Typ.
品蓝色 Royal Blue	JYQ35E42*****	445-450nm	IF=350mA	3.0	3.6	3.2	40Lm	---	50Lm
蓝色 Blue	JYQ35E42*****	450-480nm	IF=350mA	3.0	3.6	3.2	40Lm	---	50Lm
绿色 Green	JYQ35E42*****	510-530nm	IF=350mA	3.0	---	3.4	80Lm	---	100Lm
黄色 Yellow	JYQ35E42*****	580-600nm	IF=350mA	2.0	---	2.2	35Lm	---	50Lm
红色 Red	JYQ35E42*****	610-630nm	IF=350mA	2.0	---	2.2	45Lm	---	60Lm
深红色 Crimson	JYQ35E42*****	650-680nm	IF=350mA	2.0	---	2.2	224mW	---	310mW
红外 IR	JYQ35E42*****	725-745nm	IF=350mA	1.8	---	2	224mW	---	310mW

备注 note

- 光通量/光功率测量公差 : ±10% Tolerance of measurement of Luminous Flux or Radiometric Power : ±10%.
- 波长测量公差 : ±2nm Tolerance of measurement of wavelength: ±2nm.
- 正向电压测量公差 : ±0.05V Tolerance of measurement of forward voltage±0.05V.
- 以上参数仅供参考,请以实物标签为准 All the datas are just for reference, specific parameters please refer to the label.



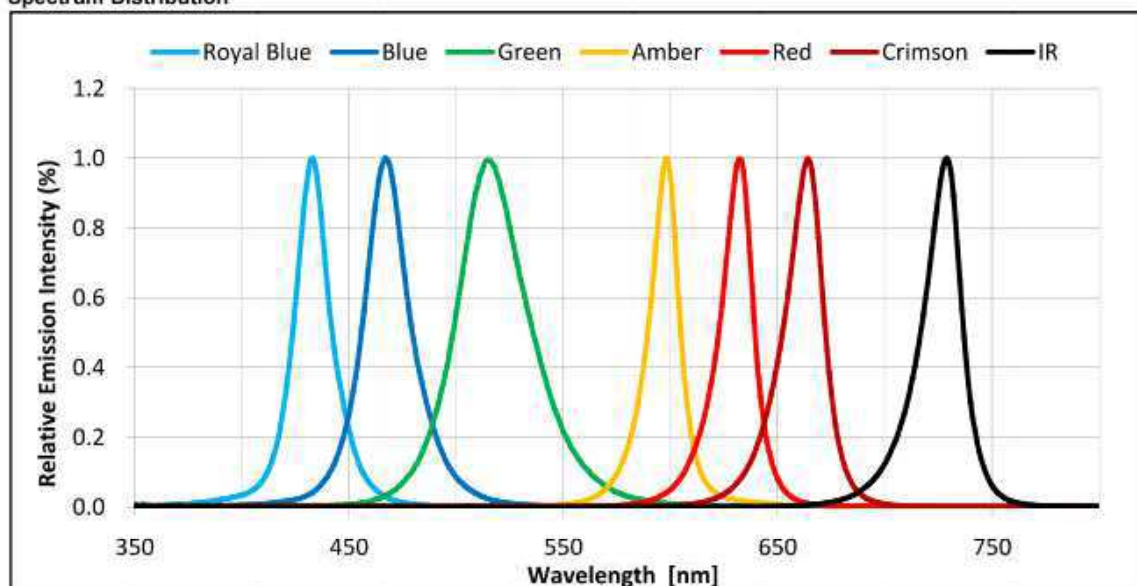
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典型特性曲线 Typical Characteristics Curves

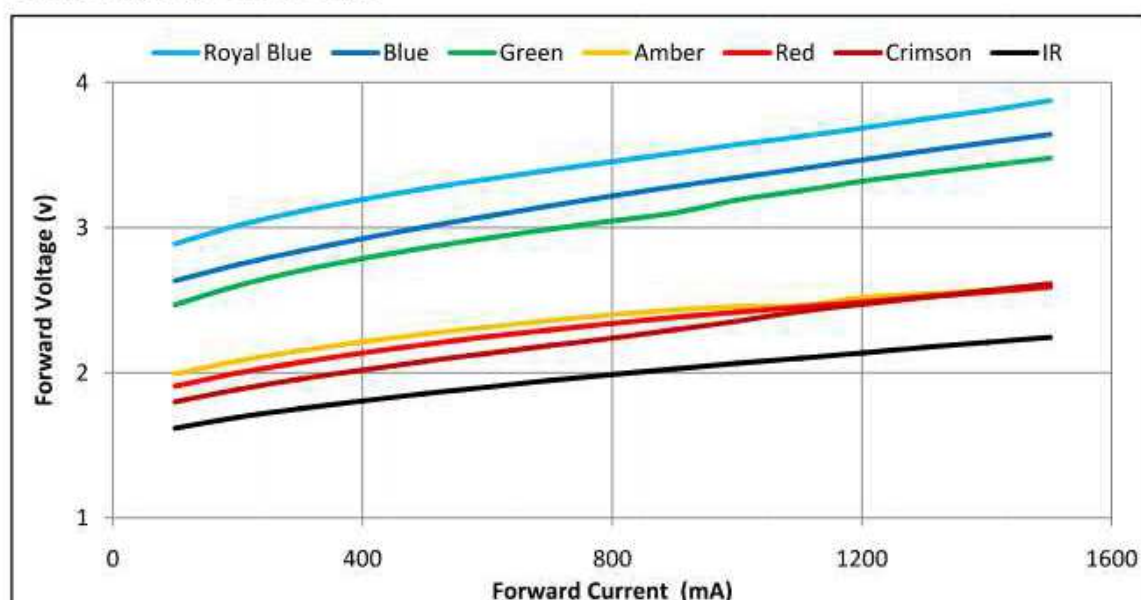
光谱分布特性曲线

Spectrum Distribution



伏安特性曲线

Forward Voltage Vs. Forward Current

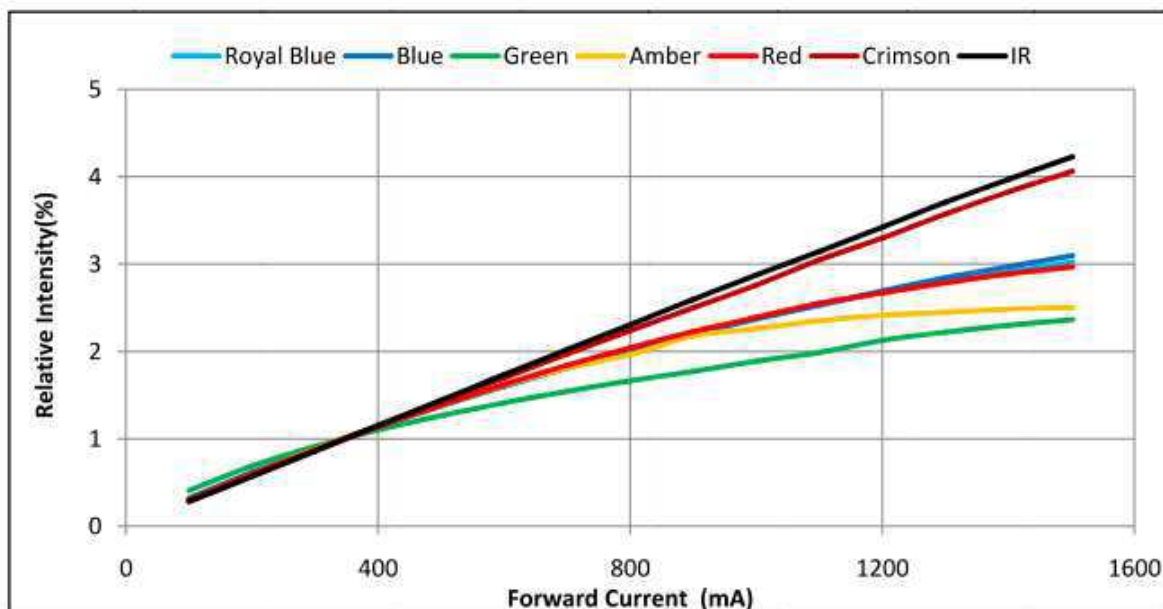




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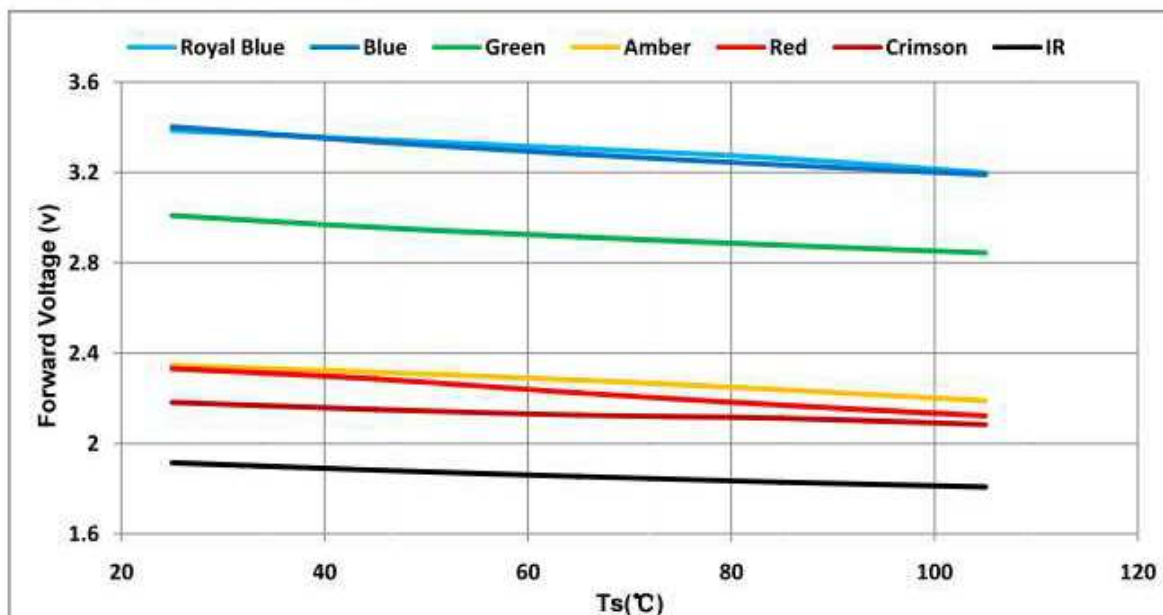
正向电流与相对光强特性曲线

Forward Current Vs. Relative Intensity



焊盘温度与电压特性曲线

Solder Temperature Vs. Forward Voltage

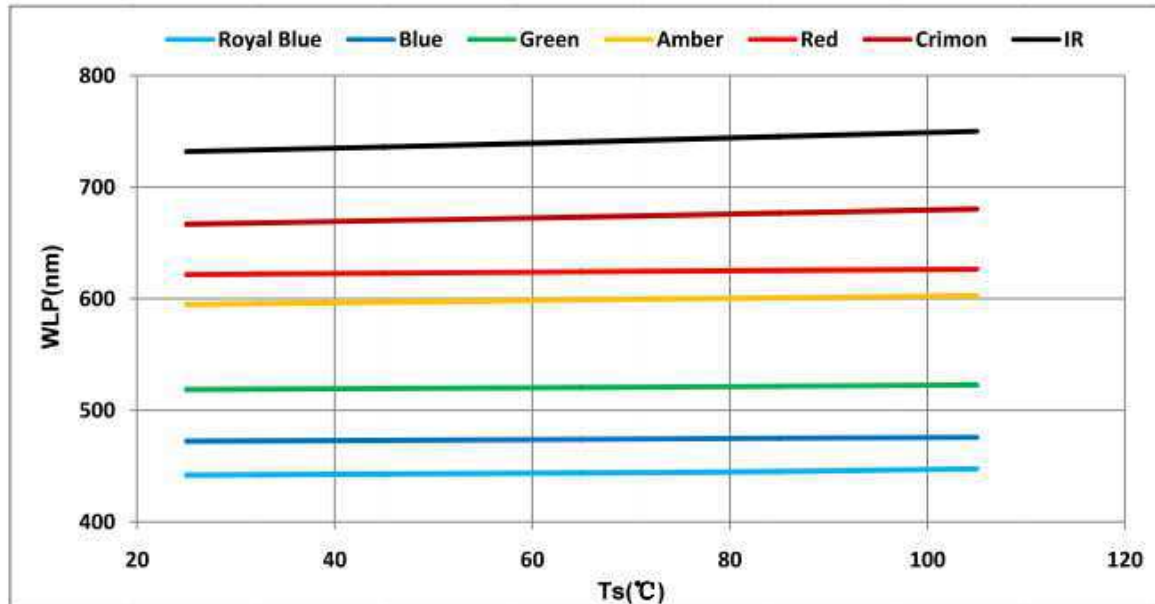




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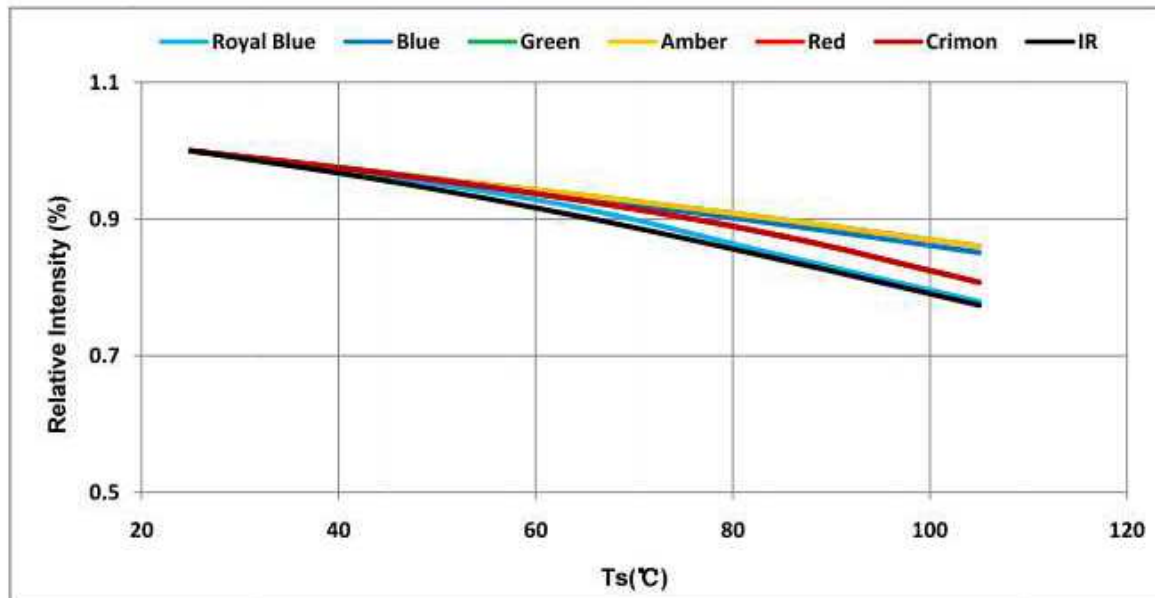
焊盘温度与波长特性曲线

Solder Temperature Vs. Wavelength



焊盘温度与相对强度特性曲线

Solder Temperature Vs. Relative Intensity



备注: Note:

所有测试都是基于盈 锋现有的标准测试平台。

All measurements were made under the standardized environment of yingfeng



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可靠性试验 Reliability Test Items Conditions

实验项目 Test Items	参考标准 reference Criterion	实验条件 Test Conditions	时间 Time	样品数 Quantity	判定 Criterion
高温储存 High Temperature Storage	JESD22-A103	Ta=100°C	1000H	11	0/11
低温储存 Low Temperature Storage	JESD22-A119	Ta=-40°C	1000H	11	0/11
常温寿命测试 Room Temperature Operating Life	JESD22-A108	Ta=25°C IF=500-700mA	1000H	11	0/11
高温高湿寿命测试 High Temperature High Humidity Life Test	JESD22-A101	Ta=60°C,RH=90% IF=500-700mA	1000H	11	0/11
冷热冲击 Thermal Shock	JESD22-A104	-40°C(15min)←→100°C(15min)	300 cycles	11	0/11
温度循环 Temperature Cycle	JESD22-A104	-40°C(30min)←(5min)→100°C(30min)	300 cycles	11	0/11
耐焊接热 Resistance to Soldering Heat	JESD22-B106	Tsld=260°C,10sec	3 times	11	0/11

失效判断标准 Criteria for Judging Damage

测试项目 Test Items	符号 Symbol	测试条件 Test Conditions	判定标准 Criteria for Judgment
正向电压 Forward Voltage	V _f	IF =500-700mA	初始值±10% Initial Data ± 10%
反向电流 Reverse Current	I _R	VR=5V	IR≤10μA
流明/光功率 Luminous flux /Radiometric Power	Φ/Φ _e	IF=500-700mA	平均 Φ/Φ _e 衰减≤30% AverageΦ/Φ _e degradation rates≤30%

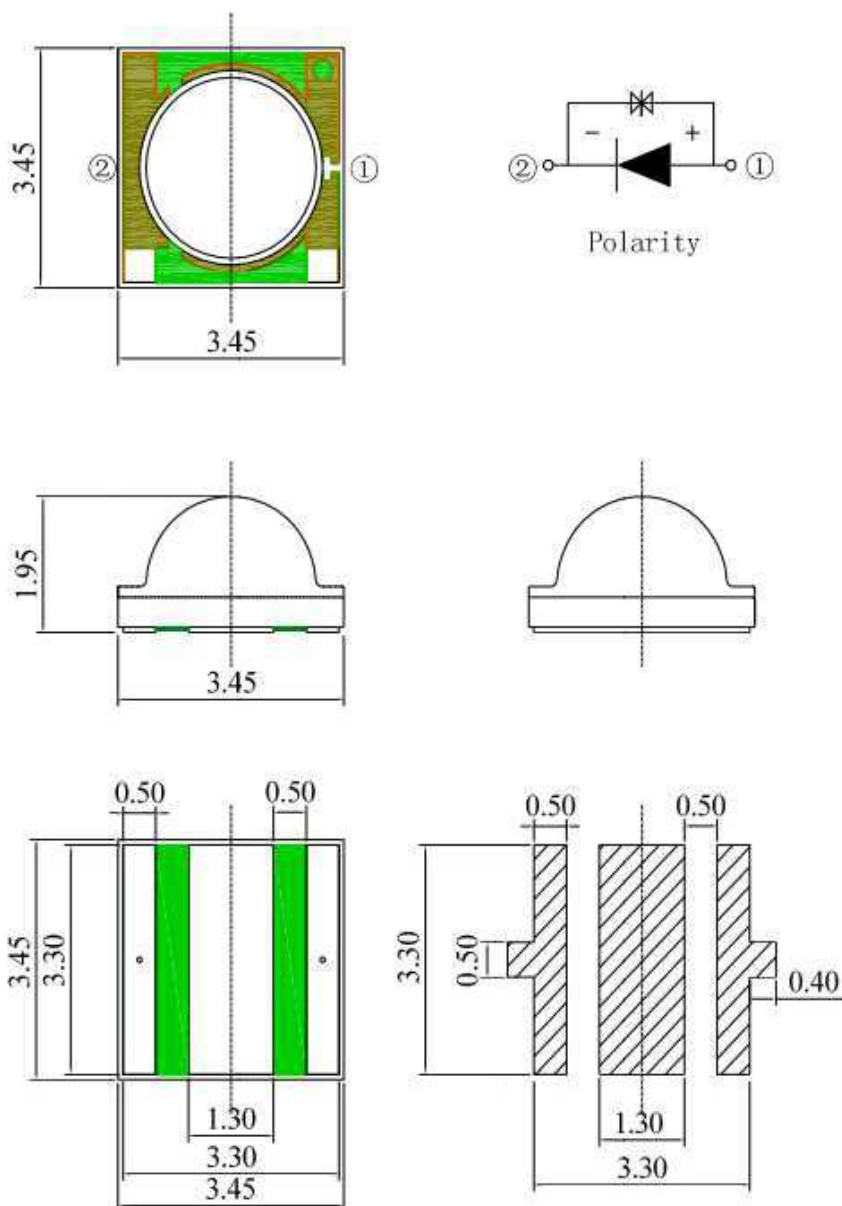
数据工作表中所示的技术信息仅限于典型特征和电路实例引用的产品,它既不构成工业特性的保证,也不构成任何许可的授权。
The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.



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外型尺寸 Outline Dimension



备注: 所有尺寸单位均为 mm,如无特殊说明误差范围为 ± 0.02 mm.

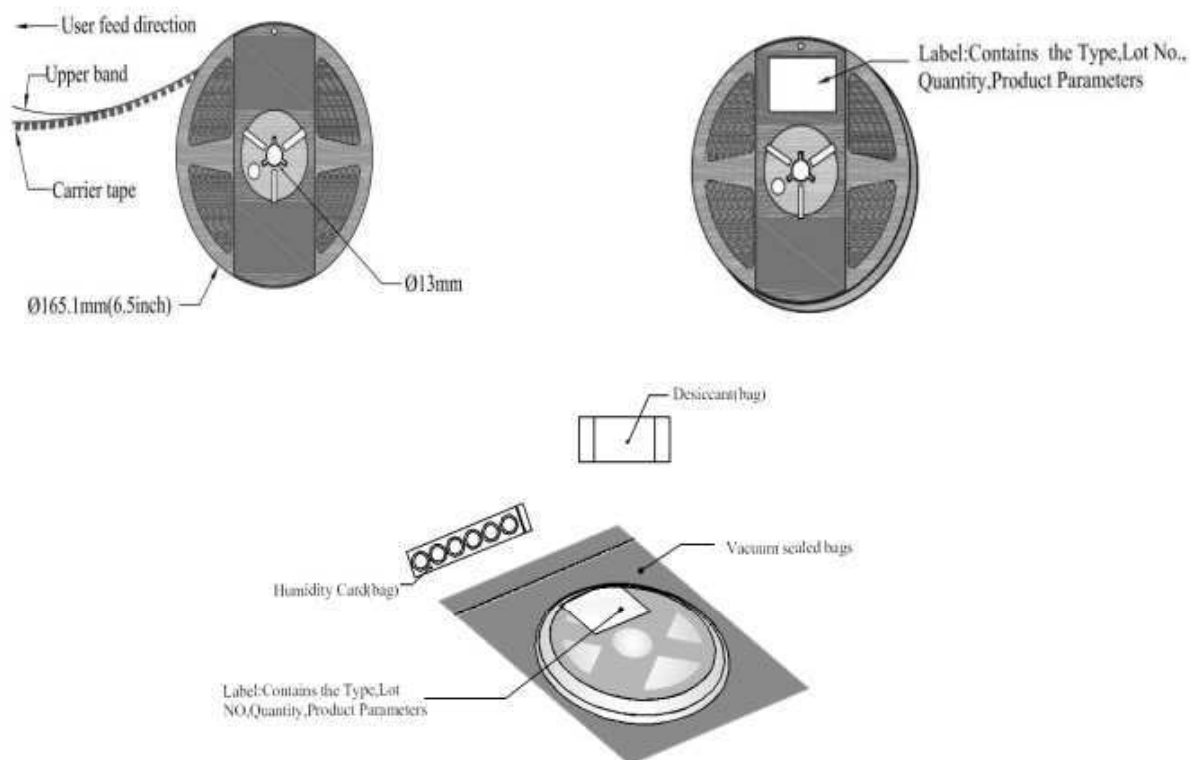
Note: All dimensions in mm ,tolerance is ± 0.02 mm unless otherwise noted.



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包装规格 Packaging Specifications

1. 载体尺寸 Carrier Tape Dimensions



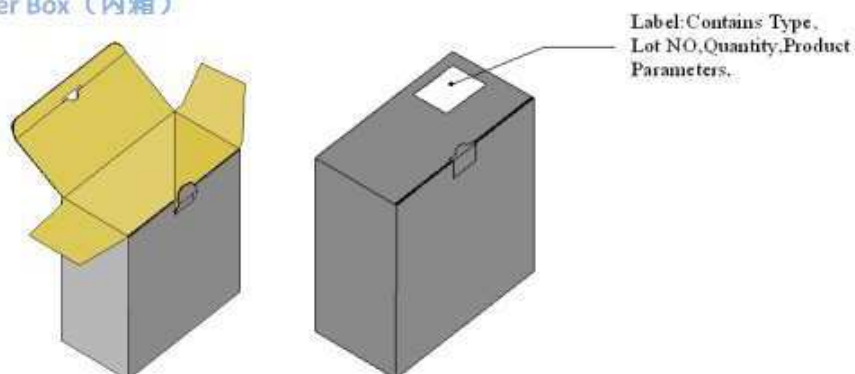
备注 Note:

标注公差为 ± 0.1 毫米，单位：毫米。

The tolerances unless mentioned ± 0.1 mm. Unit : mm

3. 标签格式规范 Label Form Specification

Inner Box (内箱)



* Capacity 5 or 10 reels per box (内箱容量: 5或10卷)



焊接指导 Guideline for Soldering

1. 使用烙铁焊接 Hand Soldering

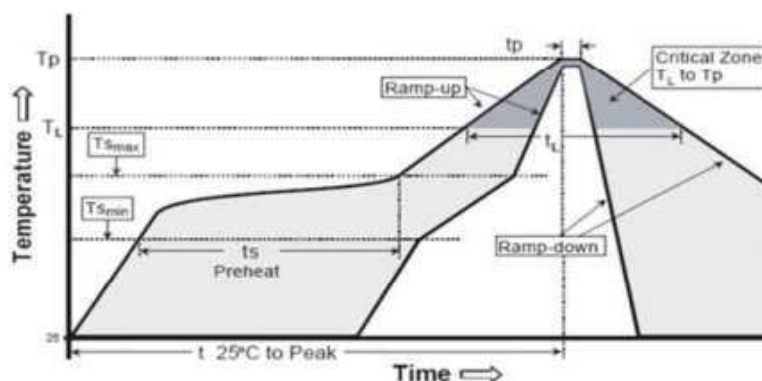
推荐使用功率低于 20W 的恒温烙铁,焊接时烙铁的温度必须保持在 300°C 以下,且每个电极只能进行一次焊接,每次焊接的持续时间不得超过 3 秒.

手动焊接过程中的不慎操作易引起 LED 产品的损坏,应当小心谨慎.

A soldering iron with Constant temperature of less than 20W is recommended to be used in Hand Soldering .Please keep the temperature of the soldering iron under 300°C while soldering. Each terminal of the LED is to go for less than 3 second and for one time only Be careful because the damage of the product is often started at the time of the hand soldering.

2. 回流焊接: 推荐使用以下无铅回流焊接温度图进行

Reflow Soldering: Use the conditions shown in the under Figure of Pb-Free Reflow Soldering.



平均升温速度 (Tsmmax 至 Tp)	最高 3 °C/ 秒	最高 3 °C/ 秒
预热: 最低温度 (Tsmmin)	100 °C	150 °C
预热: 最高温度 (Tsmmax)	150 °C	200 °C
预热: 时间 (tsmin 至 tsmax)	60 - 120 秒	60 - 180 秒
限时维持高温: 温度 (TL)	183 °C	217 °C
限时维持高温: 时间 (tL)	60 - 150 秒	60 - 150 秒
峰值 / 分类温度 (Tp)	215 °C	260 °C
与实际峰值温度 (tp) 相差 5 °C 以内的保持时间	10 - 30 秒	20 - 40 秒
降温速度	最高 6 °C/ 秒	最高 6 °C/ 秒
25 °C 升至峰值温度所需时间	最多 6 分钟	最多 8 分钟

- 回流焊接最多只能进行一次.
Reflow soldering should not be done more than one times.
- 推荐使用中温锡膏生产加工.
It is recommended that use the middle temperature solder paste.
- 在回流焊接过程中,不要对 LED 施加任何压力.
Stress on the LEDS should be avoided during heating in soldering process.
- 在焊接完成后,待产品温度下降到室温后,再进行其它处理.
After soldering ,do not deal with the product before its temperature drop down to room temperature.



3. 修补 Repairing

LED回流焊后不应该修复,当修复是不可避免时,必须使用双头烙铁,但必须事先确认此种方式会不会损坏LED本身的特性。

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LEDs will or will not be damaged by repairing.

4. 注意事项 Cautions

LED封装为硅胶,故LED胶体表面较软,用力按压胶体表面会影响LED可靠性,因此应有预防措施避免在封装的零件上的强大压力,当使用吸嘴时,胶体表面的压力应是恰当的。

The encapsulated material of the LEDs is silicone. Therefore the LEDs have a soft surface on the top of package. The pressure to the top surface will be influence to the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when use the picking up nozzle, the pressure on the silicone resin should be proper.

使用注意事项 Using Guide

1. 贮存 Storage

- 本产使用密封防潮防静电袋包装,并附有干燥剂,未开封的产品保存时间一年。
Moisture proof and anti-electrostatic package with moisture absorbent material is used, Packaged products have one year to save time.
- 开封前,产品须存放在温度不高于30℃,湿度不高于60%RH的环境中。
Before opening the package, the product should be kept at 30℃ or less and humidity less the 60%RH.
- 密封防静电袋内的湿度卡应在打开袋子后立即查看袋内的湿度指示卡来确定,湿度显示小于或等于30%时,使用前须进行烘烤。
Seal anti-electrostatic bag humidity card should immediately check bag humidity indicator card in the open the bag after, Humidity is less than or equal to 30%, Must be baked before use
- 开封后,产品必须24小时内使用完(建议工作环境温度不高于30℃,湿度不高于60%),如未使用完,余料须存放在温度不高于30℃,湿度不高于60%的环境中。
After opening the package, the product should be soldered within 24 hours. If not, please store at 30℃ or less and humidity less than 10%RH. It is recommended that the product be operated at the workshop condition of 30℃ or less and humidity less than 60%RH.
- 对于尚未焊接的LED,如果吸湿剂或包装失效,或者产品没有符合以上有效存储条件,烘烤可以起到一定的性能恢复效果。
烘烤条件:65±5℃,持续时间24H。
If the moisture absorbent material has fade away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition : 65±5℃ for 24 hours.

2. 静电 Static Electricity

以下操作可降低静电破坏的可能性

The following procedures may decrease the possibility of ESD damage.

- 将产品和外界之间的摩擦减到最低以避免静电产生。
Minimize friction between the product and surroundings to avoid static buildup.



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- 所有的产品设备和测试仪器必须接地。
All production machinery and test instruments must be electrically grounded.
- 操作人员必须配戴静电环。
Operators must wear anti-static bracelets.
- 进入带电设备工作区域时需穿防静电服。
Wear anti-static suit when entering work areas with conductive machinery.
- 所有操作 IC 和 ESD 敏感器件元器件的工作台必须保持低于 150V 的静电保护。
All workstations that handle IC and ESD-sensitive components must maintain an electrostatic potential of 150V or less.

3. 反压保护 Reverse voltage protection

通常 LED 的反向漏电流都会很小,不会影响正常使用. 如果长期遭受超过其所能承受的反向电压冲击时,LED 会损伤, 反向漏电流会迅速变大,引起显示屏零灰度下串光的发生. 在设计中, 要注意控制反向电压, 建议加在 LED 上的反向电压值不超过 10V.

In generally the reverse current of LED is very small, it can't effect using the component normally, but when it often suffered the reverse voltage which exceed the limits of the component than it will be damaged, the reverse current increases rapidly causing the string light display gray scale so when designing, please pay attention to control the reverse voltage we suggest the reverse voltage less than 10V.

4. 温度保护 The safe temperature for LEDs working

LED 在高温条件下, 衰减会加速,本身应力也会增大. 若长期处于高温环境下, 极容易出现失效. 对于高密度排列使用的情况,建议在使用过程中灯面温度不超过 55°C, 灯脚温度不超过 75°C.

The high temperature will make the LED's Luminous Intensity deceased radically, if LEDs worked in hot environment for a long time, they will be disabled easily. When LEDs are working in a closed array, we suggest that the LED's surface temperature should be lower than 55°C and the leg's temperature should be lower than 75°C.

5. 其它事项 Others

请勿直接触摸或操作硅胶透镜表面, 这可能会损坏内部的电路, 拿取时用镊子或合适的工具夹在元件的侧边

Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry. Handle the component along the side surfaces by using forceps or appropriate tools.