

SPECIFICATION

产品规格书

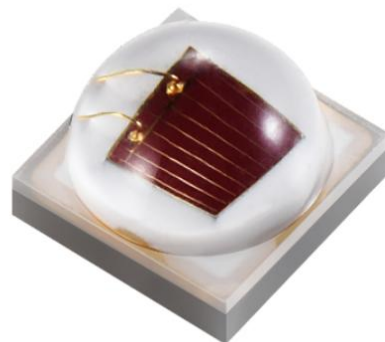
NO. (编号): XY-SE-PE-0000

Part No.(型号): 9.HCF35-451

Description(描述): 3535 陶瓷

Version NO.(版本): A0

Date(日期): _____



Customer Approved (客户审核)		Approved (确认)	
Xuyu Approved (旭宇审核)		Approved (确认)	Issued (制定)
李超		陈冲	袁丽霞
☐ Sample (样品) ☒ Mass Product (量产供货)			



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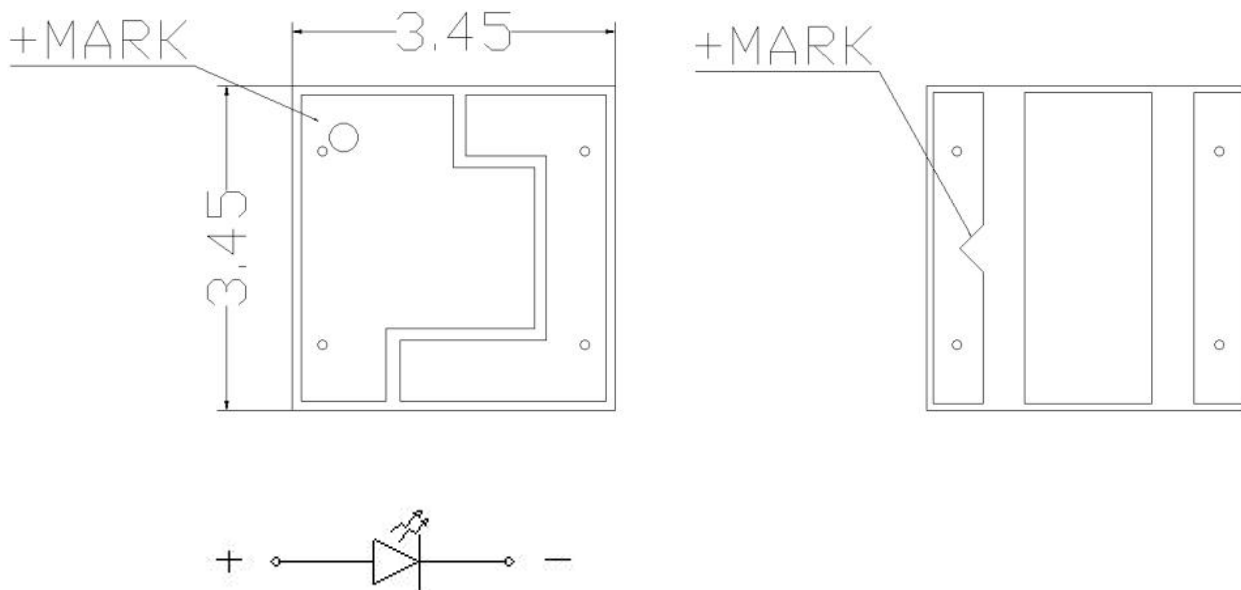
◆ Features 特性:

- *Size(mm): 3.45*3.45*2.18 尺寸(mm): 3.45*3.45*2.18
- *Ceramic and silicone molding package 陶瓷基板 molding 封装
- *Viewing Angle : 120° 发光角度: 120°
- * High reliability 高可靠性
- * RoHS compliant 通过 RoHS 认证
- *Suitable for all SMT assembly and solder process 适用所有 SMT 焊接工艺
- *Pb-free reflow soldering application 无铅回流焊

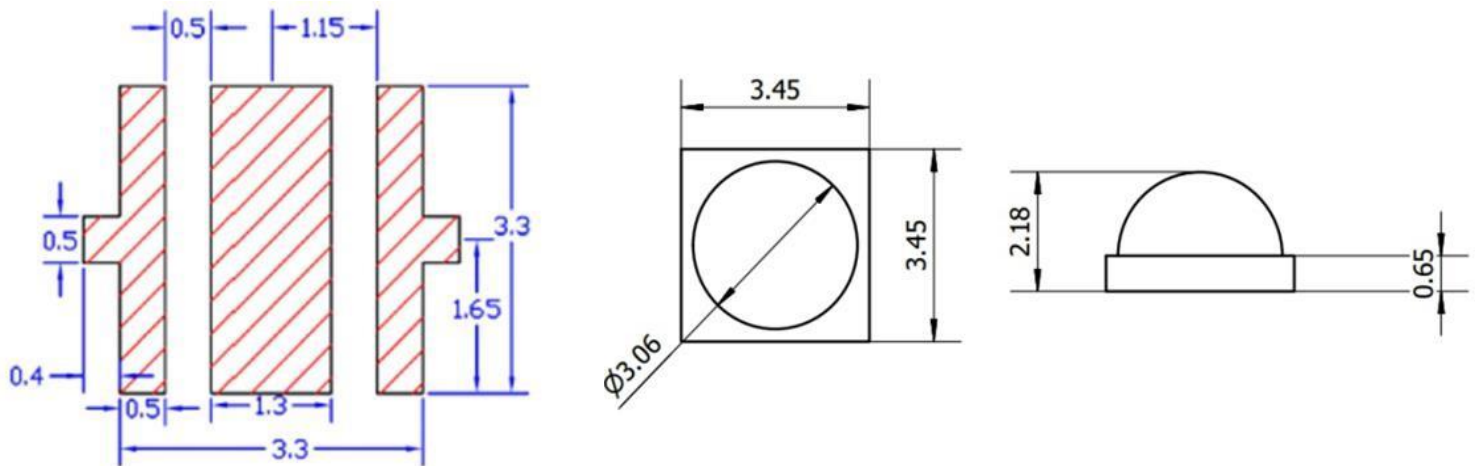
◆ Applications 产品应用:

- *spot light , ceiling light 天花灯, 球泡灯
- *down light , wall lamp , garden light 投光灯, 洗墙灯, 园林灯
- * Landscape lighting,lighting engineering 景观照明, 亮化工程
- *Planting lighting 植物照明

◆ Package Dimensions 产品外观尺寸



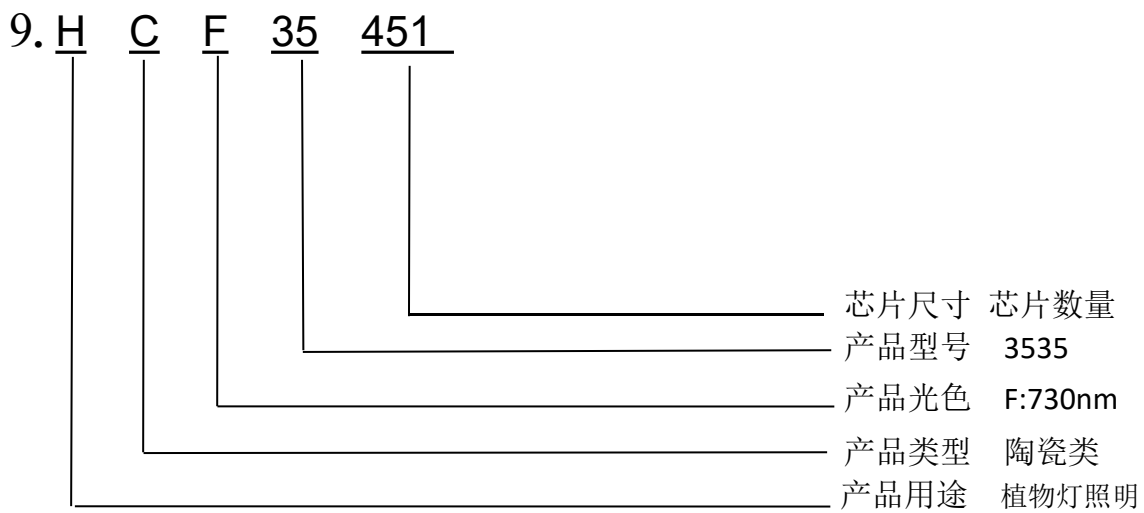
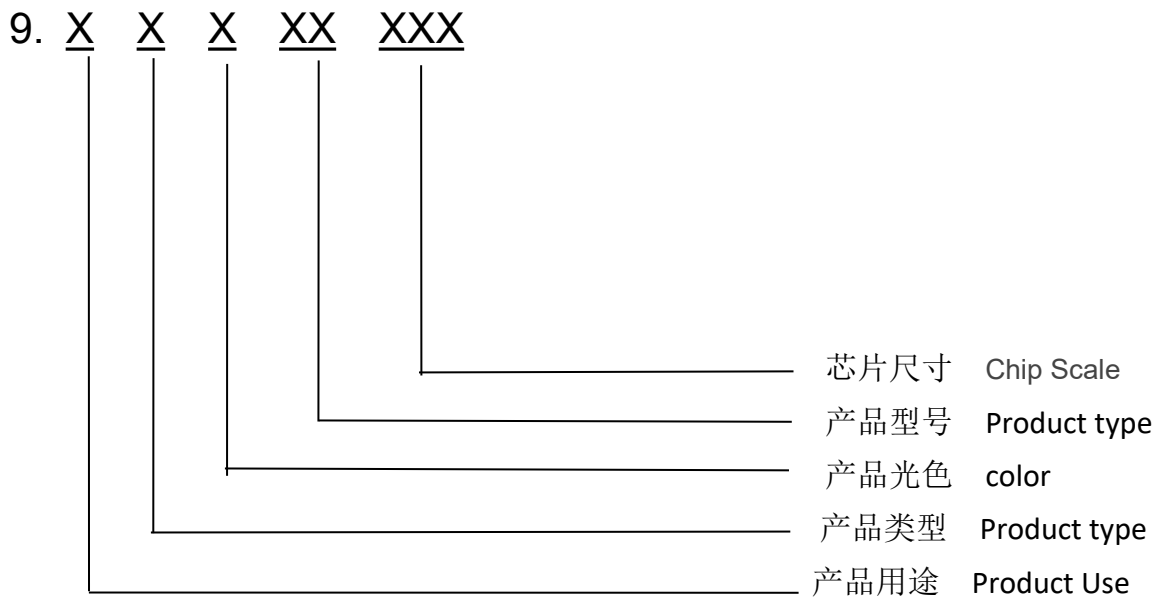
Soldering patterns 建议焊盘图



Notes:

1. All dimensions are in mm 所有尺寸单位为毫米。
2. Tolerance is ± 0.15 mm unless otherwise noted. 非特殊标注，公差为 ± 0.15 毫米

◆Product coding rules 产品编码规则



◆ Electro Optical Characteristics (TA=25℃) 光电特性

Parameter 参数	Test Condition 测试条件	Symbol 符号	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Forward Voltage 正向电压	$I_F=350\text{mA}$	V_F	1.8	---	2.2	V
Reverse Current 反向电流	$V_R=-5\text{V}$	I_R	---	---	10	μA
View Angle 发光角度	$I_F=350\text{mA}$	2 $\theta_{1/2}$	---	120	---	deg.
Electrostatic Discharge 抗静电	HBM	ESD	---	---	2000	V

◆ Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$) 最大额定值

Parameter (参数)	Symbol (符号)	Rating (等级)	Unit (单位)
Forward Current 正向电流	I_F	1000	mA
Pulse Forward Current 正向脉冲电流	I_{FP}	1500	mA
Reverse voltage 反向电压	V_R	5	V
Operation temperature 操作温度	T_{opr}	-40 to +85	$^{\circ}\text{C}$
Storage Temperature Range 储存温度范围	T_{stg}	-40 to +85	$^{\circ}\text{C}$
Junction Temperature 结温	T_j	125	$^{\circ}\text{C}$
Thermal resistance 热阻	R_{θ}	3.2	$^{\circ}\text{C}/\text{W}$
Soldering Temperature 回流温度	T_{sld}	260 $^{\circ}\text{C}$ for 10sec	

Notes:

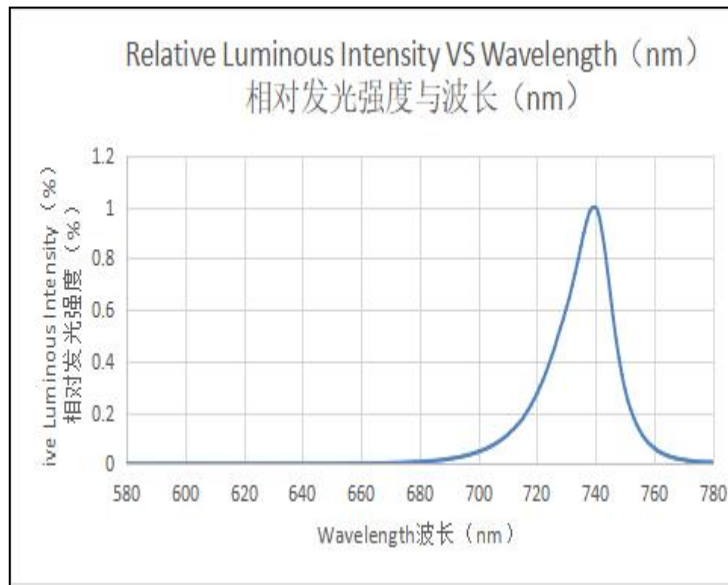
1. Frequency 10KHz, duty ratio $\leq 10\%$ 频率 10KHz , 占空比 $\leq 10\%$

◆ Mass Production List (IF=350mA;TA=25℃) 生产目录

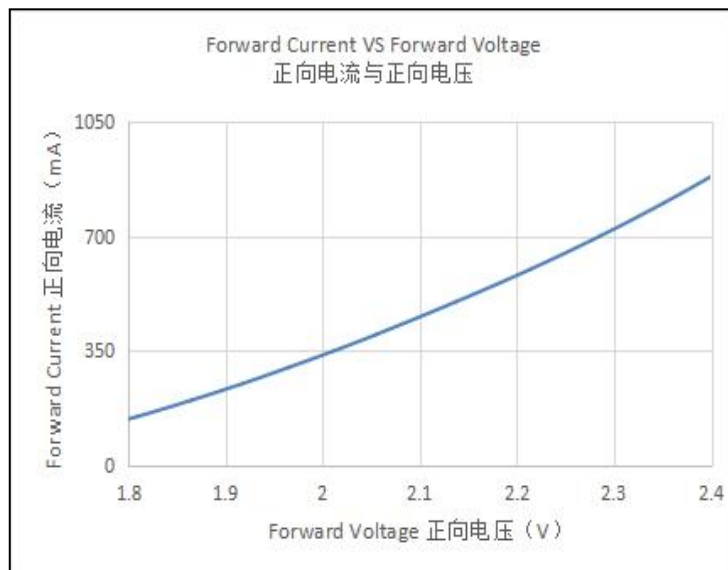
Part NO.型号	Color Renderi ng index 显指	λ_d (nm) Min	λ_d (nm) Typ	λ_d (nm) Max	Φ_e (mW) Min	Φ_e (mW) Max	PPE ($\mu\text{mol/J}$) Min	PPE ($\mu\text{mol/J}$) Max
9.HCF35-451	---	---	730	---	400	500	---	---

Note: The test error 测试误差 V_f : $\pm 3\%$ Φ_e : $\pm 10\%$ λ_d : $\pm 5\%$

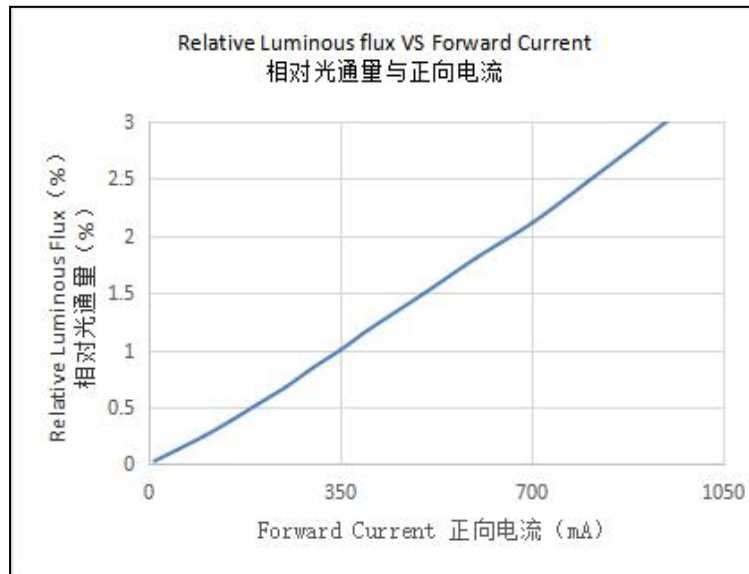
◆ Spectral Distribution 光谱分布特性曲线



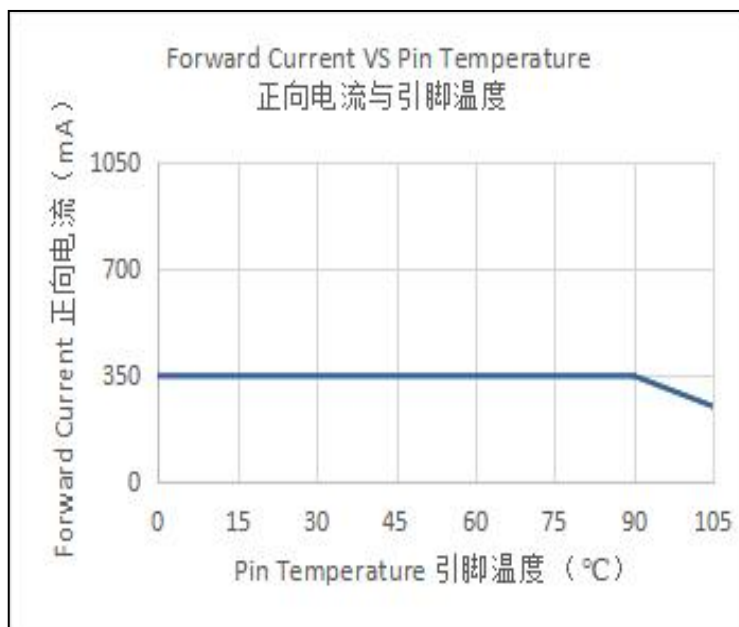
◆ Forward Voltage vs Forward Current 伏安特性曲线



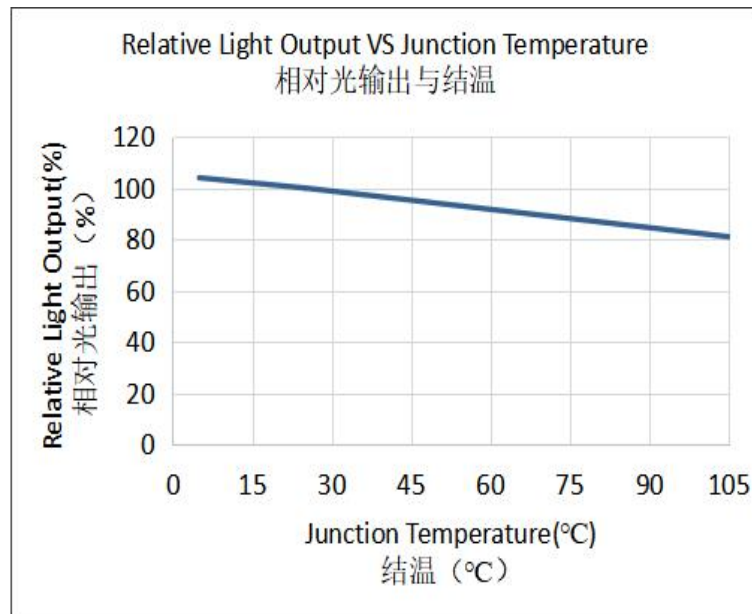
◆ Relative Luminous vs Forward Current 相对光通量与正向电流



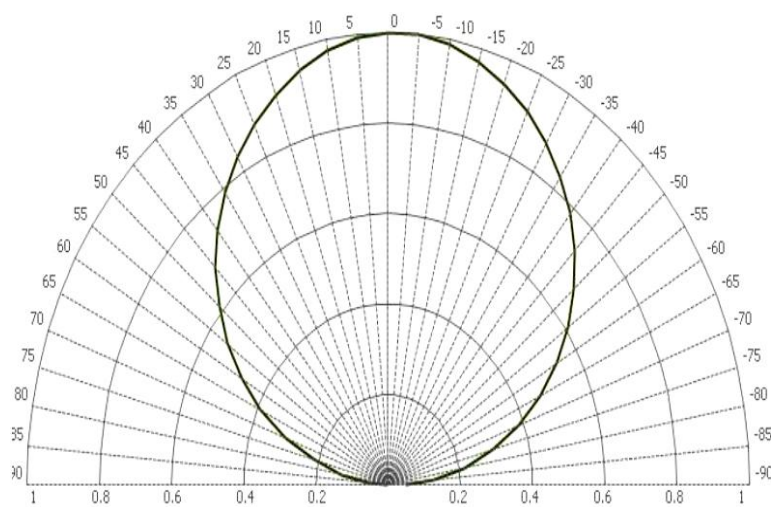
◆ Ambient Temperature vs Forward Current 引脚温度与正向电流



◆ Relative Flux vs Junction Temperature 相对光通量与结温特性曲线



◆ View Angle Distribution 空间角度分布



◆ Reliability 信赖性测试项目及测试条件

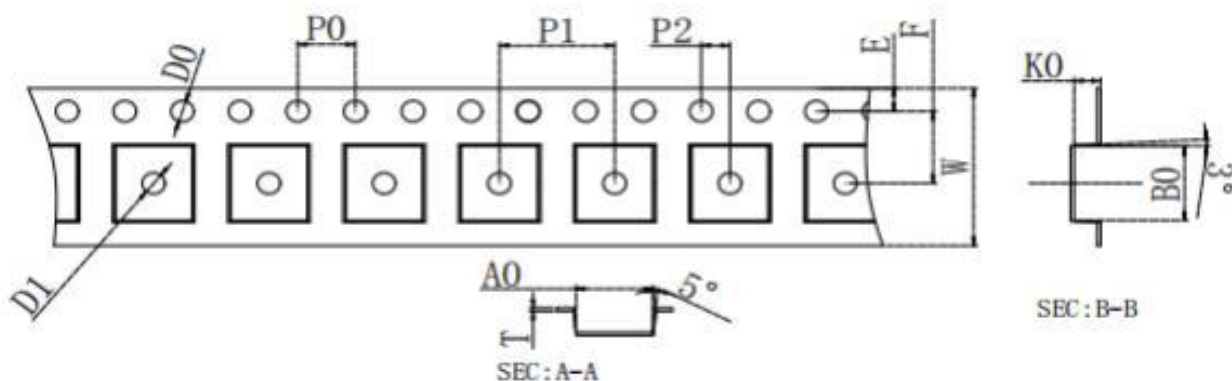
1.Test Items And Results 测试项目及结果

Item 项目	Test conditions 测试条件	Note 测试频率	Number of Damaged 损坏数量
Reflow 回流焊	Temp:260℃ max T=10 sec	2 times	0/22
Thermal Shock 冷热冲击	-40~100℃ 30min, 10s, 30min The 300 round	100cycles	0/22
High Temperature High Humidity Storage 高温高湿储存	Ta=85℃, RH=85%	300hrs	0/22
Steady State Operating life 常温通电	Ta=25℃, I _F =350mA	1000hrs	0/22
Steady State Operating life of High Humidity Heat 高温高湿通电	Ta=85℃ RH=85%, I _F =350mA	1000hrs	0/22
High Temperature Storage 高温储存	Ta=100℃	1000hrs	0/22
Low Temperature Storage 低温储存	Ta=-40℃	1000hrs	0/22

2. Criteria for Judging The Damage 失效判定标准

Item 项目	Symbol 符号	Test Conditions 测试条件	Criteria for Judgment 判定标准	
			Min.最小	Max.最大
Forward Voltage 正向电压	V _F	I _F =350mA	---	Initial Data 初始数据 × 1.1
Luminous Intensity 发光强度	I _V	I _F =350mA	Initial Data 初始数据 × 0.7	---
Reverse Current 反向电流	I _R	V _R =5V	---	> 10uA

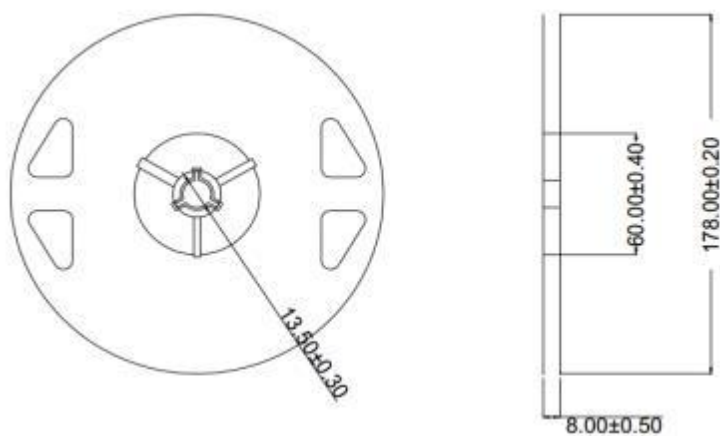
◆ Packaging Specifications 包装规格



W	12.00±0.10	T	0.20±0.02	D1	1.60±0.10	单位
E	1.75±0.10	F	5.50±0.10	D0	1.60±0.10	mm
P0	4.00±0.10	P1	8.00±0.10	P2	2.00±0.10	
A0	3.75±0.10	B0	3.70±0.10	K0	2.20±0.10	

Dimensions of Reel

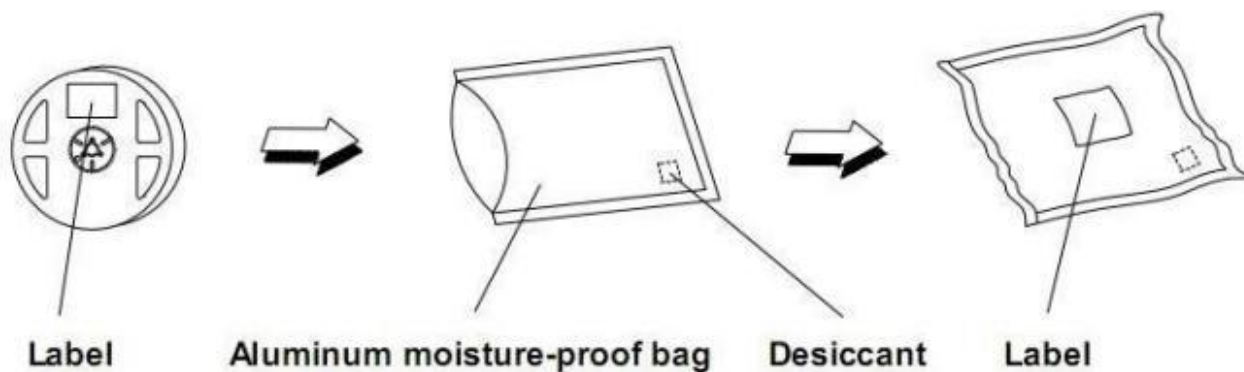
卷盘规格



Packaging

specifications

包装规格



◆ Label(标签):

Part NO: Product model 产品型号

LOT NO: Instruction number 指令单号

Φ_e (mW): Radiant flux 辐射通量

V_F/I_F : Forward voltage 正向电压

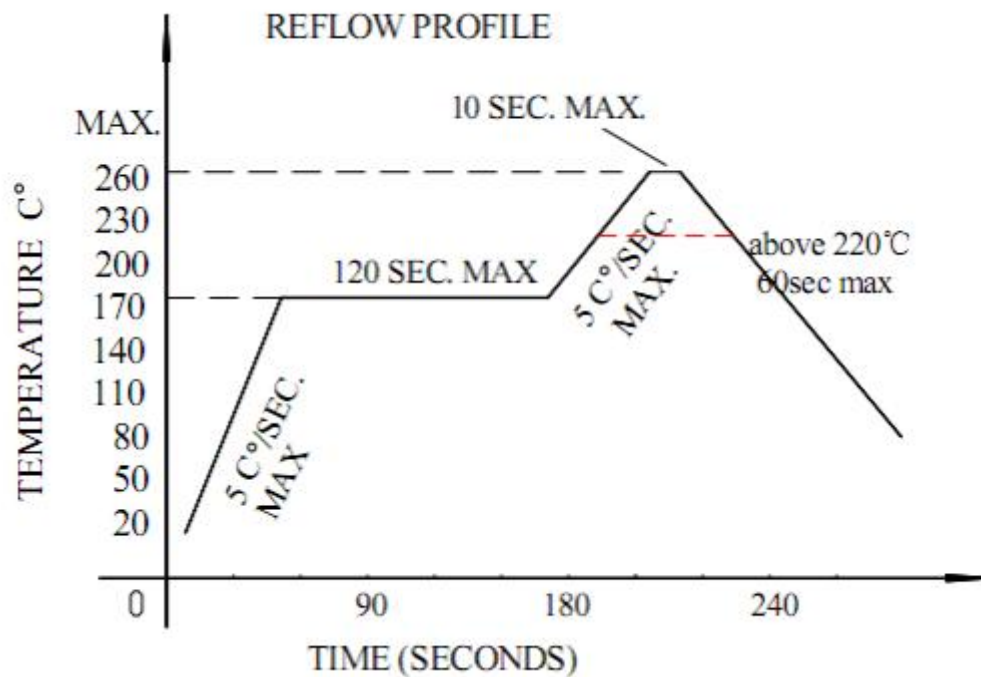
λ_p (nm): Peak Wavelength 峰值波长

Q'ty: Quantity 数量

Date: Date 日期



◆ SMT Reflow Soldering Instructions SMT 回流焊说明



1. Reflow soldering should not be done more than two times

回流焊不可以做两次以上

2. When soldering, do not put stress on the LEDs during heating

当焊接时，材料受热，不可以用力按压胶体表面

◆ CARTIONS 注意事项

1. Before opening packaging, avoid moisture entry into LED. SMD series LED is suggested to be stored in a drying cabinet with built-in desiccant. The storage environment is 5-30 centigrade, no more than 50% humidity. If storage time is over 3 months, LED needs to be re dehumidifying (65 degrees centigrade for more than /24 hours).

1.开包装前避免湿气进入 LED 内部, 建议 SMD 系列 LED 存放在内置干燥剂的干燥柜中, 储存环境为温度 5-30℃, 湿度不超过 50%, 若存储时间超过 3 个月, LED 需要重新除潮 (65℃/24 小时以上)。

2.LED electrode and bracket are made of silver plated copper alloy. The silver layer on the surface is easy to be affected by corrosive gases. Please avoid contacting with corrosive environment to cause LED discoloration, so as to avoid the poor weldability of LED and influence the photoelectric performance. Avoid sudden changes in temperature and humidity of the environment, especially under high humidity environment, easy to produce water vapor condensation.

2. LED 电极和支架是由镀银的铜合金组成, 外表银层易受到腐蚀性的气体影响, 请避免接触腐蚀的环境造成 LED 变色, 以免产生 LED 的焊接性变差或者影响光电性能。请避免环境温湿度的骤变, 尤其是高湿环境下易产生水汽凝结。

3.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.

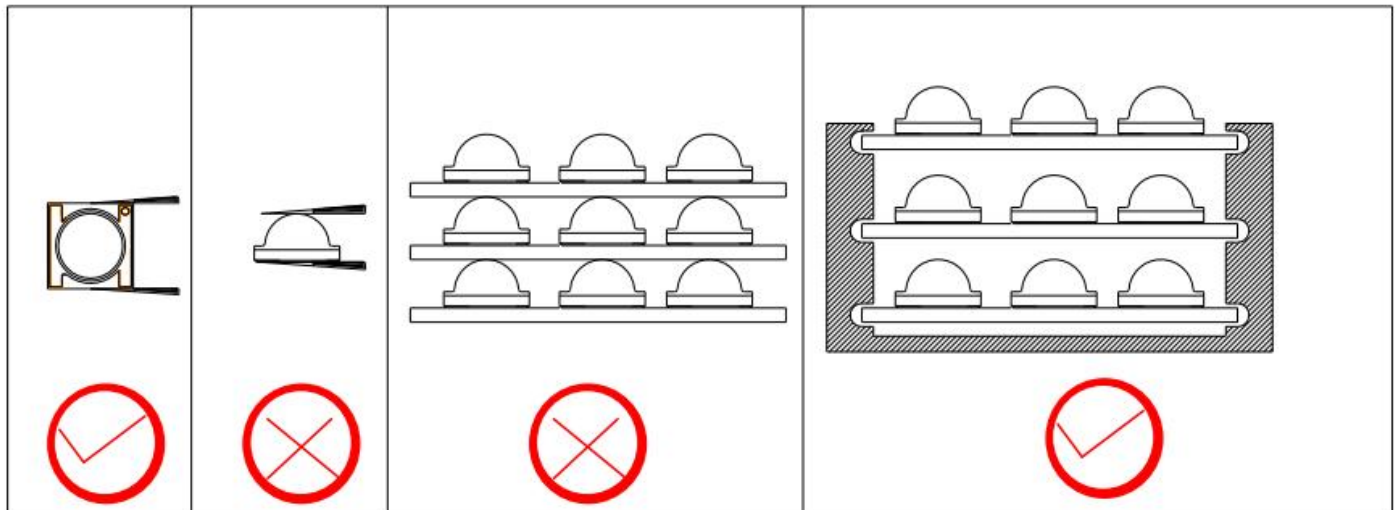
3、LED 封装为硅胶, 故 LED 胶体表面较软, 用力按压胶体表面会影响 LED 可靠性。应避免使用

较大压力按压胶体表面，在使用吸嘴时，作用于胶体表面的力应适宜。

4.Handle the component along the side surface by using forceps or appropriate tools; do not directly

touch or Handle the silicone lens surface, it may damage the internal circuitry.

4、采用合适的工具从侧面夹取材料，不要用手或尖锐金属按压胶体表面，否则可能导致内部电路损坏。



5.Electrostatic protection. LED is a chip sensitive electronic component. Various measures should be taken to avoid static electricity, such as wearing an electrostatic bracelet or anti-static gloves during use. All devices, equipment and instruments should be well grounded.

5、静电防护。LED 是晶片敏感电子元器件，应采取各种措施避免静电，诸如在使用过程中戴静电手环或防静电手套。所有的装置、设备仪器应良好接地。