

深圳市晶盟电子科技有限公司
Shen zhen jing au electronic technolodg to LTD

产品规格书

SPECIFICATION

客户名称 (CUSTOMER) : _____

产品型号 (MODEL) : JM-ZJYM0201HR

制作 Prepared By	审核 Checked By	批准 Approved By
版本号 (The version number) : A1		
发放日期 (Issuing date) :		

客户确认 Approved Signatures		
研发确认 Checked By	品管确认 Validated By	采购确认 Validated By
<input type="checkbox"/> 接受 (Qualified) <input type="checkbox"/> 不接受 (Disqualified)		

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产品及特性 Products and Features

产品型号 Model	芯片材料 Chip Materials	发光颜色 Emitting Light	胶体颜色 Lens Color
JM-ZJJM0201HR	AlGaInP	RED	Transparent

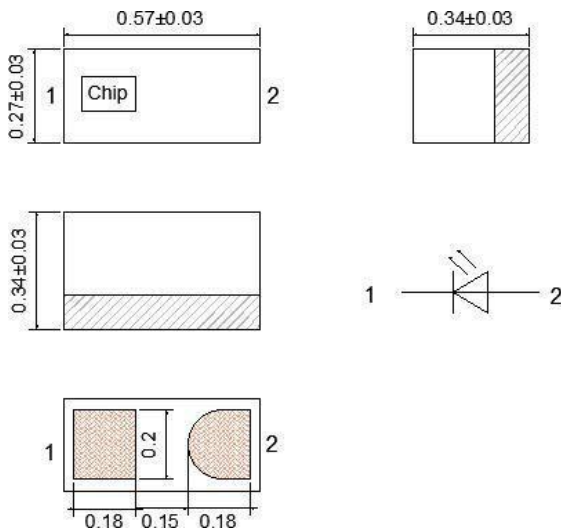
特性 Features

- Mini LED 封装技术
Mini LED Packaging technology
- 宽的发光角度
Extremely wide viewing angle
- 低功耗
Low power consumption
- 防潮级别：1 级
Moisture levels: level 1
- 符合 RoHS 规范
Meet RoHS Certification

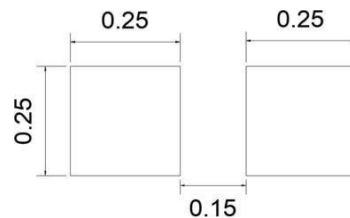
应用 Applications

- 光学指示
Optical indicator
- 室内显示
Indoor display
- 智能电器
Smart appliances
- 可穿戴和便携式设备
Wearable and portable devices

封装尺寸 Package Dimensions



建议焊盘尺寸图 Recommended Soldering Pattern



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

注意：操作时应注意静电敏
感释放设备装置

备注 (Notes) :

1. 所有标注尺寸单位为毫米。
All dimension units are millimeters.
2. 除特别标注外，所有尺寸允许公差 ± 0.1 mm。
All dimension tolerance is ± 0.1 mm unless otherwise noted.

性能参数 Performance Parameters

(1) 电性与光学特性 Electrical / Optical Characteristics at Ta=25°C

参数 Parameter	符号Symbol	最小 Min.	平均 Typ.	最大 Max.	单位 Units	测试条件 Test Conditions
正向电压 Forward Voltage	V_F	1.8	--	2.2	V	IF=5mA
亮度 Luminous Intensity	I_v	22	33	49	mcd	IF=5mA
峰值波长 Peak Wavelength	λ_{peak}	--	631	--	nm	IF=5mA
主波长 Dominant Wavelength	λ_{dom}	620	--	630	nm	IF=5mA
半波宽 Spectral Bandwidth at 50%	$\Delta\lambda$	--	16	--	nm	IF=5mA
角度 Viewing Angle	$2\theta_{1/2}$	--	130	--	deg	IF=5mA
反向电流 Reverse Current	IR	--	--	10	μA	VR = 5V

(2) 绝对最大额定值

参数 Parameter	符号 Symbol	值 Rating	单位 Units
功耗 Power Dissipation	Pd	45	mW
正向电流 Forward Current	IF	20	mA
峰值正向电流 Peak Forward Current [5]	IFP	40	mA
反向电压 Reverse Voltage	VR	5	V
静电放电等级 Electrostatic Discharge (HBM)	ESD	1000	V
操作温度 Operating Temperature	Topr	-40 ~ +85	°C
保存温度 Storage Temperature	Tstg	-20 ~ +60	°C
结温 Junction Temperature	Tj	≤ 110	°C

备注 (Note) :

- q1/2 是半值角, 指光强是光学中心线光强的 1/2 处到光学中心线的角度。
q1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
 - 以上亮度的测试允许公差为 $\pm 10\%$ 。
The above luminous Intensity measurement allowance tolerance is $\pm 10\%$.
 - 以上主波长、峰值波长的测试允许公差为 $\pm 1\text{nm}$ 。
The above Peak Wavelength and Dominant Wavelength Index measurement allowance tolerance of $\pm 1\text{nm}$.
 - 以上所示电压测量误差 $\pm 0.1\text{V}$ 。
The above forward voltage measurement allowance tolerance is $\pm 0.1\text{V}$.
- 脉宽 0.1ms, 周期 1/10。
1/10 Duty cycle, 0.1ms pulse width.

分 BIN 表 Sorting Bins

(1) 波长组 IF=5mA Wavelength Groups IF=5mA

Groups	Dominant Wavelength (nm)	
	$\lambda_{\text{dom MIN}}$	$\lambda_{\text{dom MAX}}$
R3	620	625
R4	625	630

(2) 正向电压组 IF=5mA Forward Voltage Groups IF=5mA

Groups	Forward Voltage (V)	
	$V_{\text{f MIN}}$	$V_{\text{f MAX}}$
VB	1.8	2.0
VC	2.0	2.2

(3) 亮度组 IF=5mA Brightness Groups IF=5mA

Groups	Luminous Intensity (mcd)	
	$I_{\text{v MIN}}$	$I_{\text{v MAX}}$
F5	22	33
F6	33	49

典型光学特性曲线图

Typical optical characteristics curves at Ta=25°C

Fig.1 正向电压与正向电流特性曲线

Forward Voltage vs. Forward Current

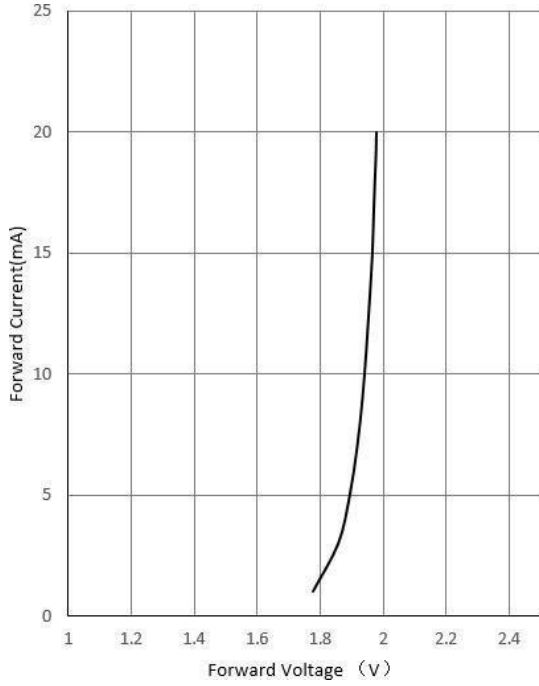


Fig.2 正向电流与相对光强特性曲线

Forward Current vs. Luminous Intensity

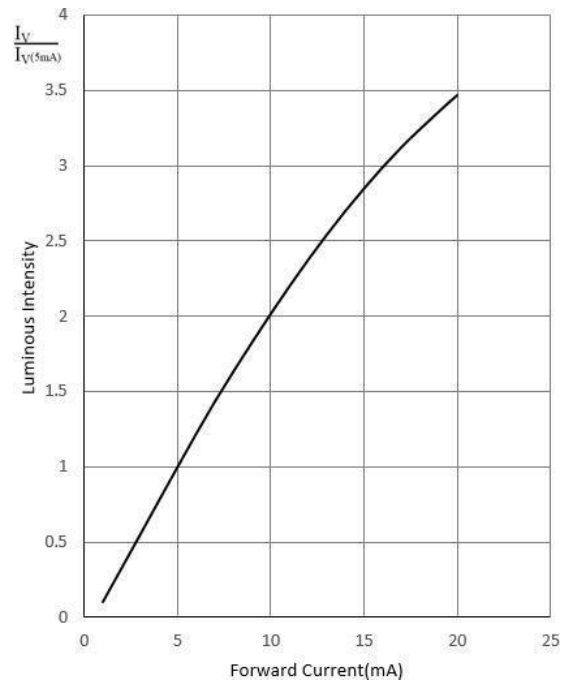


Fig.3 焊盘温度与正向电流特性曲线

Soldering Temperature vs. Forward Current

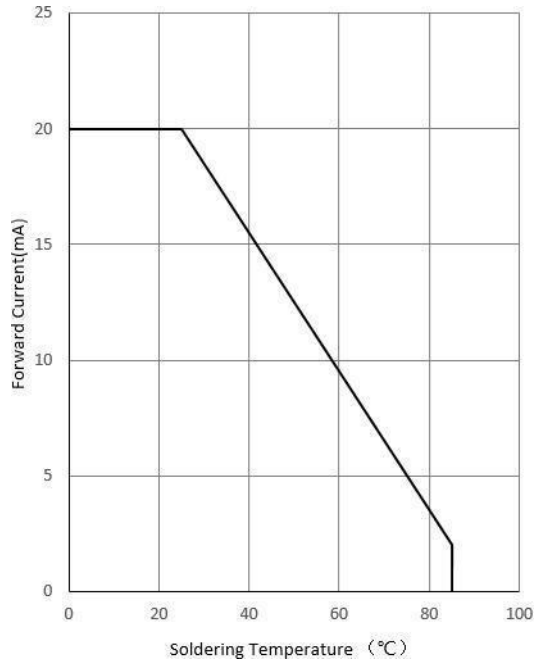
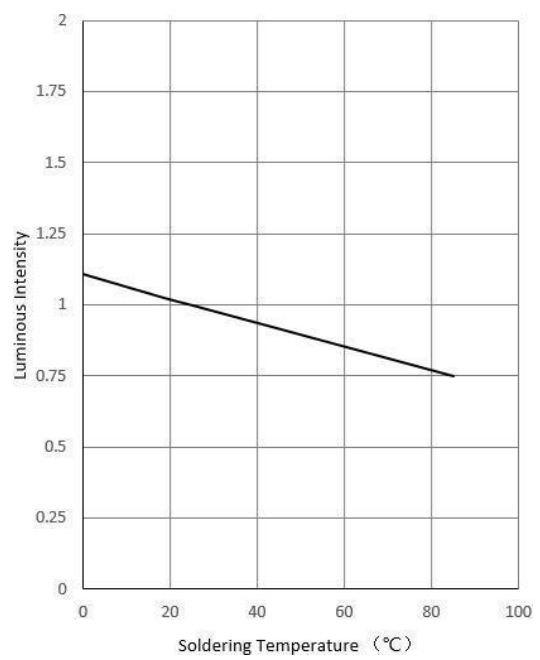


Fig.4 焊盘温度与相对光强特性曲线

Soldering Temperature vs. Luminous Intensity



典型光学特性曲线图

Typical optical characteristics curves at Ta=25°C

Fig.5 相对光谱分布曲线

Relative Intensity Vs. CIE Wavelength

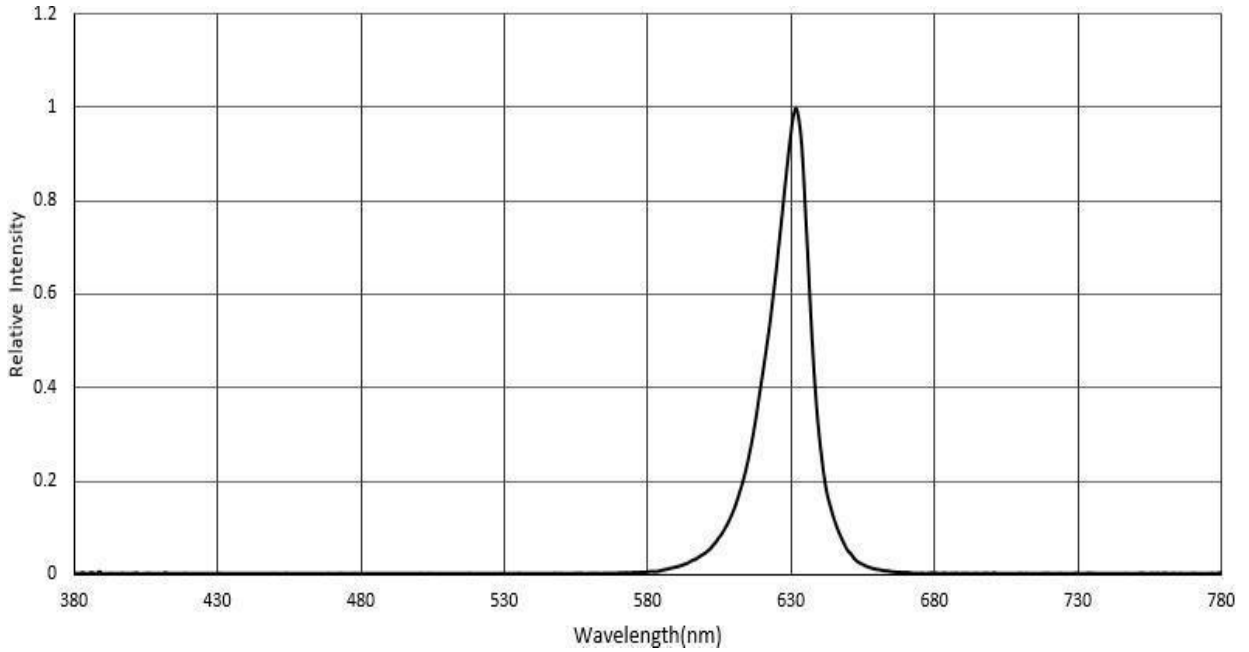
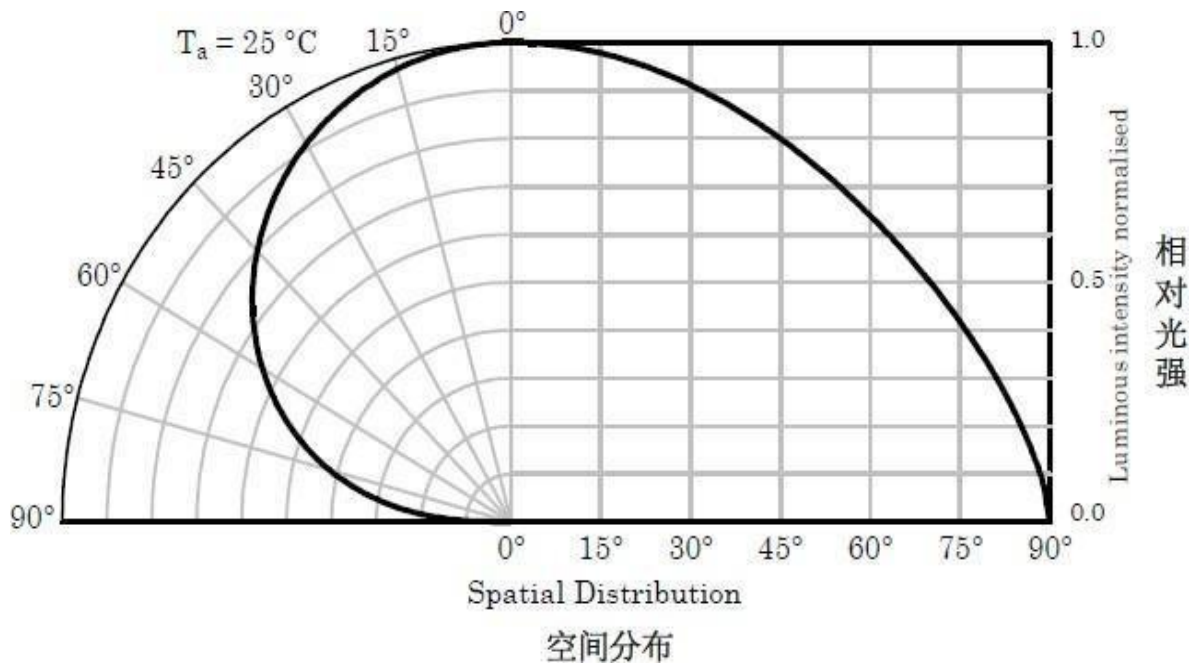


Fig.6 相对光强分布特性曲线

The intensity distribution curve



信赖性测试项目及条件 Reliability Test Items And Conditions

No.	项目 Items	参考标准 Reference	测试条件 Test Condition	测试 Test Hours/ Cycles	试验数量 Quantity	判据 Criterion
1	回流焊 Soldering	GB/T 4937.20-2018	Tsol': 245 0-5 °C	5-10 sec	1000 pcs	0/1000
2	冷热冲击 Thermal Shock	JESD22-A104-C	125°C ~ -40°C 15min 15min	200Cycles	1000 pcs	0/1000
3	ESD 测试 ESD Test	ACE(Q101-002)	500V-4000V	5 Hrs	10 pcs	0/10
4	沾锡性测试 Tin staining test	EIAJ ED-4701/300	Temp:100°C	1000Hrs	22 pcs	0/22
5	渗透测试 Penetration test	/	回流焊后纯红墨水浸泡	24 Hrs	64 pcs	0/64
		/	回流焊后高压蒸煮	20mins	64 pcs	0/64
6	高温高湿 High Temperature & Humidity	GB/T2423-50	Temp:85°C RH: 85%	1000Hrs	20pcs	0/20

失效判定标准 Criteria For Judging Damage

项目 Items	符号 Symbol	测试条件 Test condition	判断标准 Failure Criteria
正向电压 Forward Voltage	V_F	$I_F = 5\text{mA}$	初始值 ± 10% The initial value plus or minus 10%
反向电流 Reverse Current	I_{GB}	$V_B = 5\text{V}$	$I_R \leq 10\ \mu\text{A}$
亮度 Luminous Intensity	I_{LEDV}	$I_F = 5\ \text{mA}$	平均 I_{LEDV} 衰减 ≤ 30%，单个 I_{LEDV} 衰减 ≤ 50% Average I_{LEDV} attenuation 30% or less, a single I_{LEDV} attenuation 50% or less
回流焊 Soldering	/	$I_F = 5\ \text{mA}$	材料无内部裂痕、无材料间爆裂、无剥离、无死灯 Material without internal cracks, no material between stripped no deaded light

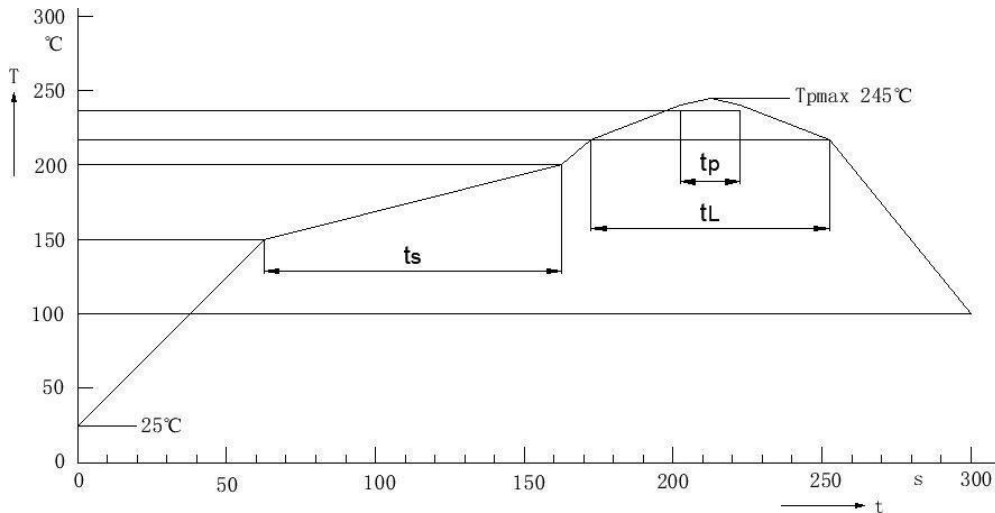
备注 (Note) :

1. Tsol为回流焊时锡液的温度； Temp为实验温度。
Tsol for reflow soldering tin fluid temperature; Temp for experimental temperature.
2. 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.

回流焊温度曲线图 Temperature curve of reflow soldering

LED 建议使用回流焊，温度曲线参考如下：

LED is recommended for reflow soldering and soldering profile is shown below :



曲线特征 Profile Feature	符号 Symbol	无铅组装 Pb-Free(SnAgCu) Assembly			单位 Unit
		最小值 Minimum	推荐值 Recommendation	最大值 Maximum	
预热升温速率: 25°C 至 150°C Ramp-up to preheat: 25°C to 150°C			2	3	K/s
时间: T_{smin} 至 T_{smax} Time: T_{smin} to T_{smax}	t_s	60	100	120	s
峰值升温速率: T_{smax} 至 T_p Ramp-up rate to peak: T_{smax} to T_p			2	3	K/s
液相线温度 Liquidus temperature	T_L		217		°C
超过液相线温度的时间 Time above liquidus temperature	t_L		80	100	s
峰值温度 Peak temperature	T_p			245	°C
温度保持在指定峰值温度 T_p -5K 的 5°C 范围内的时间	t_p			10	s
降温速度: T_p 至 100°C			3	6	K/s
时间: 25°C 至 T_p Time: 25°C to T_p				480	s

1. 回流焊不可以做两次以上。

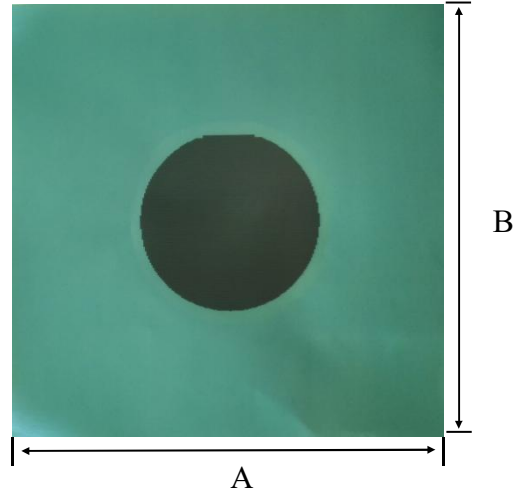
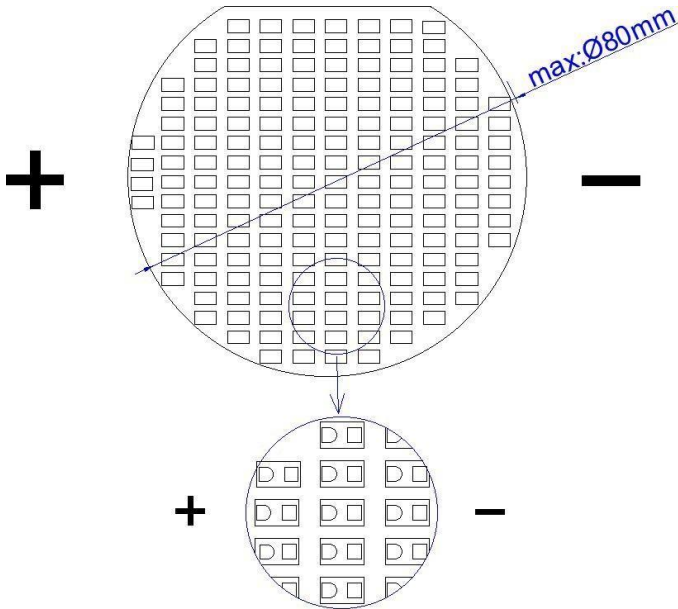
Reflow soldering should not be done more than two times.

2. 当焊接时，不要在材料受热时用力压胶体表面。

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

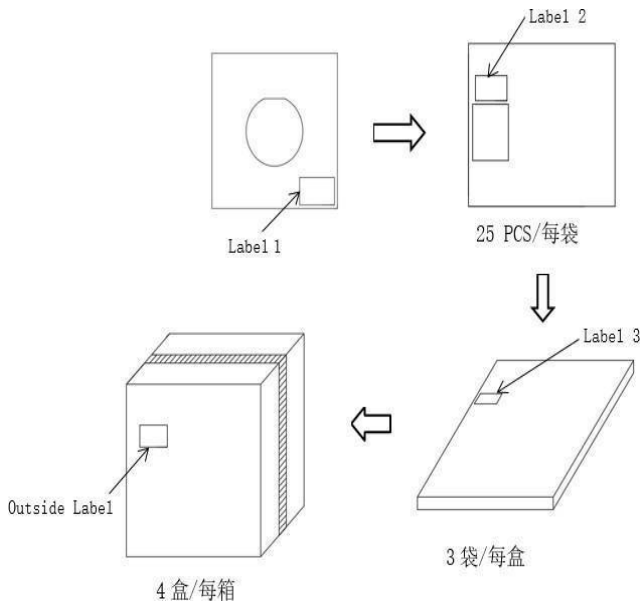
包装 Packaging

(1) 蓝膜尺寸单位
Blue Tape Dimension (Units : mm)



蓝膜尺寸 (AxB) = 200*200 mm
Blue Tape (AxB) = 200*200

(2) 包装方式
Package Method



(3) 标签样式
Label Mode



修补 Repairing

LED 回流焊后不应该修复，当修复是不可避免时，必须使用加热平台或热风枪进行修复，但必须事先确认此种方式会或不会损坏 LED 本身的特性。

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, Must use heating platform or hot air gun to repair . It should be confirmed in advance whether the characteristics of LEDs will or will not be damaged by repairing.

注意事项 Cautions

1. 本产品为MINI LED 封装器件，用力按压产品可能会造成产品断裂或暗裂，影响可靠性。因此应有预防措施避免在封装的零件上的施加强大压力，当使用吸嘴时，产品表面的压力应是恰当的。

This product is a MINI LED packaged , Pressing the product forcefully may cause the product to break or crack and affect its reliability. Therefore, preventive measures should be taken to avoid applying strong pressure on the packaged parts. When using suction When mouth, the pressure on the surface of the product should be appropriate.

2. 产品是静电敏感器件，使用过程中应注意静电防护，避免 LED 芯片被静电击穿损坏。

This product is an electrostatic sensitive device. Pay attention to electrostatic protection during use to prevent the LED chip from being damaged by electrostatic breakdown.

3. 本产品使用密封防潮抗静电袋包装，未开封的产品保质期为 6 个月。未开封前产品须存放在温度 0-30℃，20%-60%RH 的环境中。

This product is packaged in a sealed, moisture-proof and antistatic bag. The max storage period before opening the package is 6 month. Before opening the package, The product must be stored in an environment with a temperature of 0-30℃ and 20%-60%RH.

4. 开封后，产品应在 72 小时内用完。否则应该以静电袋密封包装后保存在防潮柜中。我们建议 1 个月内使用完。

After opening, the product should be used up within 72 hours. Otherwise, it should be sealed in an electrostatic bag and stored in a moisture-proof cabinet. We recommend using it within 1 month.