旭宇光电
XUYU Optoelectronics

SPECIFICATION
产品规格书

NO. (编号): XY-SE-PE-0015

Part No.(型号): 9.3535UVCAU1WX120-AU-**

Description(描述): 3535 陶瓷紫外

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)**
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☐Sample（样品）	☑Mass Product（量产供货）	

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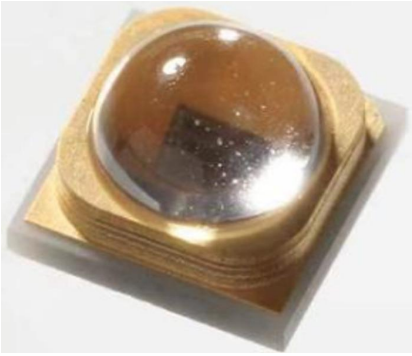
1. Description 产品介绍

1.1 General Description 产品描述



This production use the ceramics package，outline size 3.7X3.7X1.8mm

本产品采用陶瓷封装，产品尺寸：3.7X3.7X1.8mm。

1.2 Features 产品特征

► Ceramic package. 陶瓷封装

► Viewing angle:plane/60°/90°/120°. 发光角度：平面/60°/90°/120°

► Suitable for all SMT assembly and solder process. 适用于所有的 SMT 组装和焊接工艺

► Available on tape and reel. 适用于载带及卷轴

► Moisture sensitivity level: Level 3. 防潮等级 Level3

► RoHS compliant. 满足 RoHS 要求

1.3 Application 产品应用

► UV Curing.紫外固化

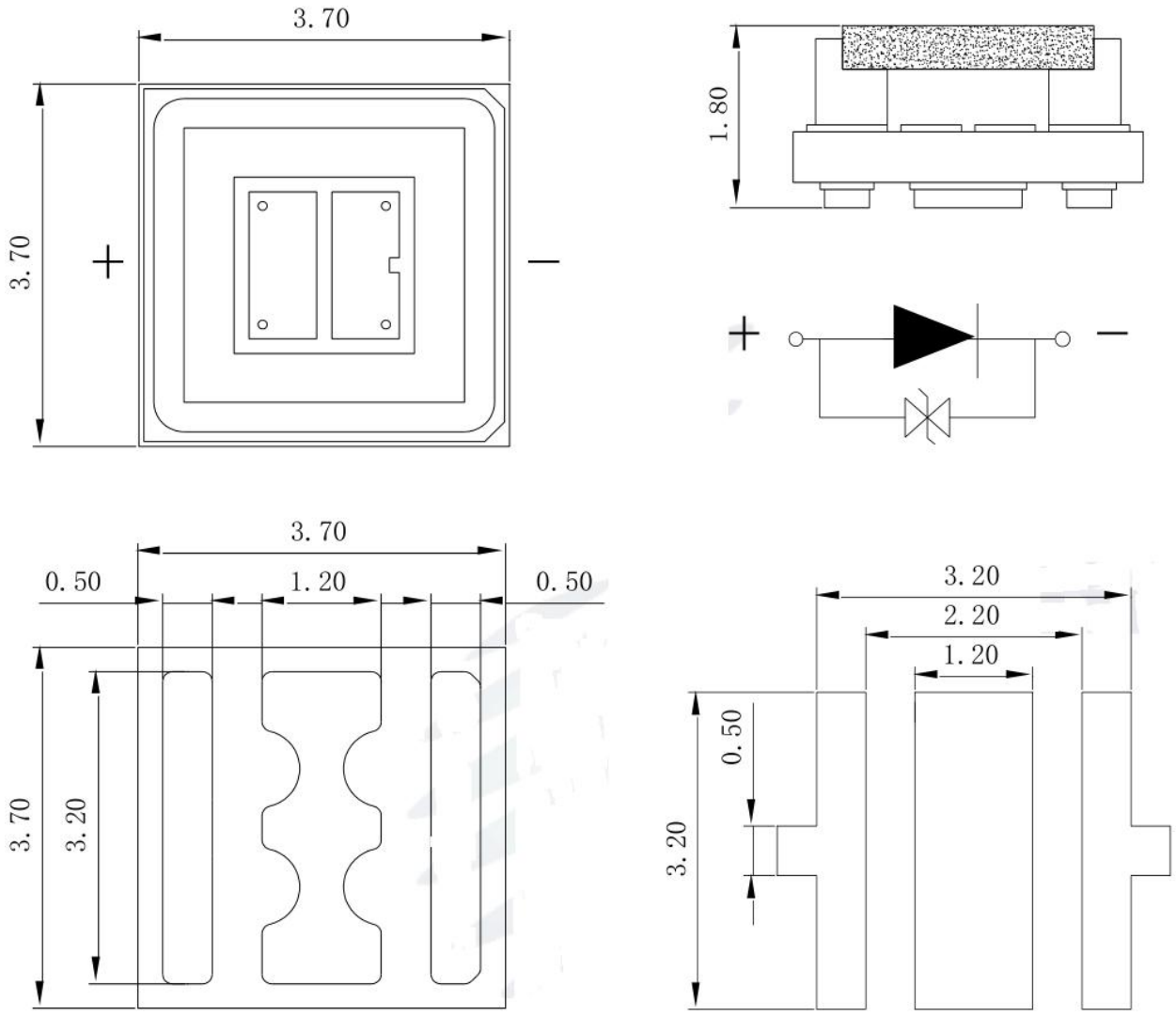
► UV Ink Curing.油墨固化

► Ultraviolet disinfection.紫外消毒

► Medical treatment and health.医疗健康

► General use.其他应用

1.4 Package Dimension 封装尺寸



Notes 备注：

1. All dimensions units are millimeters. 所有尺寸标注单位为毫米

2. All dimensions tolerances are ±0.2mm unless otherwise noted. 除特别标注外，所有尺寸公差为±0.2 毫米

1.5 Product Parameters 产品参数

Table 1-1 Electrical / Optical Characteristics at Ts=25°C 电性与光学特性

Item 项目	Symbol 符号	Test Condition 测试条件	Value			Unit 单位
			Min. (最小值)	Typ (典型值)	Max. (最大值)	
Forward Voltage (正向电压)	V_F	I_F=100mA	5.0	---	6.5	V
Reverse Current (反向电流)	I_R	V_R=-5V	---	---	5	uA
3535UVCAU1WX120-QU-S54 (270-280nm)	Φe	IF=100mA	20	---	30	mW
			30	---	40	
3535UVCAU1WX120-QU-PW (270-280nm)		IF=100mA	20	---	25	mW
			25	---	30	
3535UVCAU1WX120-QU-GH (270-280nm)		IF=100mA	15	---	20	mW
			20	---	25	
Viewing Angle (发光角度)	2θ1/2	IF=100mA	---	120	---	deg
Thermal Resistance. (热阻)	R_{THJ-S}	IF=100mA	---	45	---	℃/W

Table 1-2 Absolute Maximum Ratings at Ts=25°C 绝对最大值

Parameter (参数)	Symbol (符号)	Rating (值)	Units (单位)
Maximum Power Dissipation (最大功耗)	P_D	1.2	W
Peak Forward Current (峰值电流)	I_{FP}	150	mA
Reverse Voltage (反向电压)	V_R	5	V
Electrostatic Discharge (HBM) (静电)	E_{SD}	2000	V
Operating Temperature (操作温度)	T_{OPR}	-20 ~ +65	℃
Storage Temperature (储存温度)	T_{OPR}	-20~ +80	℃
Junction Temperature (结温)	T_J	85	℃

Notes 备注：

1. 1/10 Duty cycle, 0.1ms pulse width. 脉宽 0.1ms,占空比 1/10.

2. The above forward voltage measurement allowance tolerance is ±0.1V. 以上所示电压测量误差 ±0.1V.

3. The above wavelenth measurement allowance tolerance is ±2nm. 以上所示波长测量误差±2nm.

4. The above radiation flux measurement allowance tolerance ±10%. 上述辐射功率的测试允许公差为 ±10%.

5. When the LEDs are in operation the maximum current should be decided after measuring the package temperature, junction temperature should not exceed the maximum rate. LED 使用的最大电流需要根据散热条件确定，结温不能超过最大值.

6. ESD yield is over 90% at 2000V ESD (HBM). ESD protection during products handing is needed. 90%的 LED 通过人体模式 ESD2000V 测试,在操作时请注意静电防护。

1.6 Typical optical characteristics curves 典型光学特性曲线

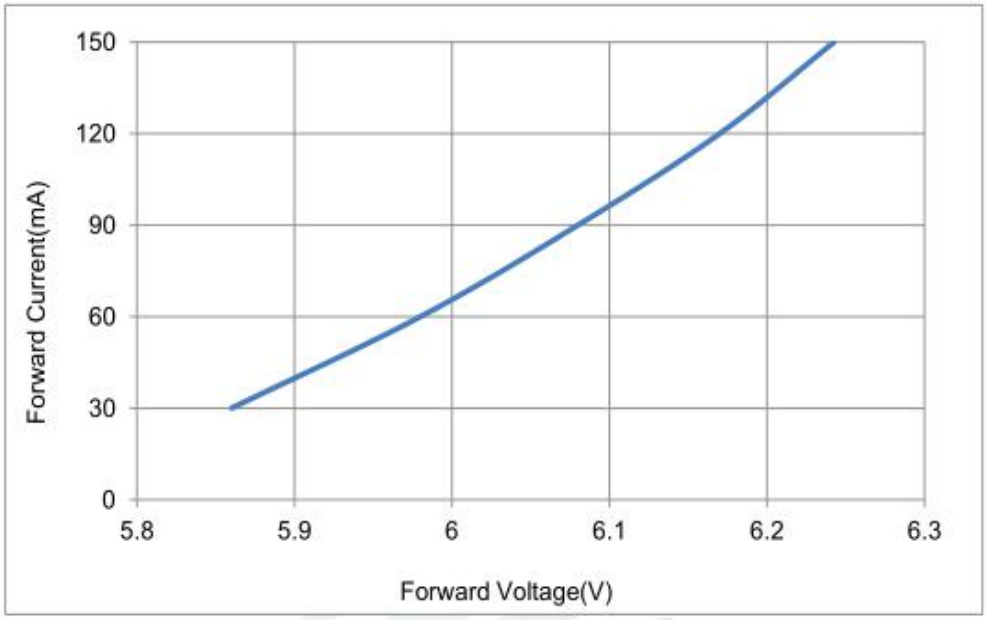


Fig.1- Forward Voltage Vs. Forward Current 伏安特性曲线

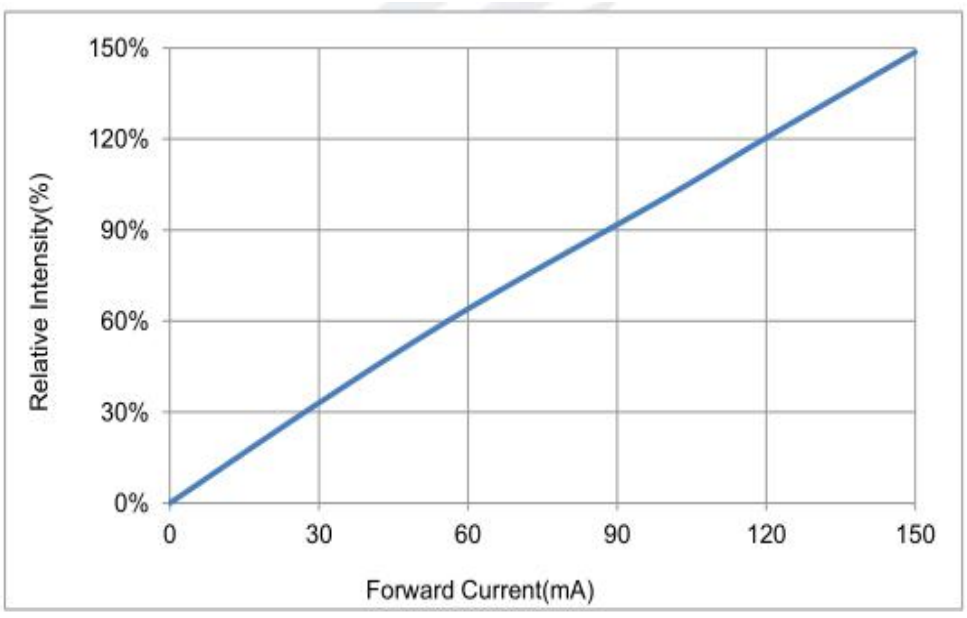


Fig.2- Forward Current Vs. Relative Power 正向电流与相对光功率特性曲线

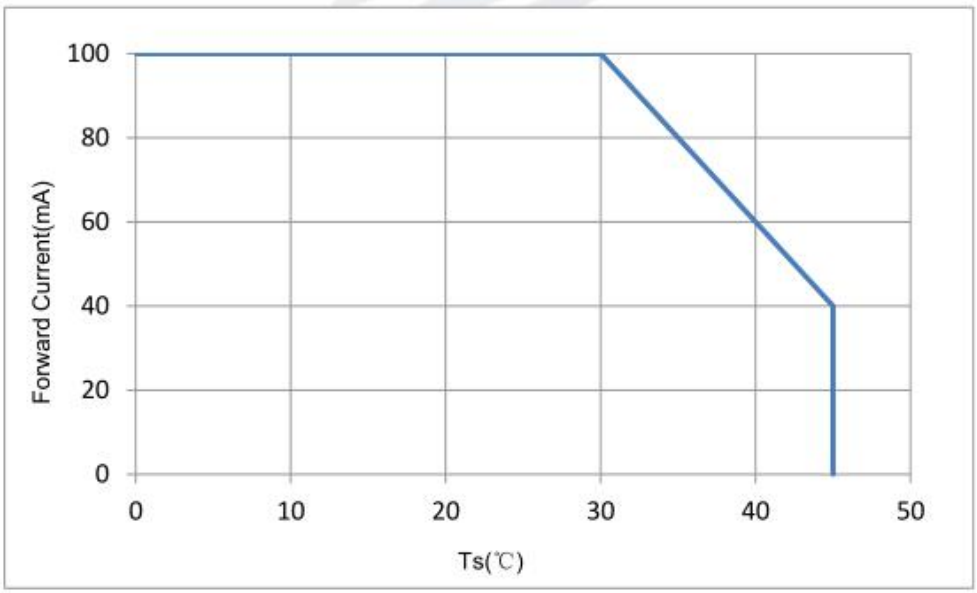


Fig.3-Ts Temperature VS. Forward Current 焊盘温度与正向电流特性曲线

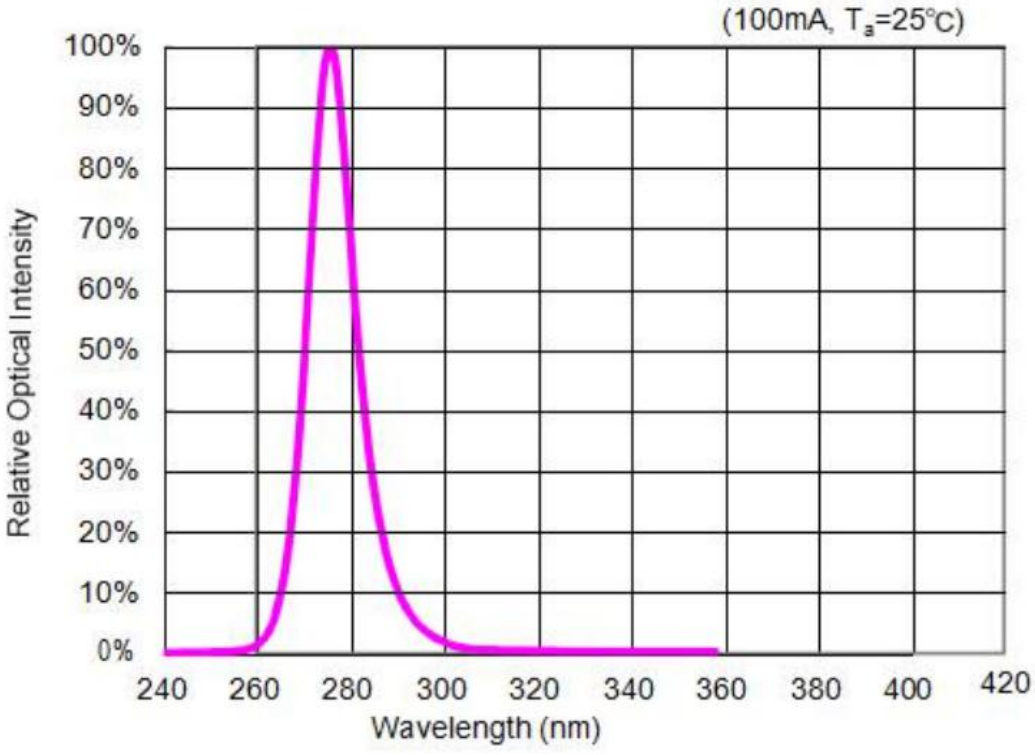


Fig.4-Spectrum Distribution 光谱分布特性曲线

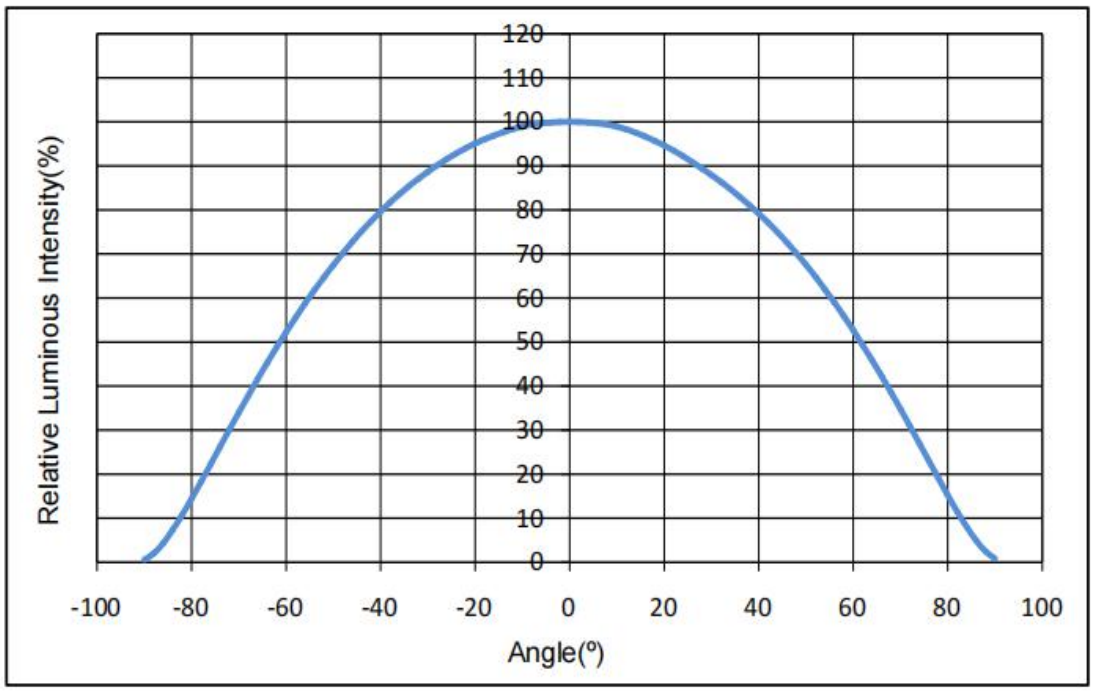


Fig.5- Radiation Diagram 辐射特性曲线

2. Packaging 产品包装

2.1 Packaging Specification 包装规格

Package:1000pcs/reel.包装每卷 1000pcs。

2.1.1 Carrier Tape Dimension 载带尺寸

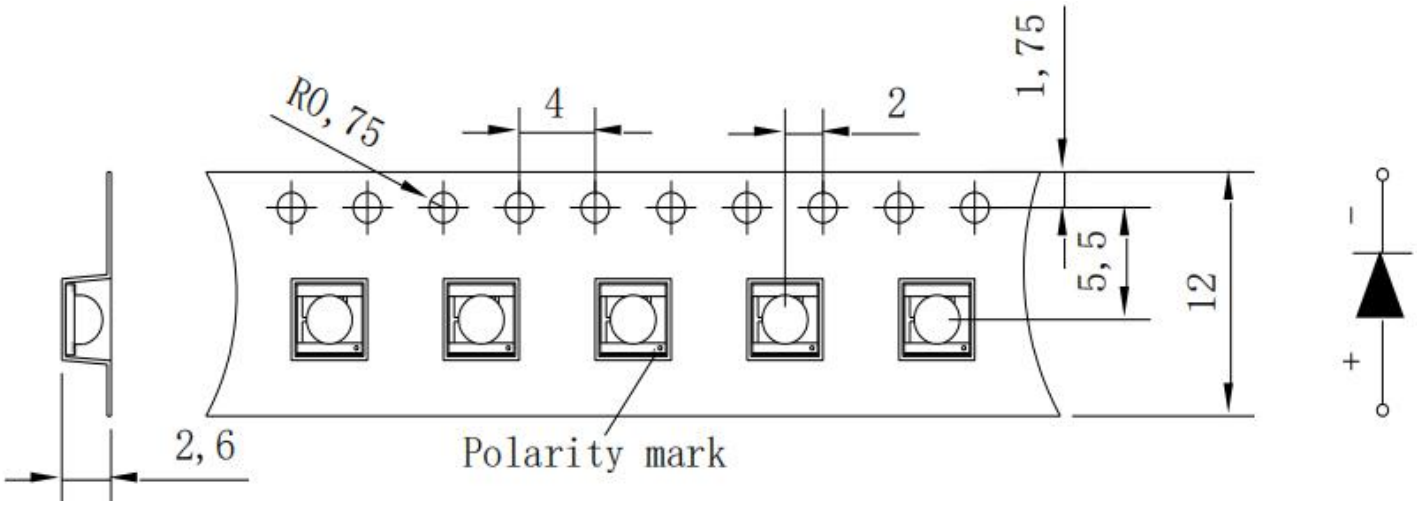


Fig.2-1 Carrier Tape Dimension 载带尺寸

2.1.2 Reel Dimension 卷盘尺寸

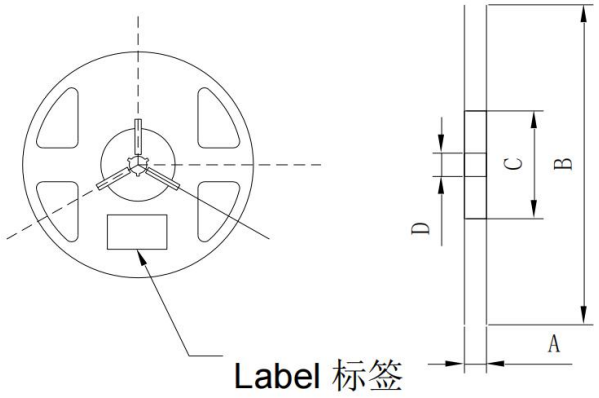


Table 2-1 Reel Dimension 卷盘尺寸

A	12±0.1mm
B	178±1mm
C	60±1mm
D	13.0±0.5mm

Fig.2-2 Reel Dimension 卷盘尺寸

2.1.3 Label Form Specification 标签规格

Part NO： Product model 产品型号
LOT NO：Instruction number 指令单号
Spec NO： product 产品规格
Date： Date 日期
Bin No.：Class-Bin No.-Wavelength code 班别-Bin 号-波段代码
Q’ty： Quantity 数量
IF（mA）：Forward current 正向电流
VF（V）：Forward voltage 正向电压
Φ（mW）： Radiant flux 辐射通量
λp(nm)： Peak Wavelength 峰值波长

2.2 Moisture Resistant Packing 防潮包装

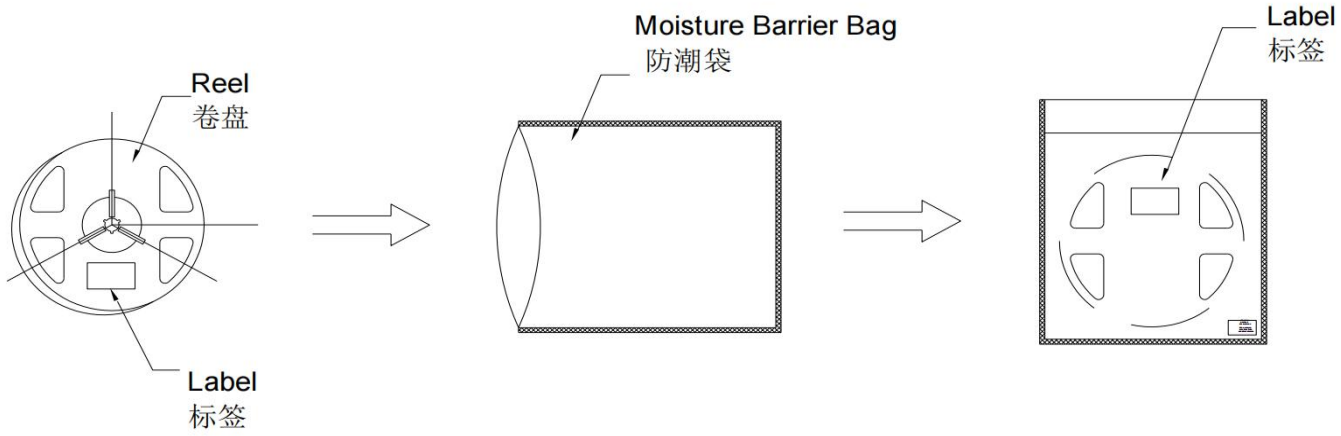


Fig.2-4 Moisture Resistant Packing Process 防潮包装过程

2.3 Cardboard Box 包装纸箱

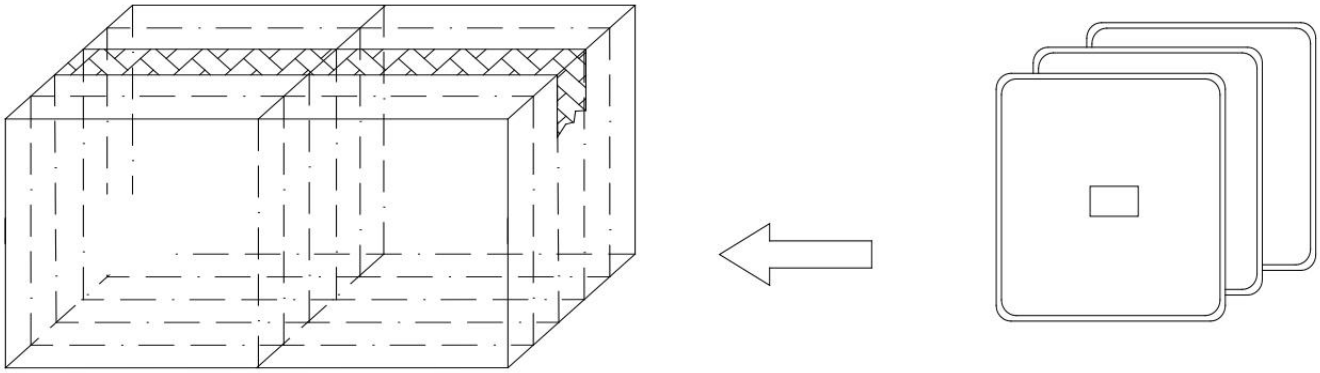


Fig.2-5 Cardboard Box 包装纸箱

2. 4 Reliability Test Items And Conditions 信赖性测试项目及条件

Table 2-3 Reliability Test Items And Conditions 信赖性测试项目及条件

Test Items 项目	Ref.Standard 参考标准	Test Condition 测试条件	Time 时间	Quantity 数量	Ac/Re 接收/拒收
Reflow 回流焊	JESD22-B106	Temp:260℃max T=10 sec	3times.	10Pcs.	0/1
Thermal Shock 冷热冲击	JESD22-A106	-40℃ 15min t↓10s 100℃ 15min	100 Cycles	10Pcs.	0/1
Life Test 常温老化	JESD22-A108	T_a=25℃ I_F=350mA	1000Hrs.	10Pcs.	0/1

2.5 Criteria For Judging Damage 失效判定标准

Table 2-4 Criteria For Judging Damage 失效判定标准

Test Items 项目	Symbol 符号	Test Condition 测试条件	Criteria For Judgement 判定标准	
			Min. 最小	Max. 最大
Forward Voltage 正向电压	V_F	I_F=100mA	-	U.S.L*)x1.1
Reverse Current 反向电流	I_R	V_R =-5V	-	U.S.L*)x2.0
Total radiant flux 光功率	Φ_e	I_F=100mA	L.S.L*)x0.7	-

Notes 备注：

1.U.S.L: Upper standard level 规格上限 L.S.L: Lower standard level 规格下限

2. The above reliability tests is based on the verification of a single/strip LED of Xuyu's existing experimental platform, the reliability experiment was taken under good heat dissipation conditions. when customers applies the LED to the series and parallel circuit, should take consideration of all the factors such as the current, voltage distribution, heat dissipation and others. 以上可靠性测试是基于旭宇现有实验平台单颗/条 LED 在良好散热条件验证下的结果。客户端将 LED 应用于串、并联线路时，需自行评估电流、电压分配、散热等问题。

3.The technical information shown in the data sheets is 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. 以上技术数据仅为产品的典型值，只作为参考，不作为任何应用条件及应用方式的保证。

3. SMT Reflow Soldering Instructions SMT 回流焊说明

3.1 SMT Reflow Soldering Instructions SMT 回流焊说明

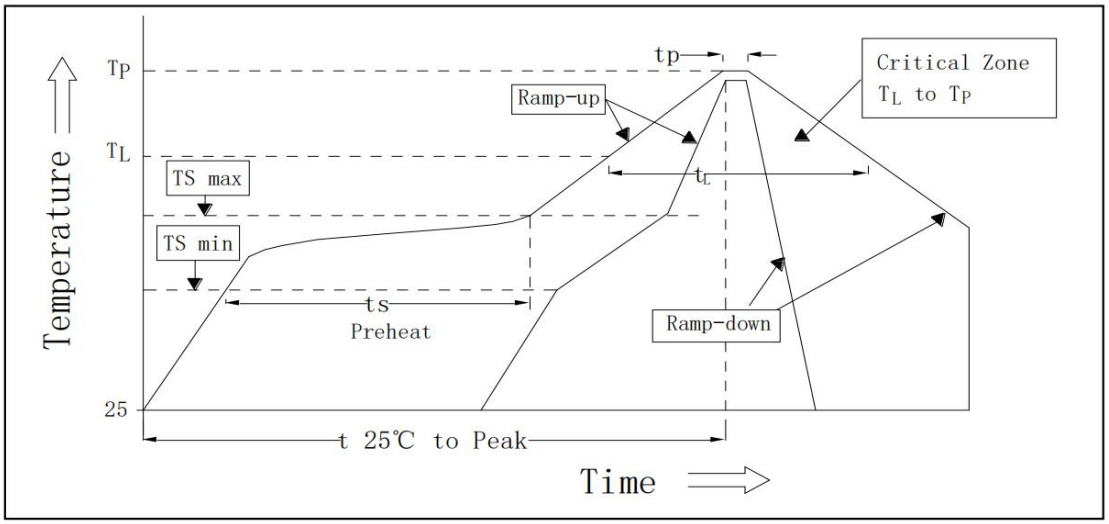


Fig.3-1 SMT Reflow Soldering Instructions SMT 回流焊说明

Table 3-1 SMT Reflow Soldering Instructions SMT 回流焊说明

Average temperature rise speed平均升温速度（Tsmax 至T_P）	Max 3 °C/ s 最高3 °C/秒
Preheating: minimum temperature预热：最低温度 (Tsmin)	150 °C
Preheating: Max temperature预热：最高温度 (Tsmax)	200 °C
Preheating: Time预热：时间（Tsmin 至Tsmax）	60s-120s 60 - 120秒
Time limited to maintain high temperature: the temperature限时维持高温：温度 (T_L)	217 °C
Time limited to maintain high temperature: The Time 限时维持高温：时间 (t_L)	Max 60s 最多60秒
Peak /Classification of temperature:峰值 / 分类温度 (T_P)	260 °C
Time limit classification of peak temperature time限时峰值分类温度：时间（t_P）	Max 10s 最多10秒
Hold time within 5 °C with the actual peak temperature (TP) 与实际峰值温度 (T_P) 相差 5 °C 以内的保持时间	Max 30s 最多30秒
Cooling speed 降温速度	Max 6 °C/ s 最高6 °C/秒
Needed time from 25 °C to Tp 25 °C 升至峰值温度所需时间	Max 8 minutes 最多8分钟

Notes 备注：

(1)Reflow soldering should not be done more than twice. If more than 24 hours between the two solderings , LED will be damaged. 回流焊次数不可以超过两次，两次回流焊的时间间隔如果超过 24 小时，LED 可能由于吸湿而损坏。

(2)When soldering , do not put stress on the LEDs during heating.当焊接时，不要在材料受热时用力压胶体表面。

3.1.1 Soldering Iron 烙铁焊接

(1) When do soldering by hand, keep the temperature of iron below less 300℃ less than 3 seconds.当手工焊接时,烙铁的温度必须小于 300℃，时间不可超过 3 秒。

(2) Soldering by hand should be done only one time.手工焊接只可焊接一次。

3.1.2 Repairing 修补

Repairing 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 not be damaged by repairing.

LED 回流焊后不应该修复，当必须修复时，必须使用双头烙铁，而且事先应确认此种方式会不会损坏 LED 本身的特性。

3.1.3 Cautions 注意事项

(1) 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 impacted on the reliability of the LEDs. Precautions should be taken to avoid the strong pressure on the encapsulated part. So when usethe picking up nozzle, the pressure on the silicone resin should be proper. LED 封装胶为硅胶，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按压器件，当使用吸嘴时，胶体表面的压力应是恰当的。

(2) Components should not be mounted on warped (non coplanar) portion of PCB. After soldering, do not warp the circuit board.LED 灯珠不要焊接在弯曲的 PCB 板上，焊接之后，也不要弯折线路板。

(3) Do not apply mechanical force or excess vibration during the cooling process to normal temperature after soldering. Do not rapidly cool device after soldering.回流焊之后冷却过程中，不要对材料实加外力，也不要有震动，回流焊后，不要采用激剧冷却的方式。

4. Handling Precautions 产品使用注意事项

1.LEDs emit very strong UV radiation. When the UV led is lighting, Do not look directly at the UV LED, it will cause irreversible damage to the eyes.

1、LED 会发射出强烈的紫外线，当紫外 LED 点亮时，不要直视紫外 LED，否则将对眼睛造成不可逆转的伤害。

2.When it lighting a long time , human or other animals must keep away from it ,only if they put on the UV protective clothing(include your eyes).

2、当紫外 LED 长期点亮时，人和动物不可长时间停留在该环境下，除非身着相应防护设备（包括眼睛的防护）。

3.keep out of reach of children.

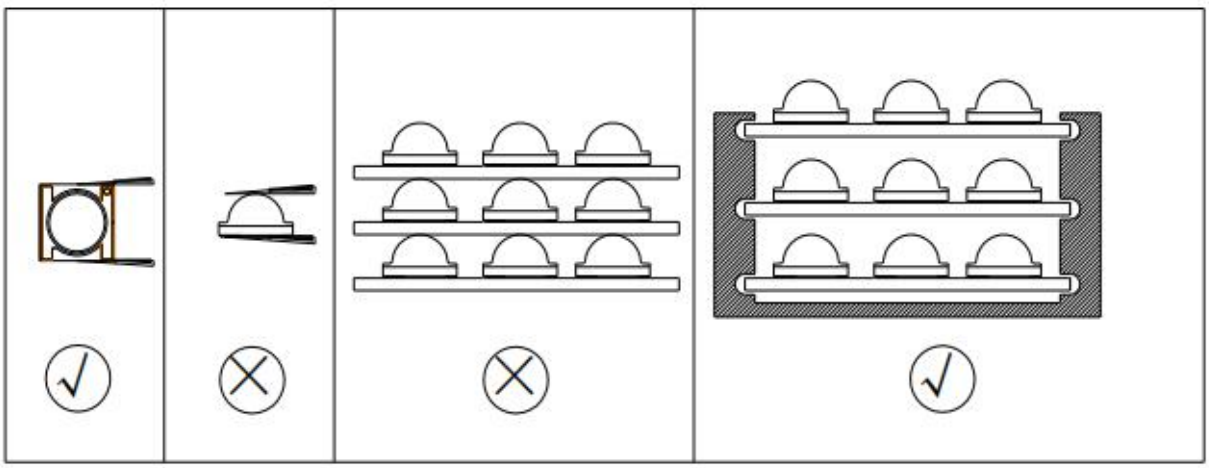
3、远离儿童

4.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.

4、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。

5.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.

5、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。



6.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.

6、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。