

---

# SPECIFICATIONS FOR SMALITE

## 斯迈得规格书

---

### TOP SL-\*B3030YEA-12FAI Lighting series EMC 3030 双并高显白光照明系列

<b>Customer</b> 客户确认	<b>Approved</b> 批准	<b>Checked</b> 审核	<b>Prepared</b> 编制

# *Smalite*

深圳市斯迈得半导体有限公司  
地址：广东省深圳市宝安区石岩街道松白路中运泰科技工业厂区厂房6栋8、9楼

电话：(86 755) 29625658    (86 755) 33581166  
传真：(86 755) 271512580

Shenzhen Smalite Semiconductor Co., Ltd  
8-9/F, 6th Block, Zhongyuntai Hi-Tech Industrial zone, Songbai Road, Shiyao Office, Bao'an District, Shenzhen

Tel: (86 755) 29625658    (86 755) 33581166  
Fax: (86 755) 271512580

## Descriptions 说明

Our EMC3030 products, use silica gel solid crystal and silica gel packages, effectively improve the heat dissipation performance. Reliability is better than companies in general, it is a complete white combination with high brightness, low-light decay characteristics.

我们的 EMC3030 系列产品使用了新型的高导热材料,低热阻封装,具备优异的耐候性、抗 UV 性能、宽功率、高亮度,光色均匀,低光衰等优势。



## Features

- Size (mm) 3.0\*3.0\*0.53
- Viewing angle: 120°
- ROHS compliant lead-free soldering compatible
- Warm/White:
- A typical color temperature:

2700K/3000K/4000K/5000K/5700K

/6500K

## 特点

- 外观尺寸 (mm) 3.0\*3.0\*0.53
- 发光角度: 120°
- 符合 ROHS 无铅焊接的标准
- 暖白/白光:
- 典型色温:

2700K/3000K/4000K/5000K/

5700k/6500K

## Applications

- Channel letter
- Portable lighting
- Decorative lighting
- OA equipment
- Backlighting of full color LCD
- Bulbs and fluorescent lamps

## 应用

- 指示灯
- 便携照明
- 装饰照明
- 办公照明
- 液晶背光
- 家居照明

**Absolute maximum ratings 最大限定参数(Ta=25°C)**

Parameter 项目名称	Symbol 项目符号	Value 规格	Unit 单位
Power dissipation 消耗功率	Pd	1260	mW
Forward current 正向电流	If	350	mA
Reverse voltage 反向电压	Vr	5	V
Operating temperature range 工作温度范围	Top	-35~+100	°C
Storage temperature range 储存温度范围	Tstg	-35~+100	°C
Pulse Forward Current 正向脉冲电流	Ifp	420	mA
Electrostatic Discharge 抗静电能力	ESD	2000(HBM)	V

**Electro-optical characteristics 主要光电参数(Ta=25°C)**

Parameter 项目名称	Test Condition 测试条件	Symbol 项目符号	Value 参数			Unit 单位
			MIN. 最小值	TYP. 中间值	MAX. 最大值	
Forward voltage 正向电压	If=350mA	Vf	3.0		3.6	V
Luminous flux 光通量	If=350mA	Φ	130		160	LM
Viewing angle at 50% Iv 半强角	If=350mA	2 θ 1/2		120		Deg
Reverse current 反向电流	Vr =5V	Ir			10	μA
RA 显色指数	If=350mA	RA	80			
Heatresistance 热阻	If=350mA	Rth			25	°C/W
Junction Temperature 结温	If=350mA	Tj			125	°C

**NOTES 注释:**

Tolerance: Φ ±10%, λd±2nm, Vf±0.05V, X, Y ±0.01)

公差:光通量 ±10%,主波长±2nm, 正向电压±0.05V, 色坐标 X, Y ±0.01)

IFP Conditions: Pulse Width ≤ 10msec and Duty ≤ 1/10.

峰值电流条件: 脉冲范围 ≤ 10 毫秒, 占空比 ≤ 1/10.

**MassProduction List 批量生产型号**

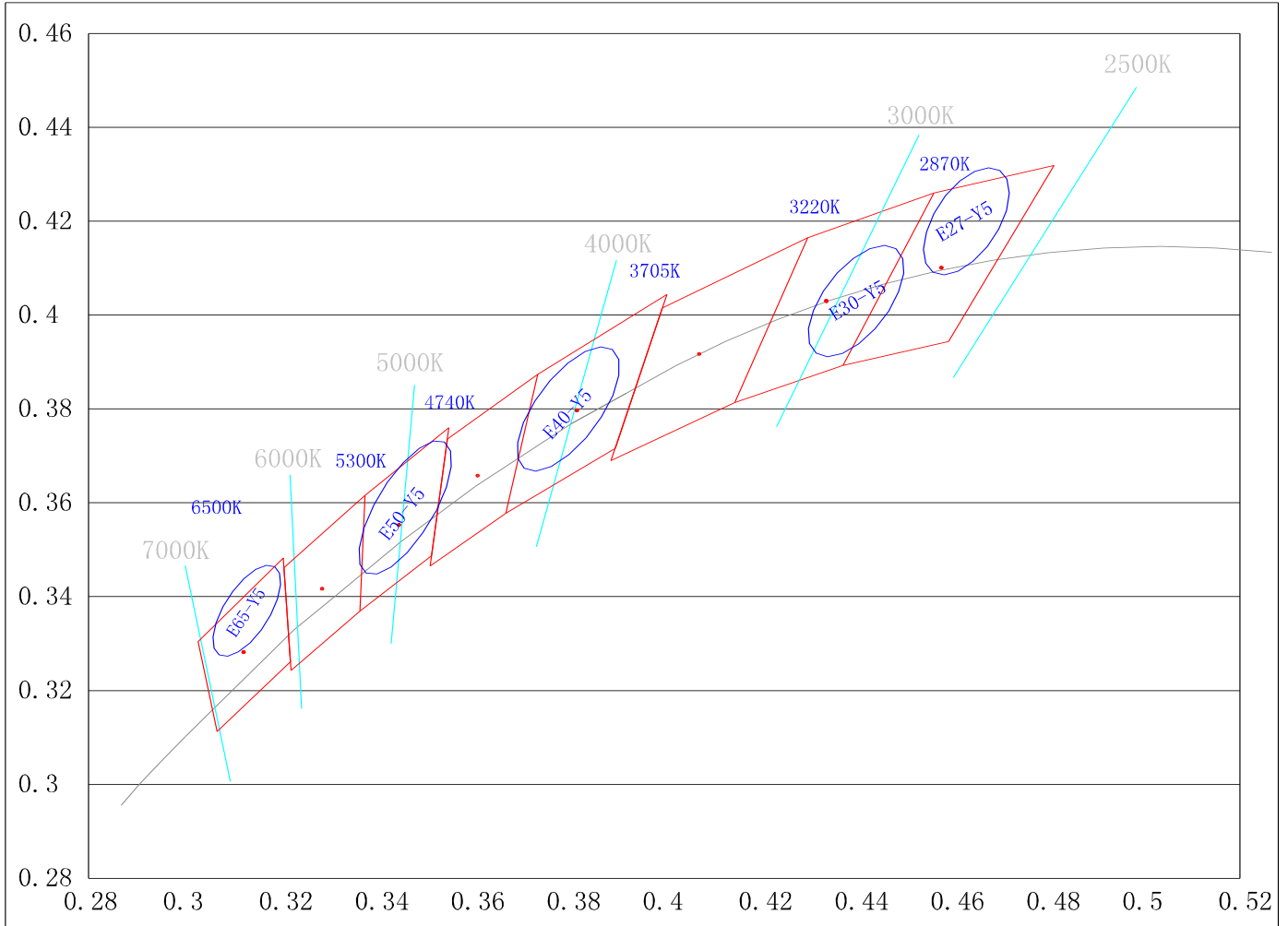
Product Name 产品型号	色区	CCT	Ra	Φ(lm) Min	Φ(lm) Max	Test conditions 测试条件
SL-IB3030YEA-12FAI	E27-Y5	2650-2850	80	130	140	25°C 350mA
	E30-Y5	2830-3100	80	135	145	
SL-NB3030YEA-12FAI	E40-Y5	3830-4300	80	145	155	
SL-WB3030YEA-12FAI	E50-Y5	4700-5350	80	150	160	
	E65-Y5	6050-6850	80	150	160	

**我司 EMC 系列产品色区：**

Nominal ANSI CCT	Target Center Point		Major Axis a	Major Axis b	Ellipse Rotation Angle
典型色温	X	Y	主轴 a	主轴 b	椭圆旋转角度
E27-Y5	0.4630	0.4200	0.01288856	0.006684505	57.28°
E30-Y5	0.4400	0.4030	0.01391042	0.006830748	53.16°
E40-Y5	0.3800	0.3800	0.015643875	0.006724617	54°
E50-Y5	0.3460	0.3590	0.016183121	0.005999582	59.62°
E65-Y5	0.3130	0.3370	0.011028956	0.004757652	58.38°

**CIE Chromaticity Diagram**

色区图



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

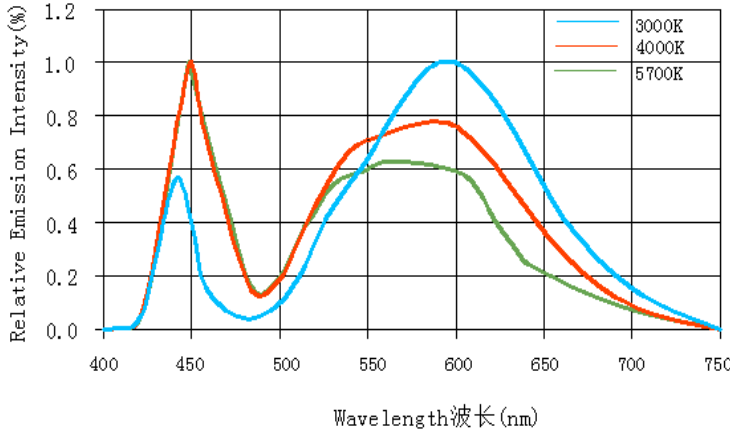
Test Items 测试项目	Test condition 测试条件	Time 时间	Quantity 数量	Ac/Re 接受、拒收
Reflow Soldering 回流焊	Temp. :260°C/10sec.	6Min.	20pcs	0/1
Thermal Shock 冷热冲击	-40~125C, 15min dwell, 10sec transfer	100Cycles	20pcs	0/1
High Temperature High Humidity life Test 高温高湿通电	85°C,85%RH, IF=350mA	1000Hrs.	8pcs	0/1
Low Temperature Storage 低温保存	Ta=-40°C	1000Hrs.	10pcs	0/1
High Temperature Storage 高温保存	Ta=100°C	1000Hrs.	8pcs	0/1
High Temperature Operation Life Test 高温通电	Ta=105°C, IF =350mA.	1000Hrs.	10pcs	0/1

### Failure Criteria 失效判断标准

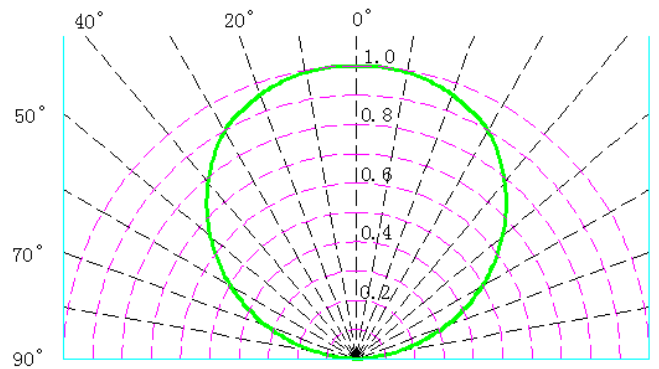
Item 项目	Symbol 符号	Failure Criteria 判断标准
Luminous Flux 光通量	Lm	≥90%
Forward voltage 正向电压	VF	±10%
Colour 坐标点	CIE_X CIE_y	±0.008

**Typical optical characteristics curves 光电特性曲线**

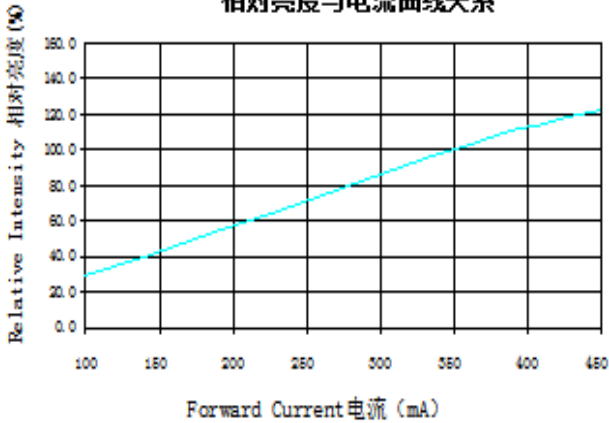
**Spectrum Distribution  
光谱分布图**



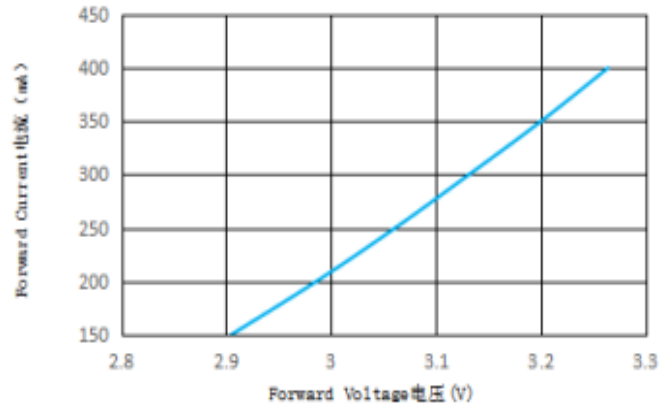
**Curves of beam angel and relative brightness  
角度图**



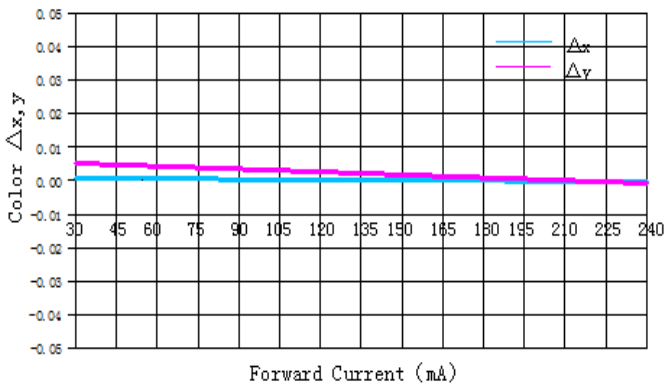
**Relative Luminous Flux vs. Forward Current  
相对亮度与电流曲线关系**



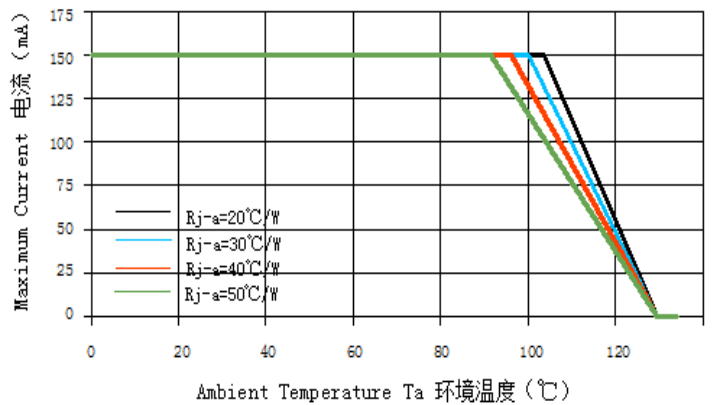
**Forward Current vs. Forward Voltage  
电流与电压曲线关系**



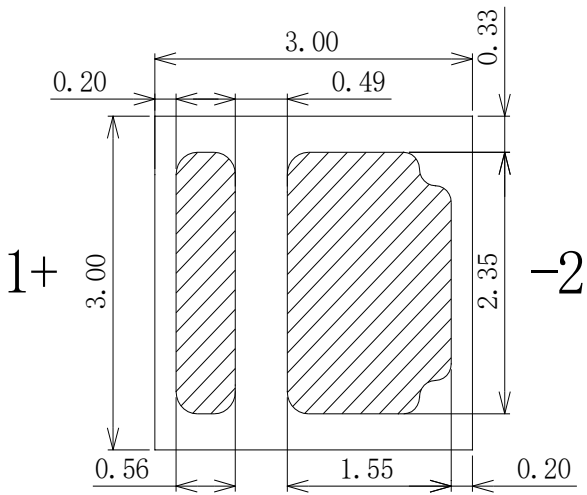
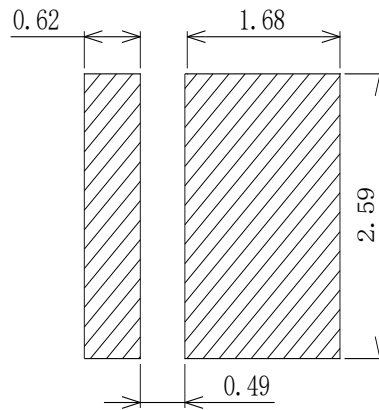
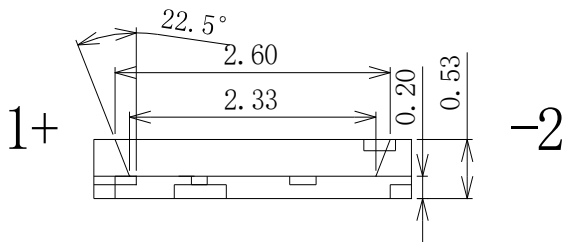
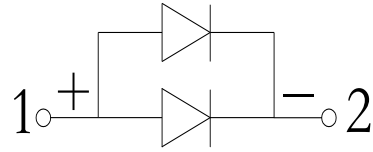
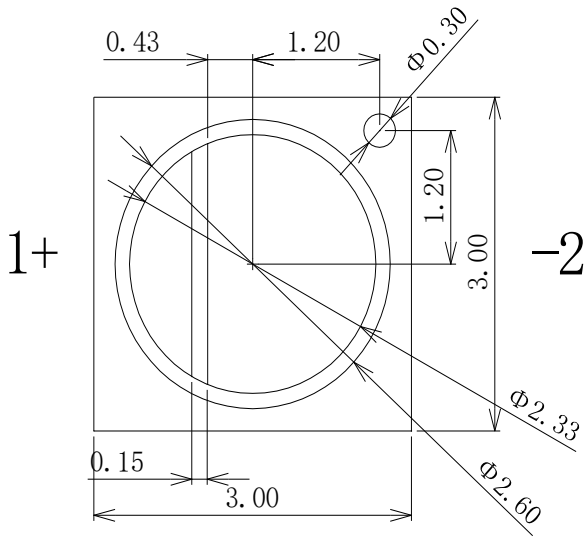
**Forward Current vs. Color  $\Delta x, y$   
电流与色坐标偏移量曲线关系**



**Thermal design  
电流与环境温度曲线关系**

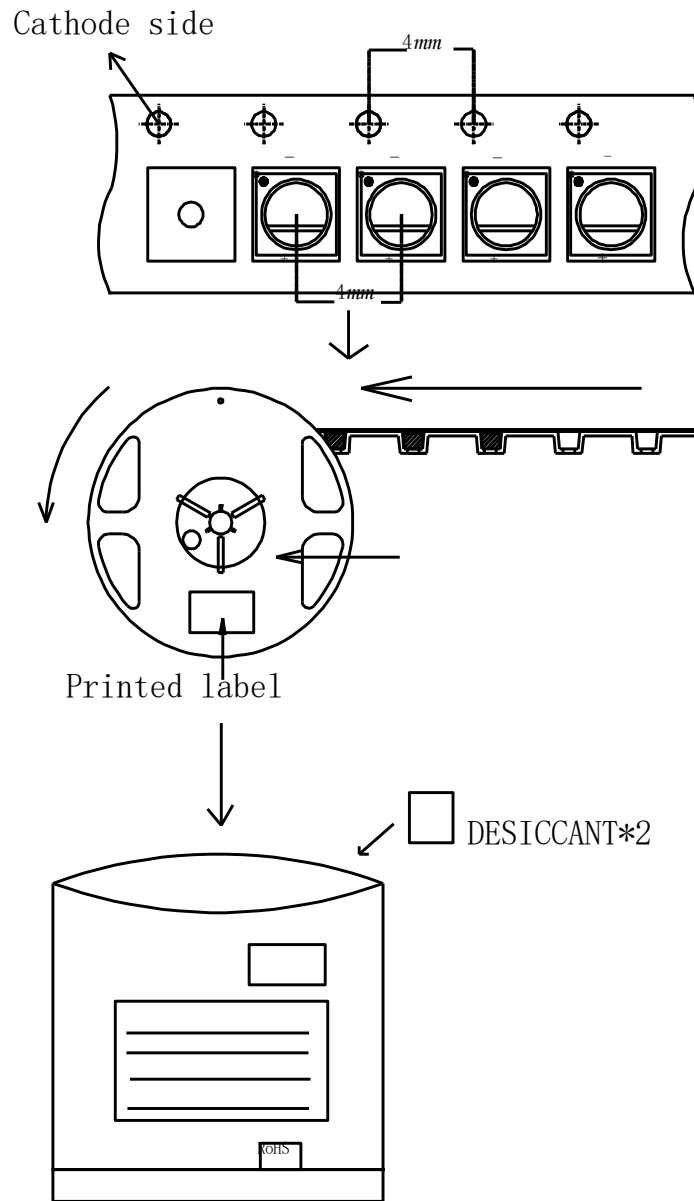


**Mechanical Dimensions** 外观尺寸: Unit 单位 (mm)





**Packaging 包装**

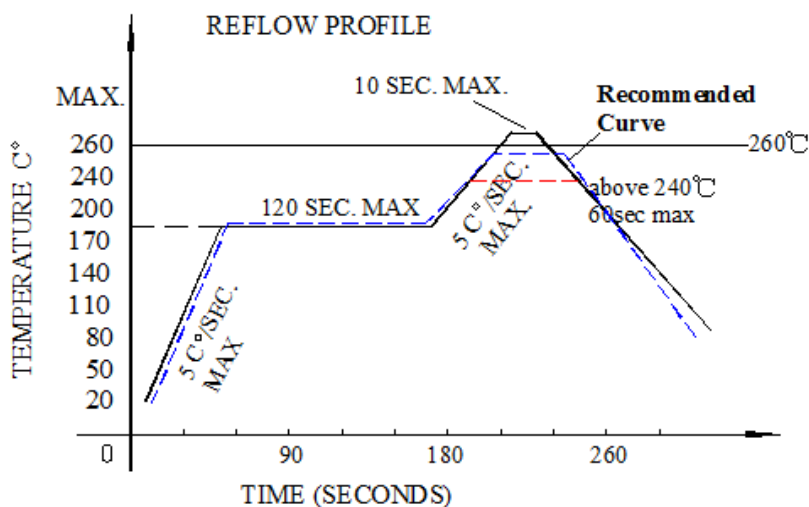


**NOTES 备注:**

1. Empty component pockets are sealed with top cover tape;  
预留载带空位也贴有上封带
2. The maximum number of missing lamps is two;  
最多缺失的 LED 不能超过两颗
3. The cathode is oriented towards the tape sprocket hole in accordance with ANSI/EIA RS-481 specifications.  
根据 ANSI/EIA RS-481 的规格,产品的负极指向卷带的导孔.
4. Package for 3030,4.5KPCS/roll  
3030 包装, 4.5K/卷

## Specifications 规格

### 一、 Requirements for application and reflow soldering 应用及回流焊要求:



Reflow soldering curve 回流焊曲线图

(Product is highest resistant to 260°C reflow but suggested the highest temperature of 240°C within)

(产品最高可耐260°C回流焊，但建议最高温度设为240°C)

#### ■ Notes for reflow soldering 回流焊注意事项:

1. No more than twice for reflow soldering.  
注意回流焊不可超过两次。
2. To ensure the quality of our LEDs, we encapsulate them with silica gels. So please do not put pressure on the LEDs.  
为保证产 LED 质量及可靠性我司采用硅胶封装，胶体表面较软，焊接加热过程中，不可施加压力在 LED 表面。
3. Please choose the right nozzle(try to learn from the plastic products parts) to avoid the damage to products due to the pressure.  
在吸嘴的选取上要选择吸嘴的大小和压力合适的吸嘴（尽量吸取产品的塑胶部分），以避免造成压力过大伤害产品。
4. Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground.  
LED 为静电敏感产品，使用时请佩带防静电手环，工作台做好防静电处理，机台设备等保证接地。

#### ■ Handwork soldering 手工焊接:

1. During the soldering, the electronic soldering iron must be kept under the temperature of 300°C and the soldering time must not be beyond 3 seconds. No touch between the electronic soldering iron and colloid.  
手工焊接时，要保持电烙铁温度在 300 摄氏度以下，并且焊接时间小于 3 秒，电烙铁不可接触胶体。
2. Handwork soldering is only allowed once. We won't take responsibility for more than that.  
手工焊接只可进行一次，重复焊接不保证产品是否完好。
3. Avoid using sharp objects to compress products Colloidal Part directly.  
避免使用尖锐的物体直接接触产品胶体部分。
4. Please put on the antistatic hand loop during the use. The worktable should be with antistatic finish. The equipments must be contacted with ground.  
LED 为静电敏感产品，使用时请佩带防静电手环，工作台做好防静电处理，机台设备等保证接地。

## 二、Storage conditions 储存条件

### Before opening the package 打开包装袋前:

1. The LEDs can be preserved for 1 year in condition of temperature no more than 30°C and humidity no more than 60%RH. Recommended for moisture-proof foil bag with desiccant packaging methods and stored in the constant temperature and humidity box. Can not reach the requirements under the environment of the guarantee as far as possible in six months after use.  
在温度不超过30°C及湿度不超过60%RH 条件下，LED 可以保存一年，建议采用带干燥剂的防潮铝箔袋的包装方式，存放在恒温恒湿箱中。达不到要求的环境下，尽量保证在6个月内使用完毕。

### After opening the package 打开包装后:

1. The SMD LEDs should be run out with 12hours in condition of temperature no more than 30°C and humidity no more than 60%RH. The rest products should be pressurized in vacuum condition with desiccants. Stored for more than 7 days, next time also must be dehumidification, the dehumidification conditions is 70°C with 12hours.  
开封后，LED 在 $\leq 30^{\circ}\text{C}$ 、 $\leq 60\%RH$  相对湿度的条件下，12 小时内完成贴片作业，未用完的产品重新真空密封，并放置在一个密封容器中，同时必须使用干燥剂。存储超过7 天，下次使用时同样需要除湿操作，除湿条件为70°C 12 小时。
2. The sealed storage products stock in the drying cabinet more for than one month, then must be dehumidified before used, and the dehumidified conditions is 70°C 24 hours.  
密封的产品在干燥箱中存储超过1个月的，须经过深度除湿作业才能上线，除湿条件：70°C 24小时。
3. If the product does not vacuum sealed packaging, and in the air for more than 40hours, this product must be removed from the tape of reel and put into the steel plate to dehumidify with 150°C 2 hours, then could ensure the quality of the product after the soldering operation.  
如果产品没有真空包装密封保存，且在空气中放置超过40小时，此产品必须从载带中拆出，放入钢盘进行150°C 2小时的除湿，之后进行回流焊作业才能保证产品品质。