EKINGLUX亿晶源

DATA SHEET 数据表

Revise History 修订记录

Rev.版本	Descriptions描述	Date日期	Page页
1.0	-	23-10-2009	-
2.0	Renew form续订表格	15-12-2015	-
2.1	Renew form续订表格	10-11-2018	-
2.2	Renew form续订表格	27-12-2021	-
2.3	Renew form续订表格	23-10-2023	-
2.4	Renew form续订表格	10-12-2024	-

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EKINGLUX亿晶源

Features 特征



●Long operating life.Low Power Consumption.使用寿命长.低功耗.
●Wide Viewing Angle.RoHS Compliant.宽视角.符合 RoHS.
●Moisture sensitivity level: 3.湿度敏感性等级:3.

Application 应用

●Backlight,Status indicator,Home and smart appliances,Wearable and portable devices,Healthcare applications
背光,状态指示器,家用和智能电器,可穿戴和便携式设备,医疗保健应用

Part Number 产品型号	Dice Material 芯片材质	Emitted Color 发光颜色	Lens Color 胶体形态
E6C1206RGBC3UDA-A13	AlGaInP-InGaN-InGaN	Red-Green-Blue	Water Clear

Electro-Optical Characteristics 电光参数(Ta=25°C)

Parameter 参数	Symbol 符号	Color 颜色	Min. 最小值	Typ. 中间值	Max. 最大值	Unit 单位	Test Condition 测试条件
Luminous Intensity *1 亮度	IV	■	70	-	200	mcd	IF=20mA
		■	400	-	900		
		■	70	-	200		
Forward Voltage 正向电压	VF	■	1.80	2.00	2.40	V	
		■	2.70	2.90	3.30		
		■	2.70	2.90	3.30		
Dominant Wavelength 主波长	λd	■	617	620	628	nm	
		■	515	520	530		
		■	460	465	470		
Viewing Angle *2 发光角度	2θ1/2		-	130	-	deg	
Reverse Current 反向电流	IR		-	-	10	uA	VR=5V

Notes 备注:
1.A Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve. 用接近 CIE 眼睛响应曲线的光传感器和滤波器组合来测量发光强度.
2. 2θ1/2 is the o-axis angle where the luminous intensity is 1⁄2 the peak intensity. 2θ1/2 是 0 轴角,其中发光强度是峰值强度的 1/2.

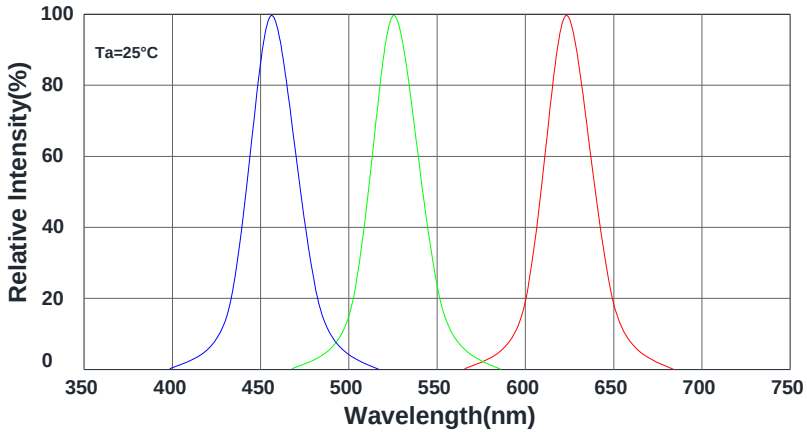
Absolute Maximum Ratings 绝对最大额定值(Ta=25℃)

Parameter 参数	Symbol 符号	Max.最大值			Unit 单位
		Red	Green	Blue	
Power Dissipation 消耗功率	Pd	60	85	85	mW
Peak Forward Current *1 脉冲峰值电流	IFP	60	60	60	mA
Forward Current 正向电流	IF	25	25	25	mA
Human Body Model 人体放电模式	ESD	2000			V
Operating Temperature Range 工作温度	Topr	-40to+85			°C
Storage Temperature Range 贮存温度	Tstg	-40to+90			°C
Reflow Soldering 回流焊	Tsld	260°C for 5 secs			

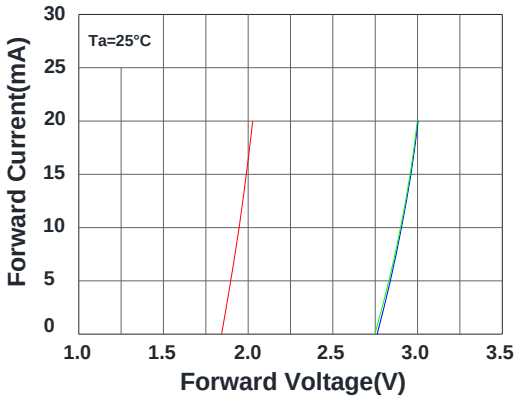
Notes 备注: 1.Duty Factor=10%, Frequency=1kHz. 占空因数=10%,频率=1kHz.

Optical & Electrical Characteristics Curves 光电特性曲线

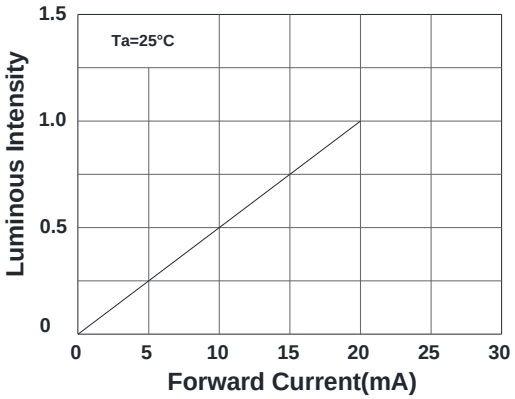
Relative Intensity vs Wavelength



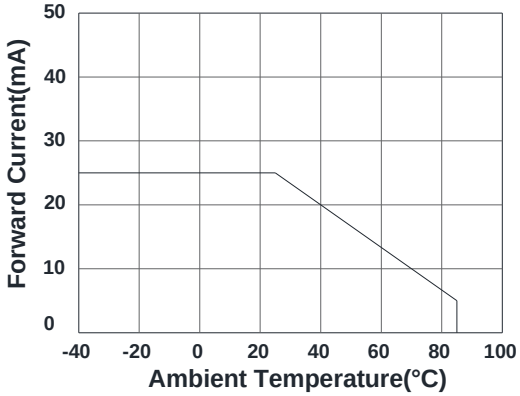
Forward Current vs. Forward Voltage



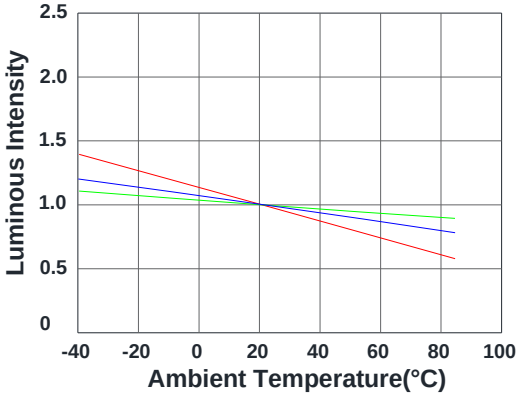
Luminous Intensity vs. Forward Current



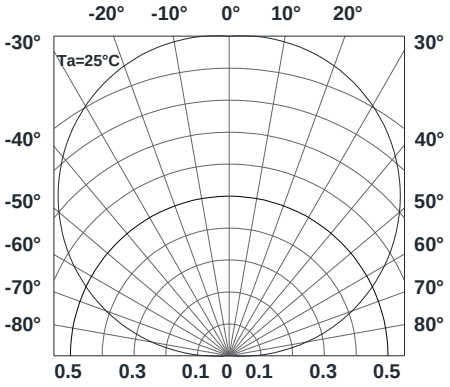
Forward Current Derating Curve



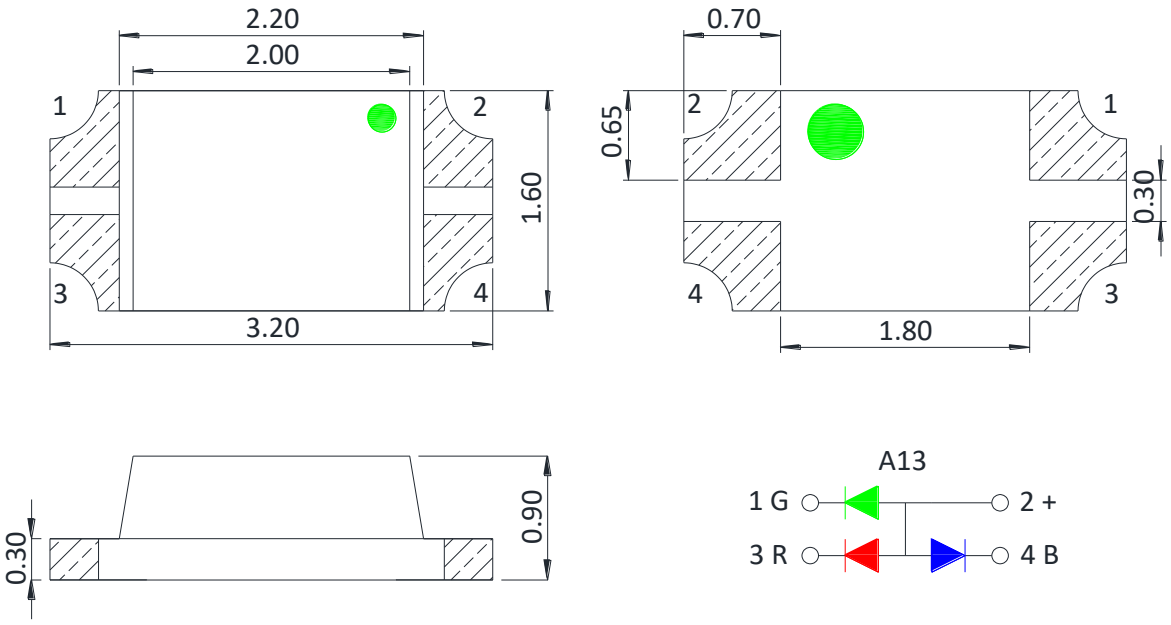
Luminous Intensity vs. Ambient Temperaturs



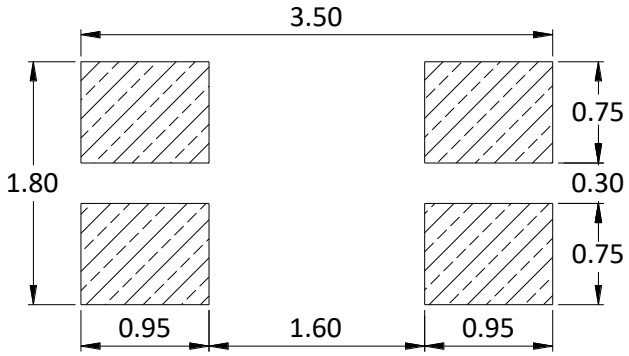
Radiation Diagram



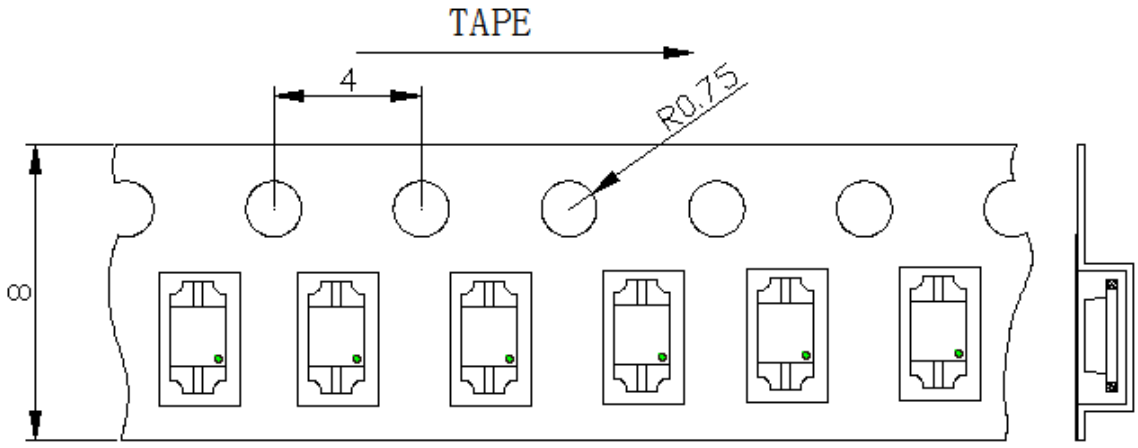
Package Dimension 封装尺寸 (Unit:mm,Tolerance: ±0.20mm)



Recommended Soldering Pad Design 推荐焊盘设计(Unit:mm,Tolerance: ±0.10mm)

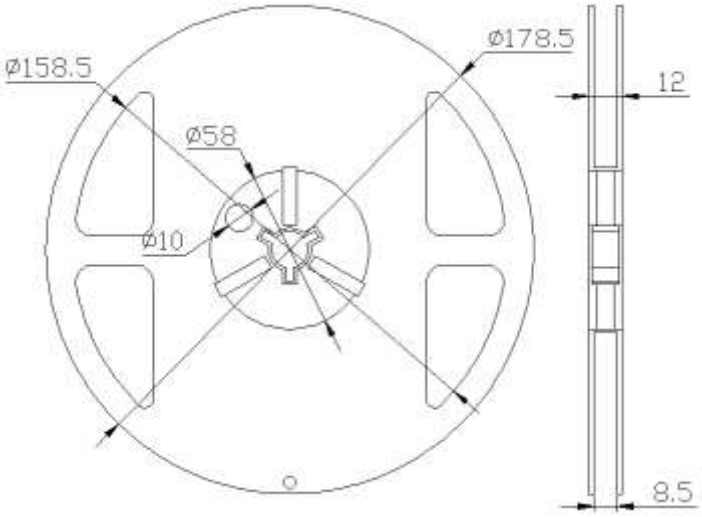


Carrier Tape Dimensions 载带尺寸(Unit:mm,Tolerance: ±0.10mm)

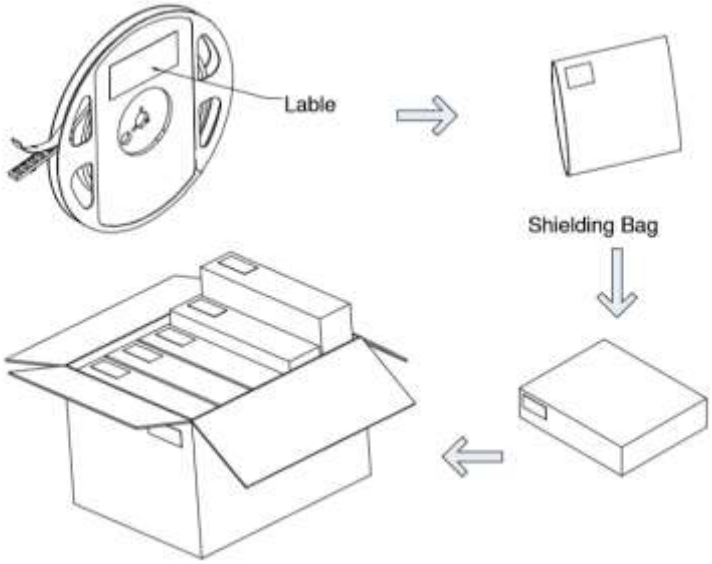


●Loaded quantity 3000 pcs per reel. 每个卷轴装载3000个。

Reel Dimensions 卷轴尺寸(Unit:mm,Tolerance: ±0.25mm)



Packaging method 包装方法



Label Style 标签样式



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
Resistance to Soldering Heat 耐焊性	IEC/TR 60068-3-122014	Temp:260℃ max T=8 sec	2 times	22PCS	0/1
Temperature Cycle 温度循环	IEC60068-2-14 : 2009	85℃±5℃ 15min ↑ ↓ 5 min -40℃±5℃ 15min	100Cycles	22PCS	0/1
High Humidity Heat Life Test 高温高湿老化测试	IEC60068-2-78:2001	Ta=85℃ RH=85% IF=I_{FT}	1000H	22PCS	0/1
High Temperature Storage 高温储存	Tested with Internal standards 按内部标准测试	Temp:85℃±5℃	1000H	22PCS	0/1
Low Temperature Storage 低温储存	IEC60068-2-1:2007	Temp:-40℃±5℃	1000H	22PCS	0/1
Life Test 常温通电老化	Tested with Internal standards 按内部标准测试	Ta=25℃±5℃ IF=I_{FT}	1000H	22PCS	0/1

Failure determination criteria 失效判定标准

Test Items 项目	Symbol 符号	Test Condition 测试条件	Failure Criteria判定标准	
			Min.最小值	Max.最大值
Forward Voltage正向电压	VF	IF=IFT	-	U.S.L*)x1.1
Recerse Current反向电流	IR	VR=5V	-	10uA
Luminous Intensity亮度	IV/Φ	IF=IFT	L.S.L*)x0.7	-

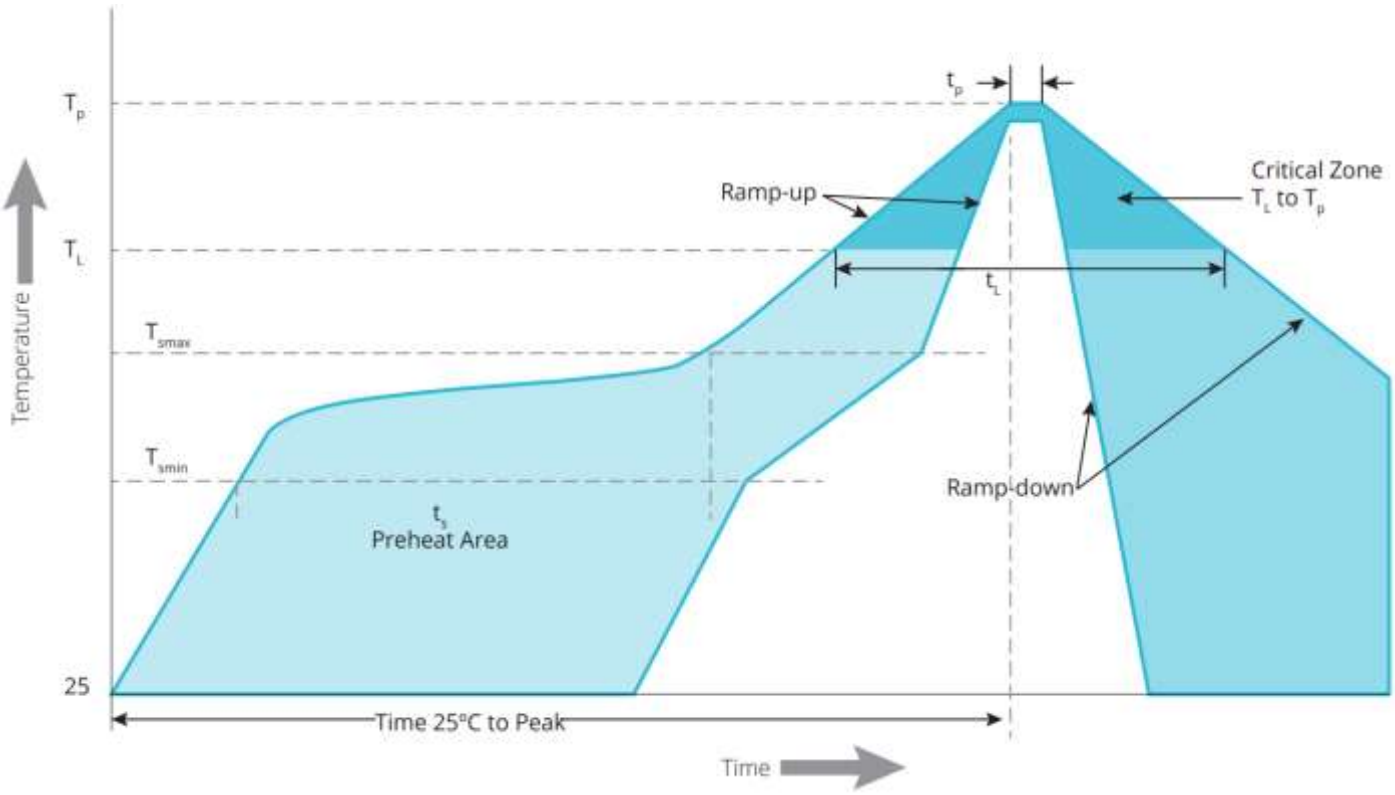
U.S.L: Upper Specification Limit 规格上限　　L.S.L: Lower Specification Limit 规格下限

SMT Reflow Soldering Instructions 回流焊说明

Profile Feature 曲线特征	Pb-Free Assembly 无铅组装
Temperature min (Tsmin) 最低温度(Tsmin)	150 °C
Temperature max (Tsmax) 最高温度(Tsmax)	200 °C
Time (Tsmin to Tsmax) (ts) 时间(Tsmin 至 Tsmax)(ts)	60-120 seconds
Average ramp-up rate (Tsmax to Tp) 平均上升率(Tsmax 至 Tp)	3 °C/second max
Liquidous temperature (TL) 液体温度(TL)	217°C
Time at liquidous (tL) 液态时间(tL)	60-150 seconds
Peak package body temperature (Tp)* 峰值封装体温度	255 °C ~260 °C
Peak Classification temperature (Tc) 峰值目标分类温度	260 °C
Time (tp) within 5 °C of the specified Classification temperature (Tc) 实际峰值温度(TP)与目标分类温度(Tc)偏差±5℃范围内的保持时间	30 seconds
Average ramp-down rate (Tp to Tsmax) 从峰值温度(Tp)降至最高允许温度(Tsmax)的平均降温速率	6 °C/second max
Time 25 °C to peak temperature 从 25°C 升至峰值温度(Tp)的升温过程	8 minutes max

●Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.
峰值温度(Tp)的公差定义为供应商最小值和用户最大值。
●Tolerance for time at peak profile temperature (tp) is defined as a supplier minimum and a user maximum.
峰值温度(tp)下的时间公差定义为供应商最小值和用户最大值。

Solder temperature profile 焊接温度曲线:



●Reflow soldering should not be done more than two times. 回流焊接不应超过两次.
●When soldering, do not put stress on the LEDs during heating. 焊接时,加热时不要对 LED 施加压力.
●After soldering, do not warp the circuit board. 焊接后,不要扭曲电路板.

Precautions 注意事项

1. Storage 储存：

●Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to aminimum.

防潮防静电包装采用吸湿材料,使水分保持在最低限度.

●Before opening the package, the product should be kept at 30°C or less and humidity less than 60% RH, and beused within a year.

打开包装前,产品应保持在 30℃或以下,湿度小于 60%RH,并在一年内使用.

●After opening the package, the product should be stored at 30°C or less and humidity less than 10%RH. It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60%RH.

打开包装后,产品应储存在 30℃或以下,湿度小于 10%RH 的环境中.建议在 30℃及以下,湿度低于 60%RH 的车间条件下操作。

●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: (70±5) °C for 24 hours.

如果吸湿材料已经褪色或 LED 已经超过储存时间,则应根据以下条件进行烘烤处理:（70±5）℃,持续 24 小时.

2. Static Electricity 静电：

●Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristic such as the forward voltage becomes lower, or the LEDs do not light at the low current. All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.

静电或浪涌电压会损坏 LED,损坏的 LED 将显示一些不寻常的特性,例如正向电压变低,或者 LED 在低电流下不亮.所有装置、设备和机械必须正确接地.同时,建议在处理 LED 时使用腕带或防静电手套、防静电容器.

3. Vulcanization 硫化：

●LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag2S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color temperature drift and serious decline ,seriously affecting the performance of the product.So we should take corresponding measures to avioding vulcanization, such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material.

LED 固化是由于硫的存在,在化学反应中生成 Ag2S,导致银层的反射能力下降,光色温漂移和严重性能下降.因此,我们应该采取相应的措施避免硫化,比如避免使用挥发性硫化物,远离高硫含量的材料.

4. Handling Precautions 搬运注意事项:

● Handle the component along the side surfaces by using forceps or appropriate tools.

使用钳子或适当的工具沿着侧面处理部件.

●Do not directly touch or handle the epoxy resin lens surface. It may damage the internal circuitry.

请勿直接触摸或处理环氧树脂镜片表面,它可能会损坏内部电路.

●Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the epoxy resin lens or damagethe internal circuitry.

不要将组装好的含有暴露LED的PCB堆叠在一起,撞击可能划伤环氧树脂透镜或损坏内部电路.