

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更新表格	15-12-2015	-
2.1	Renew form更新表格	10-11-2018	-
2.2	Renew form更新表格	27-12-2021	-
2.3	Renew form更新表格	23-10-2023	-
2.4	Renew form更新表格	10-12-2024	-



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Features 特征

- Super thermal ceramic bracket. 超导热陶瓷支架.
- Super high Flux output and high Luminance. 超高通量输出和高亮度.
- Moisture sensitivity level: Level 3. 湿度敏感度等级: 3 级.

Application 应用

- Caution light, Decoration lighting. 警示灯、装饰照明.
- Automobile lamps, Indicator, outdoor lighting. 汽车灯具、指示灯、户外照明.

Part Number 产品型号	Dice Material 芯片材质	Emitted Color 发光颜色	Lens Color 胶体形态
E6T3535RGBC3UDA	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
Forward Voltage 正向电压	VF		2.00	-	2.60	V	IF=350mA
			2.80	-	3.60		
			2.80	-	3.60		
Luminous Flux 光通量	IV		50	-	70	lm	
			90	-	110		
			25	-	45		
Dominant Wavelength 主波长	λd		620	-	630	nm	
			520	-	535		
			463	-	473		
Viewing Angle ^{*1} 发光角度	2θ1/2		-	120	-	deg	
Reverse Current 反向电流	IR		-	-	10	uA	VR=5V

Notes 备注:

1. 2 θ 1/2 is the o-axis angle where the luminous intensity is 1/2 the peak intensity. 2 θ 1/2 是 0 轴角, 其中发光强度是峰值强度的 1/2.

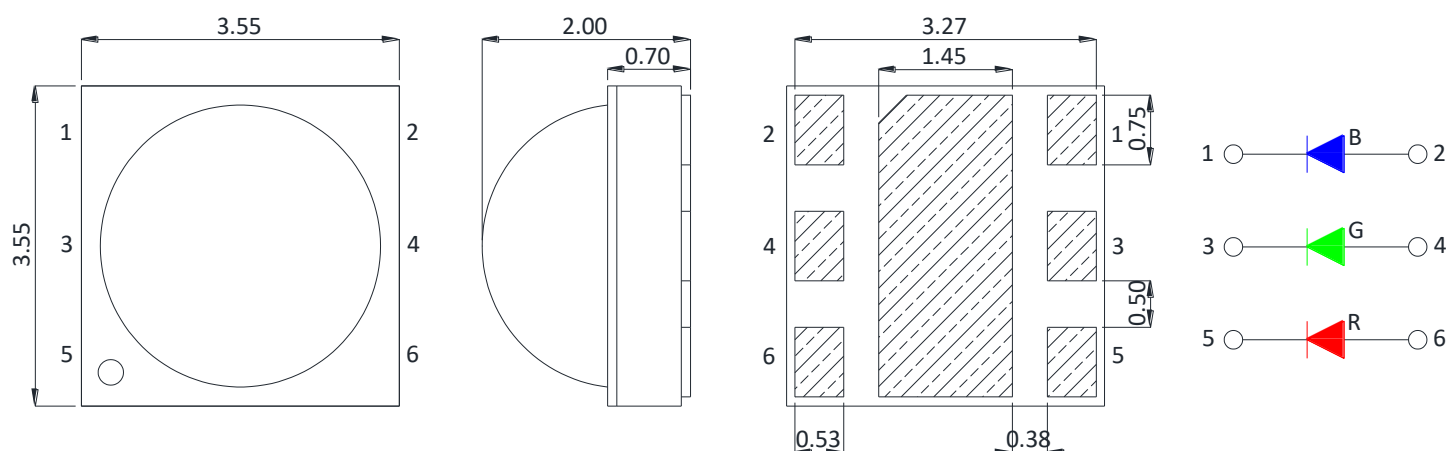
Absolute Maximum Ratings 绝对最大额定值 (Ta=25°C)

Parameter 参数	Symbol 符号	Max. 最大值			Unit 单位
		Red	Green	Blue	
Power Dissipation 消耗功率	P _d	3000			mW
Peak Forward Current *1 脉冲峰值电流	I _{FP}	380*3			mA
Forward Current 正向电流	I _F	350*3			mA
Electrostatic Discharge (HBM) 抗静电	ESD	4000			V
Junction Temperature 结温	T _j	≤125			°C
Junction Solder point 热阻	R _{THJS}	25			°C/W
Operating Temperature Range 工作温度	T _{opr}	-40to+85			°C
Storage Temperature Range 贮存温度	T _{stg}	-40to+90			°C
Reflow Soldering 回流焊	T _{sld}	260°C for 5 secs			

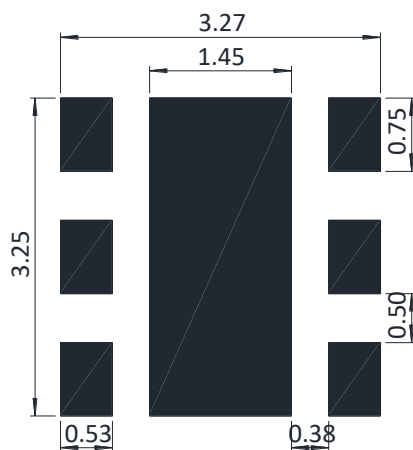
Notes 备注: 1. Duty Factor=10%, Frequency=1kHz. 占空因数=10%, 频率=1kHz.



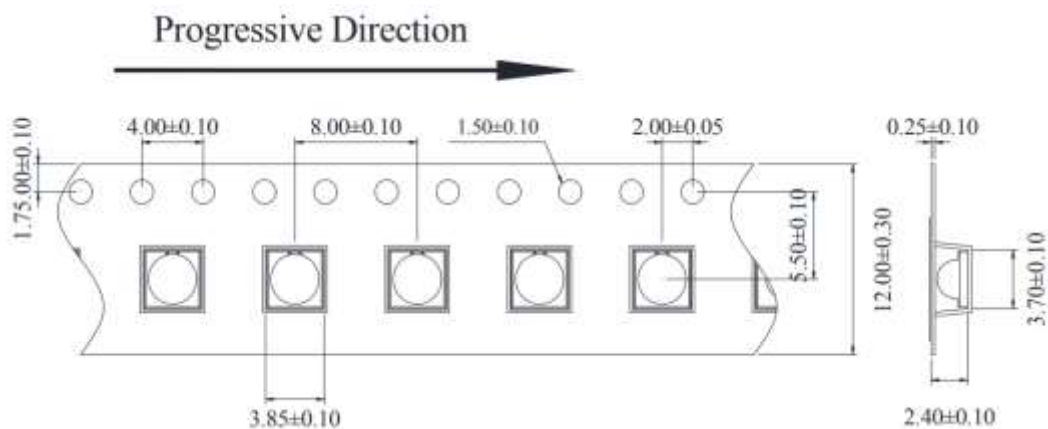
Package Dimension 封装尺寸 (Unit:mm,Tolerance: $\pm 0.20\text{mm}$)



Recommended Soldering Pad Design 推荐焊盘设计 (Unit:mm,Tolerance: $\pm 0.10\text{mm}$)

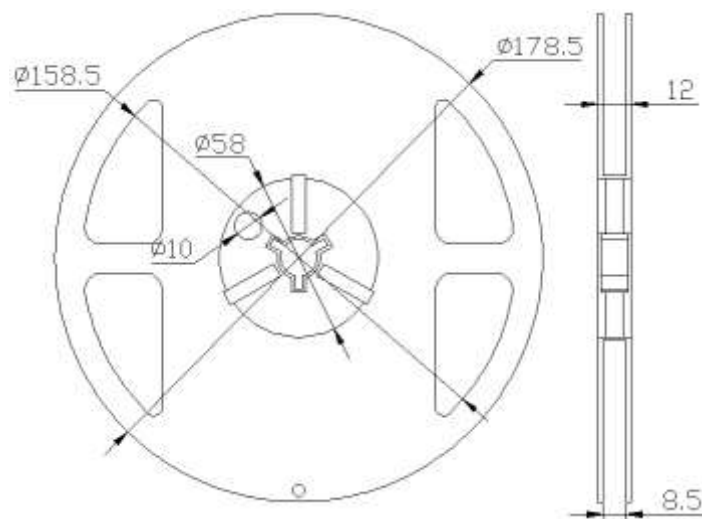


Carrier Tape Dimensions 载带尺寸 (Unit:mm,Tolerance: $\pm 0.10\text{mm}$)

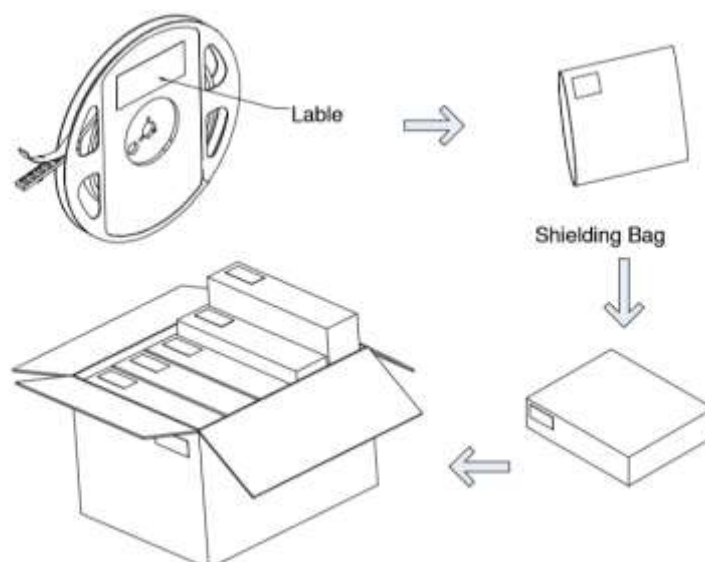


● Loaded quantity 1000 pcs per reel. 每个卷轴装载1000个。

Reel Dimensions 卷轴尺寸 (Unit:mm,Tolerance: $\pm 0.25\text{mm}$)



Packaging method 包装方法



Label Style 标签样式

EKINGLUX OPTOELECTRONICS(SHANGHAI) CO.,LTD
 Tel:021 59909181 <http://www.ekingluxs.com>


 PN:XXXXXXXXXXXXXXXXXX

Emitting Color: XXXX
 HUE: XXX-XXX
 IV : XXX-XXX
 VF: XX-XX
 QTY: XXXX PCS


 SN: XX
 DATE: XXXX/XX/XX


 LOT NO.:XXXXXXXXXX

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°C max T=8 sec	2 times	22PCS	0/1
Temperature Cycle 温度循环	IEC60068-2-14 : 2009	85°C ± 5°C 15min ↑ ↓ 5 min -40°C ± 5°C 15min	100Cycles	22PCS	0/1
High Humidity Heat Life Test 高温高湿老化测试	IEC60068-2-78:2001	Ta=85°C 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°C ± 5°C	1000H	22PCS	0/1
Low Temperature Storage 低温储存	IEC60068-2-1:2007	Temp:-40°C ± 5°C	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°C ± 5°C 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
Reverse 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 (T _{min}) 最低温度(T _{min})	150 °C
Temperature max (T _{max}) 最高温度(T _{max})	200 °C
Time (T _{min} to T _{max}) (t _s) 时间(T _{min} 至 T _{max})(t _s)	60-120 seconds
Average ramp-up rate (T _{max} to T _p) 平均上升率(T _{max} 至 T _p)	3 °C/second max
Liquidous temperature (T _L) 液体温度(T _L)	217°C
Time at liquidous (t _L) 液态时间(t _L)	60-150 seconds
Peak package body temperature (T _p)* 峰值封装体温度	255 °C ~260 °C
Peak Classification temperature (T _c) 峰值目标分类温度	260 °C
Time (t _p) within 5 °C of the specified Classification temperature (T _c) 实际峰值温度(T _p)与目标分类温度(T _c)偏差±5°C范围内的保持时间	30 seconds
Average ramp-down rate (T _p to T _{max}) 从峰值温度(T _p)降至最高允许温度(T _{max})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(T _p)的升温过程	8 minutes max

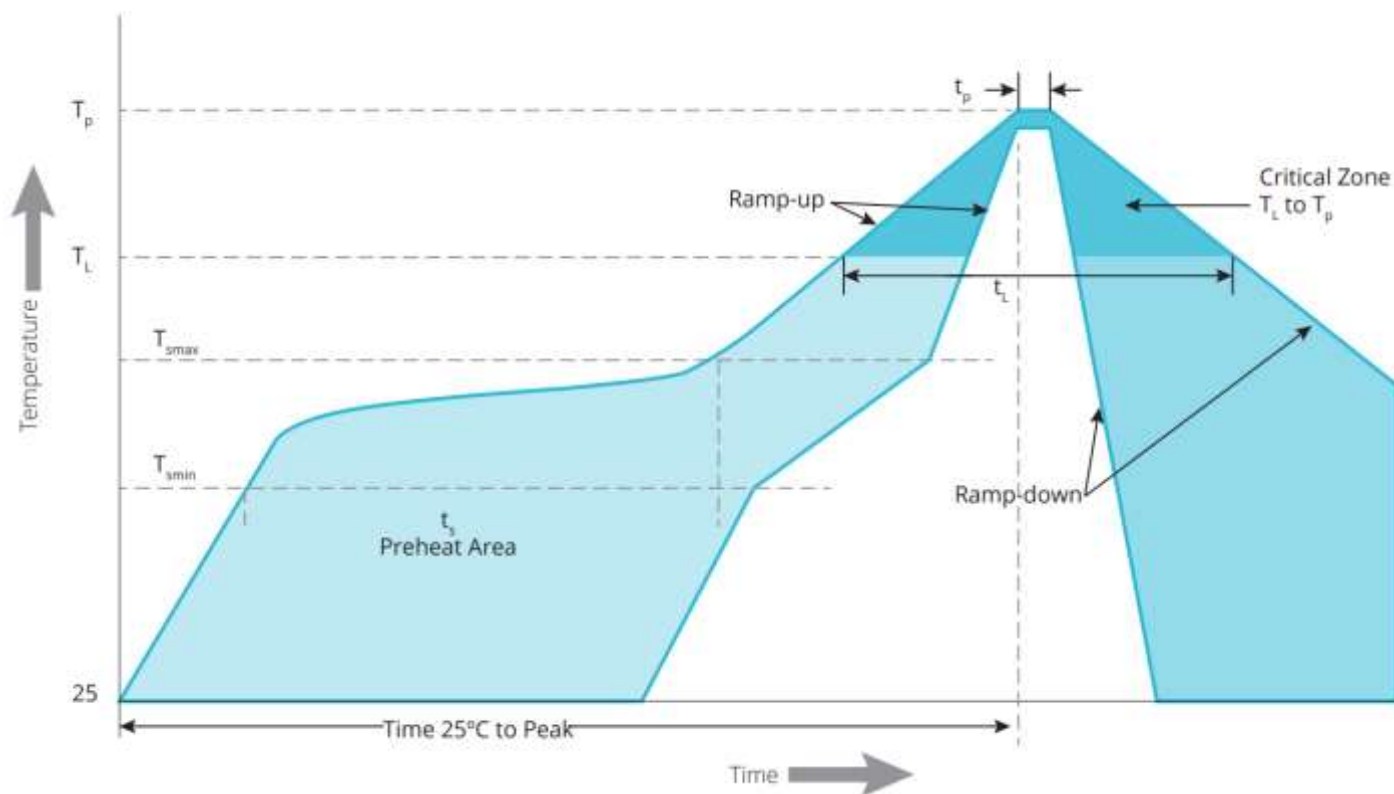
●Tolerance for peak profile temperature (T_p) is defined as a supplier minimum and a user maximum.

峰值温度(T_p)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 (t_p) is defined as a supplier minimum and a user maximum.

峰值温度(t_p)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:

- Unopened Original Packaging 未开封原始包装
- Storage Temperature: $\leq 30^{\circ}\text{C}$ (Recommended: $5 \sim 25^{\circ}\text{C}$) 存储温度: $\leq 30^{\circ}\text{C}$ (推荐 $5 \sim 25^{\circ}\text{C}$)
- Relative Humidity: $\leq 60\% \text{ RH}$, no condensation 相对湿度: $\leq 60\% \text{ RH}$, 无冷凝
- Packaging Condition: Vacuum moisture-proof bag (with desiccant + Humidity Indicator Card HIC)

包装状态: 真空防潮袋(含干燥剂+湿度指示卡 HIC)

- Shelf Life: 12 months from factory date (well sealed, HIC blue $\leq 10\% \text{ RH}$)

保存期限: 自出厂日起 12 个月(密封完好、HIC 蓝色 $\leq 10\% \text{ RH}$)

2. Floor Life After Opening 开封后车间寿命

- Ambient Condition: $\leq 30^{\circ}\text{C} / \leq 60\% \text{ RH}$ 环境条件: $\leq 30^{\circ}\text{C} / \leq 60\% \text{ RH}$
- Floor Life: 168 hours (7 days). Reflow soldering shall be completed within this period

车间寿命: 168 小时(7 天), 需在此期限内完成回流焊

3. Overdue Handling 超期处理

- If exposure time $> 168\text{h}$, baking and dehumidification are mandatory before reflow soldering

暴露时间 $> 168\text{h}$ 必须烘烤除湿后再回流焊

- Baking Condition (Overdue / Moisture affected) 烘烤条件(超期/受潮时):

- Temperature: $125 \pm 5^{\circ}\text{C}$ 温度: $125 \pm 5^{\circ}\text{C}$

- Time: 8 hours (standard); extendable to 12h for severe moisture 时间: 8 小时(常规); 严重受潮可延长至 12h

- Restriction: Maximum cumulative baking times ≤ 2 ; cool down naturally to room temperature before production after baking

限制: 累计烘烤 ≤ 2 次; 烘烤后自然冷却至室温再上线

- Prohibition: Forbid rapid high-temperature cooling and repeated baking

禁忌: 禁止高温快速冷却、禁止反复烘烤

4. Opened Temporary Storage (Within Floor Life) 已开封暂存 (未超期)

- Storage Environment: Moisture-proof cabinet ($\leq 10\% \text{ RH}$, $20 \sim 25^{\circ}\text{C}$)

存储环境: 防潮柜($\leq 10\% \text{ RH}$ 、 $20 \sim 25^{\circ}\text{C}$)

- Timing Rule: Follow the original opening timing; floor life cannot be reset

计时规则: 延续原开封计时, 不可重置车间寿命

5. HIC Humidity Indicator Card Interpretation 湿度指示卡(HIC)判读

- Blue ($\leq 10\% \text{ RH}$): Dry, direct use allowed 蓝色($\leq 10\% \text{ RH}$): 干燥, 可直接使用

- Purple ($10 \sim 20\% \text{ RH}$): Warning, use as soon as possible 紫色($10 \sim 20\% \text{ RH}$): 警告, 尽快使用

- Pink / Red ($\geq 30\% \text{ RH}$): Moisture affected, baking is mandatory 粉红 / 红色($\geq 30\% \text{ RH}$): 受潮, 必须烘烤

6. 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。

7. Vulcanization 硫化:

- LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag_2S 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 avoiding 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 Ag_2S , 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。

8. 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 damage the 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。