鸿利智汇 HONGLIZHIHUI

Under Development	
Mass production	•

RoHS

Specification

Client Name：

客户名称：_____

Client P/N：

客户品号：_____

Product P/N：

产品型号：HL-C3535K9W1LA(Ra1)-FC(4745-5310K)

Sending Date：

送样日期：_____

Client approval 客户审核		Hongli approval 鸿利智汇审核			
Approval 核准	Audit 确认	Audit 确认			Confirmation 制作
		Sales department 营销中心	Quality department 品质部	Engineering technology centre 工程技术中心	伍学海
			吕文其		
□ Qualified 接受 □ Disqualified 不接受		DATE: 日期：2025.11.28			

注:1.此规格书以中英文方式书写,若有冲突以中文版本为准文本.

2.此规格书的最终解释权归鸿利智汇集团股份有限公司

3.此规格书的有效期限为两年,自盖章或签字之日起计算,期满时双方可以续签协议,但应采用书面形式

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Product naming rules 产品命名规则

HL-C 3535 K9 W 1 L A (Ra1) -FC
1 2 3 4 5 6 7 8 9 10

1：鸿利光电代码
2：产品系列代码
3：尺寸代码
4：芯片代码
5：表示发光颜色为白光
6：表示使用350mA分光
7：模具代码
8：基板材质代码
9：表示Ra≥70
10:倒装芯片



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

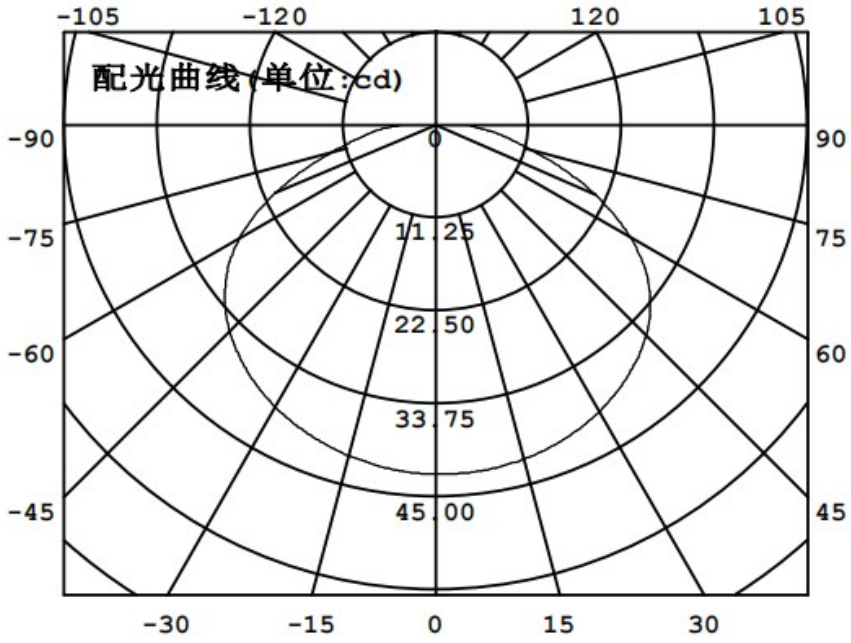
Features 特点

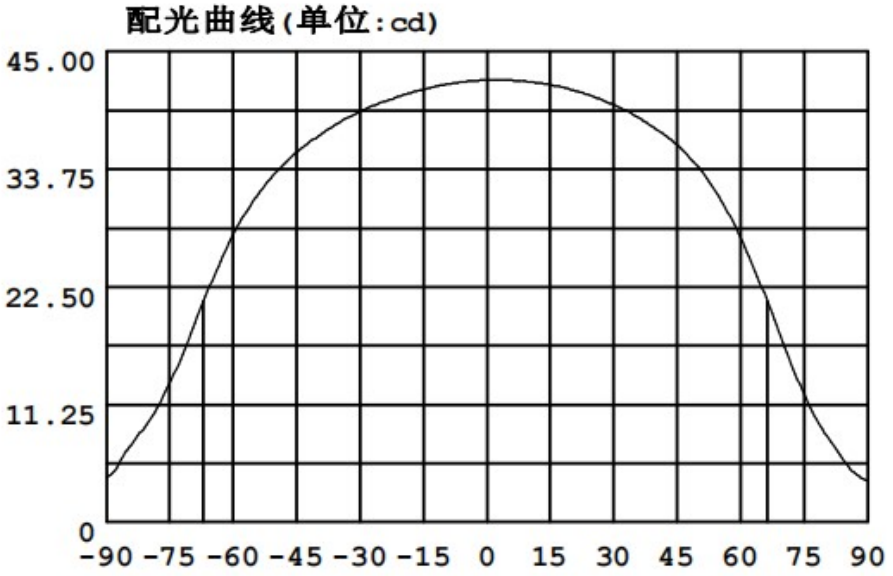
- Long operating life 寿命长
- High flux 光通量高
- More energy efficient 节能
- Low voltage DC operated 低电压直流工作
- Cool beam, safe to the touch 冷光源，接触安全
- Instant light (less than 100ns) 瞬间点亮（小于100ns）
- No UV 无紫外线
- Flip Chip Technology 倒装芯片工艺
- RoHS compliant 符合RoHS标准

Application range 应用范围

- Portable lightings /(flash lightings，bicycle)便携式照明
- Street light 路灯
- Working light 工作灯
- General lighting通用照明
- Industrial lighting 工业照明

Radiation Pattern辐射模式





Specifications规范

(1) Absolute Maximum Ratings at Ta=25℃

在25℃时绝对极限条件

Parameter参数	Symbol符号	Rating 值	Units单位
Input power 输入功率	Pi	5.4	W
Forward Current 正向电流	I_F	1500	mA
Reverse Current 反向漏电流	I_R	3@5V	uA
Junction Temperature 结温	Tj	145	℃
View Angle (FWHM)-White 发光角度	—	120~140	degrees
Operating Temperature Range 工作温度	Topr	-35℃ To +100℃	
Storage Temperature Range 储藏温度	Tstg	-40℃ To +100℃	
ESD Sensitivity（HBM） 抗静电能力	ESD	Class 1	
Reverse voltage （反向电压）	Vr	not designed for reverse bias 不允许反向工作	

Notes注:

1.* All high power emitter LED products mounted on aluminum metal-core printed circuit board, can be lighted directly, but we do not recommend lighting the high power products for more than 5 seconds without a appropriate heat dissipation equipment. When using at 1500mA, TS (cathode point) temperature should be controlled below 85℃ .

所有高功率的发光LED产品安装在铝金属为核心印刷电路板，可直接点亮，但我们不建议在没有一个适当的散热设备时,照明高功率LED点亮超过5秒，当产品为1500mA使用，TS点（负极焊盘）温度控制在85℃以下。

2.wave peak and soak-stannum soldering etc.is not suitable for this products.

波峰焊、浸锡焊接不适合这个产品。

3.Reflow soldering should not be done more than two times.The reflow temperature we recommend is 260℃,When the temperature exceeds 260 ℃, the product failure of LED can be caused

回流焊不能超过两次,回流焊最高温度建议260℃，当温度超过260℃极大可能引起LED产品失效。

(2) Optical Characteristics at Ta=25℃

在Ta=25℃ 时的典型光学特性

IF=350mA						
Main push	Center Tc（K)	Tc（K)	Ra	Min（lm）	Typ（lm）	Max（lm）
	2200	2000-2400	70(min)	145	155	175
	2725	2580-2870	70(min)	155	165	185
★	3045	2870-3220	70(min)	155	165	185
	3710	3465-3985	70(min)	165	175	195
★	3985	3710-4260	70(min)	165	175	195
	4503	4260-4745	70(min)	165	175	195
	5028	4745-5310	70(min)	170	180	200
★	5665	5310-6020	70(min)	170	180	200
	6020	5665-6530	70(min)	170	180	200
	6530	6020-7040	70(min)	170	180	200
	10000	8000-12000	70(min)	165	175	195

Notes注:

*1.the products after this specification refer to the parameters prevail, before the release of specification without refer to the above parameters.

此规格书发布日后生产的产品以上述参数为准，发布前生产的库存品不参考上述参数。

2.Tolerance of measurement of forward voltage±3%、Color-rendering index±2、luminous flux±5%

不同标准源测试存在仪器公差：正向电压公差为±3%、显指公差为±2、光通量公差为±5%。

3.The CCT at IF=700mA value will be raised 3%.

IF=700mA时色温会上升约3%。

4．With "★ "for the product the main push color segment.

带 "★ "为产品主推色温段。

(3) Optical Electrical /Thermal Characteristics at Ta=25℃

在Ta=25℃ 时典型的电学/热学特性

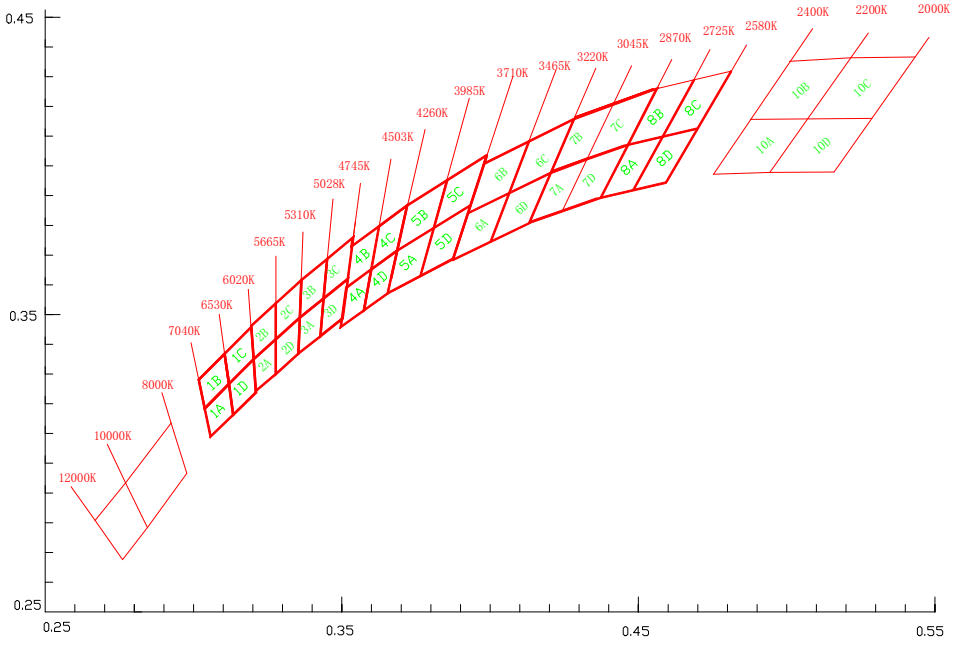
IF (mA)	VF (V)	R（j-s）(℃/W)	Po（W）
350	2.78	3.17	0.973
700	2.91	3.52	2.03
1000	3.01	3.85	3.01

Product bins 产品分级

(1) Forward Voltage bins 电压分级

Min (V)	Max (V)
2.6	2.8
2.8	3.0
3.0	3.2

(2) Chromaticity bins 色温分级



色温中心	2200K	2725K	3045K	3710K	3985K	4503K
X, Y	0. 507, 0. 4148	0. 4582, 0. 4098	0. 4338, 0. 403	0. 3945, 0. 386	0. 3818, 0. 3797	0. 3615, 0. 3659
色温中心	4745K	5028K	5665K	6020K	6530K	10000K
X, Y	0. 3531, 0. 3607	0. 3447, 0. 3553	0. 329, 0. 3417	0. 3214, 0. 3359	0. 3129, 0. 329	0. 2785, 0. 2883

Notes 注：

*1.Products are tested and binned at a transient forward current(IF) with 350mA. With the use of different IF, it may probably cause differences in CCT & forward voltage. Generally, with the increase of IF, the CCT will be raised as well.

该产品通过瞬态350mA 点亮，分光分色.若使用不同电流，可能会引起色温及电压的变化,一般情况下，使用电流增加，色温会上升。

2. Tolerence of ±0.005 on x,y coordinates.

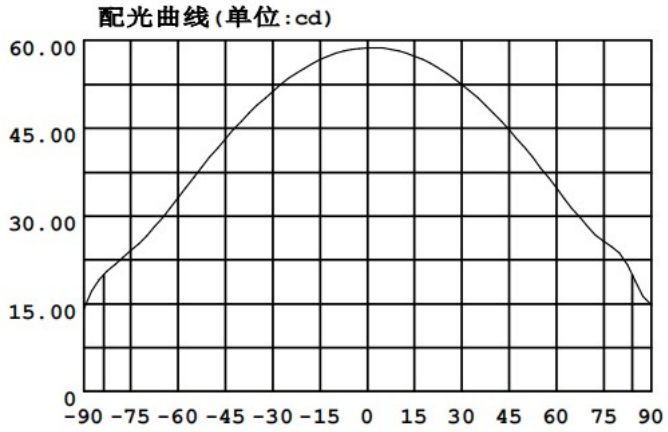
色坐标的测量误差允许在±0.005

3.The chromaticity center refers to ANSI C78.377-2008

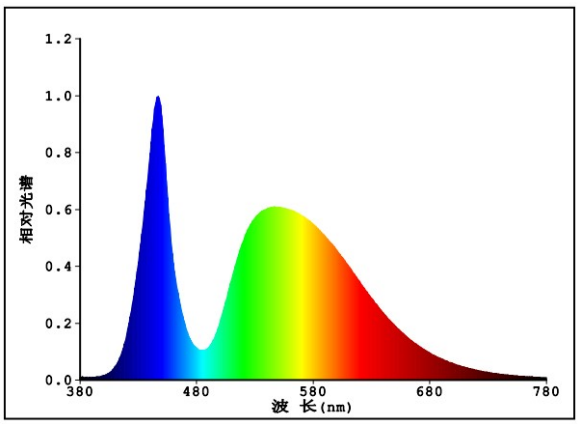
色温分bin参考ANSI C78.377-2008

Typical Optical/Electrical Characteristics Curves典型光学/电性特征曲线 (T_s=85℃ Unless Otherwise Noted)（T_s=85℃ 除非另有注释）

辐射模式　IF=700mA

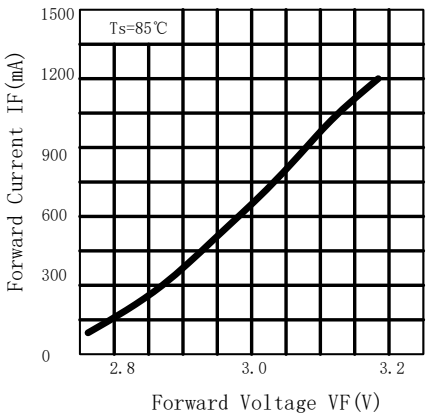


光谱曲线　IF=700mA　Tc=5700K



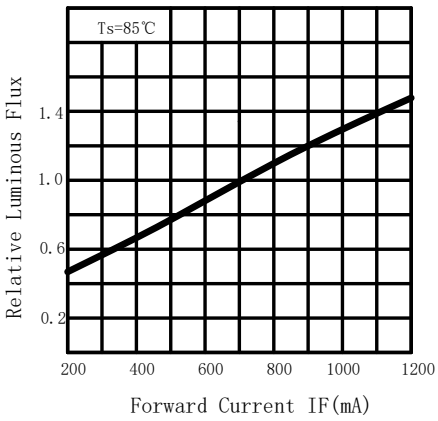
电流-正向电压曲线

IF - VF



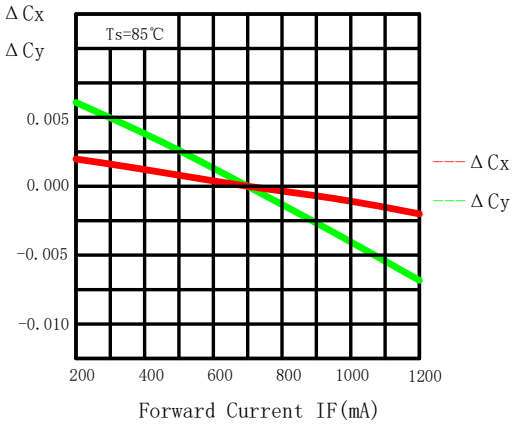
电流-相对光通量曲线

Relative Luminous Flux - IF



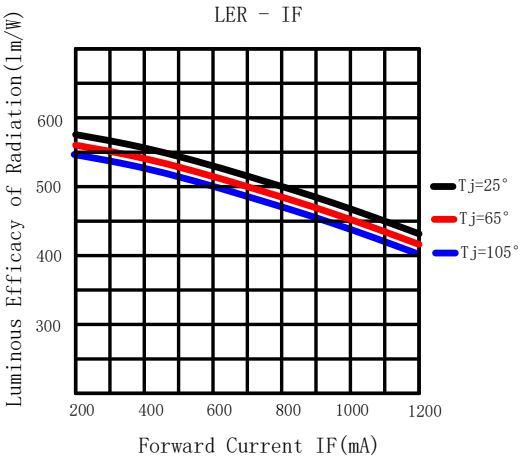
电流-色坐标漂移曲线

ΔCx, ΔCy - IF



电流-光效曲线

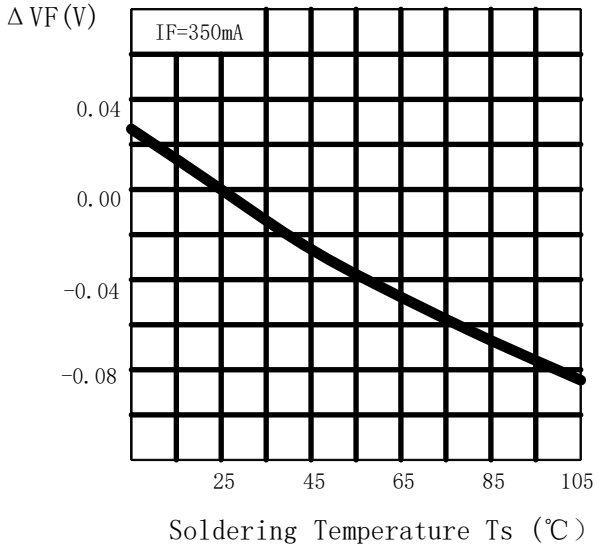
LER - IF



Typical Optical/Electrical Characteristics Curves典型光学/电性特征曲线 (T_s=85℃ Unless Otherwise Noted)（T_s=85℃ 除非另有注释）

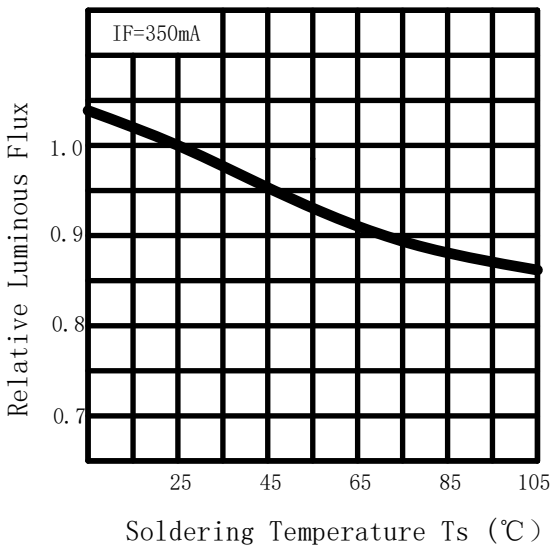
温度-正向电压曲线

Ts - VF



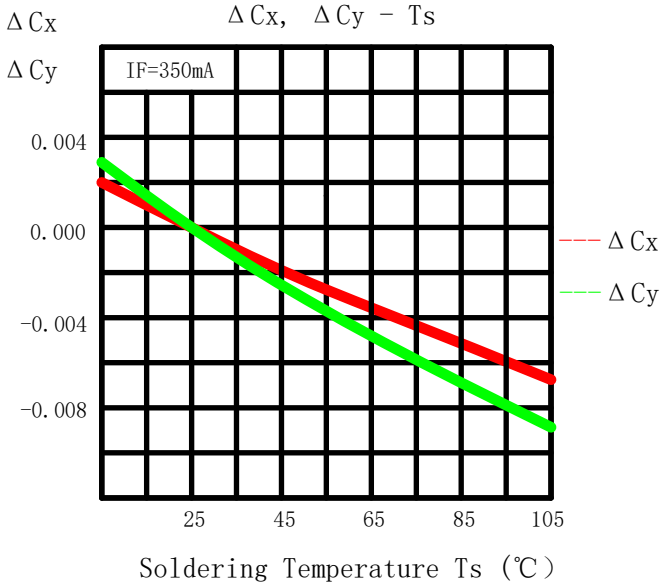
温度-相对光通量曲线

Relative Luminous Flux - Ts



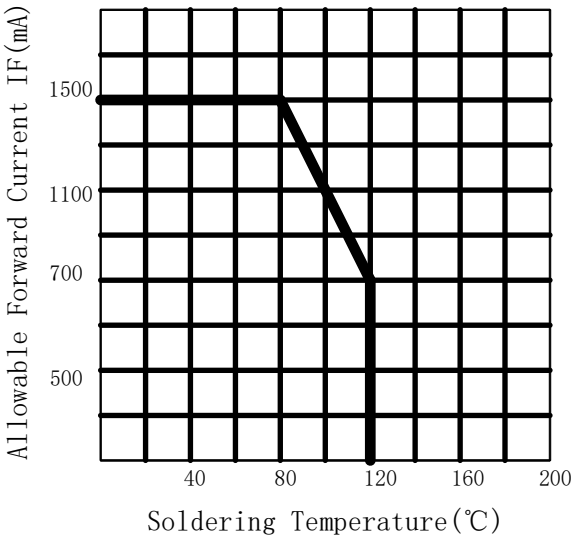
温度-色坐标漂移曲线

ΔCx, ΔCy - Ts

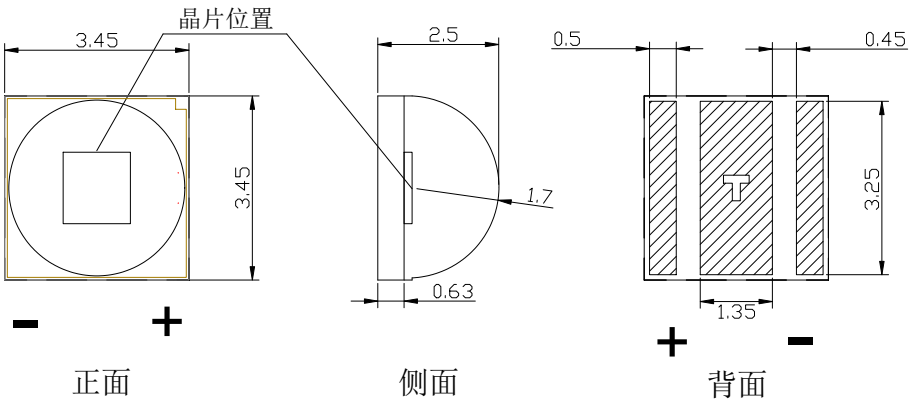


温度-最大允许操作电流

Allowable Forward Current - Ts



Package Dimensions封装尺寸

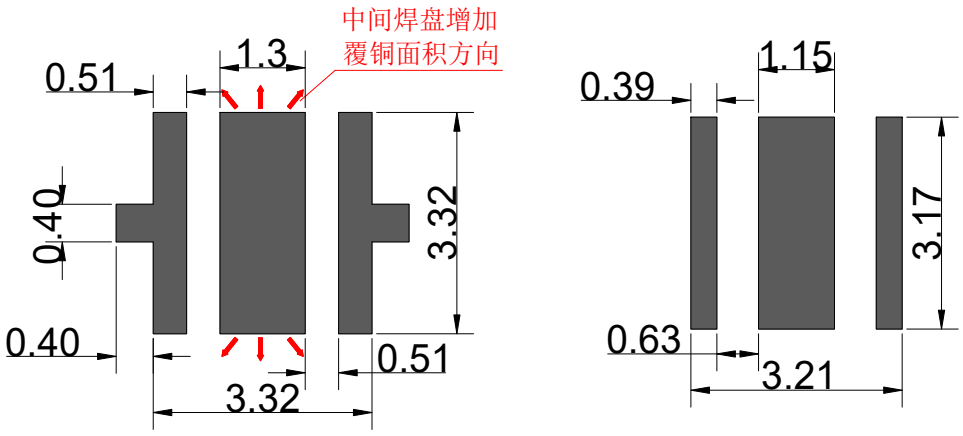


正面　　侧面　　背面

Notes注:

1. All dimension units are millimeters.
   所有尺寸单位均为毫米.
2. All dimension tolerance is ±0.15mm unless otherwise noted.
   所有尺寸误差是±0.15毫米除非另有说明

Welded plate and steel mesh Dimensions 焊盘及钢网尺寸



建议使用的焊盘尺寸　　建议使用的钢网尺寸

Notes注:

When the circuit configuration is not affected, suggested the increase in the middle of the copper area, or the connection between the middle and the pad and the negative electrode can improve the cooling performance of the product.

在不影响电路配置时，建议增加中间焊盘覆铜区域，或中间焊盘和负极焊盘连接，能提高产品散热性能。

Label 标签

TYPE：XXXXXXXXX

产品型号

QTY: XXXXX

包装数量

VF: Forward voltage rank

正向电压档次范围

ΦV: Luminous Flux rank

光通量档次范围

IF: XXXX

分选电流

TC: Color temperature

色温

DATE: XXXX

生产日期

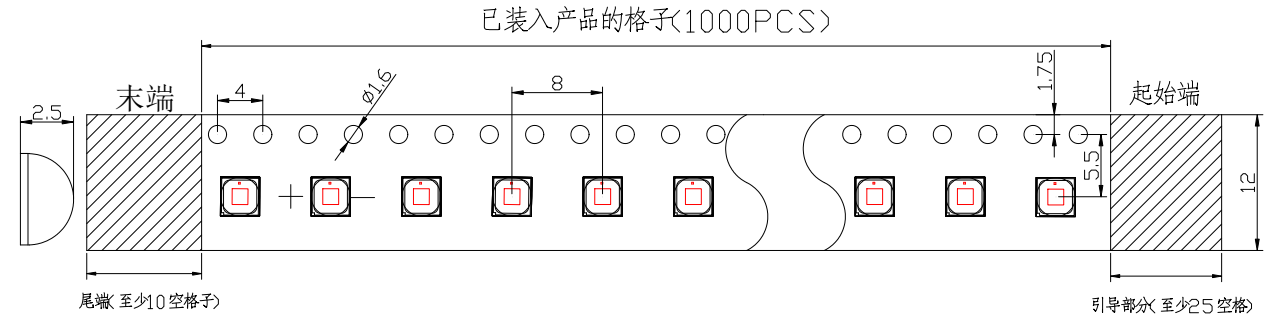
LOT.NO:Lot Number

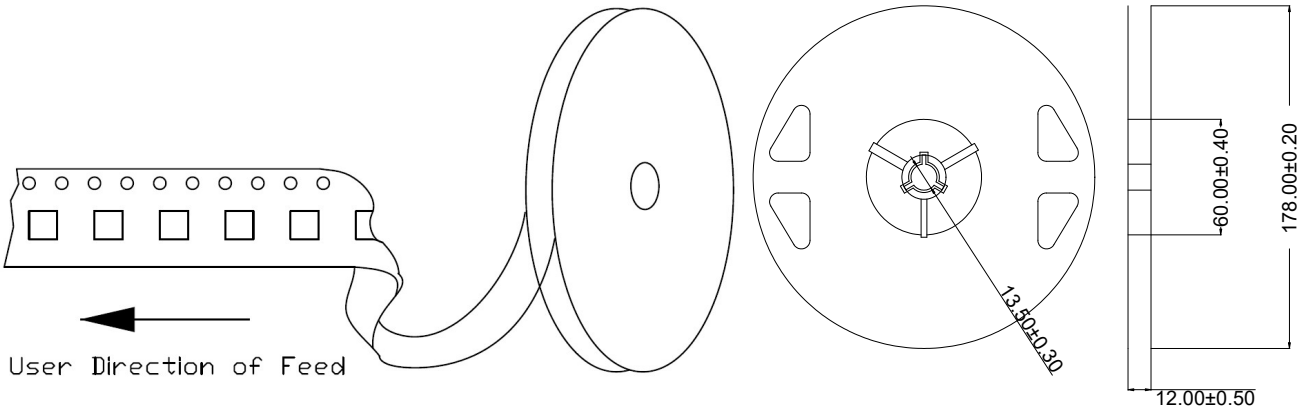
生产批号



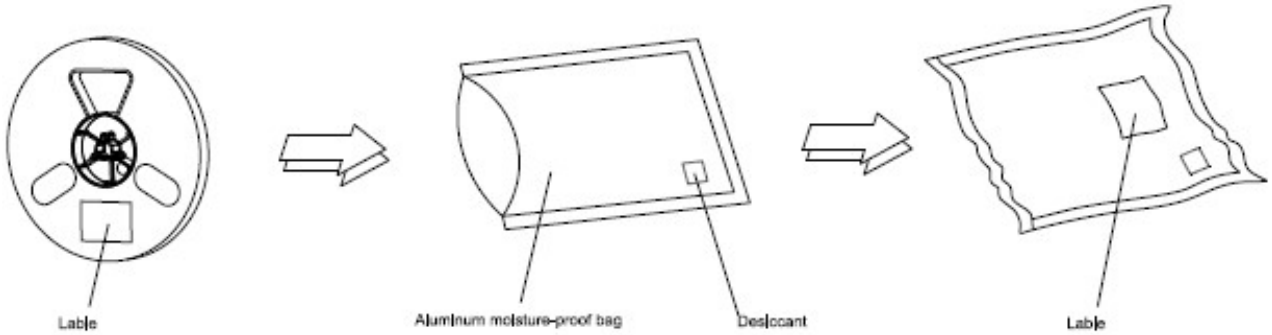
Tape Specifications(Units:mm)包装规格

(1)Reel package (1000 pcs/reel) 卷轴包装（1000 pcs/卷）

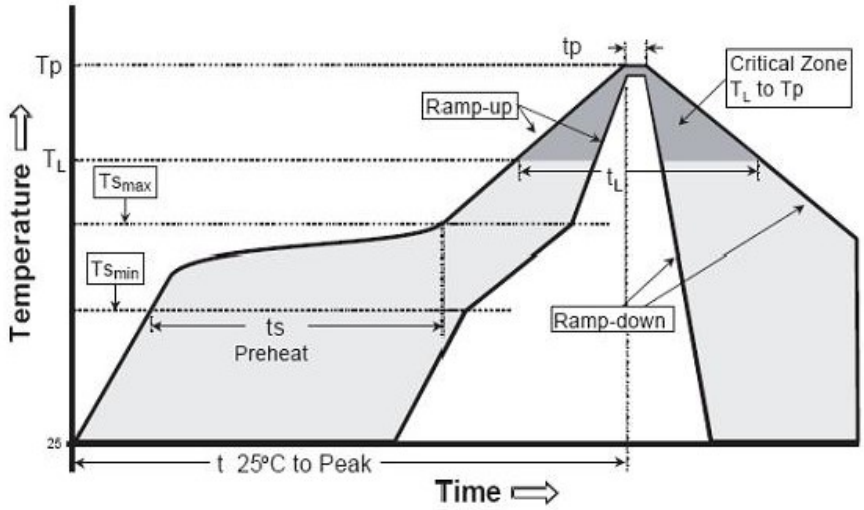




(2)Moisture resistant packaging 防潮包装



Reflow soldering instructions 回流焊说明



Profile Feature	Lead-Based sol-der	Lead-Free Solder
Average Ramp-Rate (Ts_{max} to Tp)	3℃/second max	3℃/second max
Preheat: Temperature Min (Ts_{min})	100℃	150℃
Preheat:Temperature Max (Ts_{max})	150℃	200℃
Preheat:Time(ts_{min} to ts_{max})	60-120 seconds	60-180 seconds
Time Maintained Above: Temperature(T_L)	183℃	217℃
Time Maintained Above: Time(t_L)	60-150 seconds	60-150 seconds
Peak/Classification Temperature(Tp)	215℃	260℃
Time Within 5℃ of Actual Peak Temperature(tp)	10-15 seconds	20-40 seconds
Ramp-Down Rate	6℃/second max	6℃/second max
Time 25℃ to Peak Temperature	6 minutes max	8 minutes max

Note:

1.recommend to use a convection type reflow machine with 8 zones.
建议使用八温区回流焊机。

2.recommend to use Lead-Free Paste with a melting point between 230℃-240℃.
建议使用熔点为230℃-240℃的无铅锡膏。

3.the reflow soldering time should not be more than 400s.
总的回流焊时间不要超过400s。

4.all temperature means the temperature measured on the surface of the package body.
所有温度均指在封装本体表面上测得的温度。

5.When using hot plate, the temperature is no more than 260 ℃, the time is not more than 10seconds.
当使用热板作业时，温度不超过260℃，时间不超过10秒。

Use the matters needing attention(使用注意事项)

一、储存(storage)：

为避免受潮的影响，我司建议产品在未开包装前储存条件为 5℃-30℃，相对湿度小于 60%；已开包装的 LED 光源请在 24H 内使用安装完毕，如未用完之产品，请进行除湿并抽真空后密封保存。开封超过一周或湿度卡发生变化时，请务必进行除湿，除湿条件：60℃±5℃，12H；产品密封保存有效使用期为一年。

To avoid moisture, we recommend storage conditions for the unopened LED +5℃ ~ +30℃, relative humidity <60%. LED should be used within 24Hrs. of opening the package. Please make sure to dehumidify and vacuum pack the remaining/ unused LED. Dehumidifying condition: +60℃ ± 5℃, 12 Hrs. Effective age for the sealed led is one year.

二、组装注意事项(the assembly notes)：

焊接条件：此产品必须使用回流焊接的作业方式,回流曲线最高温度不可超过 260℃.作业或存放过程中不可有 1000g 以上的外力或尖锐物体作用于透镜表面（如压力，摩擦等外力以及钳子镊子等工具），以免造成元件损伤；如果超出此使用条件，鸿利智汇将不能保证产品的稳定性，如需使用超出的操作条件，请务必进行风险评。

Soldering Conditions：This product must be used reflow soldering practices, the maximum temperature of reflow should not exceed 260℃.Please make sure when soldering, there is no external force on the soldering surface (such as pressure, friction or sharp metal nails, etc.), to avoid gold wire deformation or damage and other abnormalities. If beyond recommended conditions, we cannot guarantee the LED stability, please do the risk assessment first.

三、防静电措施(anti-Static Measures)：

请采取足够的措施来防止静电产生，比如带静电环或防静电手指套等；每个制造工程关于产品（工厂、设备、机器、载波机和运输单位）应当连接地面，避免产品电气带电。

Please take adequate measures to prevent electrostatic generation, such as wearing electrostatic ring or anti-static fingerstall etc; any relative products like plant equipment, machinery, carrier and transportation units shall be connected to discharging unit/ ground. After assembly, please make sure to discharge Static Electricity with proper ESD equipment.

四、温度控制(temperature Control)：

保证散热前提条件为：TS点（负极焊盘）为85摄氏度以下，在此温度以下，散热符合产品寿命要求；为确保在组装时降低接触热阻，请注意在组装过程中，散热片采用良好品质的导热膏涂布均匀且分布面积合理，不可出现太少或高低不平等现象。散热介质需保证电介质耐压测试至少通过500V。

Recommended temperature conditions for enhanced product life: TS (Cathode Point) is <85℃ . During assembly, please ensure that a good quality thermal paste is applied and distributed evenly over the surface. While using thermal pad (Heat Sink), make sure LED is firmly tightened and there is no gap between surfaces. The need to ensure the cooling medium dielectric withstand test at least through 500V.

五、驱动控制(drive control)：

本产品需使用恒流源进行驱动，且输出电流符合规格书上的功率使用范围，如需使用恒压源或其他使用条件，请进行使用效果风险评估。

Drive this product at constant current. Output current range specifications should be according to the operational and other conditions, as mentioned in data sheet. Before using a constant voltage source or altered specifications, other than recommended, please consider risk factors.

六、其他(other)：

本产品不可在以下条件下使用，如果产品在以下条件下使用，评估其使用效果和风险是有必要的：

---直接或间接的打湿或受潮，比如淋雨等；

---被海水损害或侵蚀；

---被暴露于腐蚀性气体(如 Cl2、H2S、NH3、SOx、NOx等） ；

---被暴露于粉尘、液体或油；

---符合使用手册情况下，产品质保期为24个月，有保质协议的则以保质协议为准；

---产品生命周期后进行回收处理。

Product is not suitable to use in following conditions;

—-Direct or indirect wet / damp conditions, such as rain, etc;

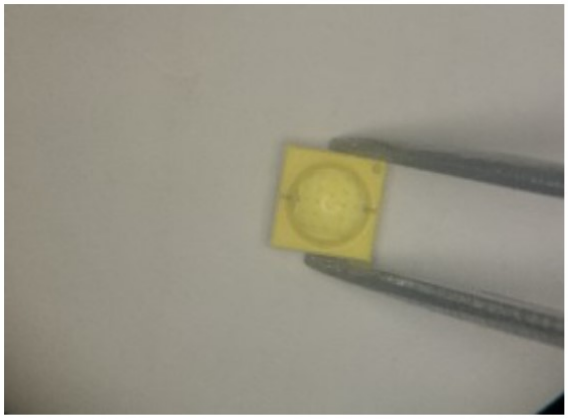
—-in contact with sea water and erosive materials;

—-Exposed to corrosive gases (e.g., Cl2, H2S, NH3, SOx, NOx, etc.);

—-Exposed to dust, liquids or oils;

—-In accordance with the user manual, the product shelf lift is 24 months, If there is a warranty agreement, the warranty agreement shall prevail;

—-After the product life cycle for recycling.



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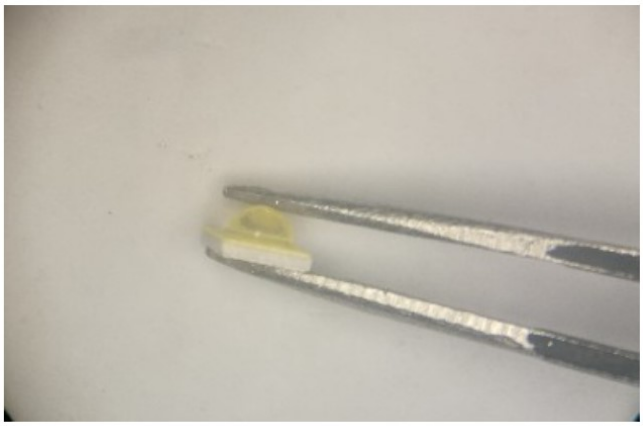

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修订次数	修订人	修订内容	修订日期	版次
1	伍学海	新建文件	2025.11.28	A/0
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