



RoHS

Specification

Client Name:

客户名称: _____

Client P/N:

客户品号: _____

Product P/N:

产品型号: HL-C3535F12RGBW1GA-1C4B

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			Confirma- tion 制作
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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



Catalog目录

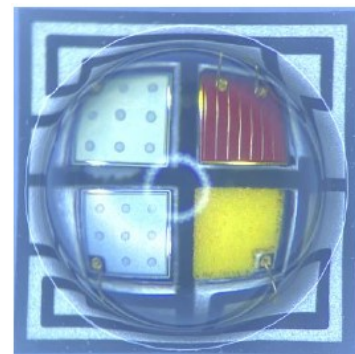
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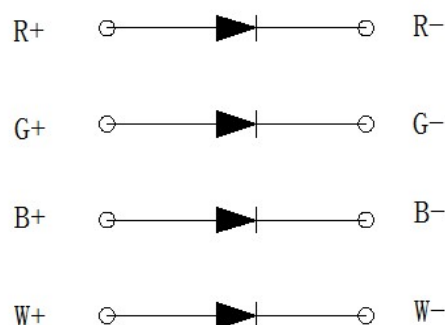
Product naming rules 产品命名规则

HL-C 3535 F12 RGBW 1 G A-1C4B
1 2 3 4 5 6 7 8 9

- 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RGBW
- 6: 350mA分光
- 7: 模具代码
- 7: 基板材质代码
- 7: 串并数



原理图



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）
- RoHS compliant 符合RoHS标准



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

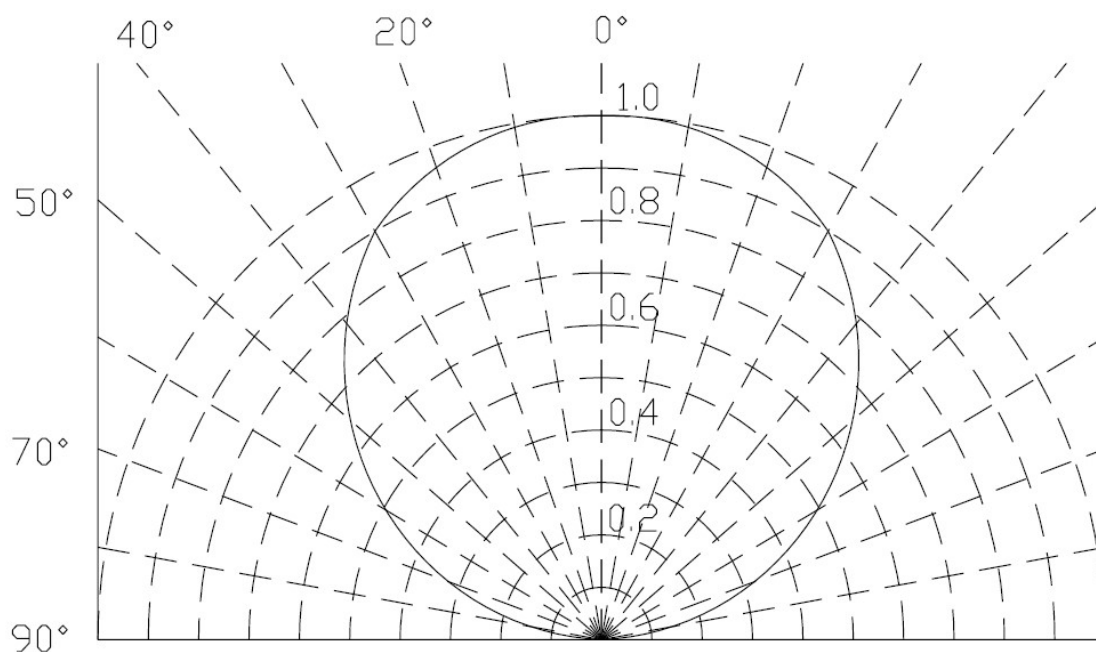


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Application range 应用范围

- Fiber optic alternative/Decorative/Entertainment 光纤型/装饰/娱乐
- Landscape lighting 景观照明
- Stage lighting 舞台照明
- Scene lighting 情景照明
- Bollards/Security/Garden /Architectural光柱/安全/花园/建筑
- Advertising lamp brand 广告灯牌

Radiation Pattern辐射模式



Specifications规范

(1) Absolute Maximum Ratings at Ta=25°C

在25°C时绝对极限条件

Parameter 参数	Symbol 符号	Red 红光	Green 绿光	Blue 蓝光	White 白光
Input Power 输入功率	Pi	0.88W	1.2W	1.2W	1.2W
Forward Current 正向电流	IF	400mA	400mA	400mA	400mA
Total Input Power 总输入功率	Pmax	5W			
Reverse Current 反向漏电流	IR	3uA@5V			
Junction Temperature 结温	Tj	125°C			
Operating Temperature Range 工作温度	Topr	-35°C To +105°C			
Storage Temperature Range 储藏温度	Tstg	-35°C To +85°C			
ESD Sensitivity (HBM) 抗静电能力	ESD	2000V			
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 400mA, TS (cathode point) temperature should be controlled below 80°C .

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400mA使用，TS点（负极焊盘）温度控制在80°C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°C,When the temperature exceeds 260 °C, 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°C，当温度超过260°C极大可能引起LED产品失效。



(2) Optical Characteristics at Ta=25°C

Parameter 项目名称	Symbol 符号	Min	Typ	Max	Unit	Test Condition 测试条件
Reverse Current 漏电流	IR	R/红	--	--	10	uA
		G/绿	--	--	10	
		B/蓝	--	--	10	
		W/白	--	--	10	
Forward voltage 正向电压	VF	R/红	1.8	--	2.4	V
		G/绿	2.4	--	3.0	
		B/蓝	2.8	--	3.4	
		W/白	2.4	--	3.0	
Peak Wavelength 峰值波长	λp	R/红	620	--	640	nm
		G/绿	510	--	530	
		B/蓝	440	--	460	
Spectrum Radiation-Bandwidth (半波宽)	FWHM	R/红		17		nm
		G/绿		30		
		B/蓝		22		
Luminous flux 光通量	Φ	R/红	50	--	70	lm
		G/绿	100	--	120	
		B/蓝	15	--	25	

Parameter 项目名称	Symbol 符号	CCT	Ra	Min	Max	Unit	Test Condition 测试条件
Luminous flux 光通量	Φ	2700K	70(min)	90	110	lm	IF=350mA
		3000K	70(min)	90	110		
		4000K	70(min)	100	120		
		5000K	70(min)	110	130		
		5700K	70(min)	110	130		
		6500K	70(min)	110	130		
Luminous flux 光通量	Φ	2700K	80(min)	80	100	lm	IF=350mA
		3000K	80(min)	80	100		
		4000K	80(min)	90	110		
		5000K	80(min)	100	120		
		5700K	80(min)	100	120		
		6500K	80(min)	100	120		
Luminous flux 光通量	Φ	2700K	90(min)	70	90	lm	IF=350mA
		3000K	90(min)	70	90		
		4000K	90(min)	80	100		
		5000K	90(min)	80	100		
		5700K	90(min)	80	100		
		6500K	90(min)	80	100		

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 $\pm 3\%$ 、Color-rendering index ± 2 、luminous flux $\pm 5\%$

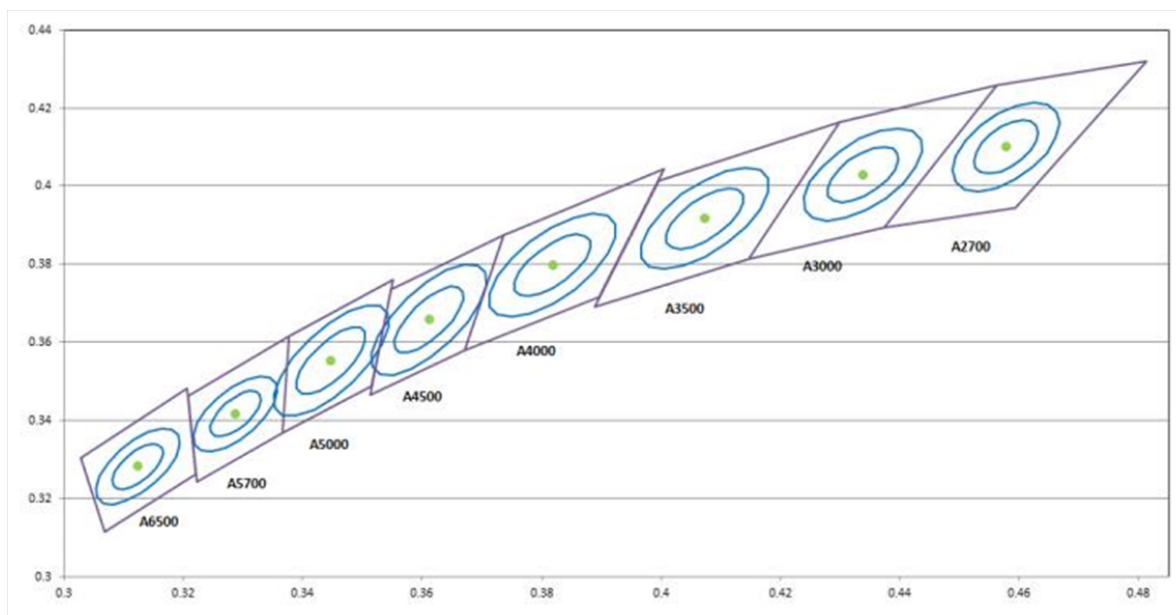
不同标准源测试存在仪器公差：正向电压公差为 $\pm 3\%$ 、显指公差为 ± 2 、光通量公差为 $\pm 5\%$ 。

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

在Ta=25°C 时典型的电学/热学特性

IF (mA)	R (j-s) (°C/W)	Po (W)
350	2	4

(4) Chromaticity bins 色温分级



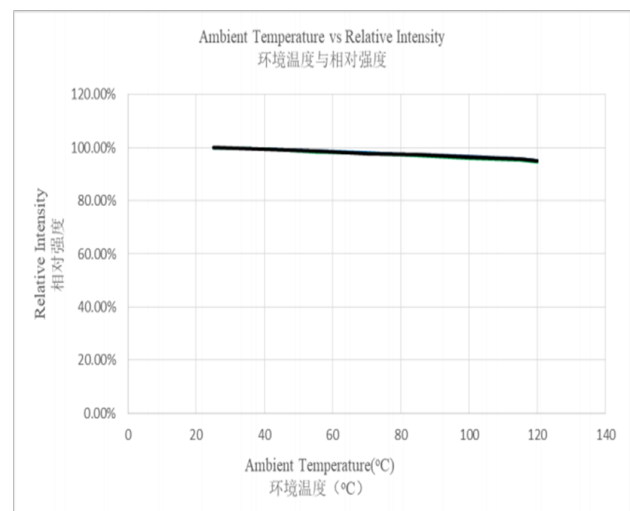
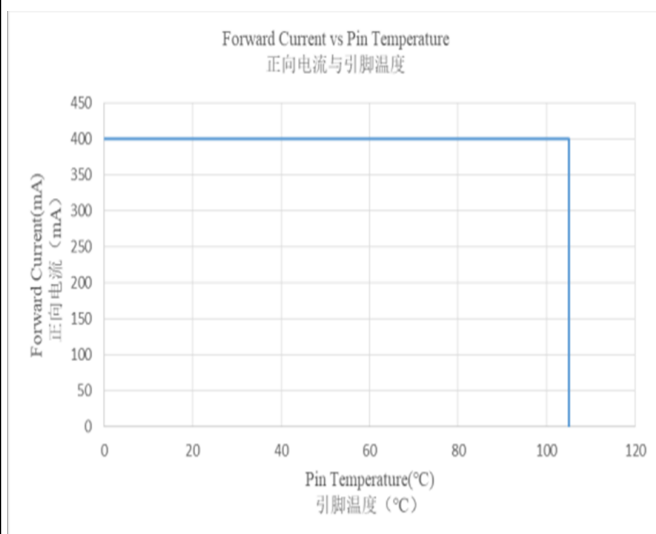
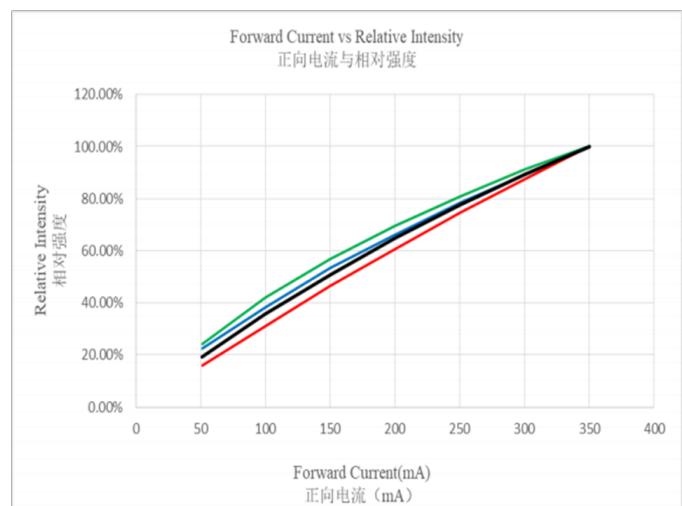
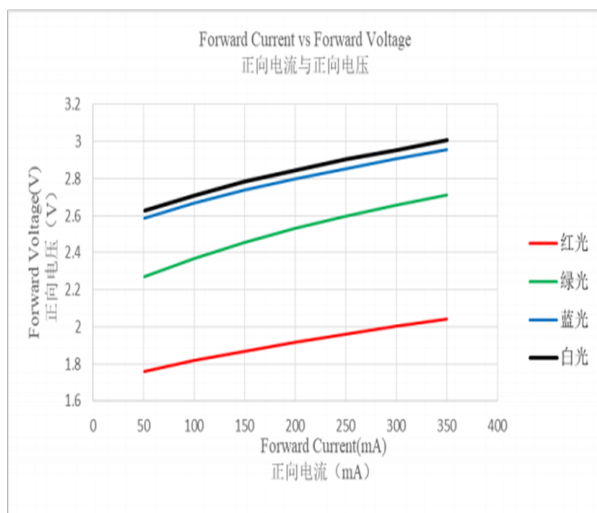
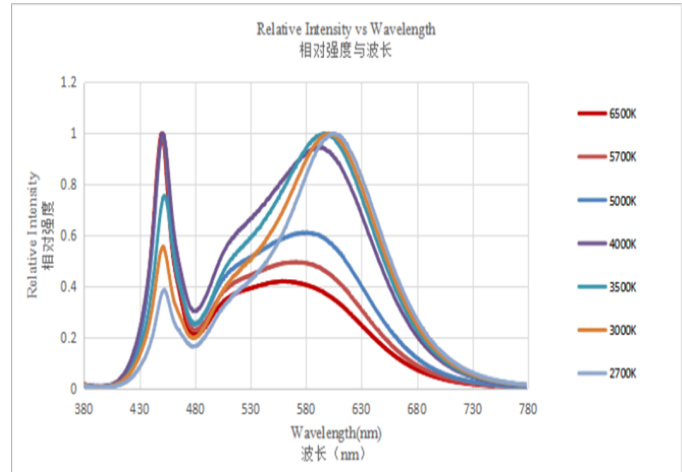
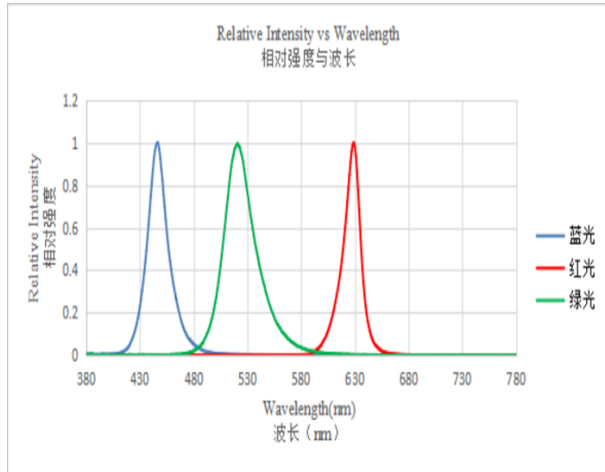
EasyWhite Color Temperatures - 3-StepEllipse					
CCT	CenterPoint		Major Axis	Minor Axis	Rotation Angle (°)
	X	Y	a	b	
6500K	0.3123	0.3282	0.00662	0.00286	58.38
5700K	0.3287	0.3417	0.00662	0.00286	59.13
5000K	0.3447	0.3553	0.00971	0.00360	59.62
4000 K	0.3818	0.3797	0.00939	0.00404	53.7
3000K	0.4338	0.4030	0.00834	0.00410	53.16
2700K	0.4578	0.4101	0.00773	0.00401	57.28



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Typical Optical/Electrical Characteristics Curves ($T_a=25^{\circ}\text{C}$ Unless Otherwise Noted)

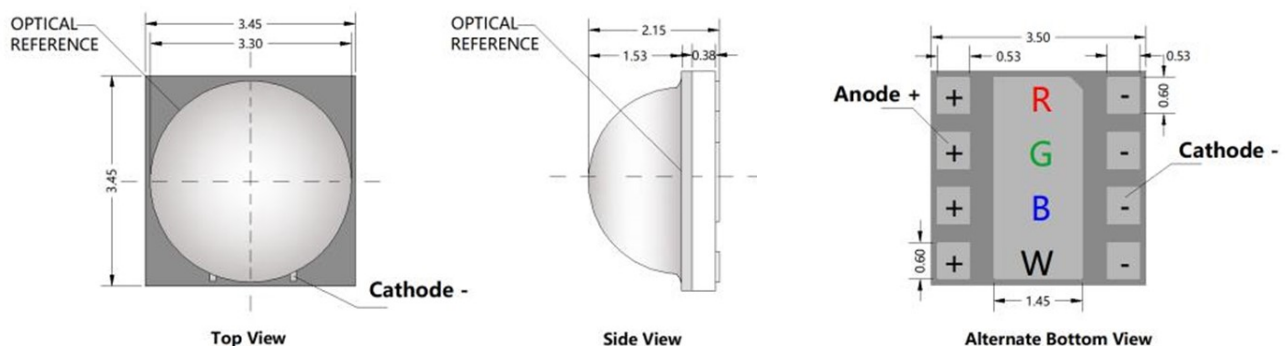
典型光学/电性特征曲线 ($T_a=25^{\circ}\text{C}$ 除非另有注释)





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Mass production	

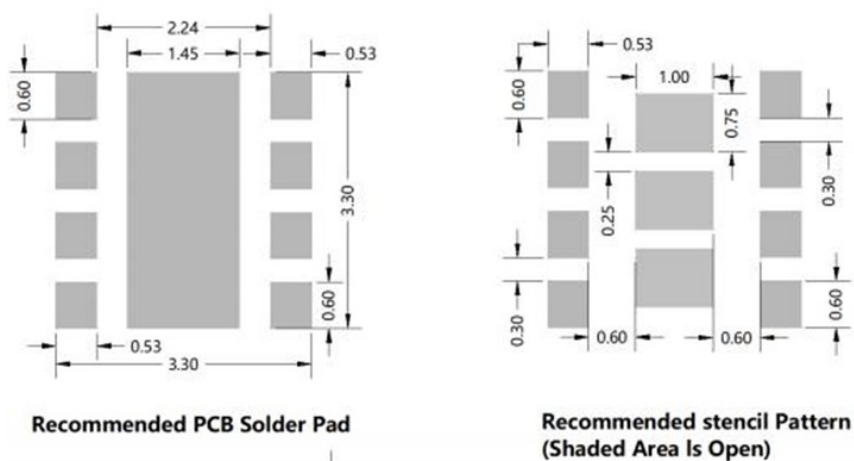
Package Dimensions封装尺寸



Notes注:

1. All dimension units are millimeters.
所有尺寸单位均为毫米.
2. All dimension tolerance is ± 0.15 mm 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



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: XXXXXXXXXX

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



HONGLITRONIC
鸿利光电

RoHS

TYPE:

QTY:

VF:

IF:

ΦV:

TC:

X/Y:

SDCM<

Ra>

DATE:

LOT.NO:



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Tape Specifications(Units:mm)包装规格

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

Dimension of Tape 载带规格

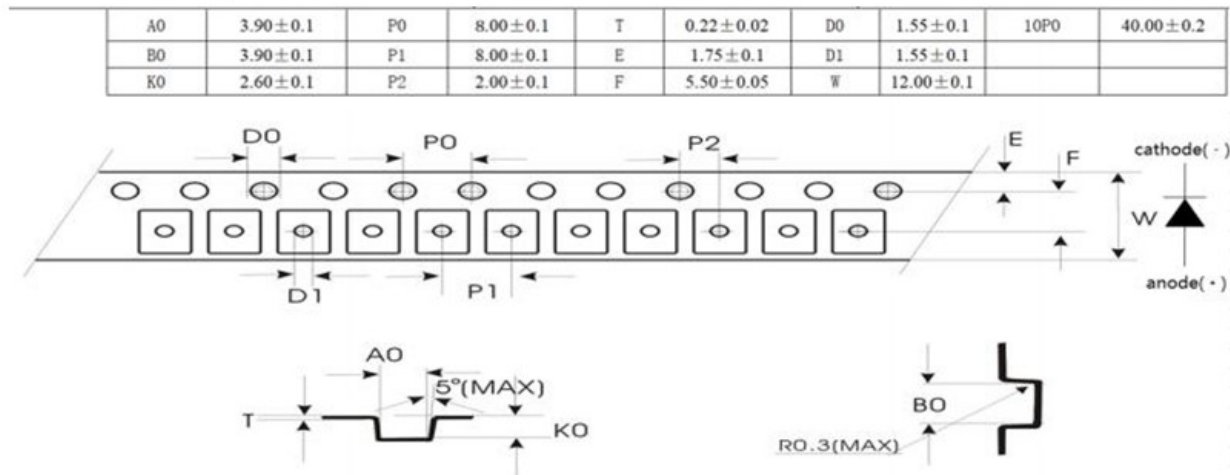
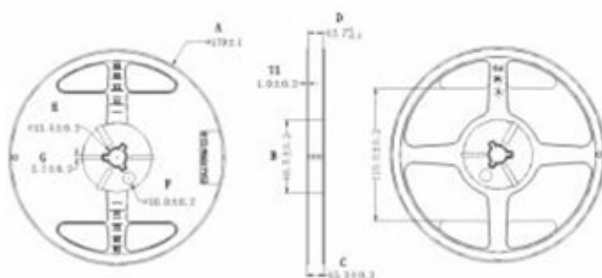
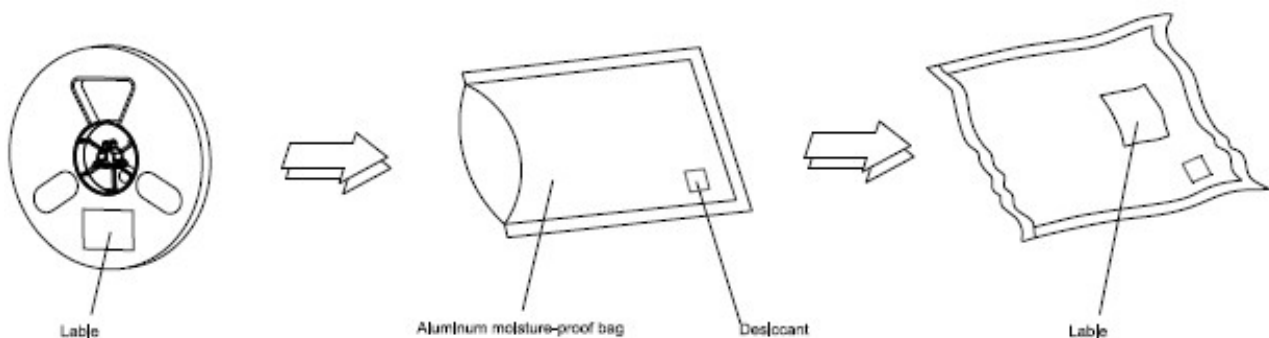


Table Dimension 尺寸



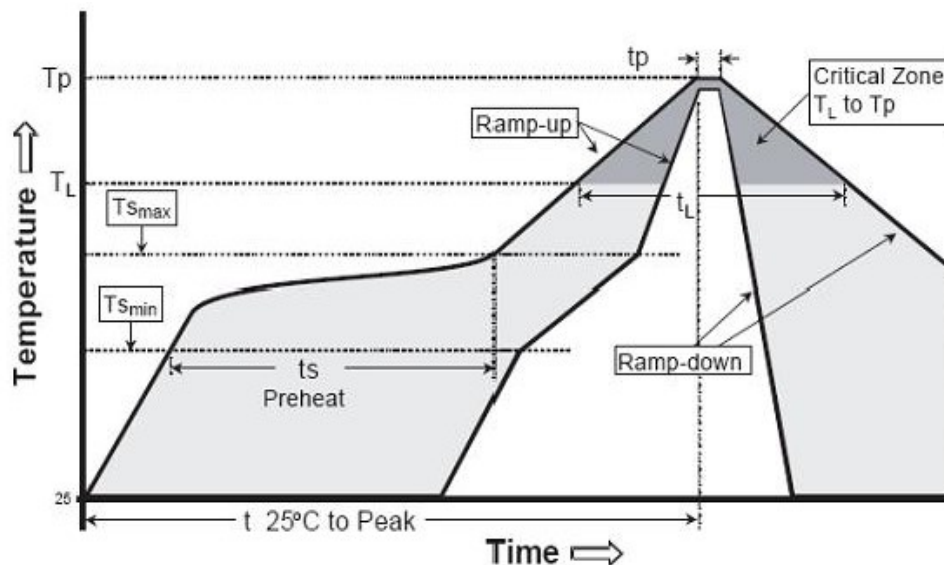
A	$179 \pm 1 \text{mm}$
B	$60.5 \pm 0.2 \text{mm}$
C	$15.3 \pm 0.3 \text{mm}$
D	$12.7 \pm 0.3 \text{mm}$

(2)Moisture resistant packaging 防潮包装





Reflow soldering instructions 回流焊说明



Profile Feature	Lead-Based solder	Lead-Free Solder
Average Ramp-Rate (Ts _{max} to Tp)	3°C/second max	3°C/second max
Preheat: Temperature Min (Ts _{min})	100°C	150°C
Preheat: Temperature Max (Ts _{max})	150°C	200°C
Preheat: Time (ts _{min} to ts _{max})	60-120 seconds	60-180 seconds
Time Maintained Above: Temperature (TL)	183°C	217°C
Time Maintained Above: Time (tL)	60-150 seconds	60-150 seconds
Peak/Classification Temperature (Tp)	215°C	260°C
Time Within 5°C of Actual Peak Temperature (tp)	10-15 seconds	20-40 seconds
Ramp-Down Rate	6°C/second max	6°C/second max
Time 25°C 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°C-240°C.
建议使用熔点为230°C-240°C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 °C, the time is not more than 10seconds.
当使用热板作业时，温度不超过260°C，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°C, 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°C±5°C, 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 °C, 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 ° C ± 5 ° C, 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°C. 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°C. 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°C . 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.



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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：

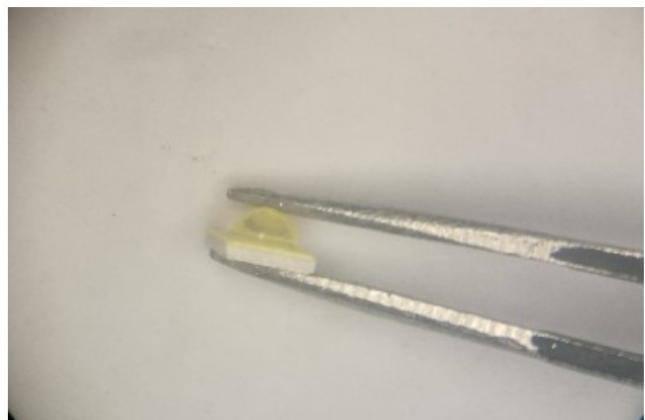
- 直接或间接的打湿或受潮，比如淋雨等；
- 被海水损害或侵蚀；
- 被暴露于腐蚀性气体(如 Cl_2 , H_2S , NH_3 , SO_x , NO_x 等) ；
- 被暴露于粉尘、液体或油；
- 符合使用手册情况下，产品质保期为24个月，有保质协议的则以保质协议为准；
- 产品生命周期后进行回收处理。

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., Cl_2 , H_2S , NH_3 , SO_x , NO_x , etc.);
- Exposed to dust, liquids or oils;
- In accordance with the user manual, the product shelf life is 24 months, If there is a warranty agreement, the warranty agreement shall prevail;
- After the product life cycle for recycling.



OK



NG



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	2024. 11. 19	A/0
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