

承認書

SPECIFICATION FOR APPROVAL

● 客戶名称	
● Customer	
● 客戶品號	
● Customer Part No.	
● 产品品號	HC-4509T4C-RGBW-BBBB-LJHX
● Brightek Part No.	
● 产品規格描述	4509RGBW 四色侧发光共阳极
● Specification	
● 製錶人	王清
● Prepared By	
● 審核	李东平
● Checkedy	
● 客戶回簽	
● Customer Comfirmation	
● 送样日期:	
● Deliver date:	

說明：一、謹致執事者：茲提供敝公司產品之有關詳細規格及圖面資料，敬請給予辦理測試認定手續。同時敬請 送返一份附有貴公司簽認之測試認定後之樣品認定書。

We are sending you our specification and drawings for your approval. Please return to us one copy "For Approval" with your approved signatures.

二、客戶意見欄 Customer' S Proposal

☐ Approve 承認 (請於認可欄中簽名)

☐ Disagree 不同意

Reason 原因:

光宇集團

中高端光电元件定制企业, 20 多年封装经验, 品质稳定, 值得信赖, 体现光的价值。

光宇集团国际(香港)有限公司

GTU Group International (HK) Co., Limited

广东光宇半导体科技有限公司

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东莞市弘呈光电有限公司

DongGuan Hong cheng Optoelectronics Co.,Ltd.

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企业邮箱: sales@led-hc.com



版本/版次	修改日期	修改内容

Note: this specification does not recommend using ac, such as improper operation, cause accidental death lamp or other adverse phenomenon, this company is not responsible for! Advising clients to set the current to use this product, please let us know if they set the voltage to use the product.

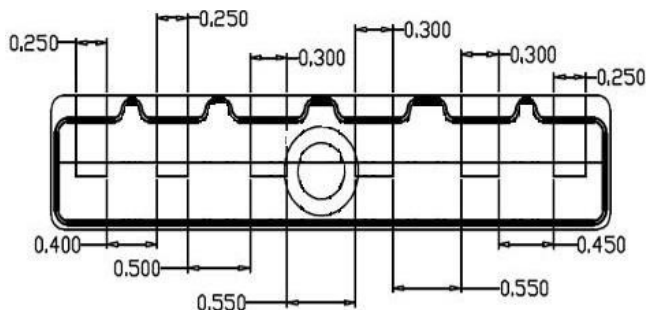
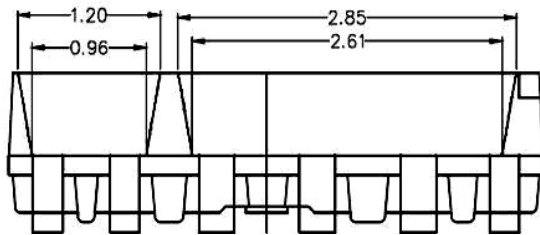
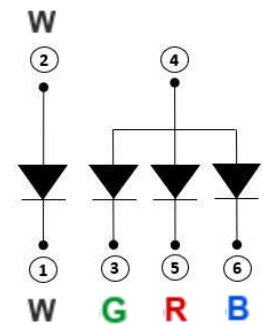
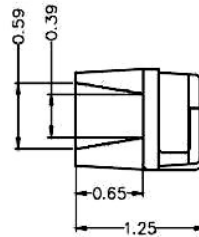
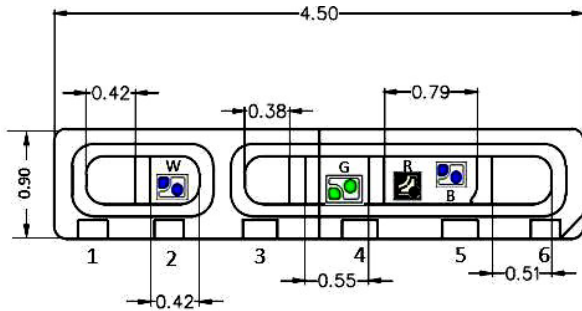
1. overview

- * Low power consumption
- * Low power
- * General equipment on the PCB board or panel
- * with IC Supporting the use/Low current requirement

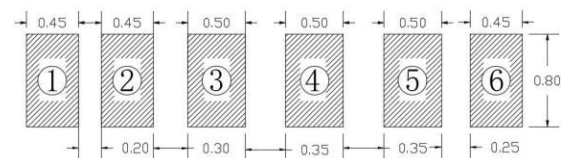
This product is a moisture-sensitive electronic component with a moisture sensitivity level of **MSL5**.

2. Product appearance size figure

(unit: mm)



Recommended Pad



Note:

1: All dimensions are in millimeters (inches). 2:

Tolerance is $\pm 0.1\text{mm}$ unless otherwise noted.

3: Specifications are subject to change without notices. 4

: This specification is for reference only for one year

3. The limit parameter (room temperature 25℃)

parameter	The numerical	Unit
Dissipation power	R:40 G:60 B:60 W:60	mW
Pulse current (1/10 work loops 0.1 millisecond pulse width)	100	mA
Working current (IF)	20	mA
Reverse voltage (VR)	5	V
Experiment temperature range	-20℃ ~ +80℃	
Storage temperature range	-20℃ ~ +80℃	
Soldering temperature	245℃ for 5 Seconds	

Photoelectric parameters At room temperature 25℃

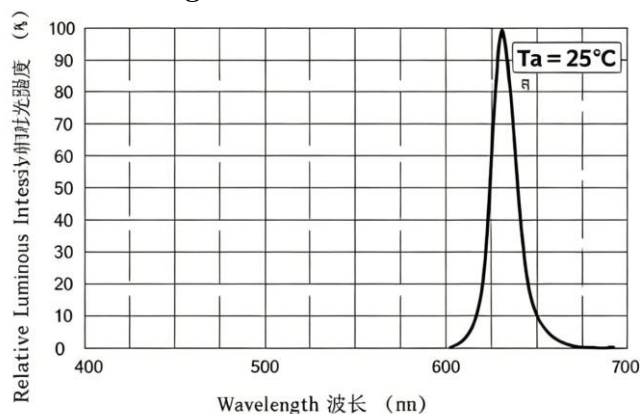
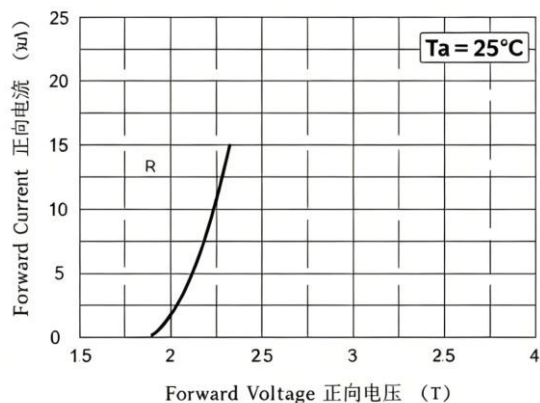
Parameter		minimum value	median	maximum	Unit	Test Condition
Luminous intensity	Red	500	-----	1000	Mcd	If=20mA
	Green	600	-----	1500	Mcd	If=20mA
	Blue	180	-----	400	Mcd	If=20mA
	white	600		1500	mcd	If=20mA
Color temperature	Red	615	----	625	Nm	If=20mA
	Green	520	-----	530	Nm	If=20mA
	Blue	460	-----	470	Nm	If=20mA
	white	4500		5500	K	If=20mA
electric voltage	Red	1.8	-----	2.4	V	If=20mA
	Green	2.6	-----	3.2	V	If=20mA
	Blue	2.6	-----	3.2	V	If=20mA
	white	2.6	-----	3.2		If=20mA
Reverse current		-----	-----	5	μA	Vr=5V

Selection Guide:

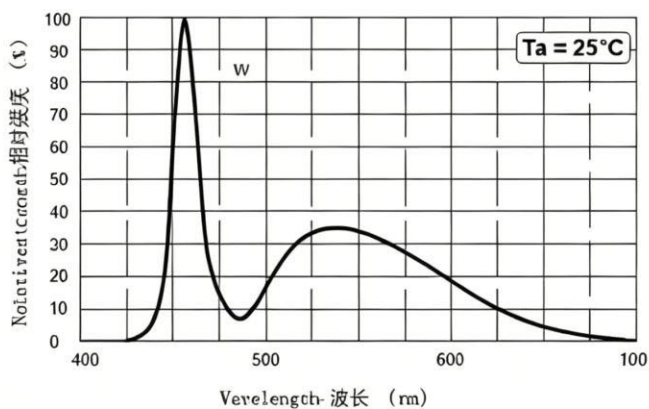
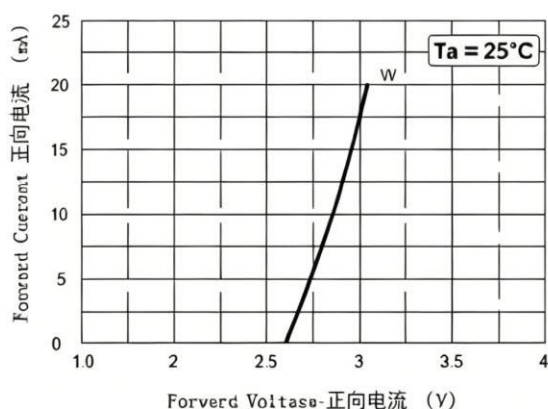
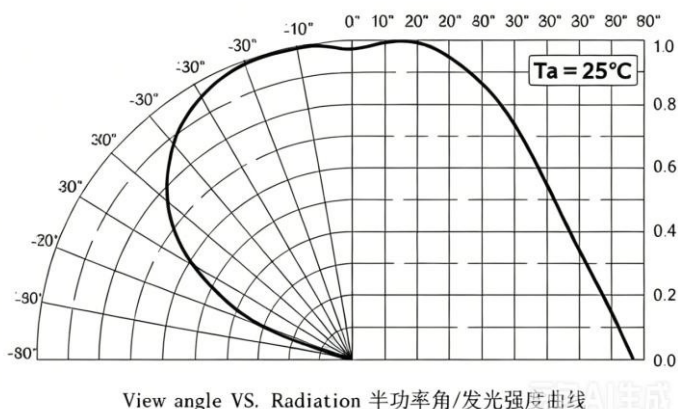
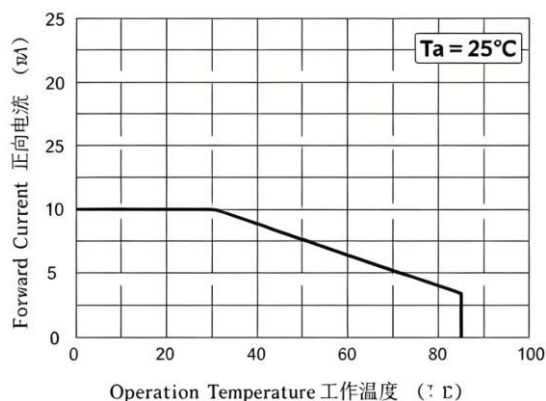
Colloid color	Chip		
Water clear	Material	Emitting light colors	λp(nm)
	GaASP/GaP	Red	620
	InGaN/GaN	Green	520
	InGaN/GaN	Blue	465
	InGaN/GaN	White	5000K

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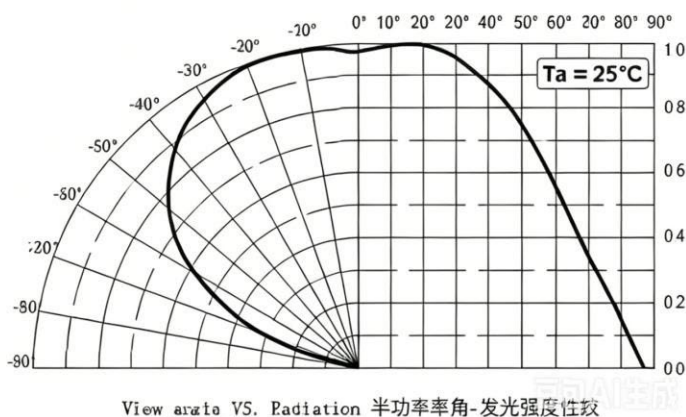
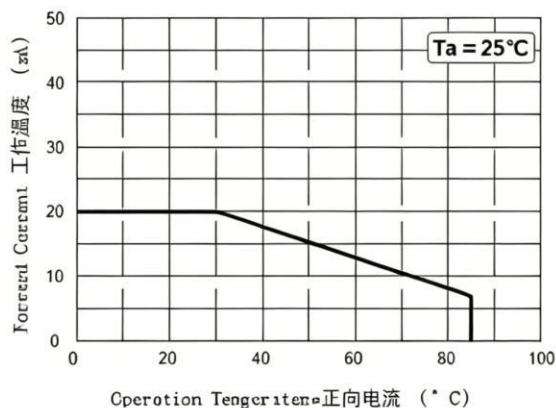
4、Under the condition of 25 °C electrical diagram:



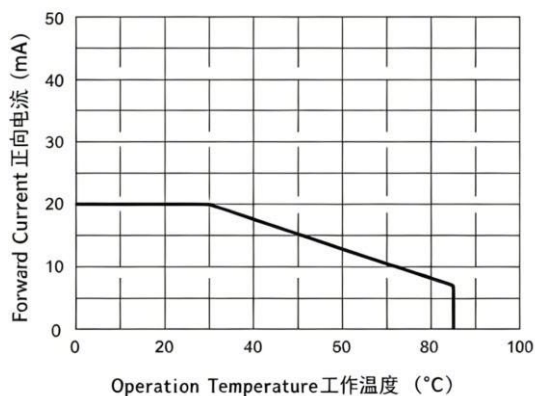
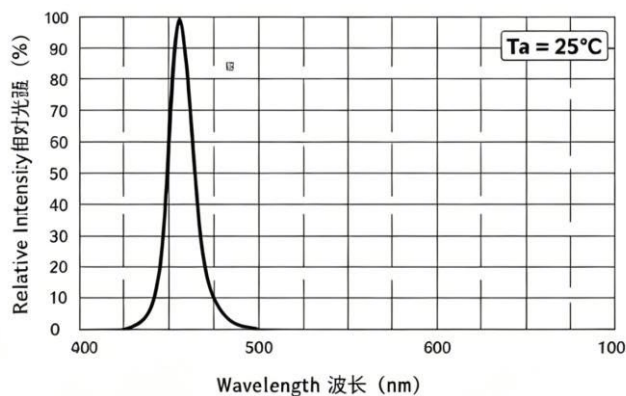
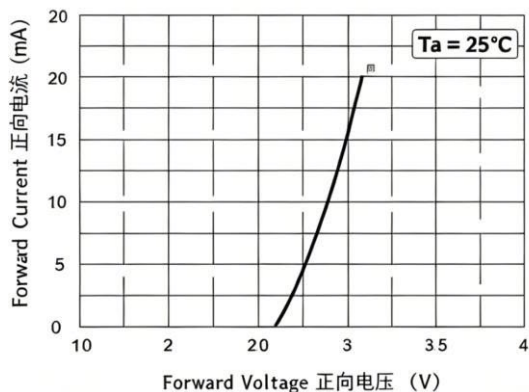
Red



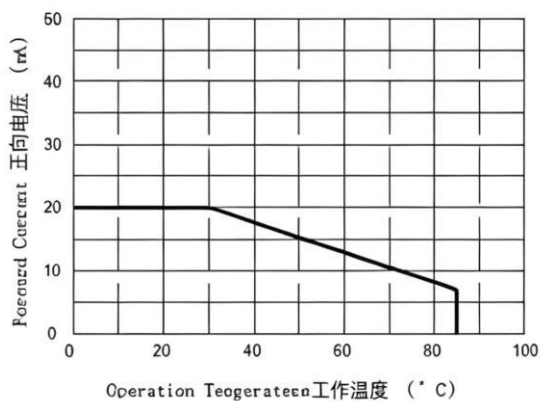
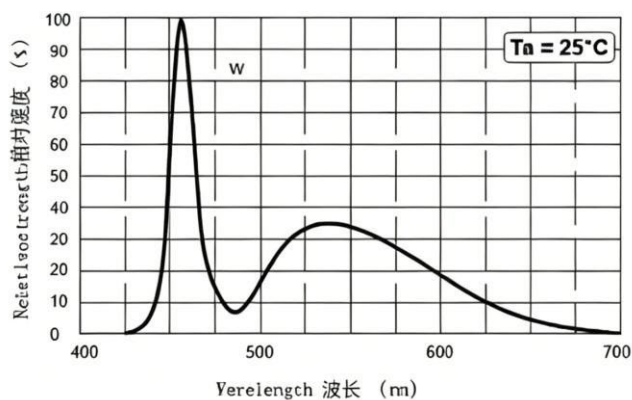
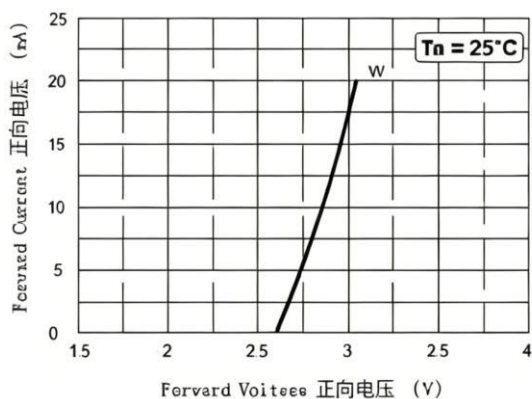
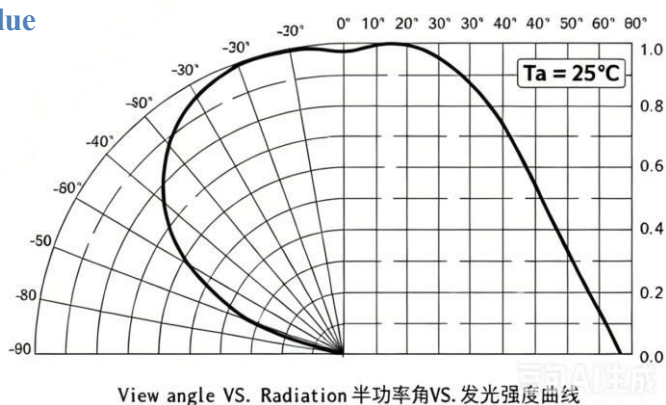
Green



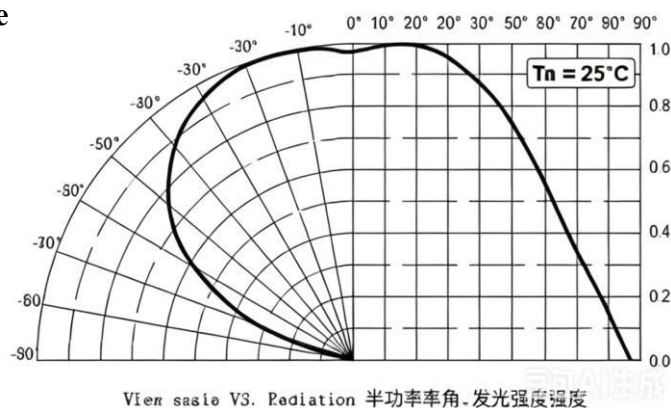
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Blue

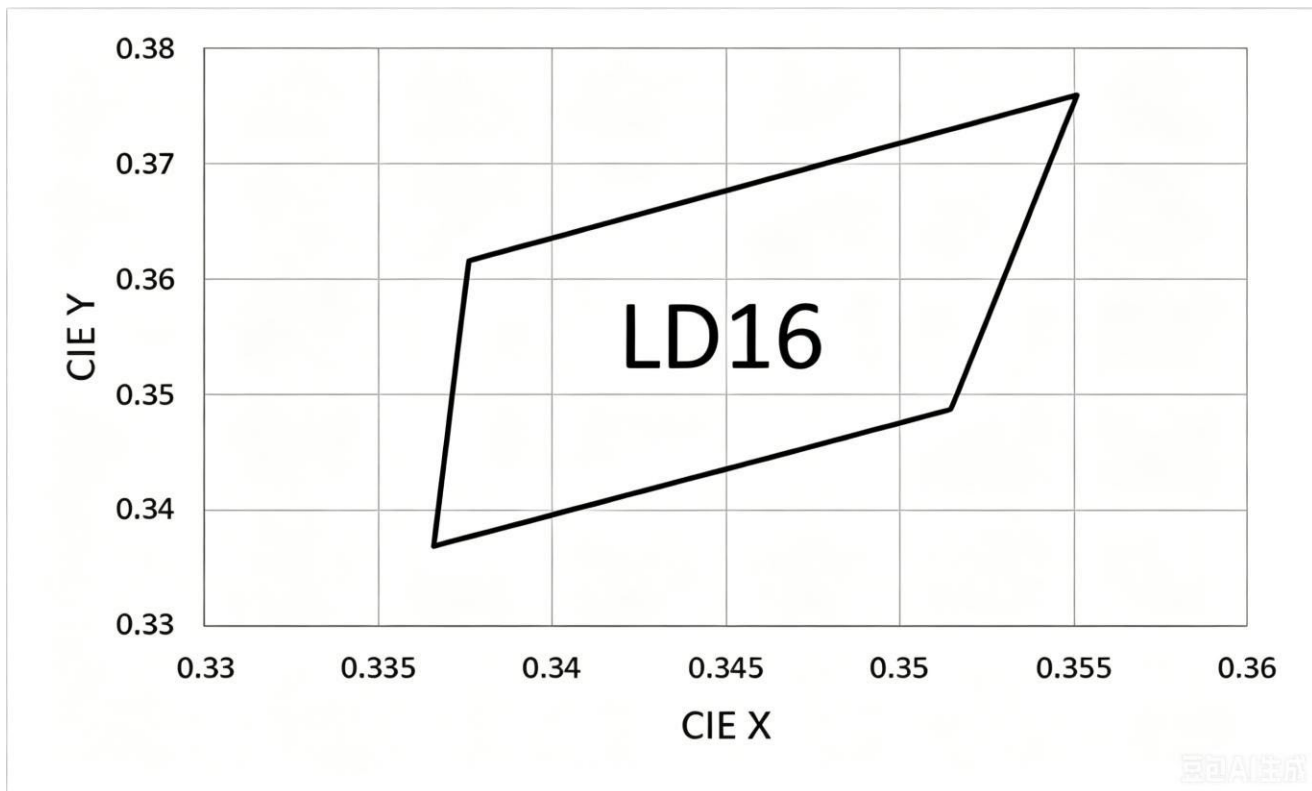


white



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The C.I.E. 1931 Chromaticity Diagram C.I.E 1931 CIE 打靶图



Bin Range of Chromaticity Coordinate 色度坐标的 Bin 范围

CCT	BIN CODE	X	Y	X	Y	X	Y	X	Y
5000K	LD16	0.3376	0.3616	0.3366	0.3369	0.3515	0.3487	0.3551	0.376

5. Not dry glue label

P/N: Product number

VF: Forward voltage

BIN: points light

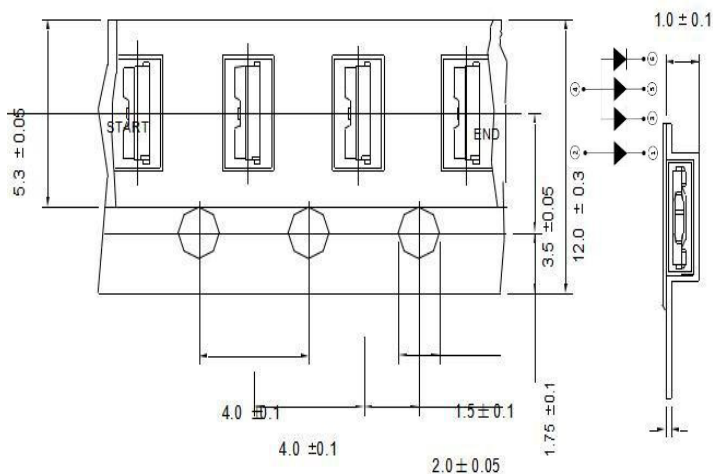
IV: Luminous intensity

WL: Color/wavelength

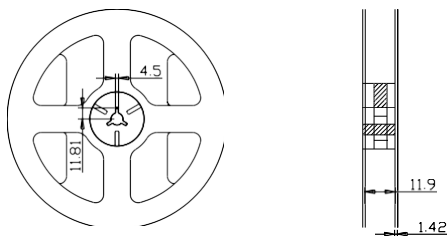
Package: 5000pcs

QC: Production order

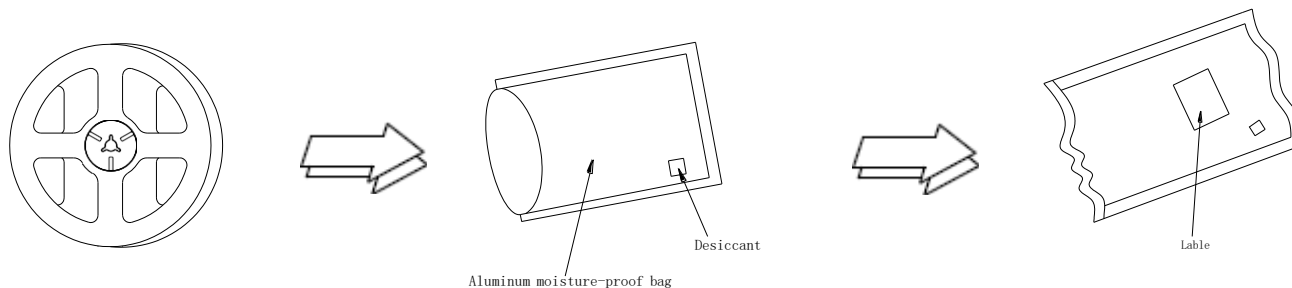
6. Tape size (unit:mm)



6.1 Reel Dimensions



6.2 Moisture Resistant Packaging



Note: unless mentioned, tolerance of ± 0.1 mm.

7. Reliability of the experimental project and conditions

Test Item 测试项目	Ref. Standard 参考标准	Test Conditions 测试条件	Note 备注	Conclusion 结论
Life Test 常温通电	JESD22-A108	Ta=25℃ IF=20mA	1000 hrs	0/20
Thermal Shock 冷热冲击	JESD22-A104	-40℃±5℃ 15min ↑↓10sec 100℃± 5℃ 15min	100 cycle	0/20
High Temperature Storage 高温存储	JESD22-A103	Ta=100℃±5℃	1000 hrs	0/20
Low Temperature Storage 低温存储	JESD22-A119	Ta=-40℃±5℃	1000 hrs	0/20
Power Temperature Cycling 点亮高低温循环	JESD22-A105	85℃±5℃ 15min ↑↓10min -40℃±5℃ 15min	100 cycle	0/20
High Humidity High Humidity 高温高湿存储	JESD22-A101	85℃±5℃ RH=85%	1000 hrs	0/20
Reflow soldering 回流焊	JESD22-B106	260℃ for 3 sec	3 times	0/20

Criteria For Judging Damage 失效判定标准

Test Items 测试项目	Symbol 符号	Test Condition 测 试条件	Criteria For Judgement 判 定标准	Applicable project 适 用项目
Forward Voltage 正向电 压	VF	IF=20mA	≤±30%	Reflow Temperature Cycle High and Low Temperature Storage Life Test
Luminous Flux 光通量	φ	IF=20mA	Maintenance ≥ 70% 光 通维持率	
High Temperature High Humidity Life Test 高温高湿老化	/	IF=20mA	No open circuit, short circuit or flicker 无开路, 短路, 闪烁	High Temperature High Humidity Life Test

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Note:

The technical information shown in the data sheets are limited to the typical characteristics and circuit examples of the referenced products. It does not constitute the warranting of industrial property nor the granting of any license.

以上技术数据仅为产品的典型值，只作为参考（以最终双方承认的规格为准），不作为任何应用条件及应用方式的保证。

8. SMD Preservation and use:

8.1 Before opening the package, the LED should be stored at 30°C/60%RH or less. After opening the package, the LED should be placed in an environment of 20-30°C/30%RH or less.

8.2 To avoid the impact of the environment, it is recommended to dehumidify after unpacking at 60°C/24H. All the leds are needed to be vacuumed to avoid failure

8.3 If the desiccant faded or expired use, dry baking: 60±5°C/24 hours.

8.4 LED Glue surface easy to dust, need to do the relevant dust prevention measures.

9. pick and place

Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.

10. Heat treatment

When driven by excessive current, the T_J (node temperature) of LED will exceed the period limit value, which leads to a serious shortening of LED life. Thermal treatment measures should effectively reduce the thermal resistance of application products. Common practice: install LED packages on metal matrix PCB boards. 1W LED products require the surface heat dissipation area of the metal substrate to be at least 30cm squared (over 80cm squared is recommended for 3W products), and its thermal conductivity is higher than 2.0w /MK. LED and gold substrate are combined by thermal conductive adhesive with good thermal conductivity. The thermal conductivity coefficient is required to be higher than 1.0w /MK

and the thickness is less than 100um.

11. Clean

If you need to clean, use a clean, soft cloth dipped in alcohol to gently remove foreign matter. Do not use a cleaner such as acetone to avoid possible corrosion damage.

12. Electrical precautions

12.1 Led Reverse drive is not allowed

12.2 Current limiting measures are necessary, otherwise slight voltage changes will lead to large current changes, which may lead to LED failure.

12.3 Under the premise that the luminous quantity meets the requirements, it is recommended to use the drive current lower than the rated current, which is conducive to improving the reliability of the product.

13. anti-static precautions

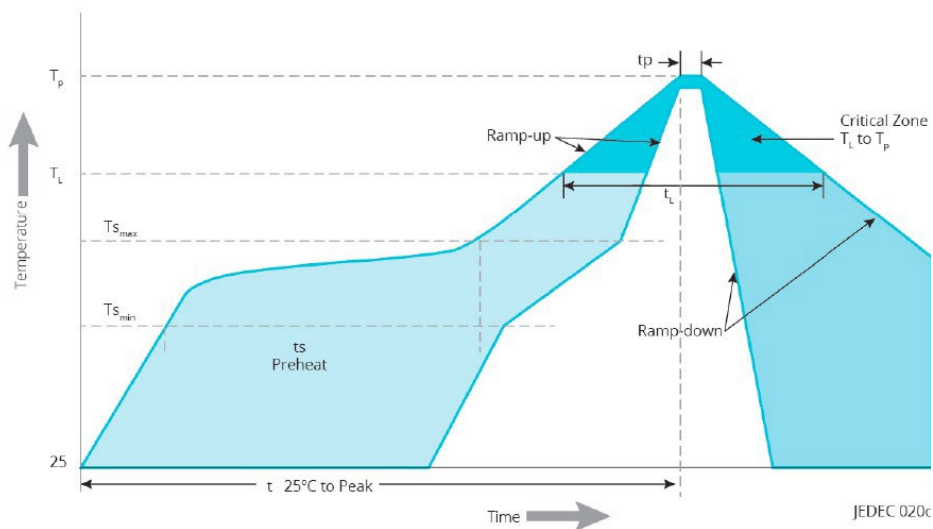
LED is electrostatic sensitive devices, in the process of preservation, use to take anti-static measures. Static electricity and surge can lead to changes in product characteristics, such as forward voltage reduction, which can be serious and even damage the product. So for the whole process (production, testing, packaging, etc.) and LED direct contact staff should do a good job to prevent and eliminate electrostatic measures. All related equipment and machinery should be properly grounded. The grounding ac resistance is less than 1.0 ohm, the table mat with surface resistance of 10^6 – 10^9 ohm is needed on the work table. Ion fans must also be installed in electrostatic environments and equipment. During the operation, the operator should use anti-static bracelet, anti-static mat, anti-static overalls, working shoes, gloves, anti-static capacity.

14. An electric soldering iron

It is recommended to use anti-static electric soldering iron, the temperature at the tip does not exceed 350°C, less than 3 seconds for each soldering. The power of the soldering iron should be less than 60W. Weld two electrode pins more than 2 seconds after each welding. Do not force the lens during welding. Problems with led usually begin when they are soldered. So you must work carefully as required.

15. SMT Reflow instructions:

Reflow Soldering Guidelines



matters need attention:

1. Reflow soldering is only allowed once.
2. Do not apply pressure to the lamp body during reflow.
3. Repair should not be done after the LED have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed in advance whether the characteristics of LED will or will not be damaged by repairing.
4. After reflow welding is completed, do not press the heat dissipation plate, do not press to the colloidal part.