承　认　书

客户名称：_____

物料编码：_____

产品型号：**JK-5050RGB+IR850红外**

版本编号：1.20

日　　期：　2023-03-11

产品描述:

- **贴片5050RGB红绿蓝+红外IR850**
- 胶体颜色:**白色透明**

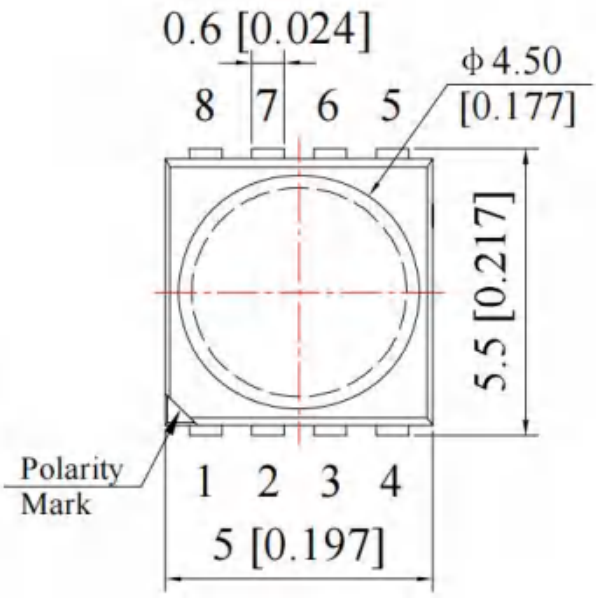
承 认 签 章		
编制	**审核**	**核准**

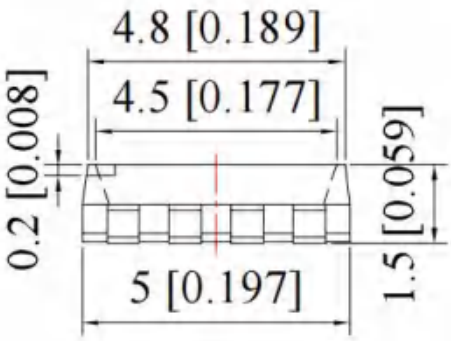
客 户 确 认		
确认	**审核**	**核准**

特征 Features

- 尺寸 Package：5.5mm*5.0mm*1.5mm
- 发光颜色 Emitted colour:：Red Green Blue IR
- 符合欧盟公布的 ROHS 指令要求 Comply ROHS standard
- 高强度 High intensity
- 视角宽 Extremely wide view angle
- 防静电胶带包装 Anti-electrostatic tape package
- 稳定性强 Reliable and stable

外形尺寸 Package Outline Dimensio





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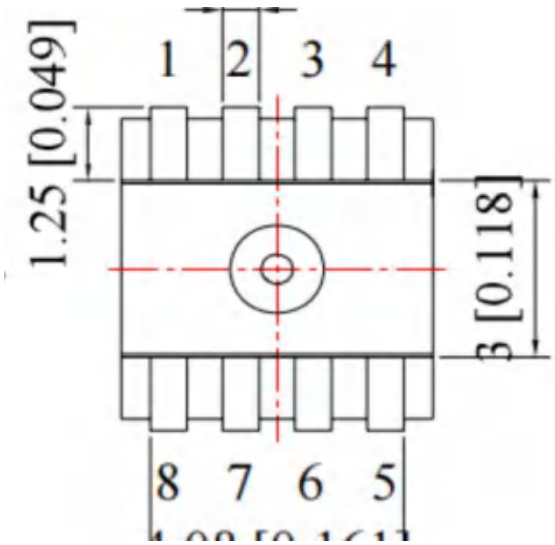
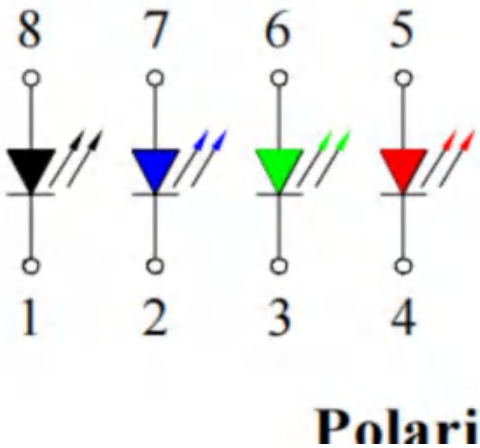




1. 所有尺寸以毫米为单位 All dimensions are in millimeters (inches);
2. 未标注公差为：X.X ±0.10mm ，X.XX±0.05mm/Unmarked tolerances: X. X ± 0.10 mm, X. XX ± 0.05

极 限 参 数（TA=25℃）/Absolute maximum ratings at Ta=25℃

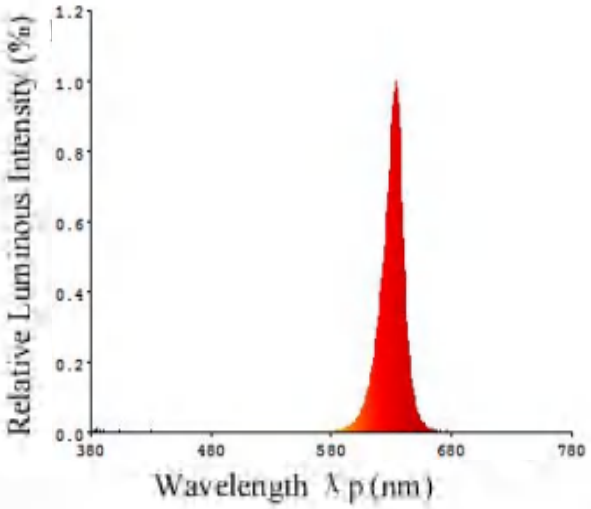
参数 Parameter	符号 Symbol		典型值 Typical	单位 Unit
功率 Power dissipation	Pd	IR	30	mW
		R	60	
		G	40	
		B	40	
正向电流 Forward current	If		20*4	mA
反向电流 Reverse voltage	Vr		5	V
工作温度范围 Operating temperature range	Top		-20 ~+85	℃
储存温度范围 Storage temperature range	Tstg		-20~+85	℃
无铅焊接温度/时间 Lead Soldering Temperature/Time	T_{SOL}		240/≤3S	℃/S
最大脉冲电流 Peak pulsing current	Ifp		100	mA
IFP Conditions: Pulse Width≦10msec. and Duty cycle≦1/10.				

光电参数（TA=25℃）/Electrical-optical characteristics at Ta=25℃

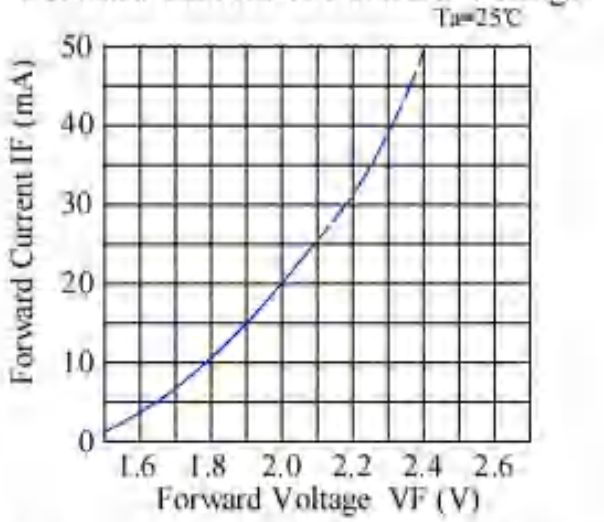
参数 Parameter	测试条件 Test Condition	符号 Symbol		数值 Typical 最小值 Min	典型值 Typ	最大值 Max	单位 Unit
DC Forward Voltage 正向压降	If=20mA	Vf	IR	1.4	--	1.7	V
			R	2.0	--	2.3	
			G	2.8	--	3.0	
			B	3.0	--	3.2	
发光强度 Luminous intensity	If=20mA	Iv	IR	50	--	120	mW/Sr
			R	300	--	500	mcd
			G	800	--	1000	
			B	300	--	400	
主波长 Dominant Wave Length	If=20mA	λd	IR	845	--	855	nm
			R	620	--	630	
			G	520	--	530	
			B	457	--	460	
峰值波长 Peak Wave Length	If=20mA	λ_p	IR	--	850	--	nm
			R	--	625	--	
			G	--	525	--	
			B	--	460	--	
发光角度 视角 Viewing angle at 50% Iv	If=20mA	2 θ 1/2		--	120	--	Deg
反向电流 Reverse Current	Vr=5V	Ir		--	--	≤10	μA

典型光学特性曲线 **Typical optical characteristics curves**

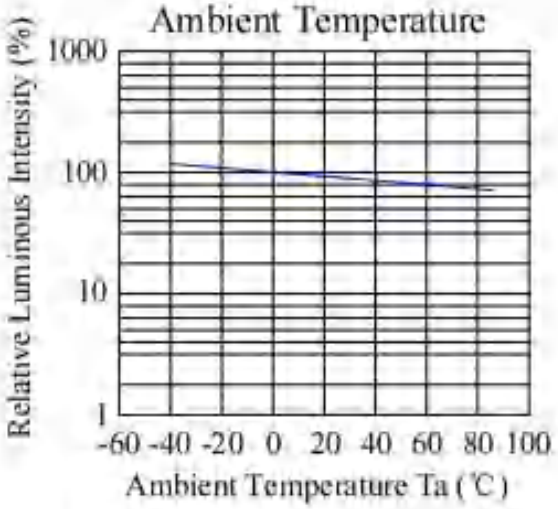
Spectrum Distribution



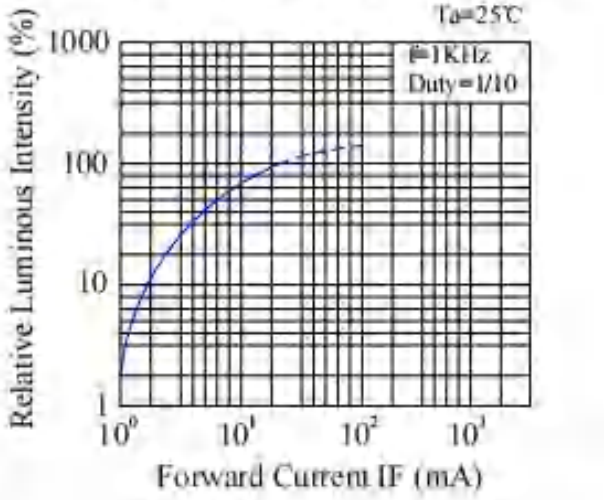
Forward Current & Forward Voltage



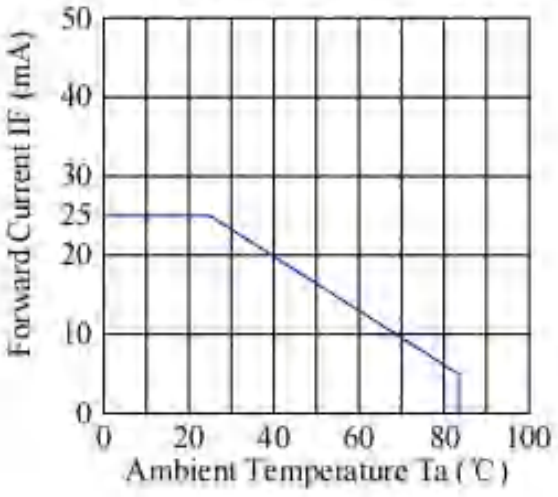
Luminous Intensity & Ambient Temperature



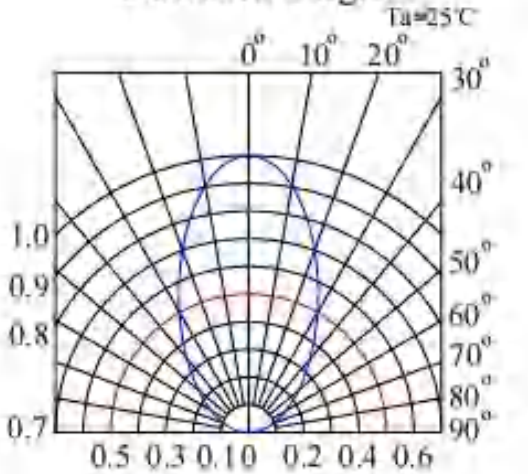
Luminous Intensity & Forward Current



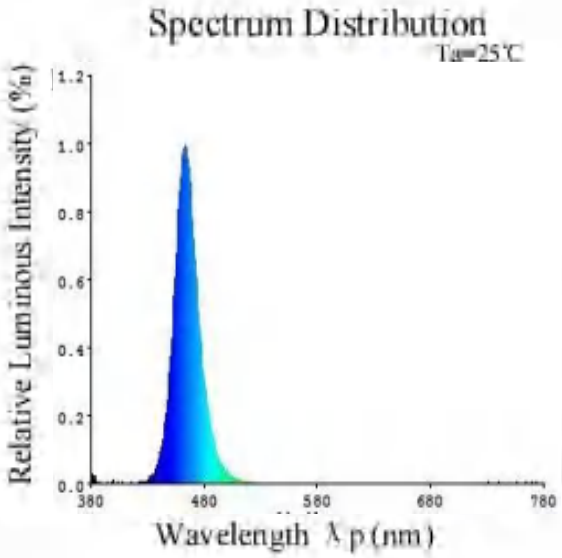
Forward Current Derating Curve

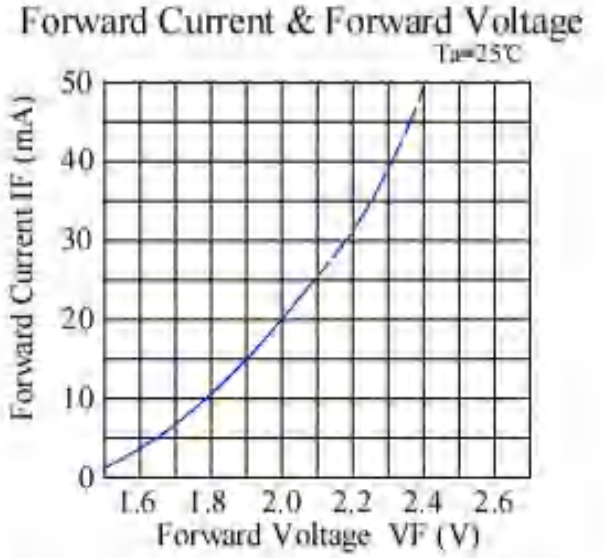


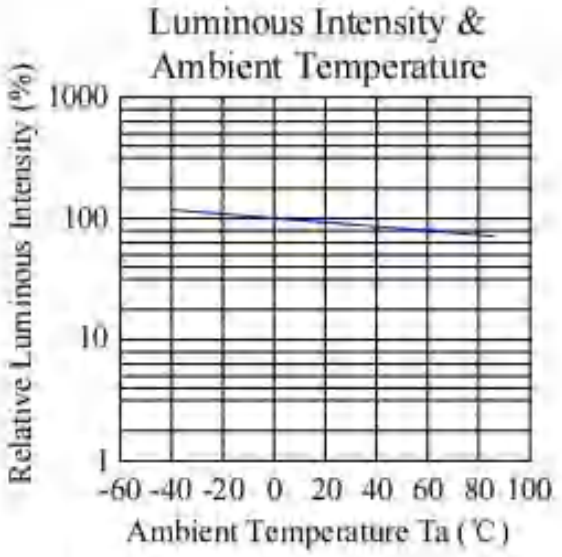
Radiation Diagram

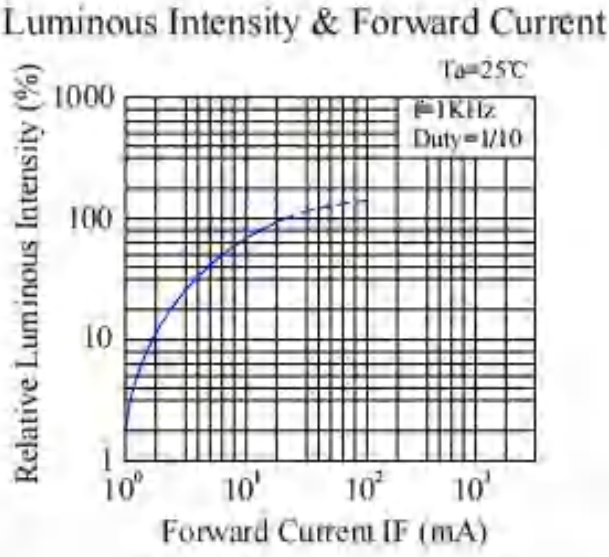


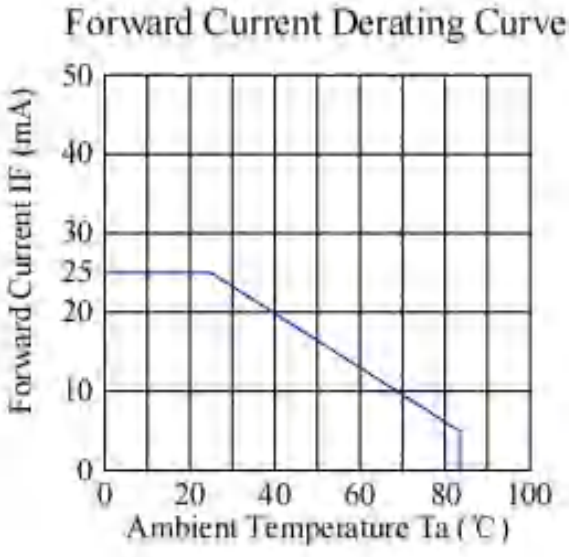
典型光学特性曲线 Typical optical characteristics curves

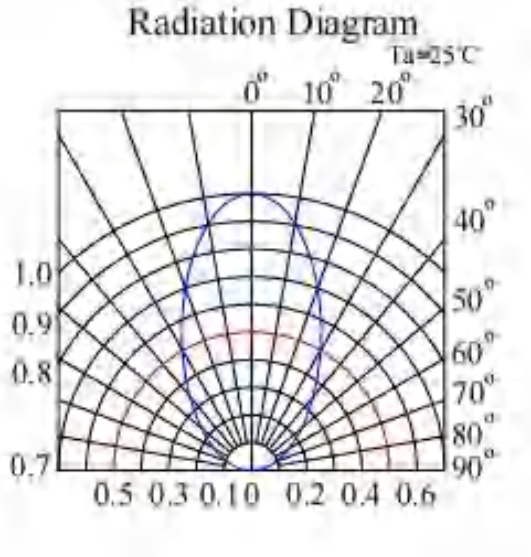






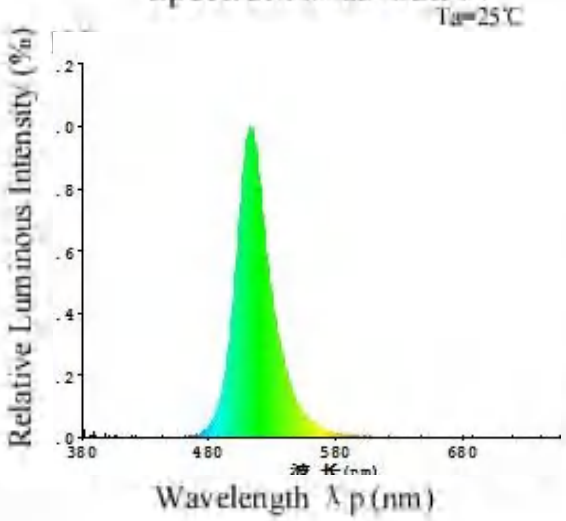




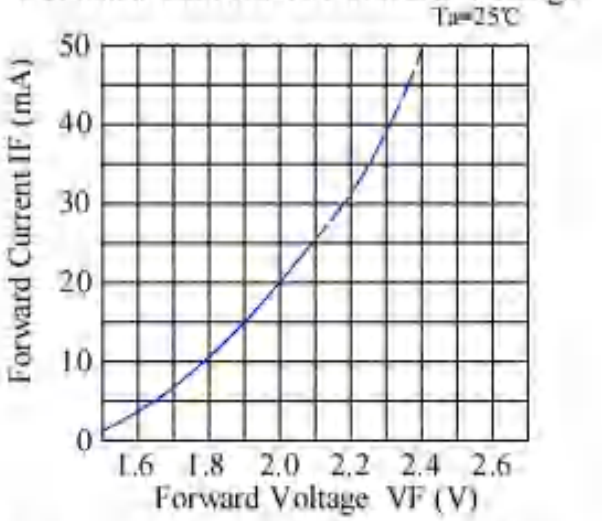


典型光学特性曲线 **Typical optical characteristics curves**

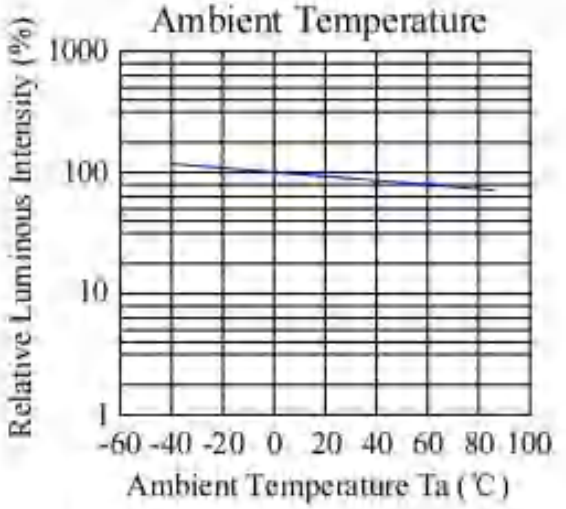
Spectrum Distribution



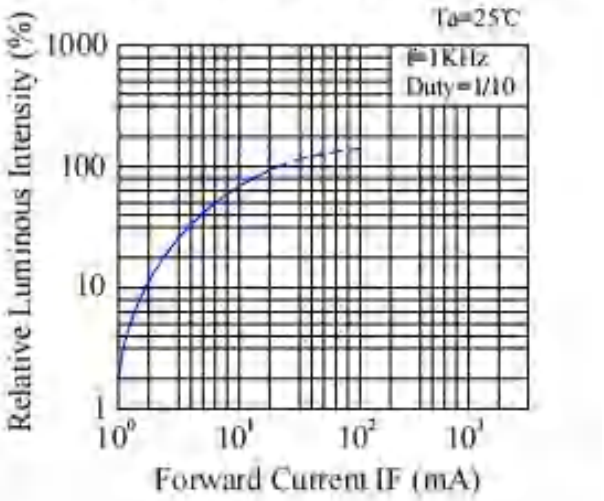
Forward Current & Forward Voltage



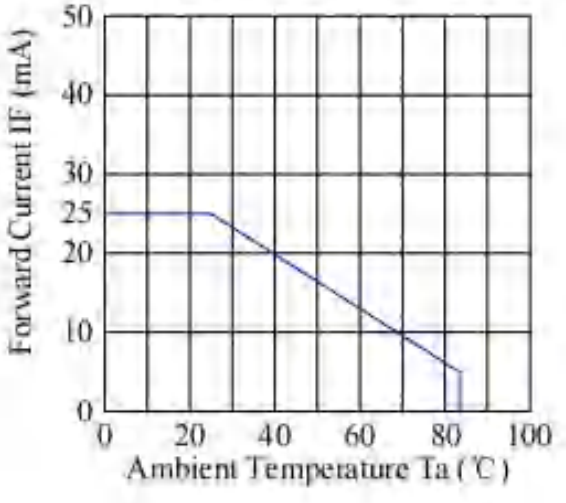
Luminous Intensity & Ambient Temperature



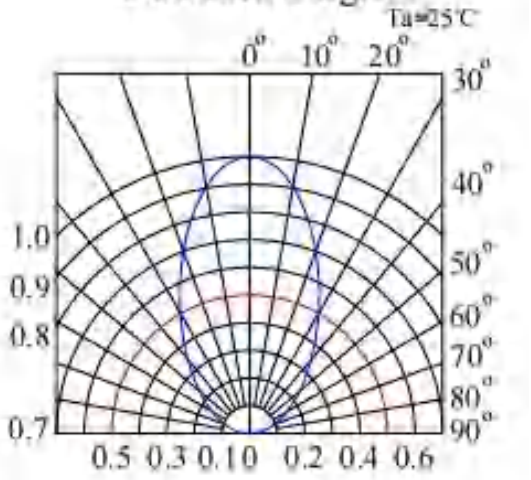
Luminous Intensity & Forward Current



Forward Current Derating Curve



Radiation Diagram



典型的电光特性曲线 Typical Electro-Optical Characteristics Curves：

Fig.1 – Relative luminous Intensity vs. Forward Current

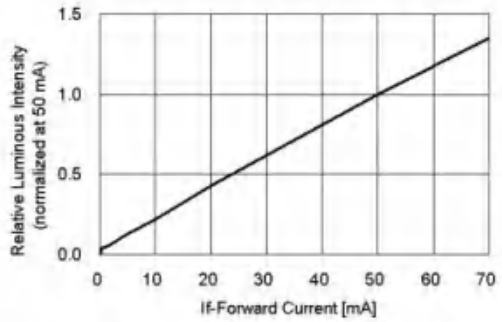


Fig.2 – Forward Current vs. Forward Voltage

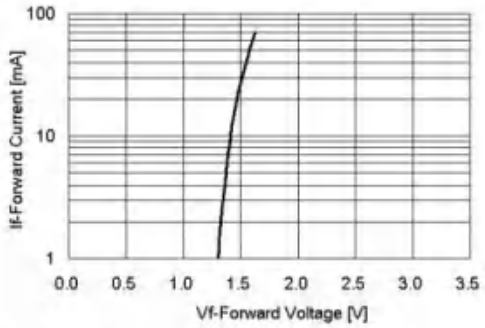


Fig.3 – Relative Intensity (@50mA) vs. Ambient Temperature

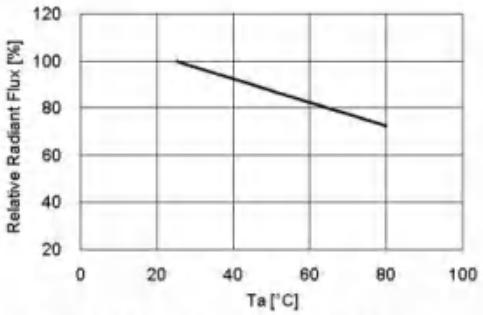


Fig.4 – Forward Voltage (@50mA) vs. Ambient Temperature

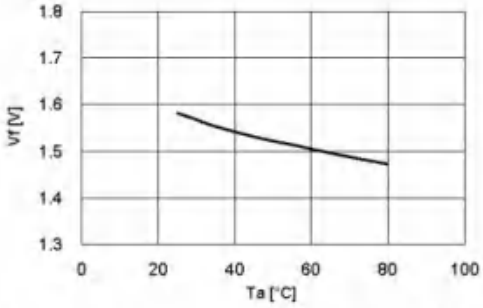


Fig.5 – Peak Wavelength (@50mA) vs. Ambient Temperature

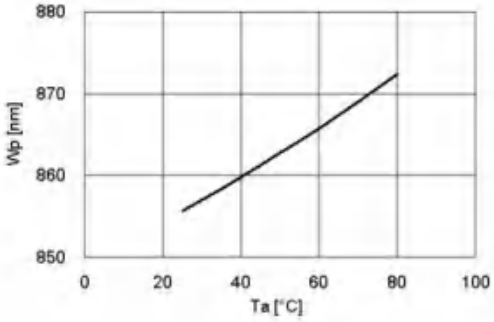
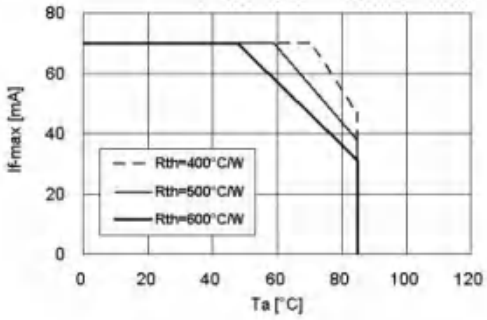
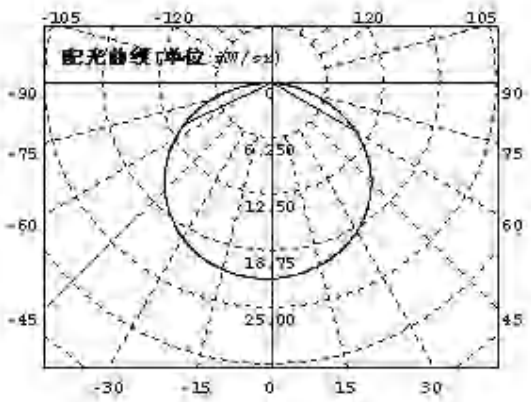
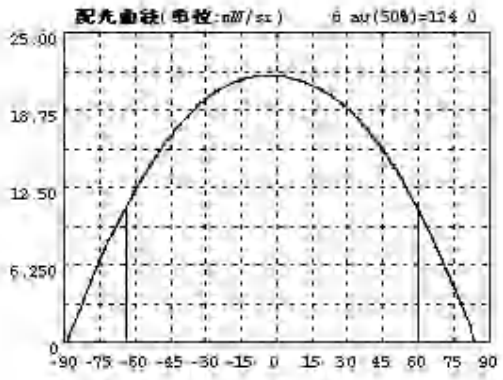


Fig.6 – Maximum Driving Forward DC Current vs. Ambient Temperature (De-rating based on Tj max. = 115°C)



Intensity distribution curve (50mA test)：





(1) 测试项目和结果 TEST ITEMS AND RESULTS

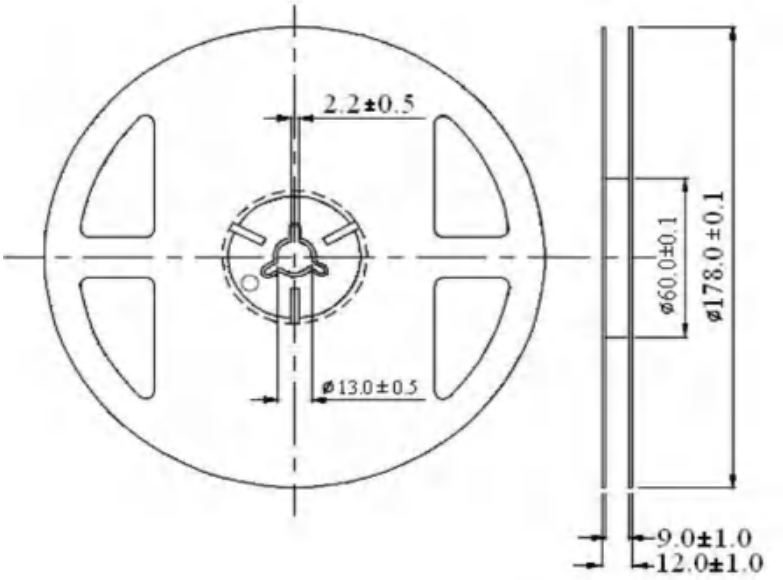
Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resitance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld=260℃, 10sec. (Pre treatment 30℃,70%,168hrs)	2 times	0/50
Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsld=215±5℃, 3sec. (Leader Solder)	1time over 99%	0/50
Thermal Shock	JEITA ED-4701 300 307	-40℃~100℃ 5min. 5min.	100cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40℃~25℃~100℃~25℃ 30min. 5min. 30min. 5min.	100cycles	0/50
High Temperature Storage	JEITA ED-4701 200 201	Ta=100℃	1000 hrs	0/50
High Temperature High Humidity Storage	JEITA ED-4701 100 103	Ta=80℃, 80%RH	1000 hrs	0/50
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40℃	1000 hrs	0/50
Steady State Operating Life		Ta=25℃, IF=20MA	1000 hrs	0/50
Steady State Operating Life of High Temperature		Ta=85℃, IF=5mA	1000 hrs	0/50
Steady State Operating Life of High Humidity Heat		60℃, 90%RH, IF=15mA	500 hrs	0/50
Steady State Operating Life of Low Temperature		Ta=-30℃, IF=20MA	1000 hrs	0/50

(2)判断损坏的标准 CRITERIA FOR JUDGING THE DAMAGE

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	V_F	I_F=20MA	-	U.S.L.*)X1.1
Reverse Current	I_R	VR=5V	-	U.S.L.*)X2.0
Luminous Intensity	I_V	I_F=20MA	L.S.L.**)X0.7	-

*) U.S.L.：Upper Standard Level　　**) L.S.L.：Lower Standard Level

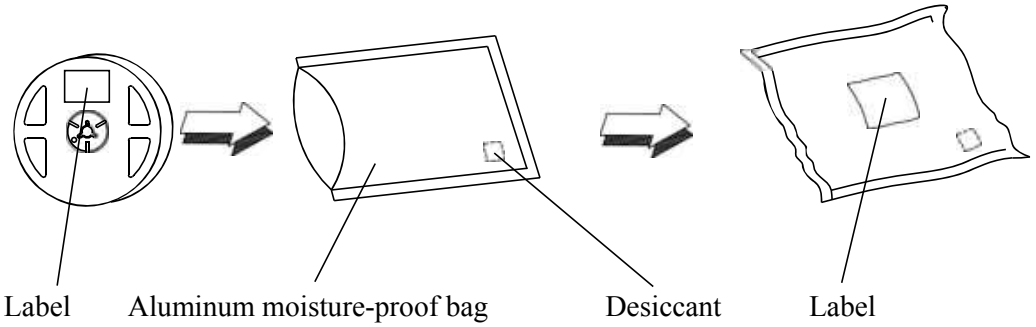
卷盘尺寸 Reel Dimensions:

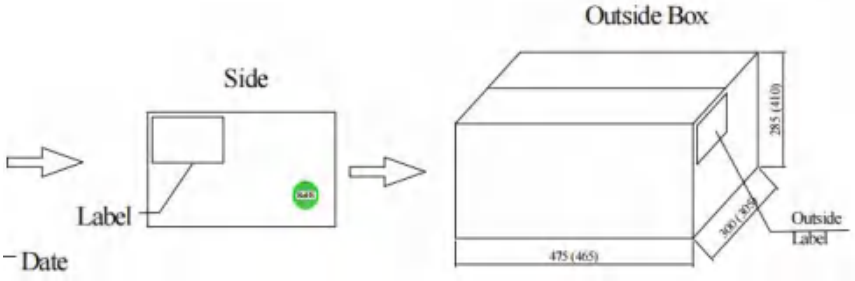


Unit: mm
Tolerance: ±0.25mm

包装和标签规格 Packing & Label Specifications:

Moisture Resistant Packaging:





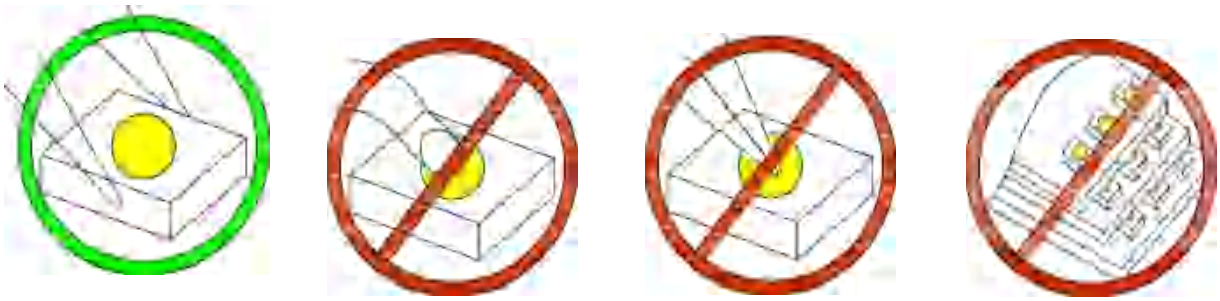
注意事项 CAUTIONS

1. Handling Precautions:

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

1.2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

1.3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force. As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

2. Storage

2.1. Do not open moisture proof bag before the products are ready to use.

2.2. Before opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.

2.3. The LEDs should be used within a year.

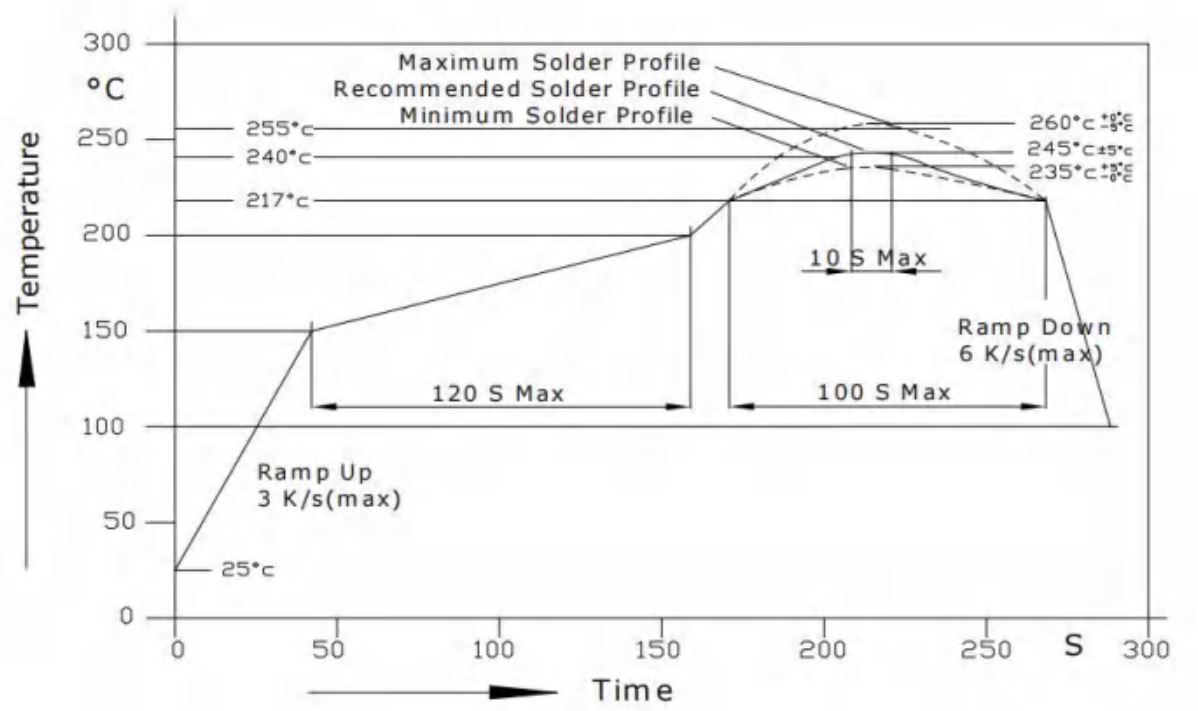
2.4. After opening the package, the LEDs should be kept at 30°C or less and 60%RH or less.

2.5. The LEDs should be used within 24 hours after opening the package.

If the moisture adsorbent material has fabled away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 65±5°C for 24 hours.

3. 焊接条件 Soldering Condition

3.1. 无铅焊接温度分布 Pb-free solder temperature profile



3.2. Reflow soldering should not be done more than two times.

3.3. When soldering, do not put stress on the LEDs during heating.

3.4. After soldering, do not warp the circuit board.

3.5. Recommended soldering conditions:

Reflow soldering		Soldering	iron
Pre-heat	150~200°C	Temperature	300°C Max.
Pre-heat time	120 sec. Max.	Soldering time	3 sec. Max.
Peak temperature	260°C Max.		(one time only)
Soldering time	10 sec. Max.(Max. two times)		

3.6.Because different board designs use different number and types of devices, solder pastes, reflow ovens, and circuit boards, no single temperature profile works for all possible combinations.

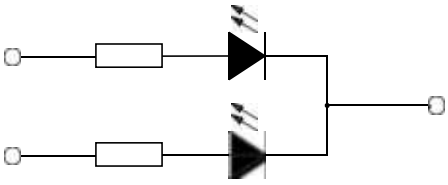
However, you can successfully mount your packages to the PCB by following the proper guidelines and PCB-specific characterization.

4. 驱动方式 Drive Method

4.1. An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.

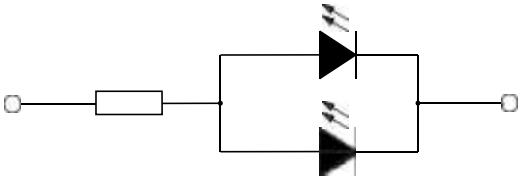
Circuit model A

LED



Circuit model B

LED



a. Recommended circuit.

b. The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs.

5. ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Suggestions to prevent ESD damage:

- Use of a conductive wrist band or anti-electrostatic glove when handling these LEDs.
- All devices, equipment, and machinery must be properly grounded.
- Work tables, storage racks, etc. should be properly grounded.
- Use ion blower to neutralize the static charge which might have built up on surface of the LED's plastic lens as a result of friction between LEDs during storage and handling.

ESD-damaged LEDs will exhibit abnormal characteristics such as high reverse leakage current, low forward voltage, or "no lightup" at low currents. To verify for ESD damage, check for "lightup" and Vf of the suspect LEDs at low currents. The Vf of "good" LEDs should be >2.0V@0.1mA for InGaN product and >1.4V@0.1mA for AlInGaP product.

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