SPECIFICATION
产品规格书

REFOND P/N 产品型号

RT25E9-COBU※P-1212

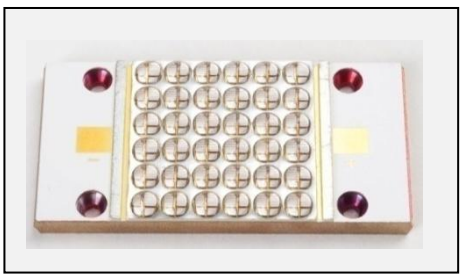
□R&D 研发

■Mass Product 量产供货

Contents 目录

1. Description 产品介绍

1.1 General Description 产品描述



This production use the Copper substrate and glass package，outline size25X50X5.2mm

本产品采用铜基和石英玻璃封装结构，产品尺寸：25X50X5.2mm。

1.2 Features 产品特征

► Copper substrate and glass package. 铜基和石英玻璃

► Viewing angle:60°.发光角度：60°

► RoHS compliant.满足RoHS要求

► Package:1pcs/bag. 每袋包装1pcs

1.3 Application 产品应用

► UV Curing.紫外固化

► UV Ink Curing.油墨固化

► UV printing.印刷

► Ultraviolet disinfection.紫外消毒

► General use.其他应用

1.4 Package Dimension 封装尺寸

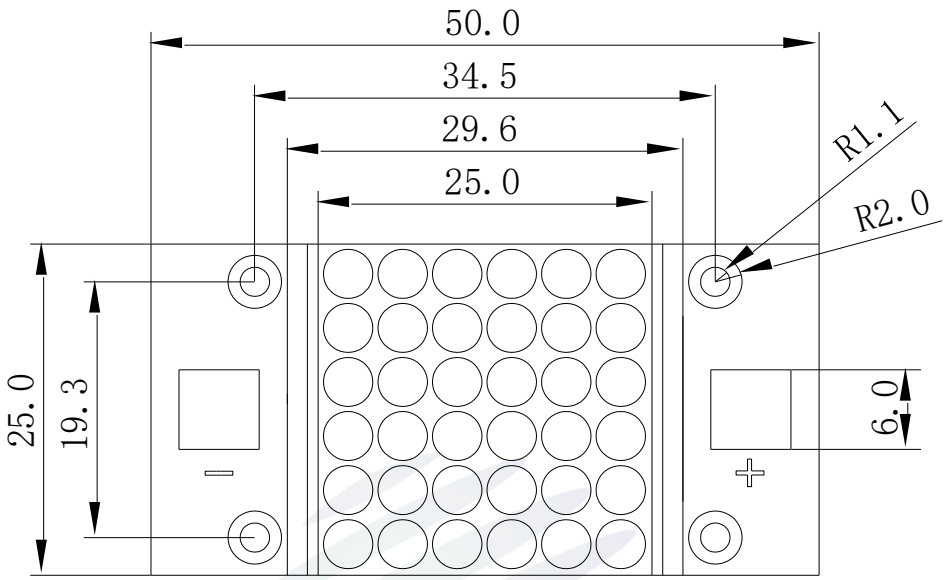


Fig.1-1 Top view 正面视图

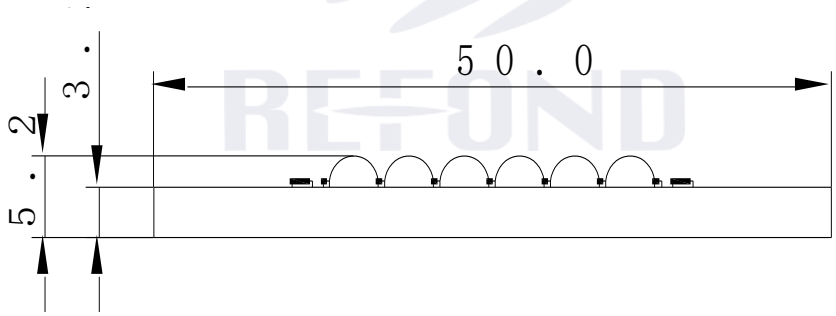


Fig.1-2 Side view 侧面视图

Notes 备注：

1. All dimensions units are millimeters. 所有尺寸标注单位为毫米
2. All dimensions tolerances are ±0.2mm unless otherwise noted.除特别标注外，所有尺寸公差为±0.2 毫米

1.5 Product Parameters 产品参数

Table 1-1 Electrical / Optical Characteristics at Ts=25°C 电性与光学特性

Item 项目	Symbol 符号	Test Condition 测试条件	Code 代号	Value			Unit 单位
				Min. （最小值）	Typ （典型值）	Max. （最大值）	
Forward Voltage （正向电压）	V_F	I_F =6.6A	C02	30	---	40	V
			C03	40	---	50	
Enitting Area Size 光区面积	S	---	---	25*25			mm
Chip connection Arrangement 线路串并方式	----	----	----	12S12P			---
Total radiant flux (辐射功率) RT25E9-COBUBP-1212 (365-370nm)	Φ_e	I_F =6.6A	1A13	12	---	14.5	W/cm^2
			1A14	14.5	15	17.5	
			1A15	17.5	---	21	
Total radiant flux (辐射功率) RT25E9-COBUEP-1212 (380-390nm)	Φ_e	I_F =6.6A	1A14	14.5	---	17.5	W/cm^2
			1A15	17.5	---	21	
			1A16	21	---	25.5	
			1A17	25.5	26	30.5	
Total radiant flux (辐射功率) RT25E9-COBUHP-1212 (390-400nm)	Φ_e	I_F =6.6A	1A14	14.5	---	17.5	W/cm^2
			1A15	17.5	---	21	
			1A16	21	---	25.5	
			1A17	25.5	26	30.5	
Total radiant flux (辐射功率) RT25E9-COBUIP-1212 (400-410nm)	Φ_e	I_F =6.6A	1A14	14.5	---	17.5	W/cm^2
			1A15	17.5	---	21	
			1A16	21	23	25.5	
			1A17	25.5	---	30.5	
Viewing Angle （发光角度）	2θ1/2	I_F =6.6A		---	60	---	deg
Thermal Resistance. （热阻）	R_{THJ-S}	I_F =6.6A		---	0.4	---	℃/W

Table 1-2 Absolute Maximum Ratings at Ts=25°C 绝对最大值

Parameter（参数）	Symbol（符号）	Rating（值）	Units（单位）
Maximum Power Dissipation（最大功耗）	P_D	360	W
Peak Forward Current（峰值电流）	I_{FP}	8.4	A
Electrostatic Discharge (HBM)（静电）	E_{SD}	2000	V
Operating Temperature（操作温度）	T_{OPR}	-40 ~ +85	℃
Storage Temperature（储存温度）	T_{OPR}	-40 ~ +100	℃
Junction Temperature（结温）	T_J	115	℃

Notes 备注：

1. 1/10 Duty cycle, 0.1ms pulse width. 脉宽0.1ms,占空比1/10.
2. The above forward voltage measurement allowance tolerance is ±1V. 以上所示电压测量误差 ±1V.
3. The above wavelenth measurement allowance tolerance is ±2nm. 以上所示波长测量误差± 2nm.
4. The above radiation flux measurement allowance tolerance ±10%. 上述辐射功率的测试允许公差为±10%.
5. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product. 使用功率不能超过规定的最大值。
6. All measurements were made under the standardized environment of Refond. 所有测试都是基于瑞丰现有的标准测试平台。
7. When the LEDs are in operation the maximum current should be decided after measuring the package temperature, junction temperature should not exceed the maximum rate. LED 使用的最大电流需要根据散热条件确定，结温不能超过最大值。
8. ESD yield is over 90% at 2000V ESD (HBM). ESD protection during products handing is needed. 90%的LED通过人体模式ESD 2000V 测试，在操作时请注意静电防护。

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

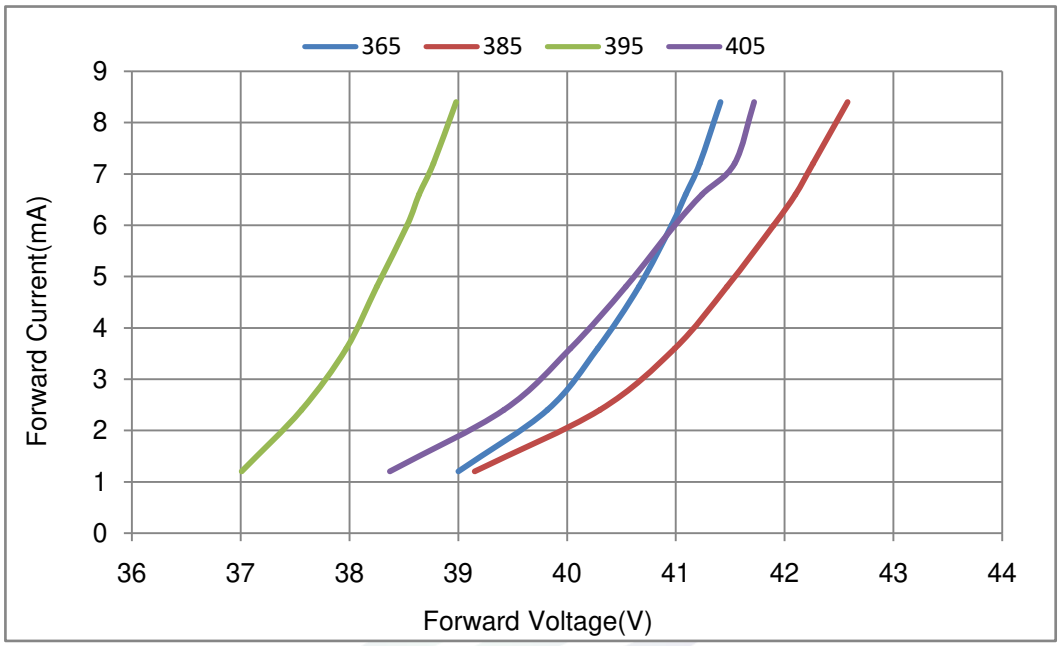


Fig.1- Forward Voltage Vs. Forward Current 伏安特性曲线

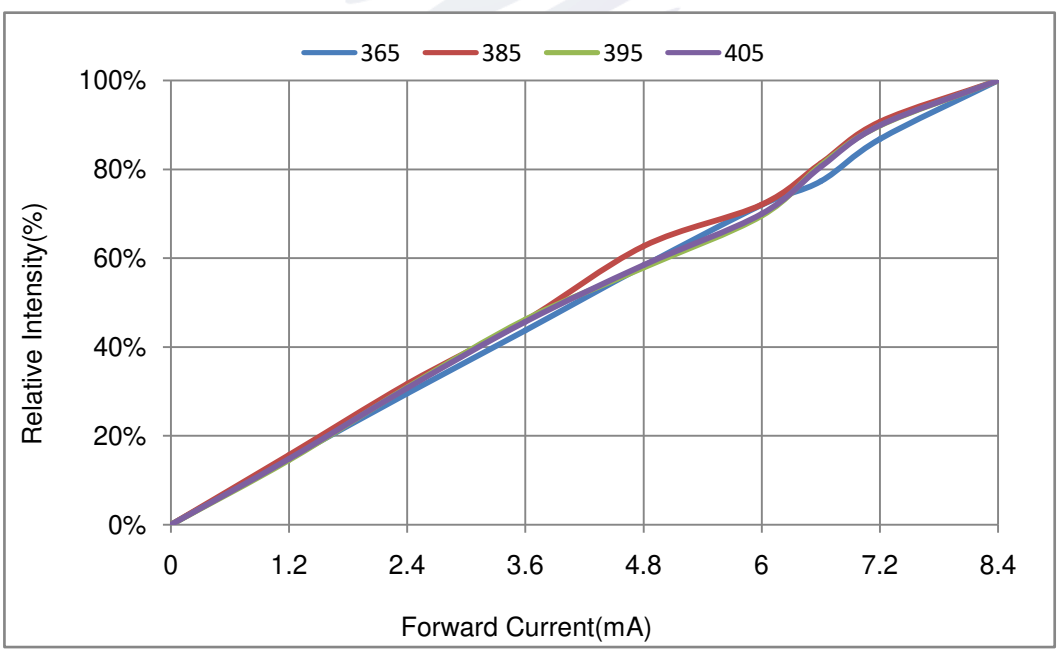


Fig.2- Forward Current Vs. Relative Power 正向电流与相对光功率特性曲线

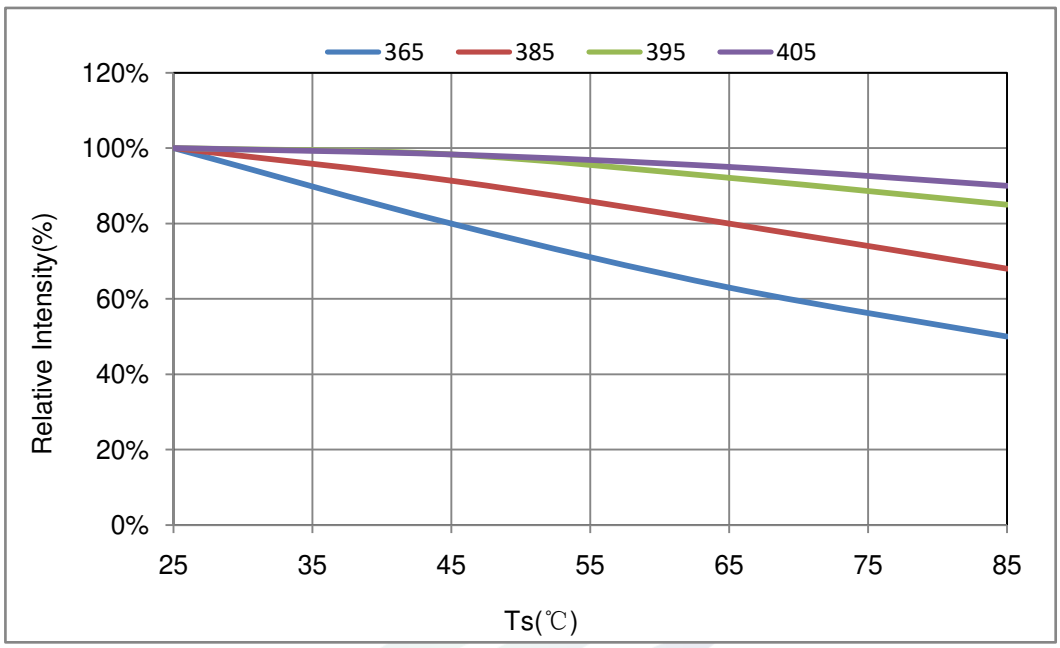


Fig.3-Solder Temperature VS. Relative Power 焊盘温度与相对光功率曲线

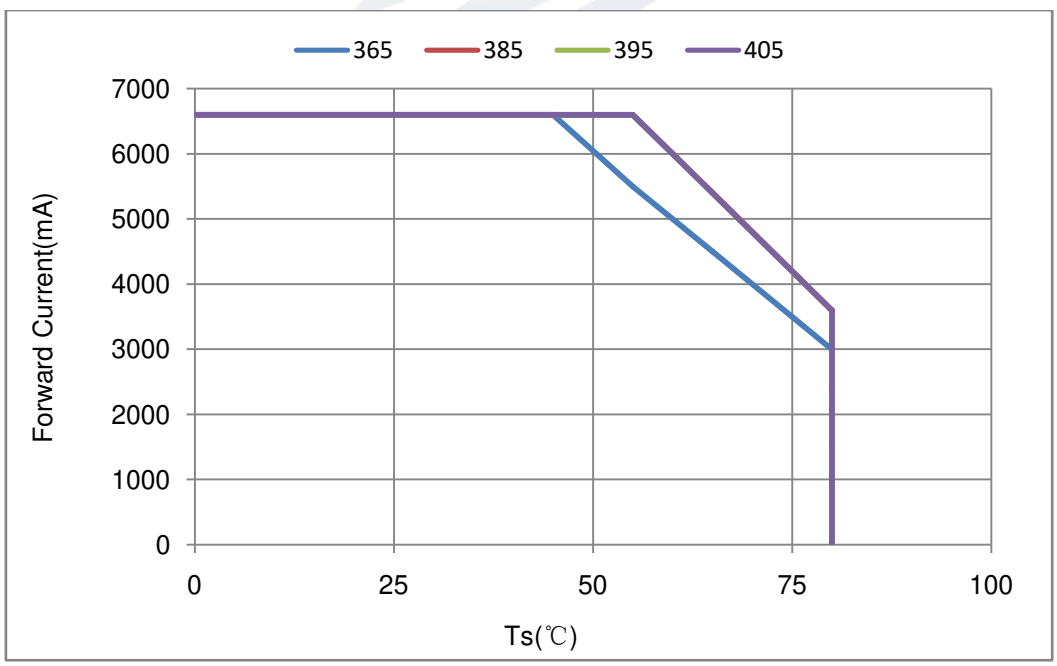


Fig.4-Ts Temperature VS. Forward Current 焊盘温度与正向电流特性曲线

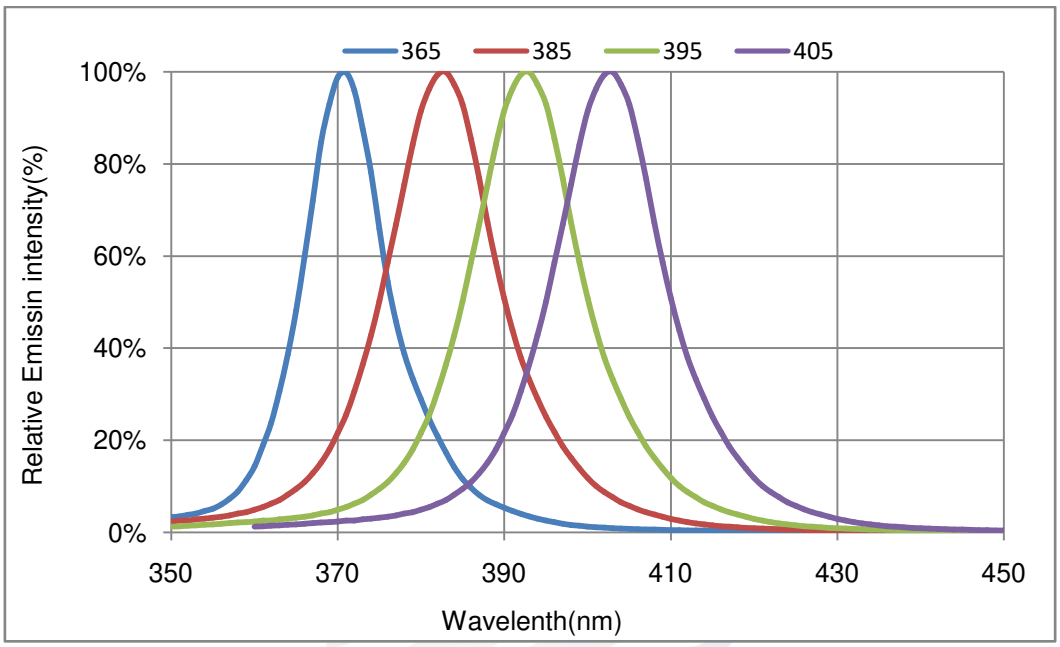


Fig.5-Spectrum Distribution 光谱分布特性曲线

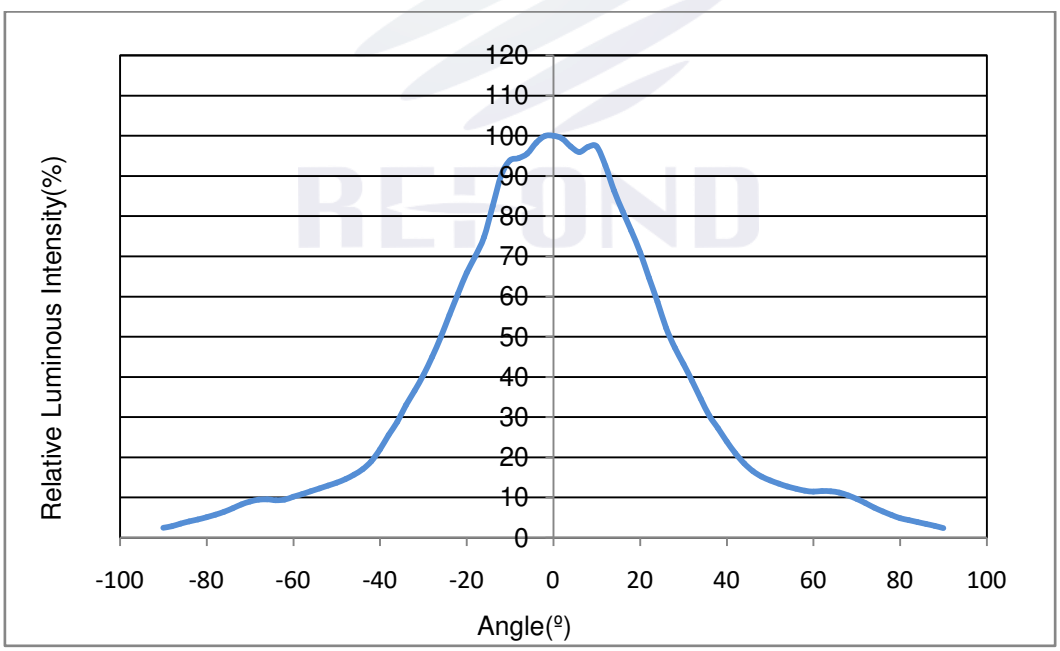


Fig.6- Radiation Diagram 辐射特性曲线

2. Packaging 产品包装

2.1 Packaging Specification 包装规格

Package: 1pcs/bag. 每袋包装1pcs

2.1.1 Label Form Specification 标签规格

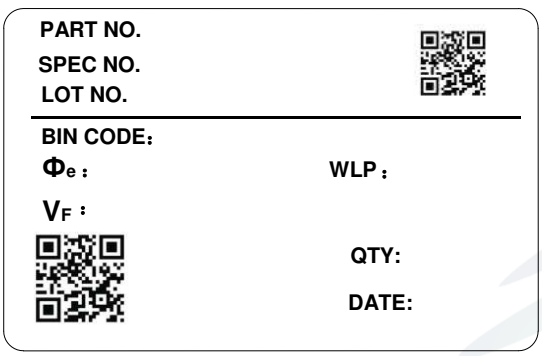


Fig. 2-1 Label Form Specification 标签规格

Table 2-1 Label Form Specification 标签规格

PART NO.	Part Number 品名
SPEC NO.	Spec Number 规格
LOT NO.	Lot Number 批次号
BIN CODE	Bin Code 参数代码
Φ_e	Radiation flux 辐射功率
V_F	Forward Voltage 正向电压
WLP	Wavelength 波长代码
QTY	Packing Quantity 数量
DATE	Made Date 生产日期

2.2 Cardboard Box 包装纸箱

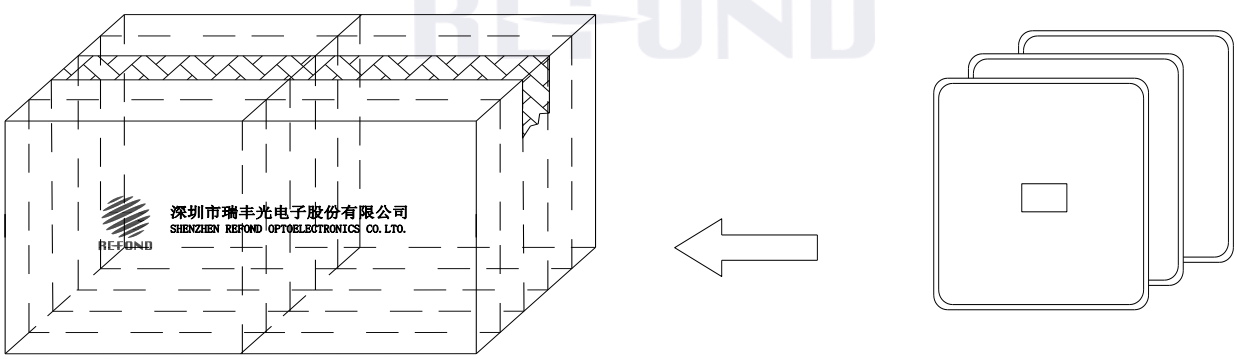


Fig.2-2 Cardboard Box 包装纸箱

2.3 Reliability Test Items And Conditions 信赖性测试项目及条件

Table 2-3 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
Thermal Shock 冷热冲击	JESD22-A106	-40℃ 15min ↑↓10s 100℃ 15min	100 Cycles	10Pcs.	0/1
Life Test 常温老化	JESD22-A108	T_a=25℃ I_F=6.6A	1000Hrs.	10Pcs.	0/1

2.4 Criteria For Judging Damage 失效判定标准

Table 2-4 Criteria For Judging Damage 失效判定标准

Test Items 项目	Symbol 符号	Test Condition 测试条件	Criteria For Judgement 判定标准	
			Min. 最小	Max. 最大
Forward Voltage 正向电压	V_F	I_F=6.6A	-	U.S.L*)x1.1
radiant density (辐射密度)	Φ_e	I_F=6.6A	L.S.L*)x0.7	-

Notes 备注：

1.U.S.L: Upper standard level 规格上限 L.S.L: Lower standard level 规格下限

2. The above reliability tests is based on the verification of a single/strip LED of Refond's existing experimental platform, the reliability experiment was taken under good heat dissipation conditions. when customers applies the LED to the series and parallel circuit, should take consideration of all the factors such as the current, voltage distribution, heat dissipation and others. 以上可靠性测试是基于瑞丰现有实验平台单颗/条 LED 在良好散热条件验证下的结果。客户端将 LED 应用于串、并联线路时，需自行评估电流、电压分配、散热等问题。

3.The technical information shown in the data sheets is 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，不作为任何应用条件及应用方式的保证。

3. Handling Precautions 产品使用注意事项

3.1 Handling Precautions 产品使用注意事项

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LEDmating usage material. This is provided for informational purposes only and is not a warranty or endorsement.

LED 工作环境及与 LED 适配的材料中硫元素及化合物成份不可超过 100PPM.这只是一个建议，不作任何品质担保。

(2) In order to prevent ex-ternal material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM,the single content of Chlorine elementis required to be less than 900PPM, the total content of Bromine element and Chlorine element in the external materials of the application products is required to be less than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsement.

为了防止外界物质进入 LED 内部以造成 LED 的损伤，所处环境及所用套件等等，单一的溴元素含量要求小于 900PPM，单一氯元素含量要求小于 900PPM，溴元素与氯元素总含量必须小于 1500PPM. 这只是一个建议，不作任何品质担保。

(3) VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues. Refond advises against theuse of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verifycompatibility, Refond recommends that all chemicals and materials be tested in the specific application and environment for which they are intended tobe used. Attaching LEDs, do not use adhesives that outgas organic vapor.

应用套件中的挥发性物质会渗透到 LED 内部，在通电产生光子及热的条件下，会导致 LED 变色，进而造成严重光衰，提前了解套件材料能够避免产生这些问题。瑞丰反对使用任何对 LED 器件的性能或者可靠性有害的物质或材料，不管这些材料是已经证实了的还是仅仅怀疑有害。针对特定的用途和使用环境，瑞丰建议对所有的物质和材料进行相容性的测试。在贴装 LED 时候，不要使用能产生有机挥发性气体的粘结剂。

(4) Handle the component along the side surface by using forceps or appropriate tools; Do not directlytouch or Handle the silicone lens surface, it may damage the internal circuitry.

通过使用适当的工具从材料侧面夹取，不可直接用手或尖锐金属压胶体表面，它可能会损坏内部电路。

(5) In designing a circuit, the current through each LED can not exceed the absolute maximum rating specified for each LED. In the meanwhile,resistors for protection should be applied, otherwise slight voltage shift will cause big current change,burn out may happen. The driving circuit must be designed to allow forward voltage only when it is ON or OFF.If the reverse voltage is applied to LED, migration can be generated resulting in LED damage.

设计电路时，通过 LED 的电流不能超过规定的最大值，同时，还需使用保护电阻，否则，微小的电压变化将会引起较大电流变化，可能导致产品损毁。电路设计必须保证只有在开启或者关闭的时候出现正向电压的变化，不要施加反压，否则会损坏 LED。

(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline,such as brightness decreased,Color change and so on.Please consider the heat generation of the LEDs when making the system design.

LED 容易因为自身的发热和环境的温度改变而改变，温度升高会降低 LED 发光效率，影响发光颜色，所以在设计时应充分考虑散热问题。

(7) The high temperature will make the LED's Luminous Intensity deceased radically, if LEDs worked in hot environment for a long time, they will be disabled easily. When LEDs are working in a closed array, we suggest that the LED's surface temperature should be lower than 45℃ and the leg's temperature should be lower than 65℃.

LED 在高温条件下，衰减会加速,本身应力也会增大，若长期处于高温环境下，极容易出现失效. 对于高密度排列使用的情况,建议在使用过程中灯面温度不超过 45℃， 灯脚温度不超过 65℃.

Table 3-1Storage 储存

Conditions 种类		Temperature 温度	Humidity 湿度	Time 时间
Storage 储存	Before Opening Aluminum Bag 拆包前	≤30℃	≤75%	Within 1 Year From Date 一年内
	After Opening Aluminum Bag 拆包后	≤30℃	≤60%	24hours 24小时
Baking 烘烤		60±5℃	-	≥24hours 大于24小时

(8) If the moisture absorbent material（silica gel）has faded away or the LEDs have exceeded the storage time, baking treatment should be performed after unpacking and based on the following condition（65±5）℃ for above 24 hours.

如果干燥剂或包装失效，或者产品不符合以上有效储存条件，需拆包后进行烘烤，烘烤条件：60±5℃，大于 24 小时。

If the package is flatulence or damaged, please notify the sales staff to assist.如果包装胀气或者破损，请通知销售人员协助处理。

(9)Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). 像其他的半导体电子器件一样，LED 对静电过流击穿非常敏感，需要做好防护。

(10) When using this product, you need to take good care to prevent it from causing harm to eyes and human body. 使用本产品时需要做好防护，防止本产品对眼睛及人体造成伤害。

(11) Other points for attention, please refer to our relevant information.其它注意事项请参照瑞丰相关资料。

Version History/修订历史

Date日期	Revisor修订者	Version版本	Verifier审核	Remarks备注
2019-10-10	刘俊	E0	吴慧文	新制
2020-09-10	成鹏	E1	刘俊	参数档位细分