RoHS

深圳市拓展光电有限公司

ShenZhen TuoZhan OptoElectronics Co.LTD

SPECIFICATION

客户名称/Customer name	
客户料号/Customer No	
产品料号/Product No	L2-10YYBR3RCJ45-001
产品名称/Product Name	10㎜ 红发红长脚
生效日期/Effective Date	2022-09-20

注：如中英译文有冲突请以中文为准。

制作 Prepared	审核 Checked	核准 Approved	业务 Salesman

客户承认结果 Customer acknowledges Results		

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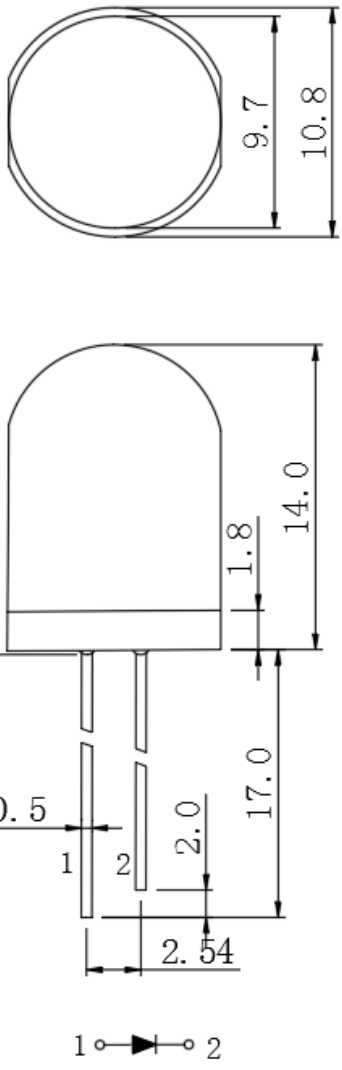
1. 产品描述：Product Description

- ●外观尺寸(L/W/H) ： Appearance Dimensions　10.0*14.0 mm
- ●防静电袋包装：Anti-static bag packaging
- ●环保产品，符合ROHS要求：Eco-products,Compliance With ROHS Requirments
- ●适用于波峰焊制程：Suitable for wave soldering process

2. 产品主要应用：Product Applications

- ☐背光 Backlight
- ☐照明 Lighting
- ☑发光指示灯 Indicator light
- ☐红外应用系统 Infrared Applicationgs systems
- ☑其他 Others

3. 外观尺寸及建议焊盘尺寸：Size of Appearance & Suggested Soldering PAD



注：Note

1.单位：毫米（mm） 1.Dimensions are in millimeters;

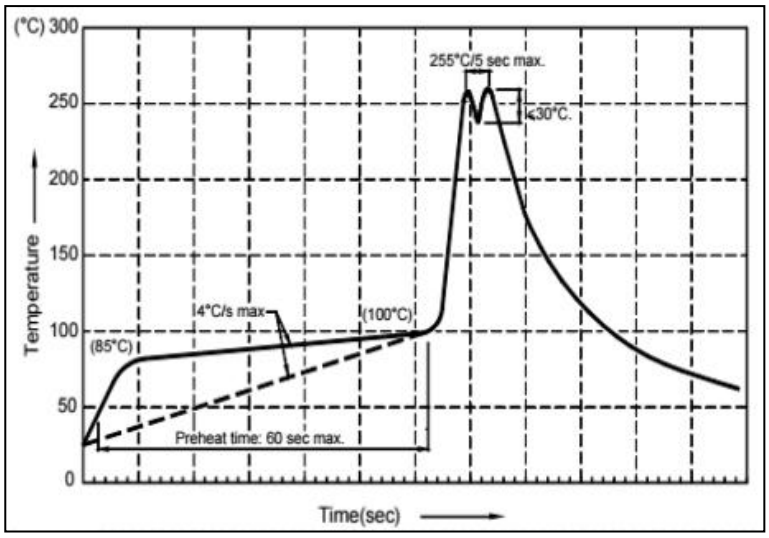
2.公差：如无特别标注则为± 0.25mm; 2.Tolerances unless mentioned are±0.25mm;

3.支架长度误差范围 1.0mm; 3.Length error range of bracket1.0mm;

4.多胶不可超过 1.0mm。 4.No more than1.0mm.

4. 建议焊接温度曲线：Recommended Wave Soldering Temperature Curve

无铅焊接：（Lead-free Soldering）



注：Note

1. 灯珠在温度较高时不要施加外力在灯珠上；

1.Don't cause syress to LEDs while it is exposed to high temperature;

2. 波峰焊是建议的焊接加工方式，其它焊接方式请咨询我司；

2.wave soldering is recommended, other soldering metoods please consult us;

5. 最大绝对额定值： Absolute Maximum Ratings（Ta=25℃）

参数 Parameter	符号 Symbol	数值 Value	单位 Unit
消耗功率 Power Dissipation	Pd	60	mW
最大脉冲电流* Max Pulse Current	I_{FP}	100	mA
正向直流工作电流 DC Forward Current	I_F	30	mA
反向电压 Reverse breakdown Voltage	V_R	5	V
抗静电能力（人体模式） Electrostatic Discharge Threshold (HBM)	ESD	2500	V
工作环境温度 Operating Temperature	Topr	-40 to 85℃	℃
储存环境温度 Storage Temperature	Tstg	-40 to 85℃	℃
焊接温度 Soldering Temperature	Tsol	波峰焊：Wave soldering 265℃/ 5S 手工焊接：Hands soldering 320℃/3S	℃

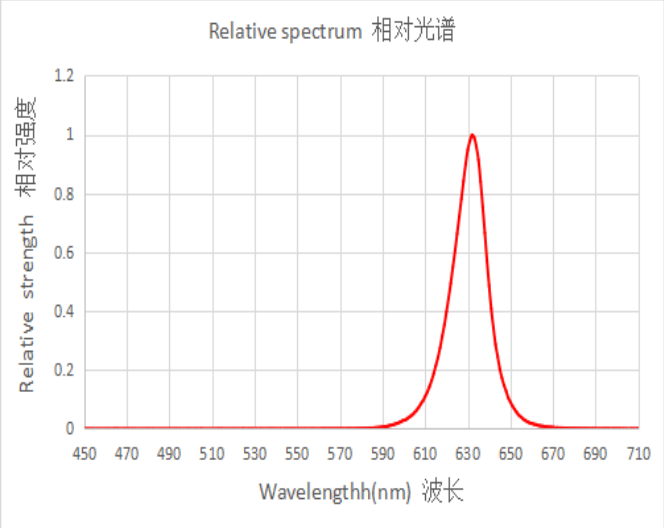
注：Note ＊：占空比 1/10，脉冲宽 0.1 ms Duty1/10,pulsewidth0.1ms

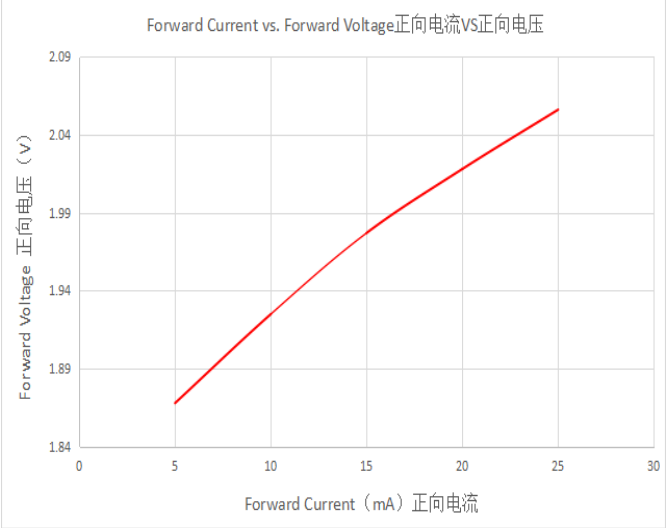
6. 光电特性参数：Electro-Optical Characteristics（Ta=25℃）

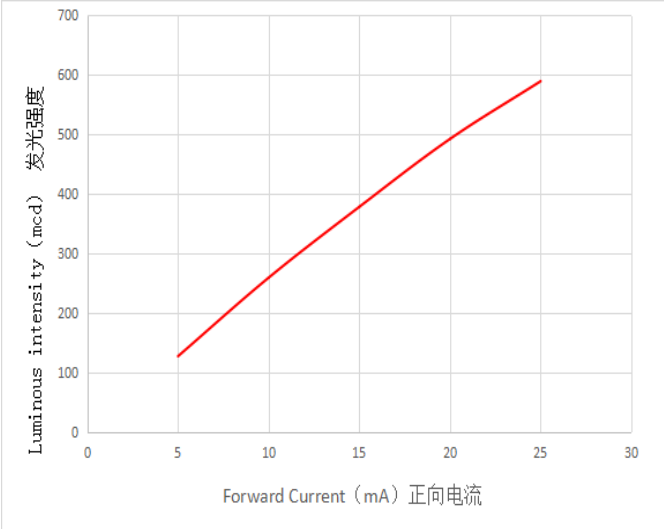
参数 Parameter	符号 Symbol	最小值 Min	典型值 Typ	最大值 Max	单位 Unit	测试条件 Test condition
亮度 Luminous Intensity	IV	350	---	700	mcd	IF=20mA
峰值波长 Peak Wavelength	λp	---	632	---	nm	IF=20mA
正向电压 Forward Voltage	VF	1.8	2.0	2.4	V	IF=20mA
主波长 Dominant Wavelength	λd	620	---	625	nm	IF=20mA
半波宽 Spectrum Radiation Bandwidth	△λ	---	17	---	nm	IF=20mA
反向漏电流 Reverse Current	IR	---	---	10	uA	VR=5V
半功率视角 Half Power View	2θ1/2	---	45	---	deg	IF=20mA

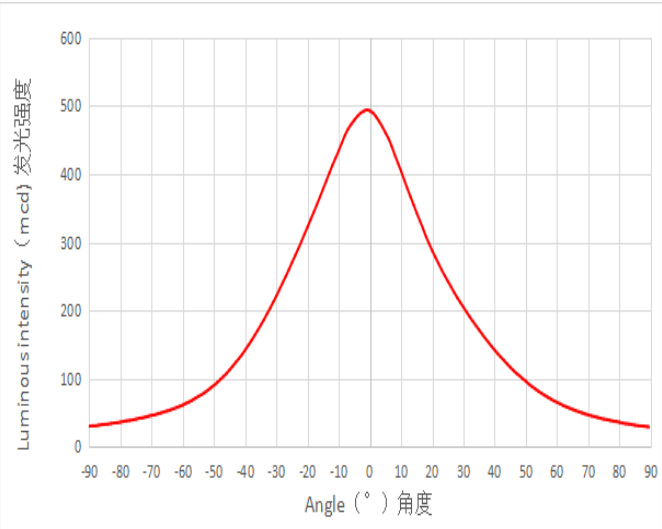
注：Note 1.测量误差：电压 ±0.1V，亮度±10%mcd,波长（X,Y) ±1nm/±0.01。
1 MeasurementErrors:ForwardVoltage:±0.1V,LuminousIntensity:±10% mcd,Wavelength(x,y):±1nm/±0.01

7．光电参数代表值特征曲线：Typical Optical-Electronic Characteristic Curves



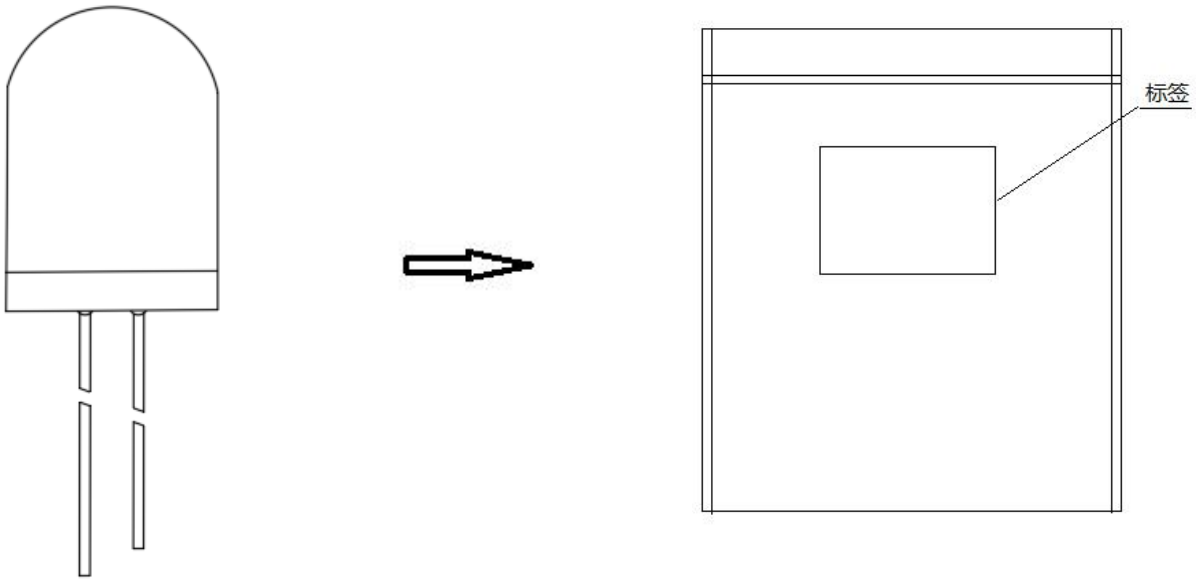






8. 标签标识：Label Identifier

Name ：	
P/N ：	
VF ：	IV ：
WL ：	QTY ：
QC ：	Date ：



注: Notes

(1) 数量：250pcs/包

Quantity :250pcs/package

(2) 包装 :品名，生产数据代码和数量须在防静电包装袋上注明

Package : P/N, Manufacturing data Code No. and .Notes on the antistatic packaging bag.

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9. 信赖性实验：Reliability Test

类别 Classification	测试项目 Test Item	试验条件 test conditionsstandards	参考标 Reference Standard	测试时间 testing time	接收水准 Receiving level
环境测试 Environmental Test	温度循环 temperature cycle	-40℃ ～25℃ ～100℃ ～25℃ 30mins 5mins 30mins 5mins	JEITA ED-4701 100 105	循环 100 回合	0/100
	冷热冲击 Hot and cold impact	-40℃ ～ 100℃ 15mins 15mins	MIL-STD-202G	循环300回合	0/100
	高湿热循环 High Moisture Heat Cycle	30℃ ～ 65℃ RH=90% 24H/1回合	JEITA ED-4701 200 203	循环50回合	0/100
	低温储存 Low Temperature Storage	Ta = -40℃	JEITA ED-4701 200 203	1000H	0/100
	高温储存 high-temperature storage	Ta= 100℃	JEITA ED-4701 200 202	1000H	0/100
	高温高湿储存 High temperature and high humidity storage	Ta = 60℃ RH=90%	JEITA ED-4701 100 103	1000H	0/100
寿命测试 Life Test	常温寿命测试 Normal temperature life test	Ta = 25℃ IF=30mA(R,G,Y)/20mA(W,B)	/	1000H	0/100
	高温高湿寿命测试 High temperature and high humidity life test	Ta = 60℃ RH=90% IF=20mA(R,G,Y)/15mA(W,B)	/	1000H	0/100
	低温寿命测试 Low temperature life test	Ta = 30℃ IF=20mA(R,G,Y)/15mA(W,B)	/	1000H	0/100
破坏性测试 Destructive testing	耐焊性 soldering resistance	T.sol= 260 ± 5℃，10S, 离胶体 3mm 距离 Distance mm colloid 3	JEITA ED-4701 300 302	焊接一次 Welding once	0/20
	可焊性 weldability	T.sol= 235 ± 5℃，5S 使用助焊剂 Use of flux aids	JEITA ED-4701 300 303	焊接一次 Welding once	0/20
静电 Destructive testing	静电放电测试 Electrostatic discharge test	人体放电模式 1000V Human discharge mode 1000 V	JEITA ED-4701 300 304	正反向各 3 次 3 positive and negative	0/10
机械测试 Mechanical testing	振动测试 Vibration test	20G 20-2000HZ 4 分钟 X，Y，Z 三个方向	JEITA ED-4701 400 403	每个方向循环 4 次 4 cycles per direction	0/10
	跌落测试 drop test	75CM	/	3 次	0/10

判定标准： requirement

项目 item	标示 marking	测试条件 test condition	判定标准 requirement
正向电压 forward voltage	VF	IF=20mA	初始值±10% 10%± initial value
反压电流 Backward current	IR	VR=5V	≦10μA
光强 light intensity	IV	IF=20mA	单颗衰减≦50%，并且平均衰减≦30% Single attenuation ≦50%, and average attenuation ≦30%; and
可焊性 weldability			浸锡面积达 95%以上 More than 95% area of tin leaching
振动测试 Vibration test		IF=20mA	没有死灯及明显损坏 No dead lights and apparent damage
跌落测试 drop test		IF=20mA	没有死灯及明显损坏 No dead lights and apparent damage

10. 使用注意事项：Application

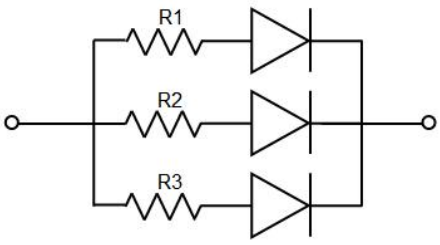
a. 使用： use

1. LED 是电流驱动元件，电压的细微变化会产生较大的电流波动,导致元件遭到破坏。客户应使用电阻串联作限流保护。

1.A LED is a current-operated device. The slight shift of voltage will cause big change of current, which will damage LEDs. Customer should use resistors in series for the Over-Current-Proof.

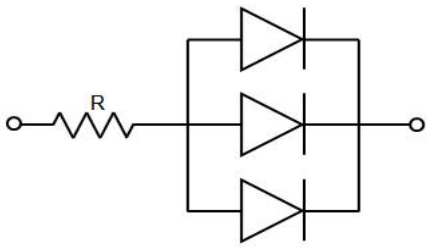
2. 为了确保多颗 LED 并联使用时光色一致，建议每条支路使用单独电阻,如下图模式 A 所示；
如采用下图模式 B 所示电路，LED 光色可能因每一颗 LED 不同的伏安特性而造成光色差异。

2. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended to use individual resistor separately, as shown in Circuit A below. The brightness of each LED shown in Circuit B might appear difference due to the differences in the I-V characteristics of those.



电路模式 A

Circuit model A



电路模式 B

Circuit model B

3. 过高的环境温度会影响 LED 的亮度以及其他性能, 所以为能使 LED 有较好的性能表现应远离热源。

3.Too high ambient temperature will affect the brightness of the LED and other properties, so in order to make the LED have better performance should be away from the heat source.

存储：Storage

1. 未打开原始包装的情况下，建议储存的环境为: 温度: 5℃~30℃；湿度: 85%RH 以下,

1. 1.When the original package is not opened, the recommended storage environment is: temperature :5℃~30℃; humidity :85% RH below,;

2. 打开原始包装后，建议储存环境为： 温度 5~30°C ； 湿度 60% 以下。

2.Upon opening the original packaging, it is recommended that the storage environment be: temperature 5~30 C; humidity below 60%.

3. LED 是湿度敏感元件，为避免元件吸湿，建议打开包装后，将其储存在有干燥剂的密闭容器内，或者储存在氮气防潮柜内。

3. LED is a humidity sensitive element. In order to avoid moisture absorption, it is recommended to open the package and store it in a closed container with desiccant or in a nitrogen moisture-proof cabinet.

4. 此款灯珠防潮等级为 MSL2a ； 打开包装后，元件应该在 672 小时（4 周）使用；

4. After the lamp bead moisture-proof grade is MSL3;, the component should be used in 672 hours (4 weeks);

ESD 静电防护 electrostatic protection

LED（特别是 InGaN 结构的蓝色、翠绿色、紫色、白色、粉红色 LED）是静电敏感元件，静电或者电流过载会破坏 LED 结构。LED 受到静电伤害或电流过载可能会导致性能异常，比如漏电流过大,VF 变低,或者无法点亮等等。所以请注意以下事项：

LED (especially the blue, emerald green, purple, white, pink LED of the InGaN structure) are electrostatic sensitive elements, and electrostatic or current overload can destroy the LED structure. LED being subjected to electrostatic damage or current overload may lead to abnormal performance, such as excessive leakage current, low VF, or inability to light up. So please note the following:

1. 接触 LED 时应佩戴防静电腕带或者防静电手套。

1.Anti-static wristband or anti-static gloves should be worn in contact with LED.

2. 所有的机器设备、工制具、工作桌、料架等等，应该做适当的接地保护（接地阻抗值 10Ω 以内）。

2.All machinery and equipment, tools, work tables, material racks, etc., should be properly grounded protection (within 10Ω of grounding impedance).

3. 储存或搬运 LED 应使用防静电料袋、防静电盒以及防静电周转箱，严禁使用普通塑料制品。

3.Anti-static bag, anti-static box and anti-static turnover box should be used LED storage or handling.

4. 建议在作业过程中，使用离子风扇来压制静电的产生。

4.It is recommended to use ion fan to suppress electrostatic generation during operation.

5. 距离 LED 元件 1 英尺距离的环境范围内静电场电压小于 100V。

5.The electrostatic field voltage is less than 100 V. within 1 foot distance from the LED element

清洗 clean

建议使用异丙醇等醇类溶液清洗 LED，严禁使用腐蚀性溶液清洗。

Recommended use of isopropanol and other alcohol solution cleaning LED, no use of corrosive solution cleaning.

焊接 Soldering

1. 焊接条件参考第一页温度曲线。

1.Wave soldering conditions refer to the first page temperature curve.

2. 只建议在修理和重工的情况下使用手工焊接；最高焊接温度不应超过 300 度，且须在 3 秒内完成。烙铁最大功率应不超过 30W。

2.Manual welding is only recommended for repair and heavy work; maximum welding temperature should not exceed 300 degrees and must be completed within 3 seconds. Hot iron maximum power not exceeding 30 W

3. 焊接过程中,严禁在高温情况下碰触胶体。

3. During welding, it is strictly forbidden to touch colloid at high temperature.

4. 焊接后，禁止对胶体施加外力，禁止弯折 PCB，避免元件受到撞击。

4.After welding, do not apply external force to the colloid, do not bend PCB, avoid impact of components.

其他 others

1. 本规格所描述的 LED 定义应用在普通的的电子设备范围（例如办公设备、通讯设备等等）。如果有更为严苛的信赖度要求，特别是当元件失效或故障时可能会直接危害到生命和健康时（如航天、运输、交通、医疗器械、安全保护等等），请事先知会敝司业务人员。

1. LED definitions described in this specification shall be applied to the general range of electronic equipment (e.g. office equipment, communication equipment, etc). If there are more stringent reliability requirements, especially when components fail or fail, which may directly endanger life and health (such as aerospace, transportation, transportation, medical devices, safety protection, etc.), please inform our business personnel in advance.

2. 高亮度 LED 产品点亮时可能会对人眼造成伤害，应避免从正上方直视。

2.High brightness LED product lighting may cause damage to the human eye, should avoid looking directly from the top.

3. 出于持续改善的目的，产品外观和参数规格可能会在没有预先通知的情况下作改良性变化。

3.For the purpose of continuous improvement, product appearance and parameter specifications may be modified without prior notice.