产品规格书

■产品名称: 3mm 红发红长脚
Product Name：3mm Red emitting red with long leads



■产品型号: 3A4RUD
Product model：3A4RUD

■发布日期: 2023 年 5 月
Release date ：May 2023

■环保产品，符合 ROHS 要求
Environmental protection products meet ROHS requirements

■湿气敏感性等级（MSL）:4-5 级
Moisture sensitivity level（MSL）: 4-5 levels

■EIA 规范标准包装
EIA standard packaging

■使用寿命长
long service life

■高能效、启动快
High energy efficiency, fast startup

■低电压有流驱动
Low voltage current drive

应用范围
APPLICATION AREA

■汽车电子
Lighting decoration

■医疗美容仪器
Medical beauty instruments

■工业与特种照明
Industrial and Specialty Lighting

■照明灯饰
Lighting fixtures

■照明灯饰
Automotive Electronics

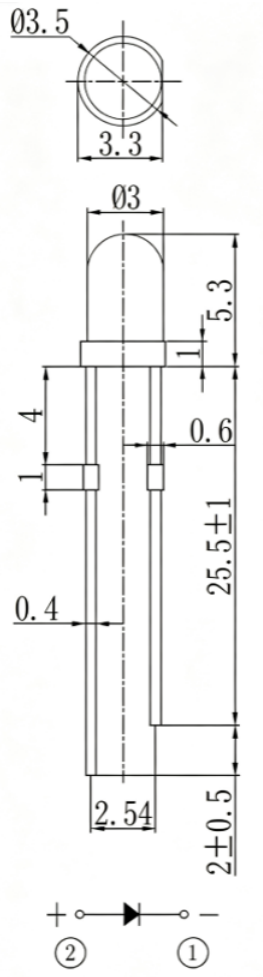
■电子教学设备
Electronic teaching equipment

■家电、数码
Home appliances, digital,

■城市亮化
urban lighting

外观与尺寸
APPEARANCE AND SIZE

■元器件引脚定义及元器件封装外形尺寸图
Definition of Component Pin and Outline Dimensional Drawing of Component Packaging
■元器件引脚定义图
Component Pin Definition Diagram



■商标同产品型号一致，标示清晰，无断符、漏眼印、残留现象
The trademark is consistent with the product model, with clear labeling and no breaks or omissions Eye print and residual phenomenon

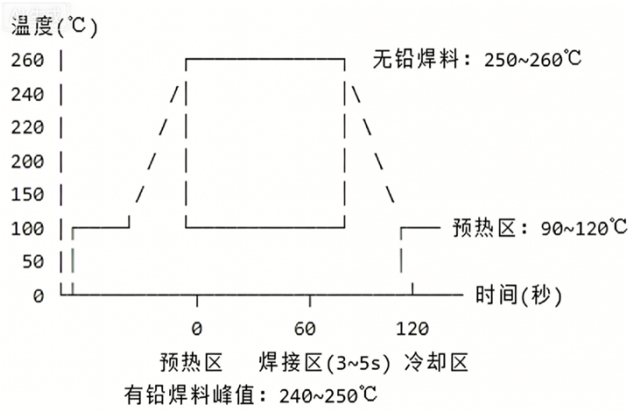
■引脚 无氧化、发黑、露铜、粘污现象
There is no oxidation, blackening, exposed copper, or sticking phenomenon on the pins

■镀层厚度 引脚镀银 0.4-0.45μm,引脚镀锡 1-10μm
Plating thickness: silver plated pins 0.4-0.45 μ m, tin plated pins 1-10 μ m

■备注(Note)
■标注尺寸单位为毫米
Dimensions are in millimeters.
■除特别标注外，所有尺寸允许公差± 0.50mm .
Tolerances unless mentioned are ± 0.50mm.

焊接条件
WELDING CONDITIONS

■波峰焊条件/Wave soldering conditions
■烙铁焊接温度要求:温度约 350℃，焊接时间约 2S。
Soldering temperature requirements: temperature of about 350 ℃, soldering time of about 2 seconds
■可焊性试验条件:温度约 240~250℃，试验时间为 3S 要求试验后测试电性能正常，外观无不良。
Solderability test conditions: temperature of approximately 240~250 ℃, test time of 3 seconds, requiring normal electrical performance and no defects in appearance after the test.



电性参数
ELECTRICAL PARAMETERS

■1、最大绝对标称值（环境温度=25°C）

Maximum absolute nominal value(Environmental temperature=25 ° C)

参数/parameter	缩写/abbreviation	标称值/ Nominalvalue	单位/ unit
顺向电流 forward current	IF	20	mA
顺向峰值电流 *1 Forward peakcurrent * 1	IFP	80	mA
反向电压 Reverse voltage	VR	5	V
焊接温度 welding temperature	Tsol	回流焊/ Reflow Soldering：250 °C，8sec. 手工焊/ manual welding：300 °C，3sec.	
使用温度 Usage temperature	Topr	-40°C~+85	
储存温度 storage temperature	Tstg	-40°C~+85	

■*IFP 条件：脉宽≤0.1msec,周期≤1/10

■*IFP condition: Pulse width ≤ 0.1nsec, cycle ≤ 1/1

■2、光电特性参数（环境温度=25°C）

Optoelectronic characteristic parameters (ambient temperature=25 ° C)

参数 Parameter	缩写 abbreviation	最小值 Min	典型值 Typ	最大值 Max	单位 Unit	条件 Condition
顺向电压 forward voltage	Vf	1.8	-	2.2	V	IF=20mA
亮度 brightness	Iv	200	-	400	mcd	
波长 wavelength	λd	620	-	625	nm	
发光角度 viewing angle	2Θ1/2	-	30	-	deg	
反向电流 reverse current	IR	-	-	5	μA	VR=5V

■备注（Notes）：

■亮度偏差：±10%　Brightness deviation: ±10%

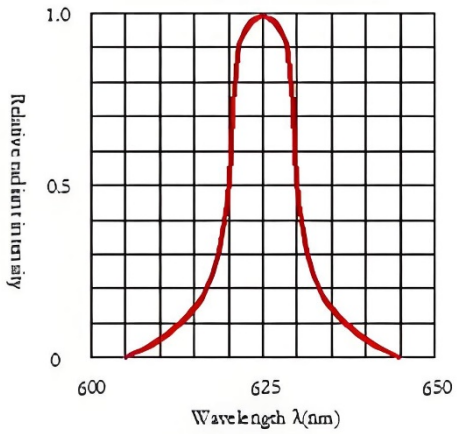
■电压偏差：±0.05V　Voltage deviation: ±0.05V

■波长偏差：±1nm　Wavelength deviation:±1nm

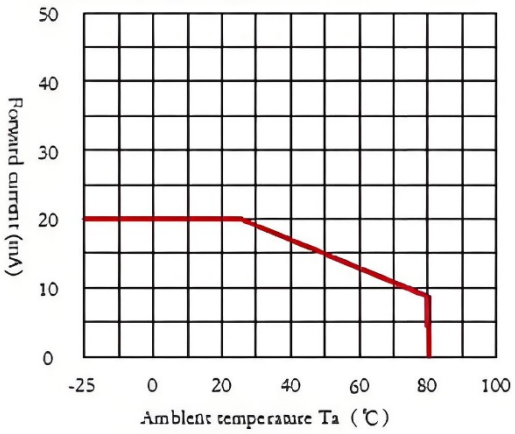
典型曲线图

TYPICAL CHARACTERISTIC CURVE

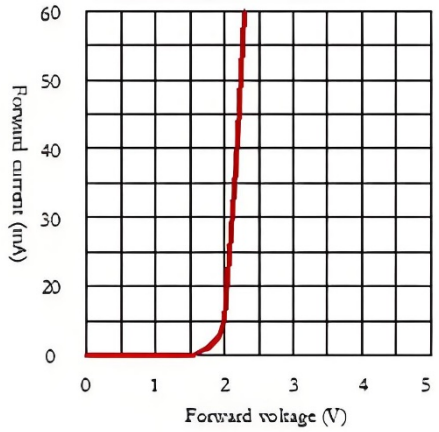
光谱分布曲线
Relative Intensity Vs. Wavelength



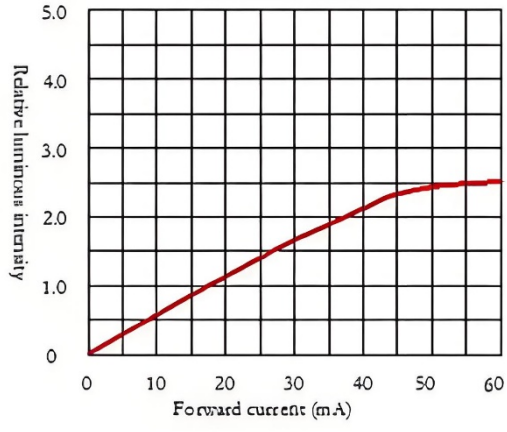
环境温度与电流的关系
Forward current derating curve Vs. Ambient temperature



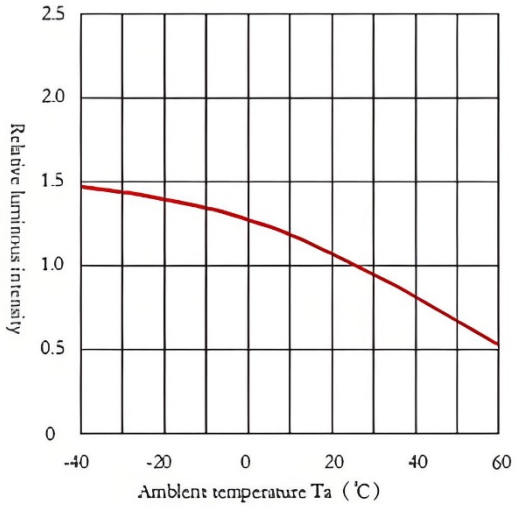
正向电压与正向电流的关系
Forward voltage Vs. Forward current



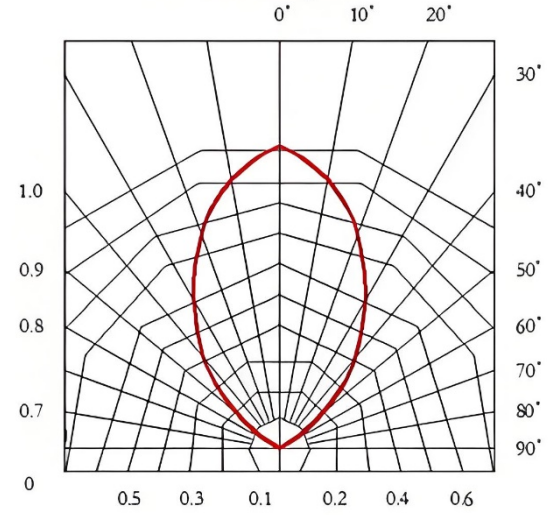
正向电流与亮度的关系
Relative luminous intensity Vs. Forward current



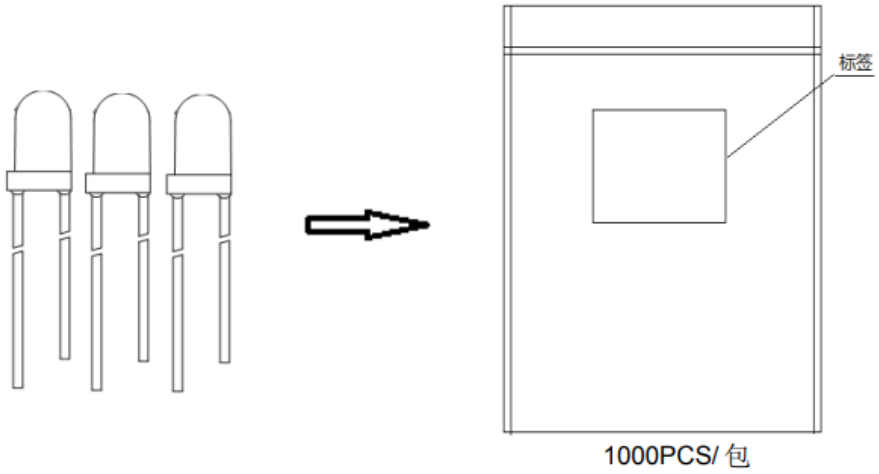
环境温度与相对光强的关系
Ambient temperature Vs. Relative luminous intensity



相对辐射强度与空间角度关系
Radiation diagram



包装与标签说明
PACKAGING AND LABELING INSTRUCTIONS



■标签说明（Label description）

LOT NO:批次信息（Batch Information）

PART NO:产品型号（PRODUCT MODEL）

BIN CODE:产品名称（product name）

WL:波长范围（wavelength range）

LV:光强范围（Light intensity range）

VF:电压范围（Voltage range）

■运输要求（Transportation requirements）

（1）箱体上不易压重物
（Not easy to press heavy objects on the box）

（2）正面朝上
（face up）

（3）不易受潮
（Not easily affected by moisture）

使用注意事项

PRECAUTIONS FOR USE

■1、清洗（clean）

当用化学品清洗胶体时必须特别小心，因为有些化学品对胶体表面有损伤并引起褪色，如三氯乙烯、丙酮等。可用乙醇擦拭、浸渍，时间在常温下不超过 3 分钟。

Special care must be taken when cleaning colloids with chemicals, as some chemicals can damage the surface of colloids and cause fading, such as trichloroethylene, acetone, etc. Can be wipedand soaked with ethanol for no more than 3 minutes at room temperature.

■2、引脚装配（Pin assembly）

（1）必需离胶体 2 毫米才能折弯支架。

It is necessary to be 2 millimeters away from the gel to bend the bracket.

（2）支架成形必须用夹具或由专业人员来完成。

The formation of the bracket must be completed using fixtures or by professionals

（3）支架成形必须在焊接前完成。

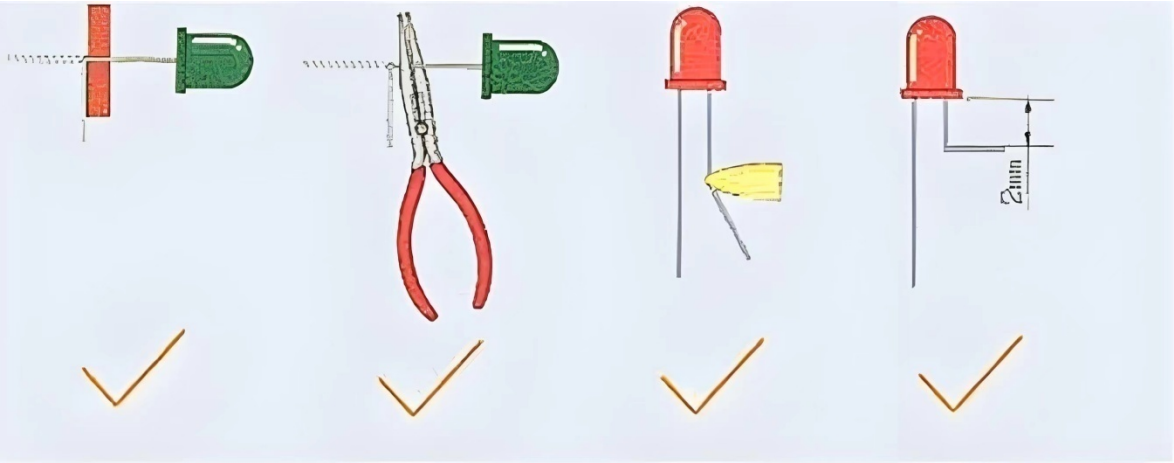
The bracket forming must be completed before welding

（4）支架成形需保证引脚和间距与线路板上一致。

The bracket forming needs to ensure that the pins and spacing are consistent with those on the circuit board

（5）焊接必须在正常温度下进行，当 LED 正常焊接到 PCB 板上后，应尽量避免在 LED 脚处施加机械压力。

Welding must be carried out at normal temperature. When the LED is soldered tothe PCB board normally, mechanical pressure should be avoided as much as possibleat the LED pins



■3、静电防护（electrostatic protection）：

静电和电流的急剧升高将会对 LED 产生损害，桂光系列产品使用时请使用防静电装置，如防护带和手套。

The sharp increase in static electricity and current will cause damage to LEDs. Please use anti-static devices such as protective belts and gloves when using guiguang series products.

注意：使用时人体放电模式 HBM<1000V；机器放电模式<100V。

Attention: When using, the human body discharge mode HBM should be less than 1000V; Machine discharge mode<100V.

■4、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

LED is a current driven component, and slight changes in voltage can cause significant current fluctuations, leading to damage to the component. Customers should use resistors in series for current limiting protection

■5、过高的环境温度会影响 LED 的亮度以及其他性能

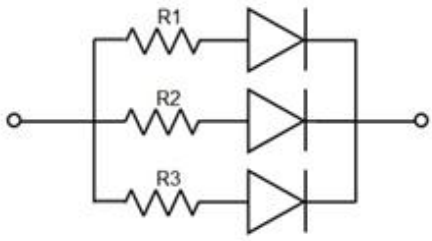
Excessive environmental temperature can affect the brightness and other performance of LED

■6、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阻，如下图模式A所示；

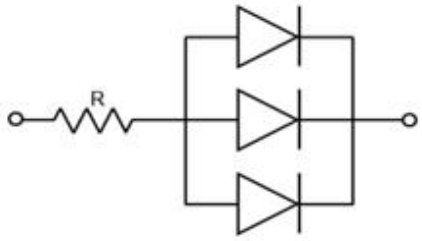
To ensure color consistency when multiple LEDs are used in parallel, it is recommended to use separate resistors for each branch, as shown in Mode A in the following figure;

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。

If the circuit shown in pattern B is used, the color of LED may vary due to the different volt ampere characteristics of each LED.



电路模式 A



电路模式 B

■7、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

High brightness LED products may cause harm to the human eye when lit up, and should beavoided from looking directly at them from above

■8、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

The LED definition described in this specification is applicable to ordinary electronic devices (such as office equipment, communication equipment, etc.). If there are stricter reliability requirements, especially when component failure or malfunction may directly endanger life and health (such as aerospace, transportation, traffic, medical equipment, safety protection, etc.),please inform our business personnel in advance