LIGHTBEI®
LED专业制造商
深圳市光贝电子有限公司

承 认 书

客户名称:
CUSTOMER NAME: ______________________________

经办者: 职称:
DIRECTOR: ____________________ TITLE: ____________________

客户料号:
CUSTOMER PART NO.: GB-T1010RGB-Y

品名: 版本:
PART NUMBER: 1010全彩RGB REVISION: **2.0**

发件日期: 回文日期:
ISSUE DATE: **2015/03/15** RETURN DATE: / /

一、谨致执事者：兹提供敝公司产品之有关详细规格及图面数据，
敬请给予办理测试认定手续。
同时敬请送返一份附有贵公司签认之测试认定后之样品认定书。
We are please in sending you herewith our specification and drawings for your approval.
Please return to us one copy “For Approval” with your approved signatures.

二、附件:

ACCESSORY：□样品 □出货检验记录表 □封装尺寸图 □电气特性曲线

□内部线路图 □焊性建议 □PAD 建议 □包装方式

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深圳市光贝电子有限公司
Shenzhen light bei electronic Co., LTD

电话（TEL）：0755-82563337
传真（FAX）：0755-82788831
官网（Web）：www.lightbei.cn

1010 Package LED

特性参数（Features）

胶体表面全雾化处理 The gule surface is completely atomized.

全彩型 RGB Full-color type RGB.

适用于回流焊制程 Compatible with infrared and vapor phase reflow solder process.

无铅 Pb-free.

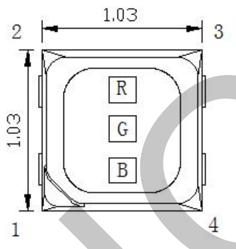
应用（Applications）

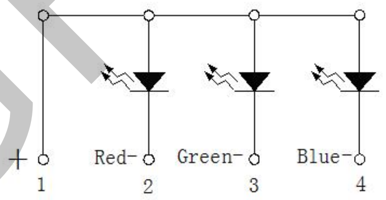
室内显示屏 Indoor signage display applications.

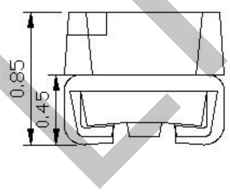
室内装饰设计 Indoor decorating and entertainment design.

应用广泛 General use.

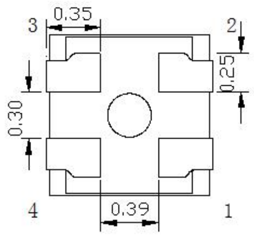
产品尺寸（Package Dimensions）

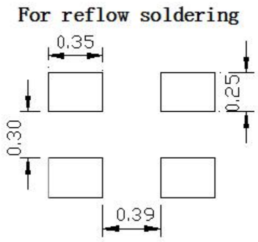






For reflow soldering





说明：所有尺寸公差：x.x ±0.1mm、 x.xx ±0.05mm(长边引脚间距±0.1mm) Note：
All dimensions is x.x ±0.1mm 、 x.xx ±0.05mm (pin pitch in long side±0.1mm)

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极限参数（温度=25℃）:

Absolute Maximum Ratings (Temperature=25℃)：

参数 Pameters	极限参数 Absolute Maximum Ratings			单位 Units
	红色 Red	绿色 Green	蓝色 Blue	
功耗 Power Dissipation	20	30	30	mW
正向脉冲电流 Pulse Forward Current	20	20	20	mA
正向电流 Forward Current	10	10	10	mA
反向电压 Reverse Voltage	5	5	5	V
静电放电能力（人体模式） Electrostatic Discharge(HBM)	2000	1000	1000	V
贮存温度 Storage temperature	-40℃-85℃			
灯珠作业温湿度 Ambient temperature and humidity	20℃-30℃/30%-60%RH			
回流焊温度 Soldering Temperature	260℃			

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光电参数（温度=25℃） Electro-Optical Characteristics (Temperature=25℃)

参数 Parameter	符号 Symbols	颜色 Color	最小值 Min	标准值 Typical	最大值 Max	单位 Units	测试条件 Testing Conditions
光强度 Luminous Intensity	IV	红(Red)	10	23	40	mcd	IF=5mA
		绿(Green)	50	75	130	mcd	IF=3mA
		蓝(Blue)	8	15	35	mcd	IF=3mA
波长 wavelength	WLD	红(Red)	615	620	625	nm	IF=5mA
		绿(Green)	515	530	545	nm	IF=3mA
		蓝(Blue)	460	470	480	nm	IF=3mA
发光角度 View Angle	2θ1/2	红(Red)	---	100	---	Deg	IF=5mA
		绿(Green)	---	100	---	Deg	IF=3mA
		蓝(Blue)	---	100	---	Deg	IF=3mA
正向电压 Forward voltage	VF	红(Red)	1.6	---	2.4	V	IF=5mA
		绿(Green)	2.5	---	3.4	V	IF=3mA
		蓝(Blue)	2.5	---	3.4	V	IF=3mA
反向电流 Reverse Current	IR	红(Red)	---	---	0.5	uA	VR=20V
		绿(Green)	---	---	0.5	uA	VR=10V
		蓝(Blue)	---	---	0.5	uA	VR=10V

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备注（Remarks）：

1、此发光亮度为根据人眼对发光亮度的感应曲线之模拟发光强度符合 CIE（国际光委会组织）。

Light-emitting brightness is according to human eye simulation of the induction curve of luminous intensity in line with the CIE (International Light Committee Organization).

2、1/2 的角度是从光学中心线处的发光强度为 1/2 光学中心线值。

1/2 angle is from optical centerline at the luminous intensity is 1/2 the optical centerline value.

3、发光亮度保证误差正负 10%。

Brightness tolerance is guaranteed within plus or minus 10%.

✧ 标签说明 Label Explanation

TYPE：产品型号
QTY：数量 Quantity
BIN：分档 Rank
LOT：批号 Lot Number
λd：波长范围 Wavelength Range
IV：光强范围 Luminous Intensity Range
VF：正向电压范围 Forward Voltage Range
IF：以上数据测试电流 Testing Current

LIGHTBEI®
CPN:
P/N: 0603 Red
RoHS
TYPE: GB-C191KRKT-T6
REF: 2022
HUE: 620625
CAT: 120150
QTY: 4000
LOT NO: GBXXZZ121028B00
QC PASS 检02
MADE IN CHINA

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二维码内容信息说明：
搅拌批次+产品型号（物料编码）+色温代码+波长 R/波长 G/波长 B/电压 R/电压 G/电压 B/亮度 R/亮度 G/亮度 B+档次代码 Bin 号+包装数量+生产部门代码+打印时间/生产部门代码/机台号/班别/流水号

Two-dimensional code content information description:

Mixing batch + product model (material code)+color temperature code+wavelength R/wavelength G/wavelength B/voltage R/voltage B/brightness R/brightness G/brightness B+grade code Bin+packing quantity+production Department code+printing time/production Department code/machine number/shift number/flow number

可靠性试验 Reliability Test Items And Conditions

颗粒满足如下可靠性测试 The particles meet the following reliability test：

编号 Nmber	测试项目 Test Item	实验条件 Test Conditions	样本大小 Sample quantity	判定 Determine
01	冷热冲击 Thermal Shock	125℃±5℃ ~-40℃±5℃ 15 mins 15mins 周期(Cycles)：270 个周期（270 Cycles）	100pcs	270C 无死灯、暗亮等异常 No dead light or dim light in 270 Cycles
02	寿命测试 Life Test	温度(Temperature)=25℃±5℃ 电流(Current)IF R/G/B= 5/3/3 mA 周期(Cycles)：500 h	12pcs	无死灯、暗光、电性不良、外观不良，数据对比，参考用： 平均光衰（Brightness attenuation）≤30% 波长偏移（Wavelength deviation）≤1nm 电压偏差（Voltage deviation）≤20%
03	低温储存 Low Temperature Sorage	温度(Temperature)：-40℃±5℃ 周期(Cycles)：500h	12pcs	
04	高温储存 High Temperature Storage	温度(Temperature)：100℃±5℃ 周期(Cycles)：500h	12pcs	
05	红墨水实验 Red ink (25℃)	回流焊 1 次，常温红墨水浸泡 12H Reflow Soldering 1 time，Soak red ink at room temperature for 12H	50pcs	功能区无渗透 Functional zone impermeability

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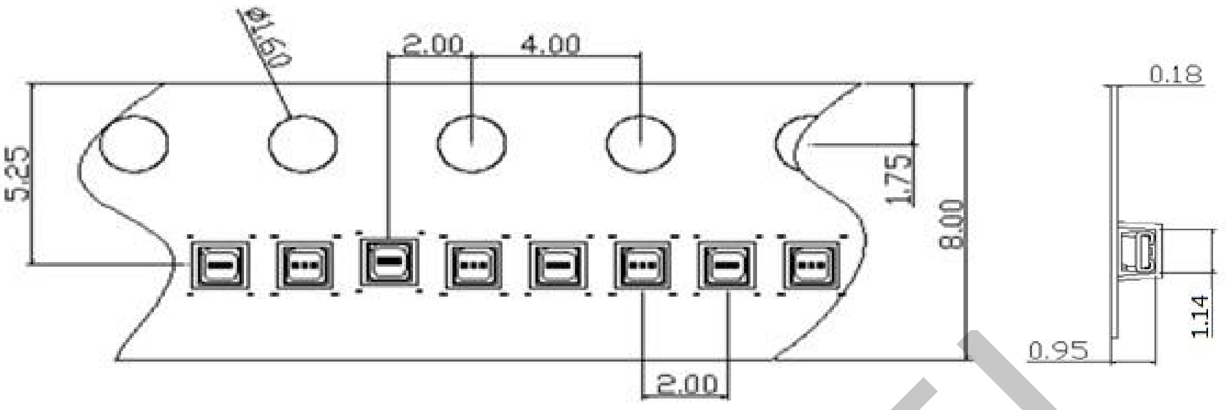
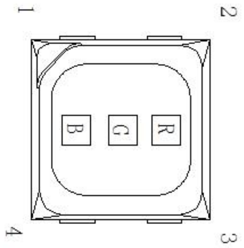
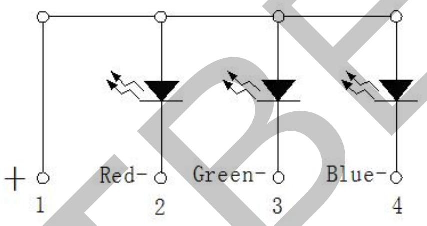
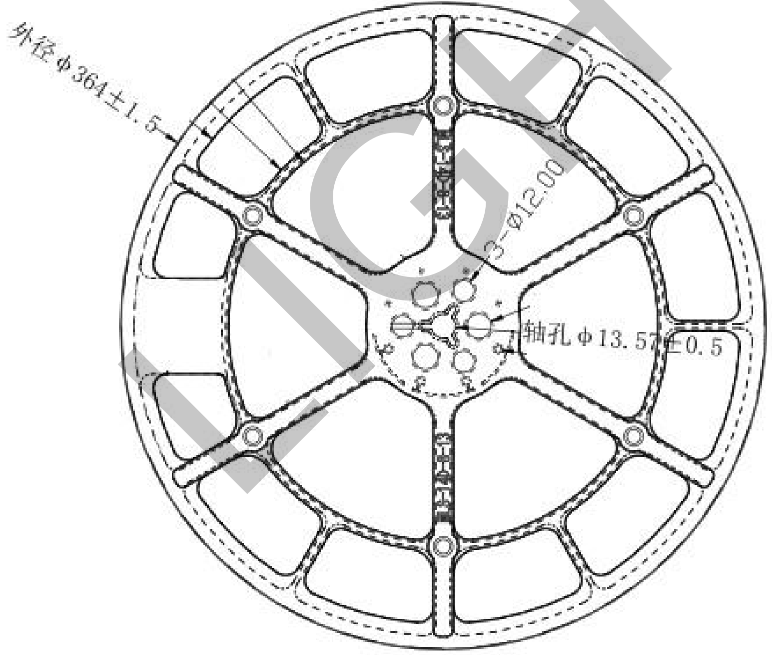
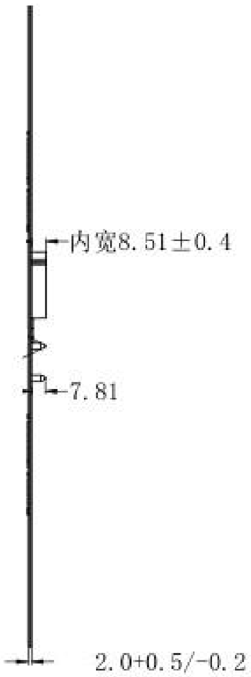
载带及卷轴尺寸 Reel Size（单位 Unit：mm）







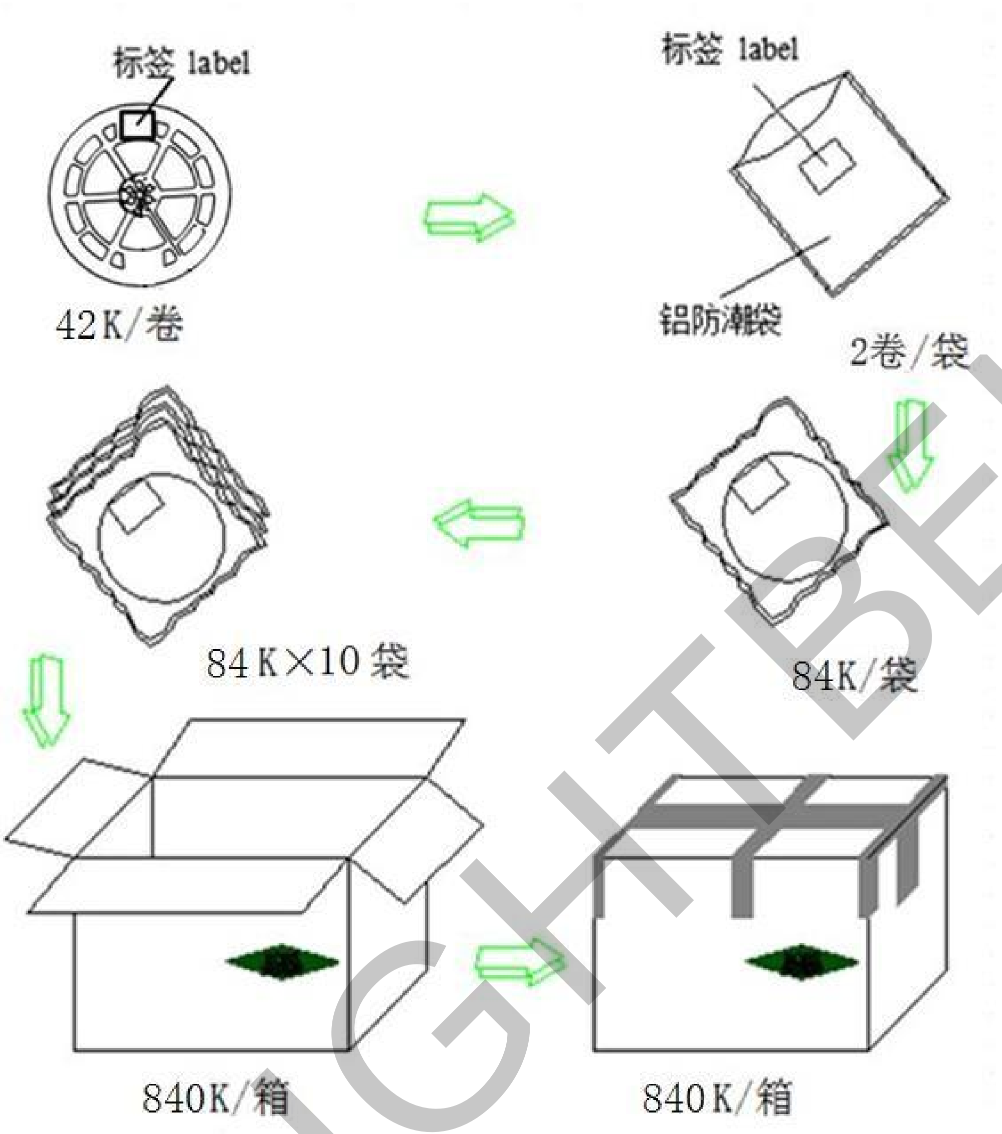




包装数量：可承载 42000pcs 每卷

Packing Quantity: 42000 pcs per volume

防潮包装（ **Humidity Proof packaging**）



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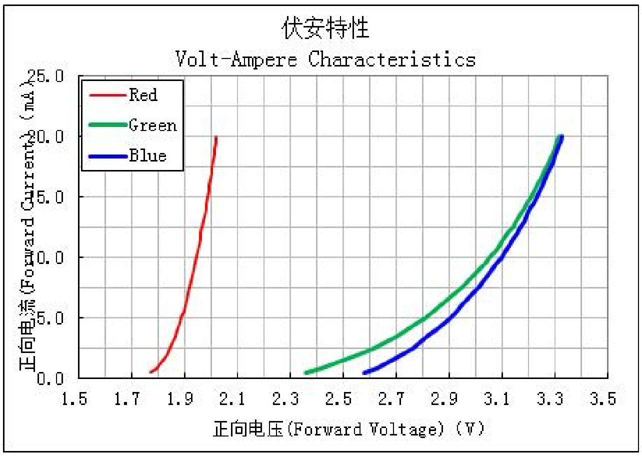
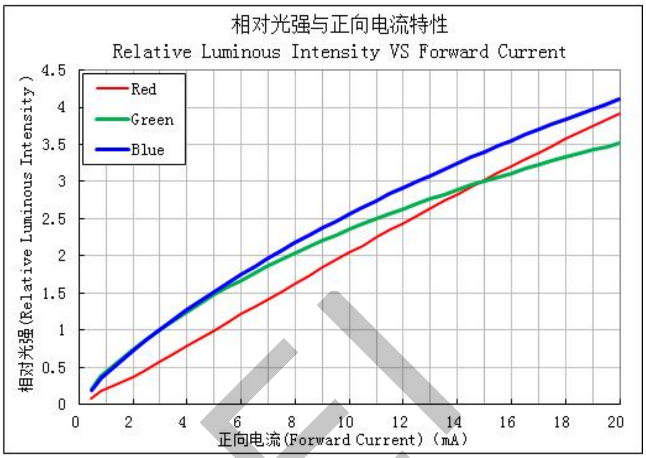
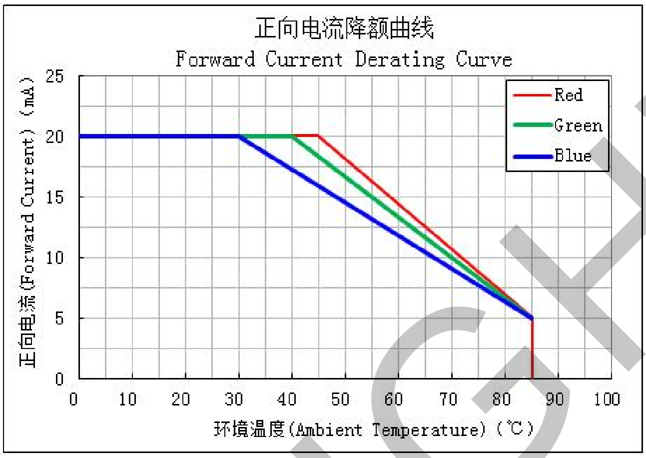
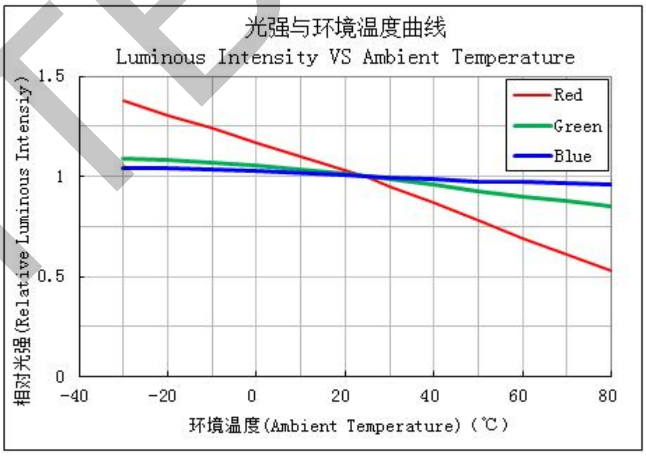
典型的电性及视角曲线（**Typical Electrical and Perspective Curve**）

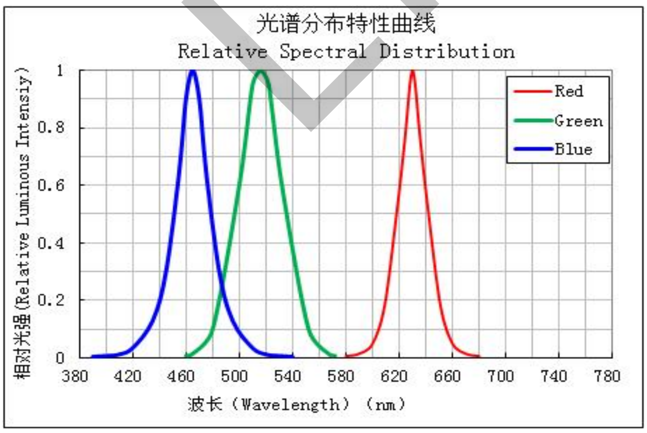
如果没有特别说明，环境温度为 **25**℃ （**nless Otherwise Specified, Ambient Temperature is 25** ℃）

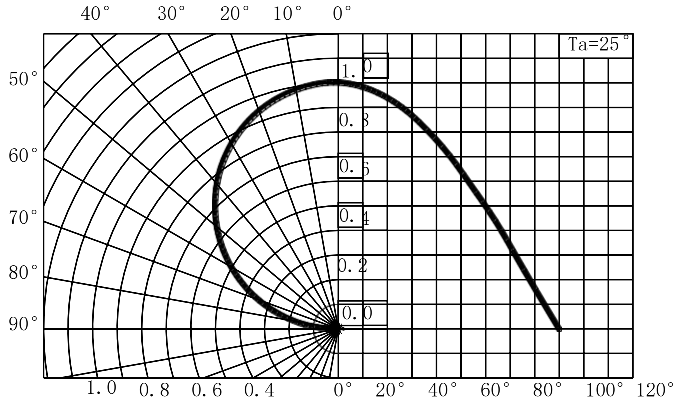












发射角 120° 空间分布

Emitting Angle 120° Space distribution

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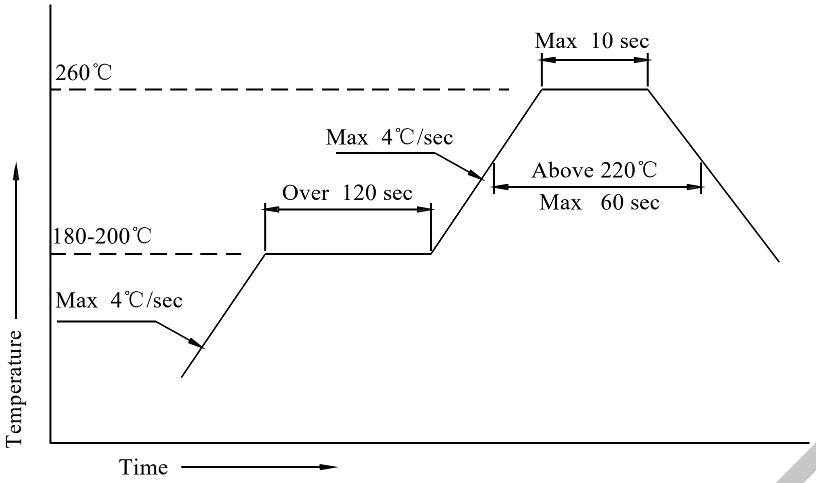
注意事项（Note）

回流焊接 ：推荐使用以下回流焊接温度图进行。

Reflow Soldering: Use the conditions shown in the under Figure of Reflow Soldering.



1、回流焊建议使用免清洗助焊剂。

Reflow soldering is recommended to the use of no-clean flux.

2、焊接次数不可超过 2 次。

Reflow soldering must not be performed more than twice.

3、焊接时，不要在加热过程中对其施加压力。

When soldering, do not apply stress to the LED while the LED is hot.

烙铁焊接（Soldering）

1、如使用手工焊接，建议使用小于 25W 的电烙铁，烙铁温度必须控制在 260℃以下，焊接时间需控制在 15 秒钟之内，且每颗灯珠只能焊接一次。

If manual welding is used, it is recommended to use an electric soldering iron less than 25W. The soldering temperature must be controlled below 260 ℃, the welding time should be controlled within 15 seconds, and each lamp bead can only be welded once.

2、手工焊接时电烙铁不可触及 SMD LED 表面。

The epoxy resin of the SMD LED should not contact the tip of the soldering iron.

3、焊接期间，不可以对器件施加机械压力。

No mechanical stress should be exerted on the resin portion by the tip of the soldering iron.

4、器件外部温度在 40℃以下时，才可以对其进行处理。避免高温时操作对 LED 造成损伤。

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Handing of the SMD LED should be done when the temperature of environment is below 40℃, in case of LED failures caused by thermal-mechanical stress in condition of high temperature .

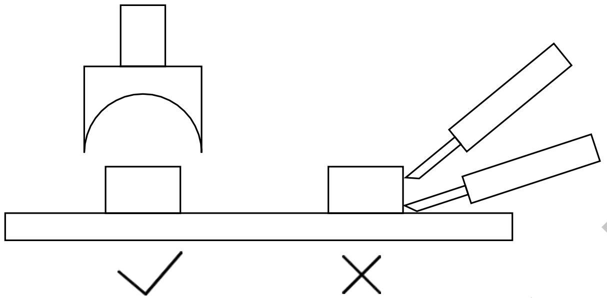
5、不可在同一单元板上焊接不同 BIN 的材料，否则会导致 LED 色差。

Do not mix different BIN materials on the same board, otherwise it will cause color Variation of LED.

维修（Repair）

当维修发光二极管时，并事先确认发光二极管是否会被破坏，修复过程中应避免接触胶体表面，双焊头烙铁应使用如下图的方式作业。

When repairing is unavoidable, it should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing. During the repairing process , a double-head soldering iron should be used to avoid contact with the surface of colloid according to following diagram.



清洗（Clean）

1.在焊接后推荐使用纯酒精清洗，清洗擦拭或浸渍不要超过 1 分钟。使用其它类似溶剂清洗前，请确保溶剂不会对 LED 的封装和环氧树脂部分造成损伤。

It is recommended that alcohol（Anhydrous ethanol） be used as a solvent for cleaning after soldering . Cleaning and wiping or dipping is to go no more than 1 minute. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

2.可使用超声波清洗，但一般功率不超过 300W

Ultrasound cleaning can be used, but the general power does not exceed 300W.

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静电防护 （Electrostatic protection）

对于整个工序（生产、测试、包装等）所有与 LED 直接接触的员工都要做好静电防护措施，主要有：

All employees have direct contact with LED for all processes (production, testing, packaging, etc.) must perform all preventive and eliminating static electricity measures：

1、车间铺设防静电地板并做好接地，工作台采用防静电工作台，带电产品接触低阻值的金属表面时， 由于急放电引发产品故障的可能性是很高的，故要求工作台及与产品相接触之处使用表面电阻为 10^6-10^9Ω 的桌垫 。

In workshop, it is use of anti-static work bench, the anti-static flooring and grounding. If charged material is in contact with metal surface with low resistance , the possibility of product failure caused by urgent discharge is very high. Accordingly, anti-electrostatic pads with surface resistance of 10^6-10^9Ωcan be used .

2、生产机台如：锡炉、回流焊、SMT 设备、电烙铁，以及检测设备均需接地良好，接地交流阻抗小于 1.0Ω。在容易产生静电的环境与设备上，还必须安装离子风扇、作业过程中，操作员穿防静电服、带防静电手环、手套等，取放材料时尽可能接触绝缘部分。

Production machines such as tin furnace, reflow soldering, SMT equipment, electric soldering iron, and testing equipment need to be grounded well, and the grounding AC impedance is less than 1.0. In the environment and equipment prone to static electricity, it is also necessary to install ion fans, during operation, operators wear anti-static clothes, wear anti-static bracelets, gloves and so on, and contact the insulating part as far as possible when taking and discharging materials.

3、盛装 LED 使用防静电元件盒，包装则采用防静电材料。

For packaging of LED, anti-static component boxes and anti-static materials should be used.

4、请保持环境温湿度在 10℃~30℃&RH30%~ 60%RH 以下，以免空气过于干燥产生静电。

Keep the ambient temperature and humidity below 10 ~30℃/RH 30%~60% RH, so as not to cause static electricity when the air is too dry.

5、静电接地需与电源零线、防雷地线分开，接地措施应完全防止静电产生，必须用粗的铜线引入泥土内，在铜线末端系上大铁块，埋入地表 1 米以下，各接地线均需与主线连接在一起。

Static electricity grounding wire should be separated from the lightning grounding wire and the zero wire of the power. Grounding measures should completely prevent static electricity generation Heavy gauge copper cable should be connected to a large piece of metal and buried at least 1 meter deep into the ground. All ground cables must be connected together with the main cable.

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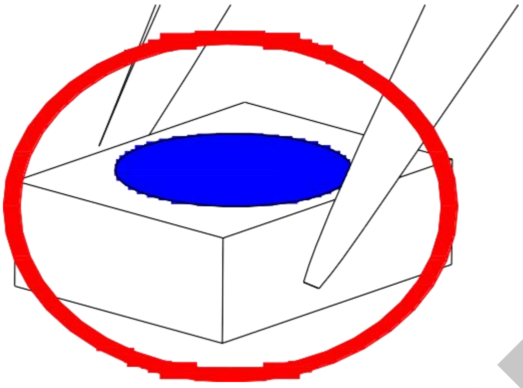
使用操作示意图（Operating diagram）

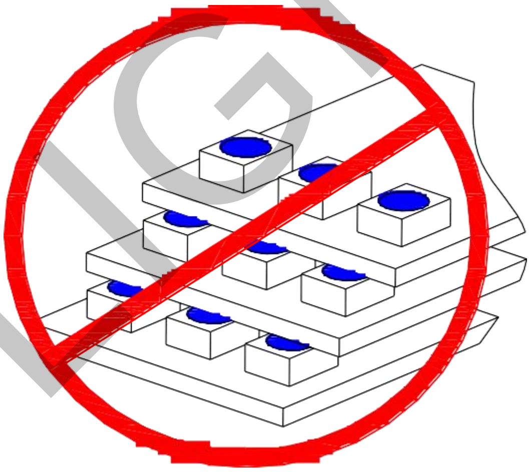
1、在使用镊子时，注意不要让 LED 受到过大外力，以致封装树脂部出现损伤、欠缺、剥落、产品变形和断线，最后导致不亮。

When handling the product with tweezers, be careful not to apply excessive force to the resin. Otherwise, The resin can be cut, chipped, delaminate or deformed, causing wire-bond breaks and catastrophic failures.



2、不让安装有本产品的电路板重叠。电路板重叠可能导致封装树脂受到外力，出现封装树脂损伤、欠缺、剥落，金线变形、断线，LED 脱落，以致 LED 出现不亮。

Do not stack assembled PCBs together. Failure to comply can cause the resin portion of the product to be cut, chipped,delaminated and/or deformed. It may cause wire to break, leading to catastrophic failures.



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储存（Storage）

1、建议未拆封前储存条件：10℃-30℃/60%RH 以下，保存期限：自生产之日起 12 个月；并要求所有产品上线前均需进行烘烤除湿，烘烤条件: 60℃±5℃/12h.

It is suggested that the storage conditions before unpacking should be below 10-30 C/60% RH, and the storage period should be 12 months from the date of production, and all products should be baked and dehumidified before being put on line, and the baking conditions should be 60℃ ±5℃ /12h.

2、开封前，需检查包装袋有无漏气现象，若已漏气，请重新除湿使用，除湿条件 60℃±5℃/24h。
Before using, please check whether there is any air leakage or not, If the bag has leaked air, Please bake the product with below condition. Baking conditions:60℃±5℃/24h .

3、拆封后需在室温<30℃，湿度 60%RH 以下环境使用，建议在 8H 内完成回流焊作业，如果超过使用时间，须将产品重新烘烤除湿后再进行使用。

After unpacking, the product should be used in the environment with room temperature < 30 ℃ and humidity below 60% RH. It is recommended to complete reflow operation within 8H. If the service time is exceeded, the product must be re baked and dehumidified before use.

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