

承认书

Approved Sheet

客户名称：	
客户物料名称：	
客户物料编码：	
文件编号：	
拓展品名：	TZ-T5050-IRIRR/A-PC16UF-TA14A5NA/W072
拓展料号：	W072-11146

客户

拓展

检测员：	检测员：
审核：	审核：
批准：	批准：
盖章：	日期：

广东拓展光电子有限公司

BRIGHTWAY Optoelectronics Co., Ltd.

TZ-T5050-IRIRR/A-PC16UF-TA14A5NA/W072

The core value of the 5050 red-infrared dual-color LED lies in its flexible dual-wavelength switching capability. It not only meets the lighting and indication requirements in visible light scenarios but also leverages the advantages of infrared light, such as concealment and penetration. Additionally, it features a compact size, low power consumption, and long lifespan, making it compatible with intelligent control and IoT applications. It is an ideal light source for multifunctional, intelligent lighting and sensing systems.



Applications/产品应用

Indoor lighting:Fluorescent lamp,tube
Commercial illumination and displays:Advertising words,light box
LCD Backlighting
Decorative lighting:light strip
Automotive interior auxiliary lighting
Other illumination and displays

室内照明：珠宝照明、软硬灯条
商业照明显示：广告字、广告灯箱
LCD背光源
装饰照明：柔性灯条
汽车内部辅助照明
其它照明和显示类

Features/特性

Size(mm):5.0*5.0*1.6
Color: Red infrared
Thermal resistance: 20°C/W
Viewing angle: 120°
ESD protection up to 2 KV
High reliability
RoHS compliant

尺寸(毫米)：5.0*5.0*1.6
发光颜色：红红外
热阻：20°C/W
发光角度：120°
抗静电：2kV
高可靠性
通过RoHS认证

Absolute maximum ratings(Ta=25°C)/最大额定值

Parameters/参数	Symbol/符号	Value/数值	Unit/单位
Power dissipated 功率消耗	P_D	R:140 IR:102	mW
forward current 正向电流	I_F	60	mA
Operating temperature 工作温度	T_{OPR}	-40~+85	°C
Storage temperature 储存温度	T_{STG}	-40~+85	°C
Maximum junction temperature(1) 最大结温	T_J	≤85	°C
Soldering temperature 焊接温度	Reflow soldering 260°C for 10sec		

Proper current derating must be observed to maintain junction temperature below the Maximum.

Electro optical characteristics(Ta=25°C)/光电特性

Parameters 参数	Test condition 测试条件	Symbol 符号	Min 最小	Typ 典型	Max 最大	Unit 单位
Forward voltage 正向电压	60mA	R	2.1	--	2.3	V
		IR	1.5	--	1.7	
View Angle 发光角度	60mA	2θ1/2	--	120	--	deg.
Electrostatic discharge 抗静电	HBM	ESD	--	--	2000	V
Thermal resistance 热阻	60mA	RJ-A	--	--	20	°C/W
Reverse current 反向电流	VR=5V	IR	--	--	10	uA

Notes:

Measurement tolerance: Vf±0.1V Luminous Intensity:±10% Wavelength(x,y):±1nm/±0.01.

TZ-T5050-IRIRR/A-PC16UF-TA14A5NA/W072

Electro optical chart(Ta=25°C)/光电特性

Color	Series Number 产品系列号	Part Number 产品型号	Forward voltage 正向电压 (V)	Luminous flux 光通量 (lm)	Luminous power 光功率 (mW)	Peak wavelength 峰值波长 (nm)
R	5050	TZ-T5050-IRIRR /A-PC16UF- TA14A5NA/ W072	2.1-2.3	1.5-2.5	--	655-660
IR			1.5-1.7	--	20-30	855-860

Ranks(sorting current=60mA, Ta=25°C)/档位

Item 项目	Color 颜色	Min 最小值	Max 最大值	Unit 单位
Φ光通量	R	1.5	2.5	lm
Po光功率	IR	20	30	mW

Item 项目	Color 颜色	Min 最小值	Max 最大值	Unit 单位
VF电压	R	2.1	2.3	V
	IR	1.5	1.7	

Item 项目	Color 颜色	Min 最小值	Max 最大值	Unit 单位
WP峰值波长	R	655	660	nm
	IR	855	860	

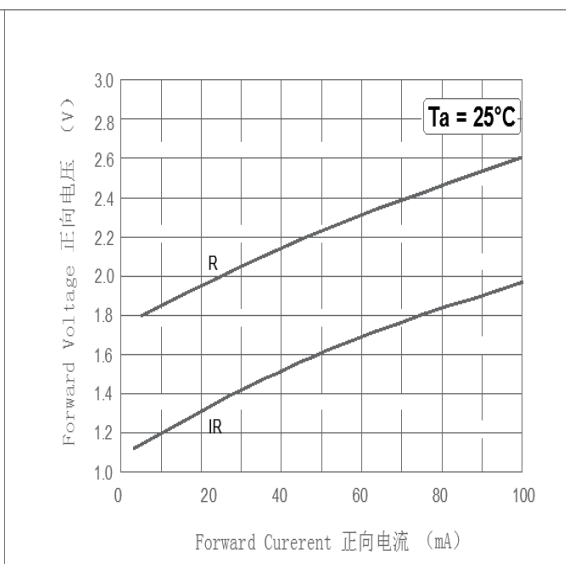
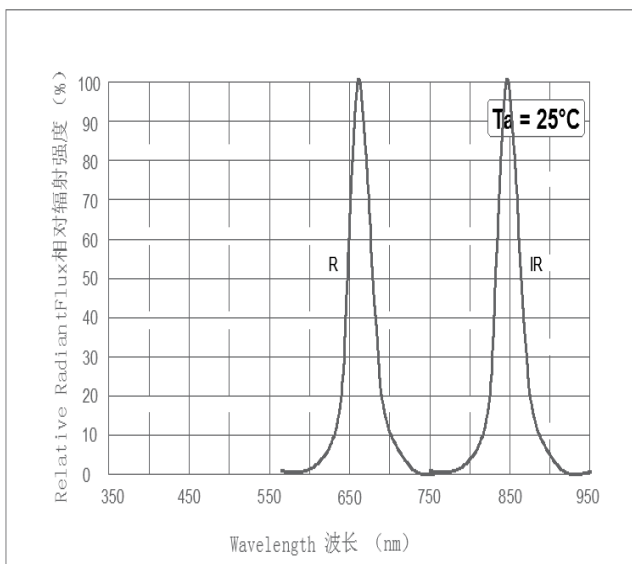
Typical electrical optical characteristic curves/典型光电特征曲线

Relative Spectral Emission

$\Phi_{rel} = f(\lambda); I_F=60 \text{ mA}; T_J = 25 \text{ }^\circ\text{C}$

Forward current Vs Forward Voltage

$I_F = f(V_F); T_J = 25 \text{ }^\circ\text{C}$

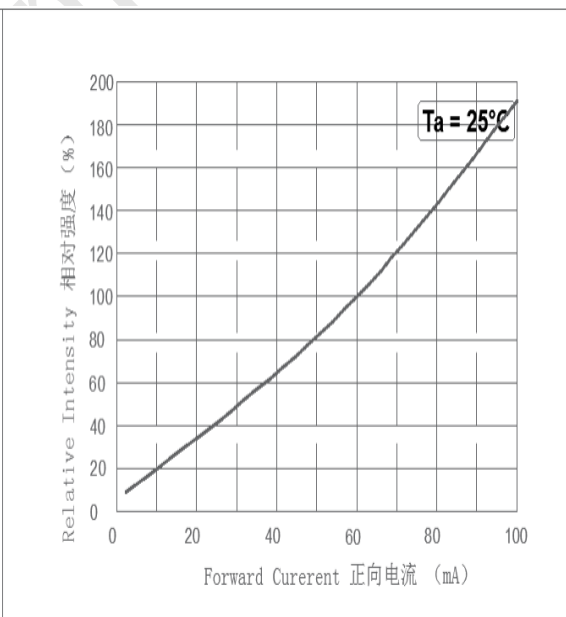
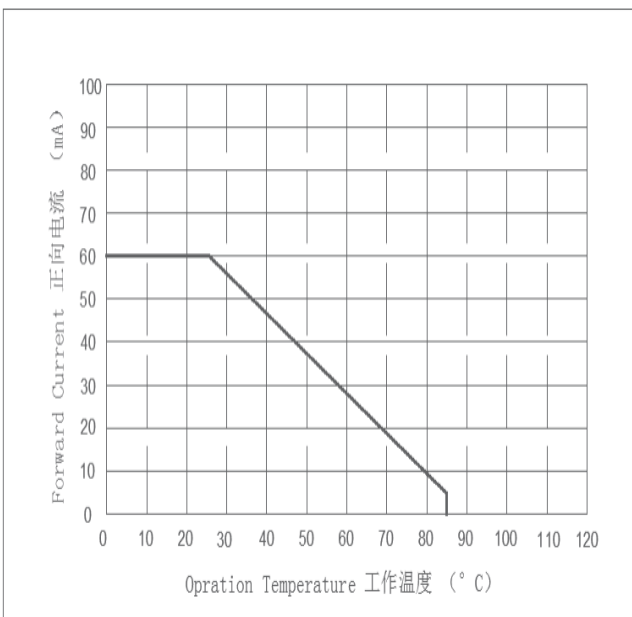


Max. Permissible Forward Current

$I_F=f(T)$

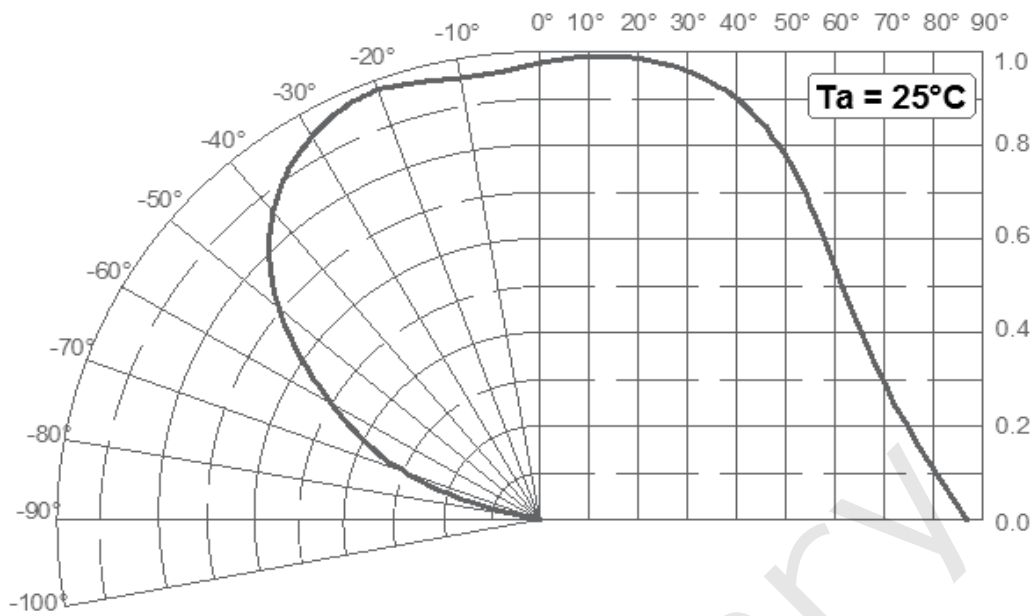
Relative intensity VS Forward current

$I_{Vrel} = f(I_F); T_J = 25 \text{ }^\circ\text{C}$



Radiation Characteristics

$I_{rel} = f(\varphi)$

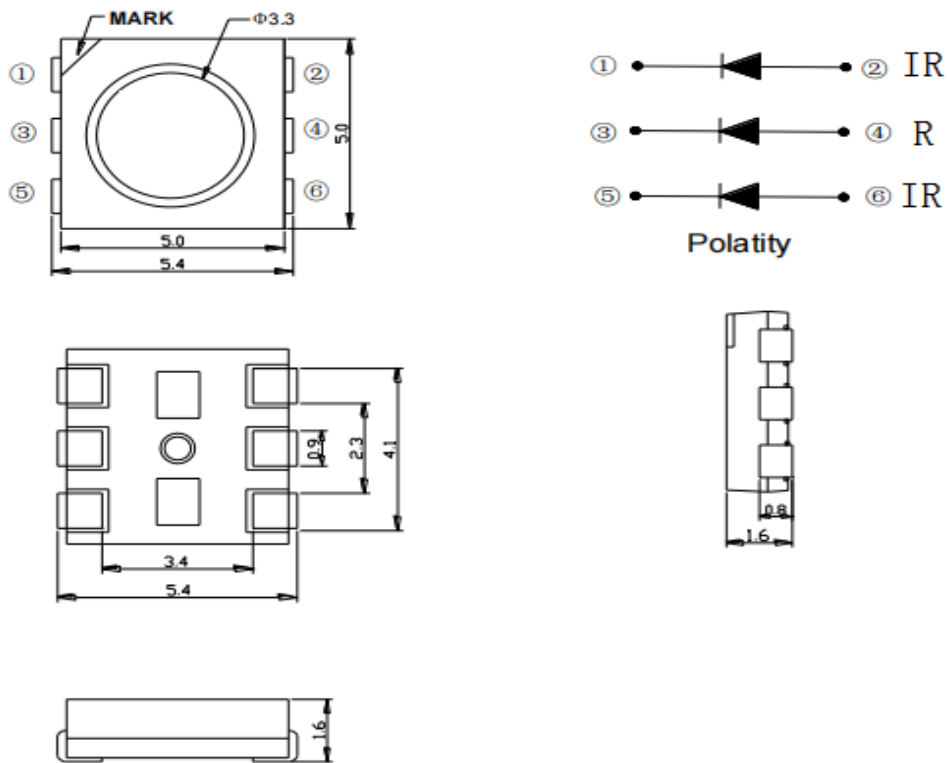


View angle VS. Radiation 半功率角VS. 发光强度曲线

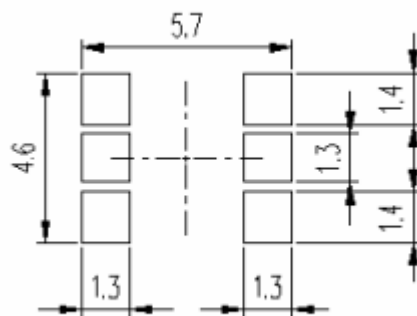
Notes:

1. $2\theta_{1/2}$ is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is $\pm 5^\circ$.

Package dimensions/产品外观尺寸



Reference soldering pad/参考焊盘



(1) All dimensions are in millimeters ;

单位：毫米

(2) Tolerances are ± 0.2 mm unless otherwise noted.

未标注公差处公差为 ± 0.2 mm。

Packaging Specifications/包装规格

Product Labeling/产品标签

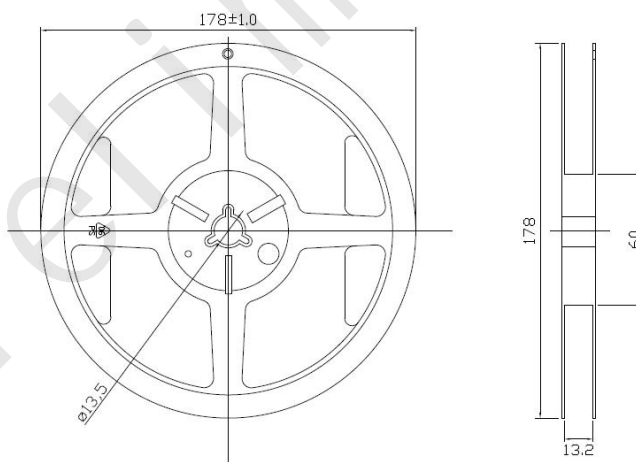
Label Explanation/标签解释

Name: Part Number
 LOT No: Lot Number
 Prd No: LProduct Code
 IF(mA):Operation Forward current
 VF(V):Forward voltage Bin
 WP: Peak wavelength
 BIN CODE:Bin Code
 Q TY (pcs): Package Quantity
 Date:Packaging Date



Emitter Reel Packaging/卷盘包装

Reel Dimensions/卷盘尺寸



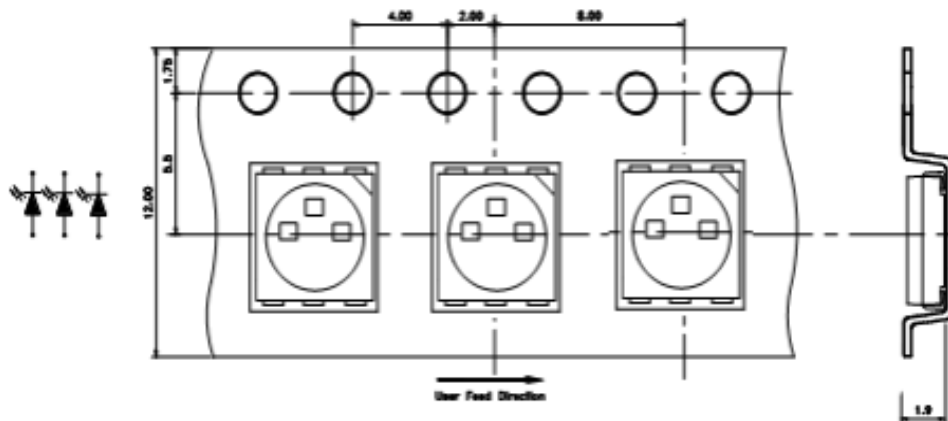
Note/备注 :

1. All dimensions are in millimeters ;

单位 : 毫米

Tape On Reel Package/载带包装

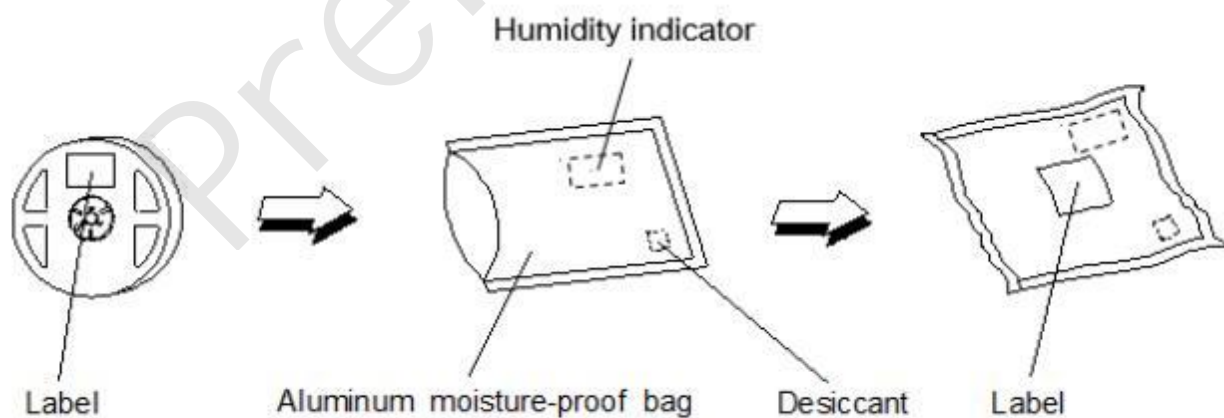
Carrier Tape Dimensions as the following/载带尺寸



Note/备注：

- (1) The cathode is oriented towards the tape sprocket hole in accordance with data sheet specifications.
根据图表显示，负极朝向载带孔。
- (2) MPQ:1000pcs per reel.
1000颗/每盘。

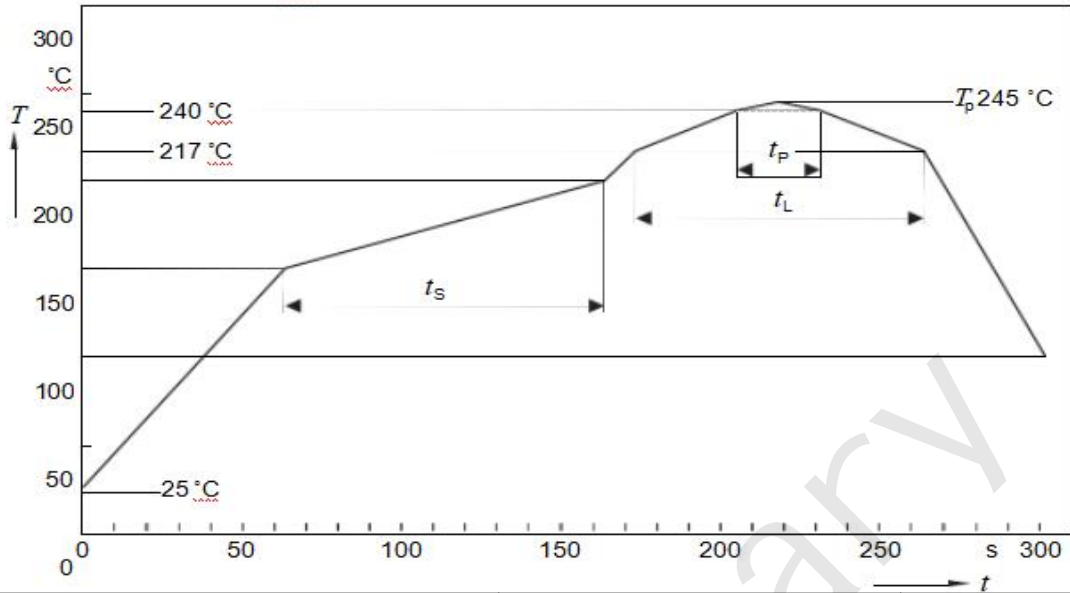
Moisture Resistant Packaging/防潮包装



Soldering Characteristics/焊接工艺

Reflow Soldering Profile/回流曲线

Product complies to MSL Level 2 acc. to JEDEC J-STD-020E



Profile Feature	Pb-Free Assembly	Unit Einheit
Average Ramp-up Rate 25 °C to 150 °C	2-3	°C /sec
Preheat Temperature Min.	150	sec
Preheat Temperature Max.	200	sec
Preheat Time	60- 120	sec
Time Maintained Above Temperature	217	°C
Time Maintained Above Time	60-90	sec
Peak Temperature (max.)	260	°C

- c. Reflow soldering should not be done more than twice.
- d. In soldering process, stress on the LEDs during heating should be avoided.
- e. After soldering, do not bend the circuit board.

Cautions/注意事项

1. Moisture-Proof Package/防潮包装

1.1 When moisture is absorbed into the LED package it may vaporize and expand products during soldering. There is a possibility that this may cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. For this reason, the moisture-proof package is used to keep moisture to a minimum in the package.

当水分被吸收到 LED 包装中时，它可能会在焊接过程中蒸发并膨胀产品。这可能会导致触点脱落并损坏 LED 的光学特性。因此，防潮包装需要将包装中的水分保持在最低限度。

2. Current limiting/限流

2.1 A resistor should be used to limit current spikes that can be caused by voltage fluctuations. Otherwise damage could be occur.

应使用电阻器限制电压波动引起的电流峰值。否则可能会发生损坏。

3. Iron Soldering/烙铁焊接

3.1 Hand soldering is not recommended for regular production. These guidelines are for rework only. 常规生产不建议手工焊接。此方法仅适用于返工。

3.2 The recommended condition is less than 5s at 260°C.

建议的条件是在 260°C 时小于 5s。

3.3 The time must be shorter for higher temperatures. (+10°C→-1sec)

对于较高的温度，时间必须更短。(+10°C→-1 秒)

3.4 The power dissipation of the soldering iron should be lower than 25W and the surface temperature of the device should be controlled at under 300°C.

烙铁的功耗应低于 25W，器件表面温度应控制在 300°C 以下。

4. Storage Conditions/储存条件

4.1 Before opening the package : The LEDs should be kept at 30°C or less and 90%RH or less. The LEDs should be used within a year. When storing the LEDs, moisture-proof packaging with moisture-absorbent material is recommended.

打开包装前：LED 应保持在 30°C 或以下，相对湿度为 90% 或以下。LED 应在一年内使用。储存 LED 时，建议使用吸湿材进行防潮包装。

4.2 After opening the package: The LEDs should be kept at 30°C or less and 60%RH or less. The LEDs should be soldered within 24 hours (1 days) after opening the package. If unused LEDs remain, they should be stored in moisture-proof packages, such as sealed containers with packages of moisture-absorbent material. It is also recommended to return the LEDs to the original moisture-proof bag and to resealed the moisture-proof bag again.

打开包装后：LED 应保持在 30°C 或以下，相对湿度为 60% 或以下。LED 应在打开包装后 24 小时 (1 天) 内焊接。如果仍有未使用的 LED 灯珠，则应将其储存在防潮包装中，例如带有吸湿材料包装的密封

容器中。也建议将 LED 灯珠放回原来的防潮袋，并再次重新密封防潮袋。

4.3 If the moisture-absorbent material has faded away or the LEDs have exceeded the recommended storage time, baking treatment should be performed using the following conditions. Baking treatment: more than 24 hours at $65\pm 5^{\circ}\text{C}$

如果吸湿材料褪色或 LED 超过建议的存储时间，则应使用以下条件进行除湿处理。除湿处理：在 $65\pm 5^{\circ}\text{C}$ 下烘烤超过 24 小时。

4.4 **BRIGHTWAY** LED electrode sections are comprised of a silver-plated copper alloy. The silver surface may be affected by environments which contain corrosive gases and so on. Please avoid condition which may cause difficulty environments during soldering operations. It is recommended that the user uses the LEDs as soon as possible.

拓展 LED 灯珠电极部分由镀银铜合金组成。银表面可能受到含有腐蚀性气体等环境的影响。在焊接操作过程中，避免出现可能由环境导致问题的情况。建议用户尽快使用 LED 灯珠。

4.5 Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur.

请避免环境温度快速变化，尤其是在可能发生冷凝的高湿度环境中。

5. Handling of Silicone LEDs/硅胶 LED 灯珠处理

5.1 Avoid silicone resin parts especially with sharp tools such as tweezers.

避免使用锋利工具，尤其是使用镊子等接触硅胶部分。

5.2 Avoid leaving fingerprints on silicone part.

避免在硅胶零件上留下指纹。

6. Usage/用途

6.1 Do not exceed the values given in this specification.

不要超出本规范中给出的使用条件。