

# Technical Data Sheet

## 规格书

PN/型号: GT-2835WW22SA-01

For/测试电流: IF=30mA

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Customer confirm 顾客确认	Approved by 批准	Checked by 审核	Issued by 制作

Part No/型号	GT-2835WW22SA-01		
Emitted Color/颜色	Warm White/暖白	Face Color/外观	Yellow/黄色
Chip Material/材质	InGaN/GaN	Package/塑胶	PPA

◆ Features/特征:

Compatible with automatic placement equipment/适合自动 SMT

Compatible with reflow solder process/回流焊制程

Low power consumption and wide viewing angle/低功耗、宽视角

This product doesn't contain restriction Substance, comply ROHS standard/符合 ROHS

◆ Applications/应用说明:

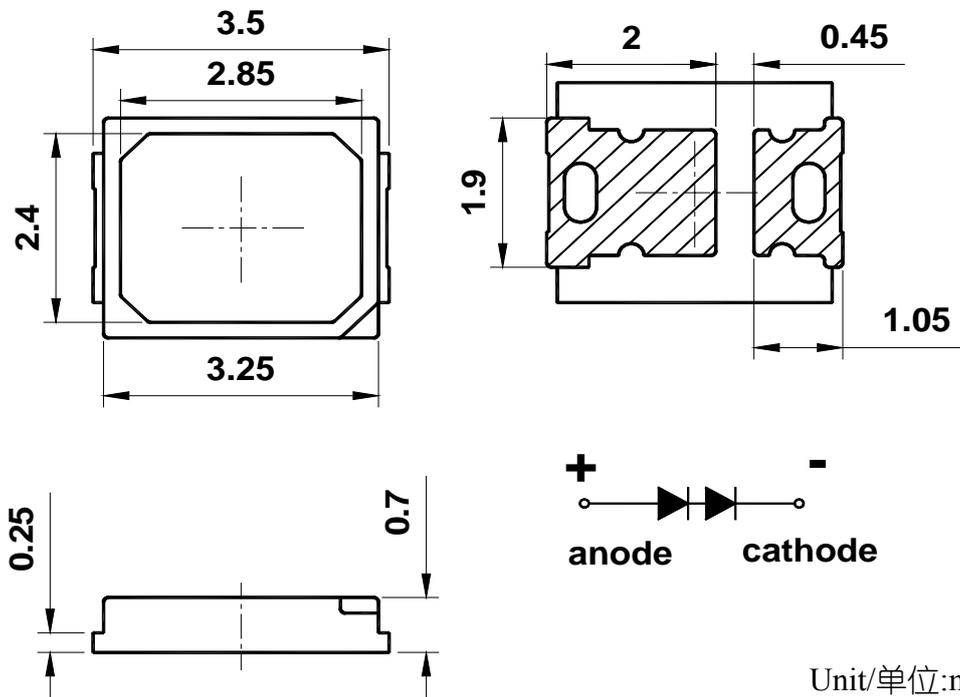
Automotive and Telecommunication/机电、通信

Flat backlight for LCD ,switch and symbol in telephone and fax/背光、开关、信息显示

General use for indicators/指示标识

Indoor lighting/照明

◆ Package Dimensions 外形尺寸:



Unit/单位:mm

Tolerance/公差:±0.2mm

Electrodes/焊盘: Ag Plating/银

Encapsulating Resin/封装胶: Silicone with phosphor/硅树脂

◆ Absolute Maximum Rating /极限参数 (Ta=25℃)

Parameter/参数	Symbol/符号	Max./最大	Unit/单位
Power Dissipation/功耗	P <sub>M</sub>	560	Mw
Pulse Forward Current/脉冲电流	I <sub>FP</sub>	100	mA
DC Forward Current/正向电流	I <sub>F</sub>	80	mA
Reverse Voltage/反向电压	V <sub>R</sub>	5	V
Operating Temperature Range/工作温度	Topr	-30℃~85℃	℃
Storage Temperature Range/储存温度	Tstg	-40℃~100℃	℃

\* I<sub>FP</sub> condition/脉冲电流条件: pulse width ≤1ms ,duty cycle ≤1/10

◆ Electrical Optical Characteristics/光电参数 (Ta=25℃)

Parameter/参数	Symbol 符号	Min 最小	Typ. 均值	Max. 最大	Unit 单位	Test Condition
Luminous Flux/光通量	Φ	22	--	31	lm	I <sub>F</sub> =30mA
Correlated Color Temperature 色温	CCT	2870	--	3220	K	I <sub>F</sub> =30mA
Forward Voltage/正向电压	V <sub>F</sub>	5.3	--	6.8	V	I <sub>F</sub> =30mA
Reverse Current/反向电流	I <sub>R</sub>	--	--	10	uA	V <sub>R</sub> =5V
Color Rendering Index/显指	R <sub>a</sub>	80	--	--	--	I <sub>F</sub> =30mA
Spectral Line Half Width	Δλ	--	--	--	nm	I <sub>F</sub> =30mA
Viewing Angle/半光强角	2θ <sub>1/2</sub>	--	120	--	Deg.	I <sub>F</sub> =30mA

Notes/说明: 1.Tolerance of Luminous Intensity±10%/光通量误差±10%.

2.Tolerance of CCT ±10%/色温误差 CCT ±10%

3.Tolerance of Forward Voltage±0.1V/电压误差±0.1V

4.Optical characteristic is measured by GOOZO's equipment/国泽测量系统.

5. The above Color Rendering Index measurement allowance tolerance is ±2/显指误差

±2

◆ BIN range/分档规格

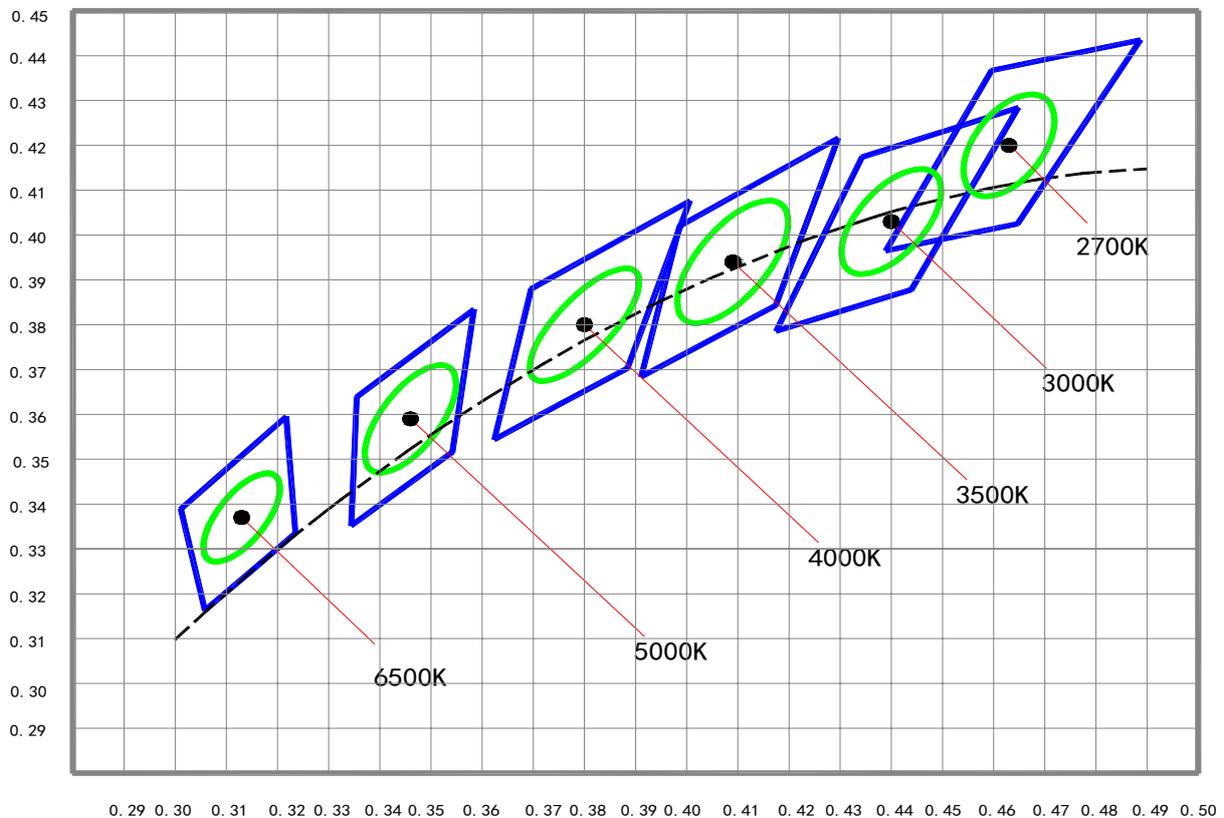
Forward voltage (tolerance is  $\pm 0.1V$  @  $I_F=30mA$ )/正向电压:

BIN CODE/档位	Min.(V)	Max. (V)
	5.3	5.8
	5.8	6.3

Luminous intensity (tolerance is  $\pm 10\%$  @  $I_F=30mA$  )/光通量:

BIN CODE/档位	Min.(Lm)	Max. (Lm)
	22	25
	25	28
	28	31

Chromaticity Coordinates & Bin grading diagram( $I_F=30mA$ )/色区图:



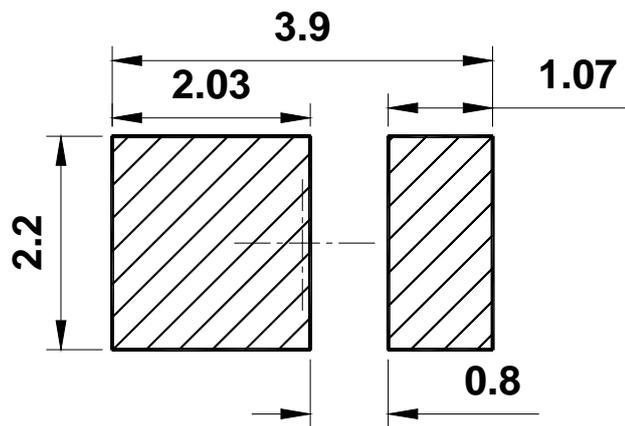
Shooting figure based on IEC60081 color tolerance standard coordinates/按IEC60081色容差标准分选

Bin range of Chromaticity Coordinates (tolerance is  $\pm 0.01$  @  $I_F=30\text{mA}$ )/色区数据:

Code	Center Color Coordinates		X	Y	Code	Center Color Coordinates		X	Y
	Cx	Cy				Cx	Cy		
W30	0.4400	0.4030	0.4175	0.3786					
			0.4343	0.4174					
			0.4648	0.4284					
			0.4439	0.3878					

Please refer to CIE 1931 Chromaticity diagram/执行CIE1931

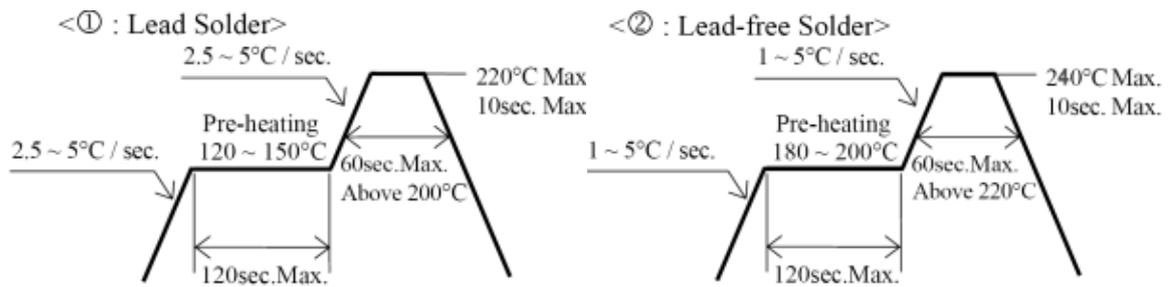
◆ Soldering Pad Dimensions/推荐焊盘尺寸:



Unit/单位: mm

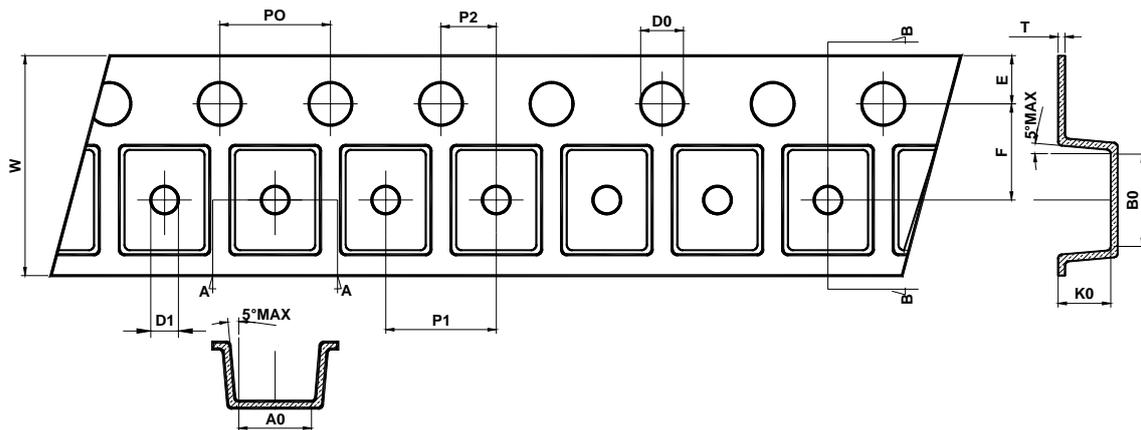
◆ Soldering Conditions (Maximum allowable soldering conditions)/焊接条件

	Reflow Soldering		Hand Soldering	
	Lead Solder	Lead-free Solder	Temperature	Soldering time
Pre-heat	120 ~ 150°C	180 ~ 200°C	350°C Max. 3 sec. Max. (one time only)	
Pre-heat time	120 sec. Max.	120 sec. Max.		
Peak temperature	220°C Max.	240°C Max.		
Soldering time Condition	10 sec. Max. refer to Temperature - profile ①.	10 sec. Max. refer to Temperature - profile ②. (N <sub>2</sub> reflow is recommended.)		



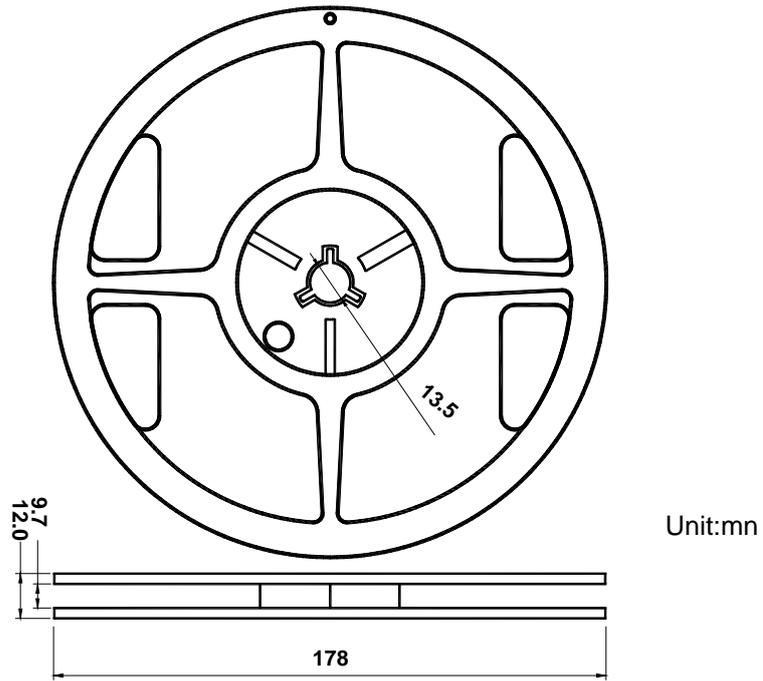
- Reflow soldering should not be done more than two times/回流焊不能超过 2 次
- Do not stress its resin while soldering/在高温下，不能给壳体施压
- After soldering, do not warp the circuit board/未冷却时，不要扭转线路板
- Pay attention to electrostatic (ESD) /防护静电要求

◆ Package Tape Specifications/包装规格: (4500 pcs/Reel)

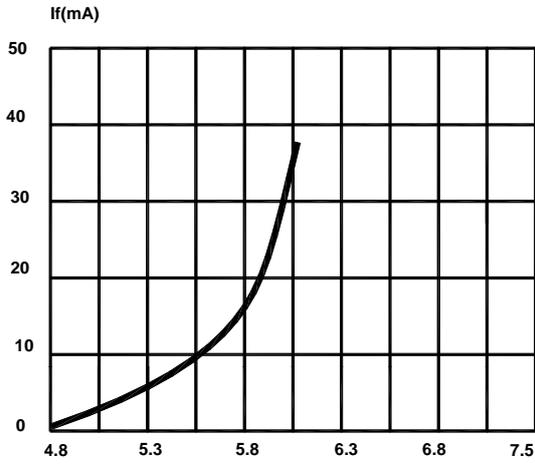


Unit:mn

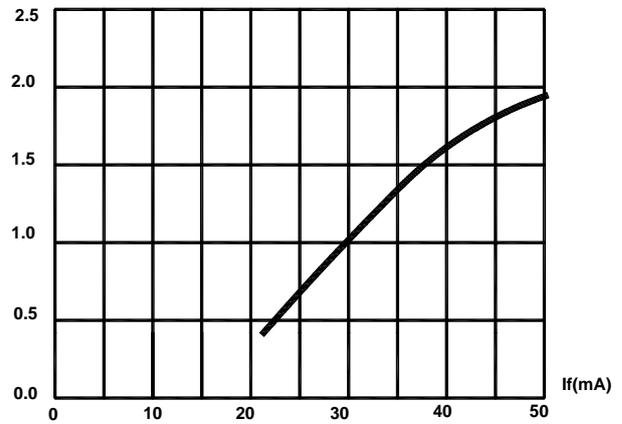
symbol	A0	B0	K0	P0	P1	P2	T
spec	3.05±0.10	3.70±0.10	1.10±0.10	4.00±0.10	4.00±0.10	2.00±0.05	0.20±0.05
symbol	E	F	D0	D1	W	10P0	
spec	1.75±0.10	3.50±0.05	1.60±0.1	1.00±0.1	8.00±0.1	40.0±0.20	



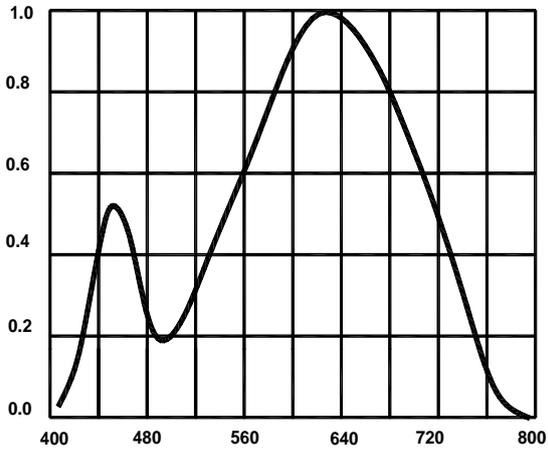
◆ Typical Electro-Optical Characteristics Curves/光电曲线:



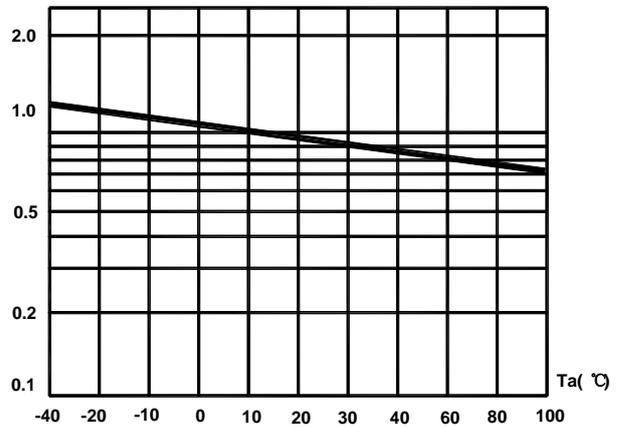
Forward Current vs. Forward Voltage



Relative Luminous Intensity vs. Forward Current



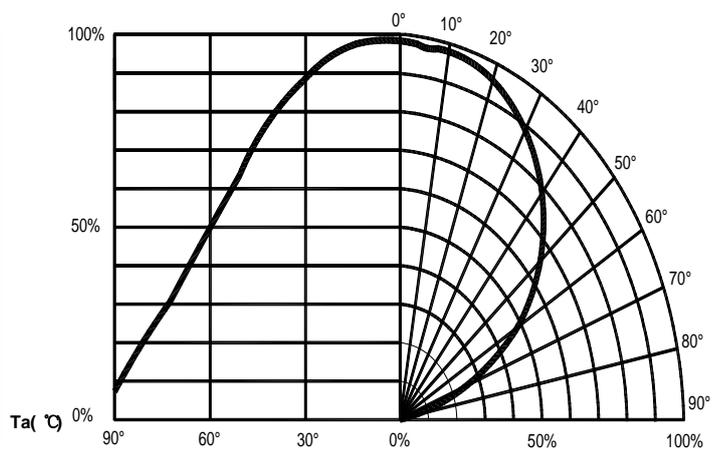
Relative Luminous Intensity vs. Wavelength



Relative Luminous Intensity vs. Ambient Temperature



Maximum Forward Current vs. Ambient Temperature



Relative Luminous Intensity vs. Radiation Angle

◆ Reliability/信赖性

(1) Test Items and Conditions/测试项目

Test Item/测试项目	Standard Test Method	Test Conditions/条件	Note	Number of Damaged
Reflow Soldering/回流焊	JEITA ED-4701 300 301	A.T <sub>A</sub> =230±5℃ TIME=30-60S B.T <sub>A</sub> =240±5℃ TIME=110-120S C.T <sub>A</sub> =260±5℃ TIME=10±1S D.T <sub>A</sub> =230±5℃ TIME=30-60S	1 time	0/50
High Temperature Storage/高温储存	JEITA ED-4701 200 201	T <sub>A</sub> =100±5℃	1000 Hrs	0/50
Low Temperature Storage/低温储存	JEITA ED-4701 200 202	T <sub>A</sub> =-40±5℃	1000 Hrs	0/50
Temperature Humidity Storage/湿度储存	JEITA ED-4701 100 103	T <sub>A</sub> =85±5℃, RH=90%RH	1000 Hrs	0/50
Thermal Shock Test/冷热冲击	JEITA ED-4701 300 307	-40℃ ~ 100℃ 15min 15 min 15 min	100 Cycles	0/50
Temperature Cycling Test/温度循环	JEITA ED-4701 100 105	-40℃ ~ 25℃ ~100℃ ~25℃ 30min 15min 30min 15min	100 Cycles	0/50
Operating Life Test/光衰	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1	T <sub>A</sub> =25℃ I <sub>F</sub> =30mA	1000 Hrs	0/50

(2) Criteria of judging the damage/失效判定

Item/项目	Symbol	Test Conditions	Criteria for Judgment	
			Min.	Max.
Forward Voltage/电压	V <sub>F</sub>	I <sub>F</sub> =30 mA	---	Initial Data ×1.1
Luminous Intensity/光通量	I <sub>V</sub>	I <sub>F</sub> =30 mA	Initial Data × 0.8	---
Reverse Current/反向电流	I <sub>R</sub>	V <sub>R</sub> = 5V	---	≅ 50μA
Wave length/波长	λD/λP	I <sub>F</sub> =Test Current	/	Initial Data±2nm
Appearance/外观	/	View check	No mechanical damage/无机械损坏	

## ◆ Cautions/警示

### 1、Package/包装

When moisture is absorbed into the package it may vaporize and expand during soldering. There is a possibility that this can cause exfoliation of the contacts and damage to the optical characteristics of the LEDs. So the moisture proof package is used to keep moisture to a minimum in the package/该器件属于3级湿度敏感级别，在焊接高温过程中，湿气膨胀，极易损坏器件，外封袋采用防湿包装

### 2、Storage/储存

Before opening the package: The LEDs should be kept at 5~30°C and 60%RH or less. The LEDs should be used within a year/器件须储存在5~30°C，小于60%RH的环境下

After opening the package: The LED must be used within 24 hours, else should be kept at 5~30°C and 30% RH or less. The LEDs should be used within 7days after opening the package. If unused LEDs remain, they should be stored in moisture proof packages, recommended to return the LEDs to the original moisture proof bag and to reseal the moisture proof bag again/包装袋开封后，须在24小时内用完，不然须储存在小于30% RH的环境下，严格防潮管控

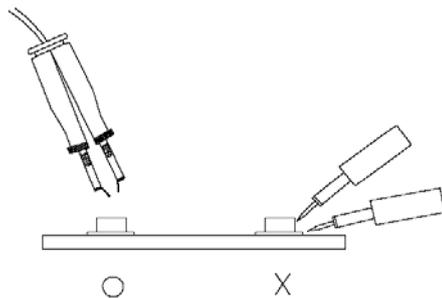
If the LEDs have exceeded the storage time, baking treatment should be performed more than 24 hours at 60 ± 5°C/建议器件在回流焊之前，采用60 ± 5°C，烘烤24H后再使用

### 3、Soldering Iron/烙铁焊接

Each terminal is to the tip of soldering iron temperature less than 300°C for 3 seconds within once in less than the soldering iron capacity 25 W.Leave two seconds and more internals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder/25W电烙铁300°C，3S，焊接一次

### 4、Repairing/维修

Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing/维修时，须确认不能损坏器件外观，建议采用双头烙铁同时加热焊盘，注意确认器件的损坏状况



5、The LED electrode sections are comprised of a gold/Ag plated. The gold/Ag surface may be affected by

environments which contain corrosive gases and so on. Please avoid conditions which may cause the LED to corrode or discolor. This corrosion or discoloration may cause difficulty during soldering operations. It is recommended that the User use the LEDs as soon as possible/器件引脚采用镀金或镀银，长期暴露在外，易引起氧化，导致焊接困难，建议尽快使用.

6、Please avoid rapid transitions in ambient temperature, especially in high humidity environments where condensation can occur/器件应避免快速的环境温度变化，在高湿环境下，更易导致器件失效

#### 7、Static Electricity/静电防护

7.1、These products are sensitive to static electricity charge, and users are required to handle with care. Particularly, if an current and or voltage which exceeds the Absolute Maximum Rating of Products is applied, the overflow in energy may cause damage to, or possibly result in electrical destruction of the Products. The customer is requested to take adequate countermeasures against static electricity charge and surge when handling Products/产品属于I级静电敏感器件，超出极限的工作条件极易损伤器件，务必在使用过程中，做好静电防护

7.2、Proper grounding of Products , use of conductive mat, conductive working uniform and shoes, and conductive containers are effective against static electricity and surge/做好接地、使用导电地垫、防静电工作服、防静电周转工具等均能显著降低静电损伤

7.3、Ground low-resistance areas where the product contacts, such as metal surfaces of the work platform, with a conductive mat (surface resistance  $10^6$ - $10^8 \Omega$  )/静电手环、接地线、地坪电阻率测试应在 $10^6$ - $10^8 \Omega$

7.4、A tip of soldering iron is requested to be grounded. An ionizer should also be installed where risk of static generation is high/防静电烙铁、离子风机均须在高静电环境中使用

#### ◆ Notes/注意事项:

1、Above specification may be changed without notice. We will reserve authority on material change for above specification/产品规格可能会在经过品质论证后，予以更改

2、When using this product, please observe the absolute maximum ratings and the instructions for the specification sheets. We assume no responsibility for any damage resulting from use of the product which does not comply with the instructions included in the specification sheets/敬请顾客在使用前，请仔细查阅产品技术规格，由于超出正常工作条件下的损坏，公司不予认可。