

环保型光敏传感器  
Environmentally friendly photosensitive sensor  
产品规格书  
Product specifications

客户名称 Customer	
日期 Date	
产品型号 Model	SMD1206-30
产品单号 Product number	

制作 Make	梁广进
核准 Approval	
客户承认签名 Customer Signatures	

销售中心

Sales center

地址：中国 深圳市 南山区 梦海大道 5109 号 卓越前海壹号 T3 座 32 层

Address: 32<sup>nd</sup> Floor, Tower T3, One Excellence, No.5109 Menghai Avenue, Nanshan District, Shenzhen, China

主页 Website: [www.nysenba.com](http://www.nysenba.com)

电话 Tel: 86-755-82594756 18929323299

传真 Fax: 86-755-82594762

## ■ 产品功能

### Product function

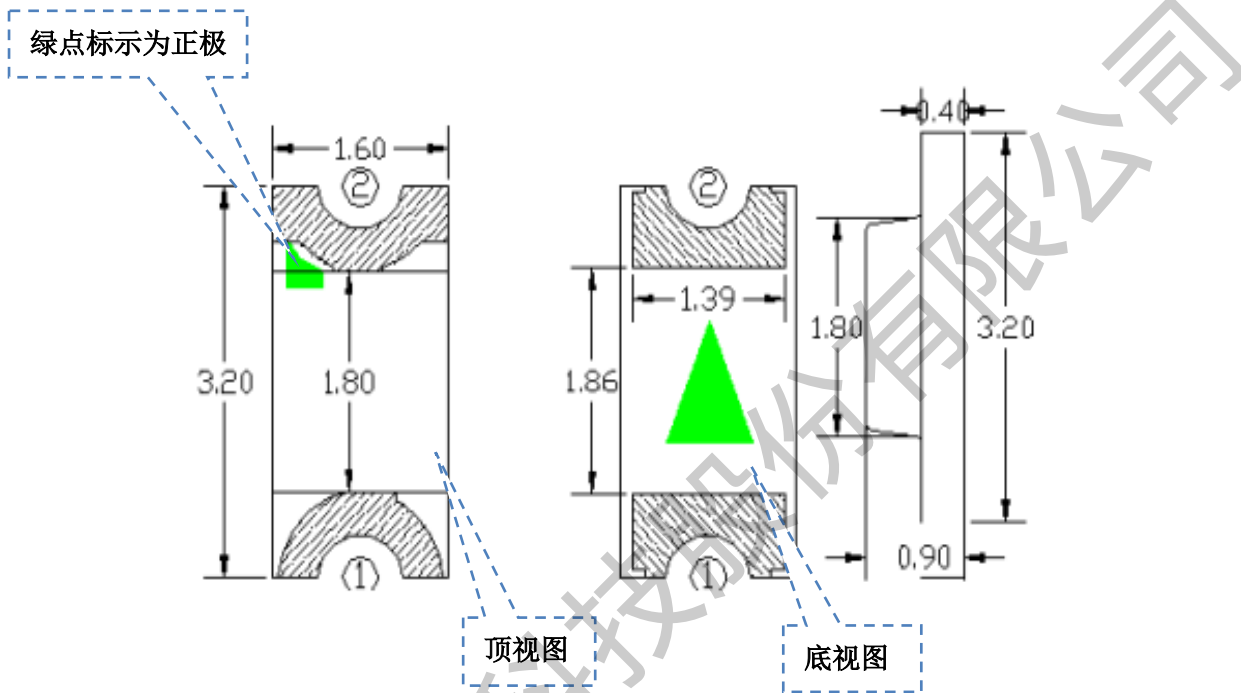
1. 替代传统光敏电阻 (CdS), 不含镉、铅等有害物质, 符合欧盟 ROHS 标准  
Replace Photoresistors(Cds),RoHS Compliance/Pb-free/Cd-free.
2. 自动调节背景光, 如 LCD, 手机, 照相机, 电脑摄像头等  
adjust background light automatically,LCD,mobile phone,camera,Computer Camera etc.
3. 适用于各种光控照明产品和光控玩具: 如小夜灯等  
Suitable for all kinds of light control products and light control toys,such as night lamp etc.
4. 适用于各类光控红外检测测试设备等  
Suitable for all kinds of infrared light detection and testing equipment

## ■ 产品特性

### Product Features

1. 峰值感光波长850nm  
Peak sensitive wavelength 850nm
2. 低功耗  
Low Power Consumption
3. 高可靠性  
High reliability
4. 批量一致性好, 完全解决灯起动过早或一致性不好等现象  
Perfect consistency, completely solve the problems of early start or poor consistency of the lamp.
5. 响应速度快, 性能稳定, +85°C高温/65%高湿条件下老化1000H起动点不漂移  
Fast response, stable performance, no drift at 1000h starting point under + 85 °C/ 65% humidity condition
6. 可按要求提供不同外型尺寸, 方便安装于产品的任何位置  
Size customized, easy for Installation.

■ 产品外观尺寸图 Product Dimensions



注 Note:

1. 引脚极性标示：“1” 负极（发射极），“2” 正极（集电极）  
"1" negative "2" positive  
所有尺寸为毫米（mm），未指定公差为：±0.1mm  
Unit: mm± 0.1mm
2. 胶体外观颜色以样品实物为准  
The appearance color of colloid shall be subject to the sample
3. 规格若有变动，恕不另行通知  
Specifications are subject to change without notice

■ 最大额定值 (Ta=25°C) MAXIMUM RATING (TA = 25 ° C)

参数名称 Parameter name	符号 Symbol	额定值 Rating	单位 Unit
集电极-发射极电压 Collector-Emitter Voltage	$V_{CEO}$	20	V
发射极-集电极电压 Emitter-Collector Voltage	$V_{ECO}$	5	V
功耗 Consumption	$P_c$	70	mW
工作温度 Working temperature	$T_{opr}$	-25~+85	°C
储存温度 Storage temperature	$T_{stg}$	-40~+100	°C

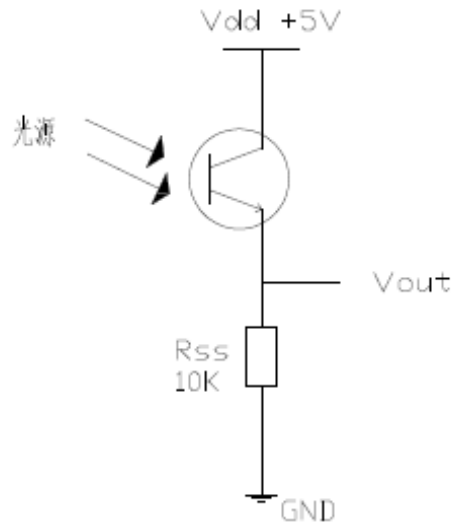
■ 光电特性 (Ta=25°C) ELECTOR-OPTICAL CHARACTERISTICS (TA = 25 ° C)

参数名称 Parameter	符号 Symbol	测试条件 Testing conditions	最小值 Min.	典型值 Typical Value	最大值 Max.	单位 Units
光电流 Photo-current	$I_L(1)$	$V_{DD}=5V, E_V=10Lux$	18	25	40	$\mu A$
	$I_L(2)$	$V_{DD}=5V, E_V=50Lux$	~	80	~	$\mu A$
	$I_L(3)$	$V_{DD}=5V, E_V=100Lux$	~	220	~	$\mu A$
暗电流 Dark current	$I_{CEO}$	$V_{DD}=5V, E_V=0Lux$	~	~	0.2	$\mu A$
感光峰值波长 Photosensitive peak wavelength	$\lambda_p$	\		850		nm
感光波长范围 Sensitivity wave range	$\lambda_d$	\	450	~	1050	nm
集电极-发射极电压 Collector-emitter Breakdown Voltage	$B_{vceo}$	$I_c=100\mu A$ $E_e=0mW/cm^2$	~		70	V
发射极-集电极电压 Emitter-Collector Breakdown Voltage	$B_{veco}$	$I_E=10\mu A$ $E_e=0mW/cm^2$	~		30	V
集电极发射极饱和电压 Collector-Emitter saturation voltage	$V_{ce(sat)}$	$I_c=2mA$ $E_e=1mW/cm^2$	~		0.4	V
响应时间 Response time	开启时间 Rise time	$V_{CE}=5V,$ $I_C=1mA$ $R_L=10k\Omega$	10			$\mu s$
	关闭时间 Fall time		15			

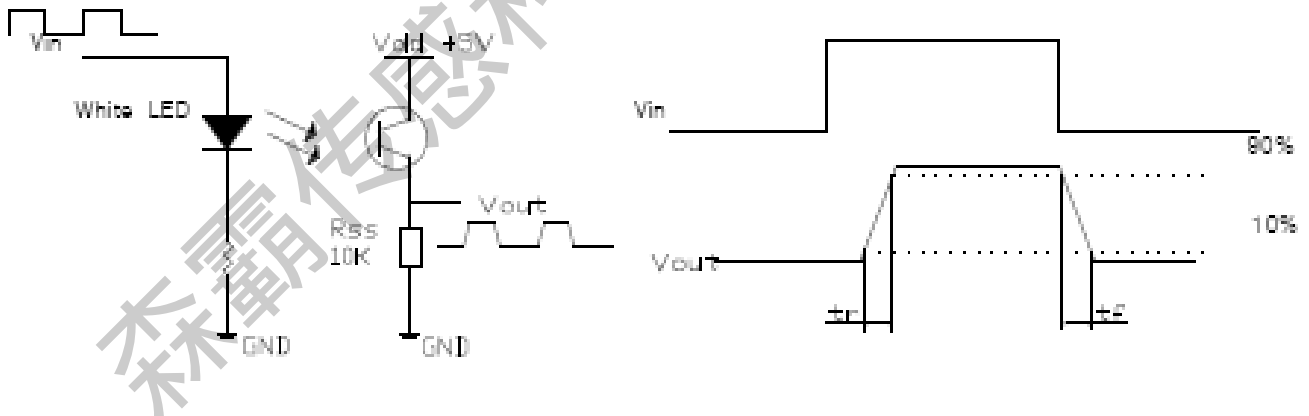
注：测试光源采用 2850K 色温 LED.

Notes: The test light source adopts 2850k color temperature led

■ 测试原理图 Test schematic

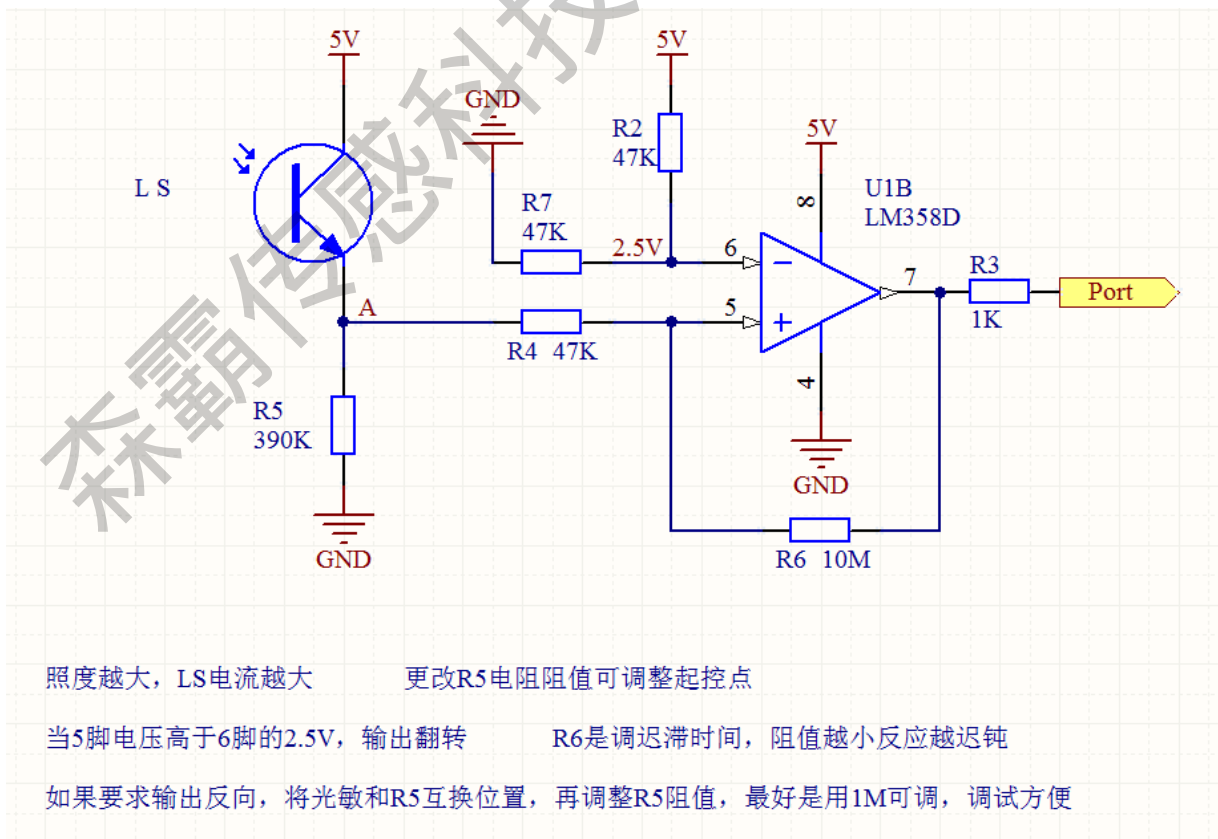
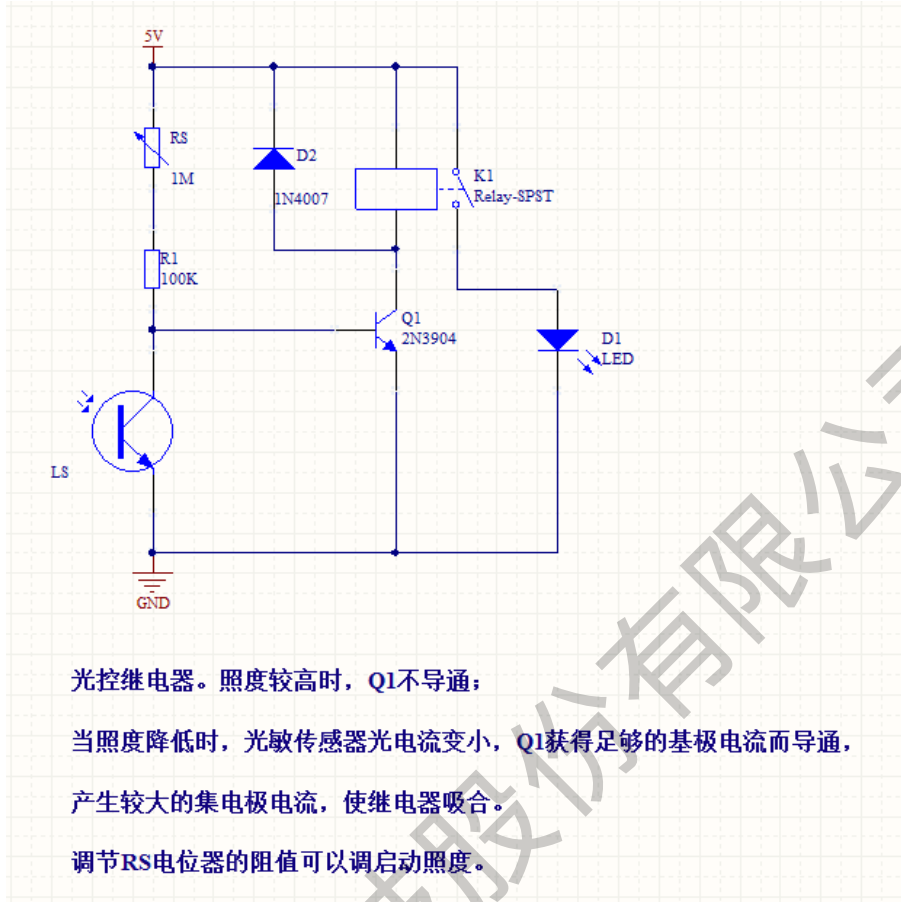


光电流 Photocurrent =  $V_{out} / R_{ss}$   
 \*  $R_{ss}$  推荐使用高稳定电阻。  
 High stable resistance is recommended for  $R_{SS}$

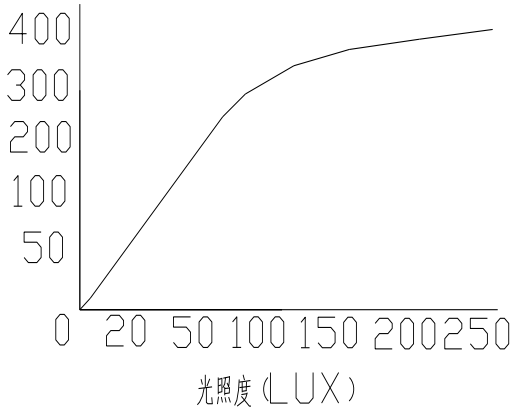


开关时间测量方法 Measurement method of switching time

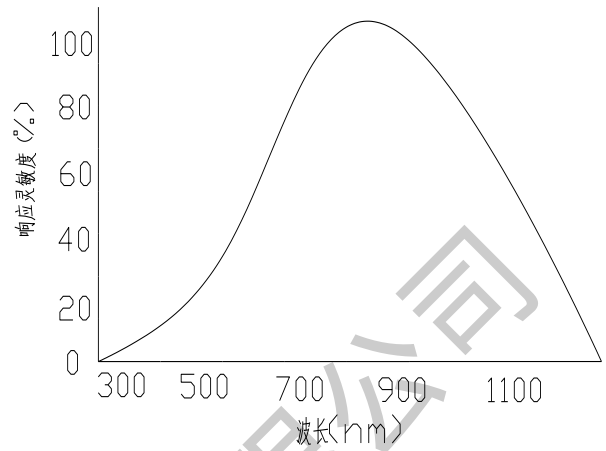
■ 参考电路 Reference circuit



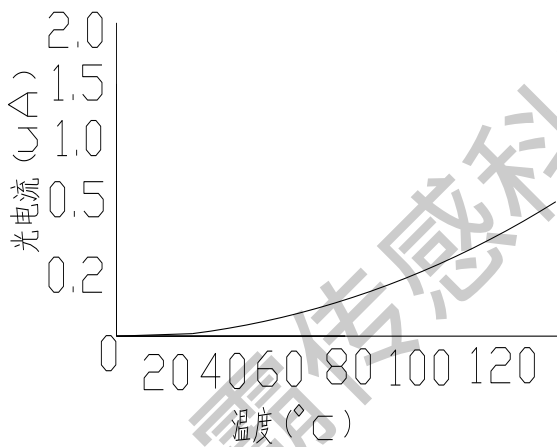
■ 光电特性曲线 Typical photoelectric characteristics curves



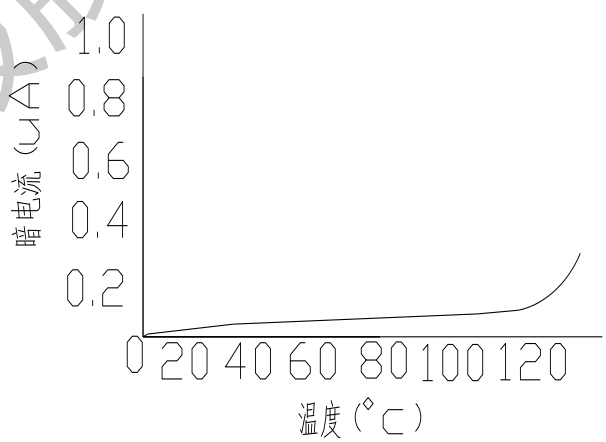
光照度与光电流变化图  
Change of illuminance and photocurrent



感光波长图  
Photowavelength map



温度与亮电流变化图  
Temperature and photocurrent diagram



温度与暗电流变化图  
Temperature and dark current diagram

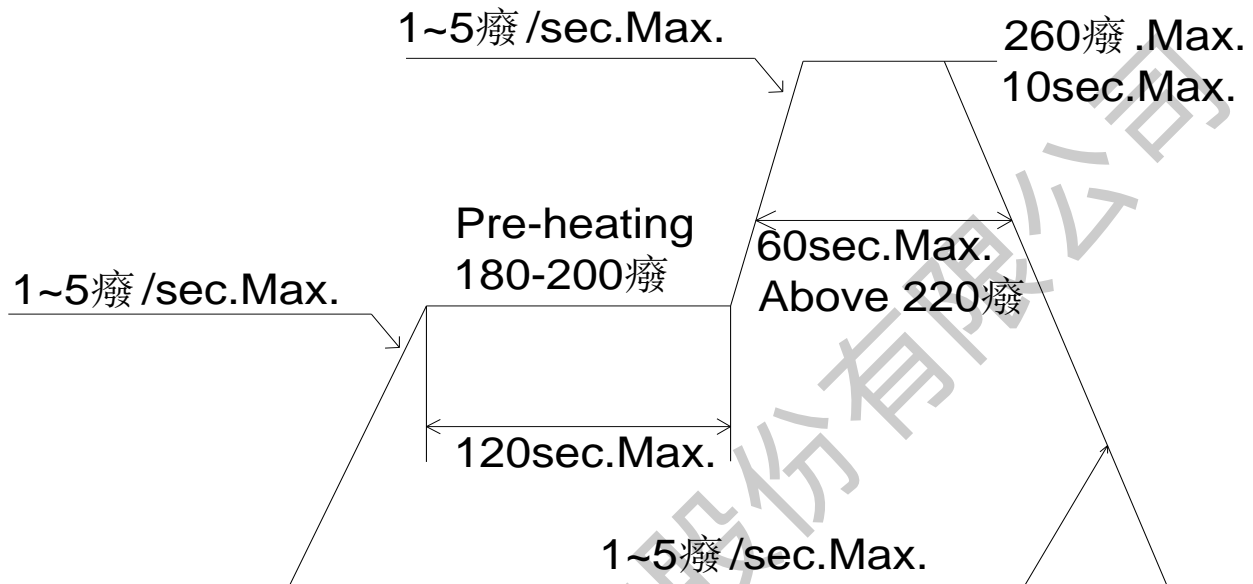
■ 可靠性实验 Reliability Test

测试项目 Test Parameter	参考标准 Reference Criterion	测试条件 Test Condition	时间 Time	样品数 Quantity	允收/ 拒收 Ac/RE
耐焊接热 Resistance to Solder Heat	JESD22-B106	260°C±5°C	10sec	30PCS	0/1
冷热循环 Thermal Cycle	JESD22-A104	+110°C(15min) 5min -15°C(15min)	50 cycles	30PCS	0/1
冷热冲击 Thermal Shock	JESD22-A104	+120°C(30min) -45°C(30min)	50 cycles	30PCS	0/1
高温存储 High Temperature storage	JESD22-A103	+100°C	1000H	30PCS	0/1
低温存储 Low Temperature storage	JESD22-A119	-40°C	1000H	30PCS	0/1
高温高湿 High Temperature and High Humidity Test	JESD22-A101	90°C & 85%R.H	168H	30PCS	0/1
寿命测试 Life Test	JESD22-A108	VCE=5V	1000H	30PCS	0/1



■ 建议焊接温度曲线 Soldering Profile Suggested

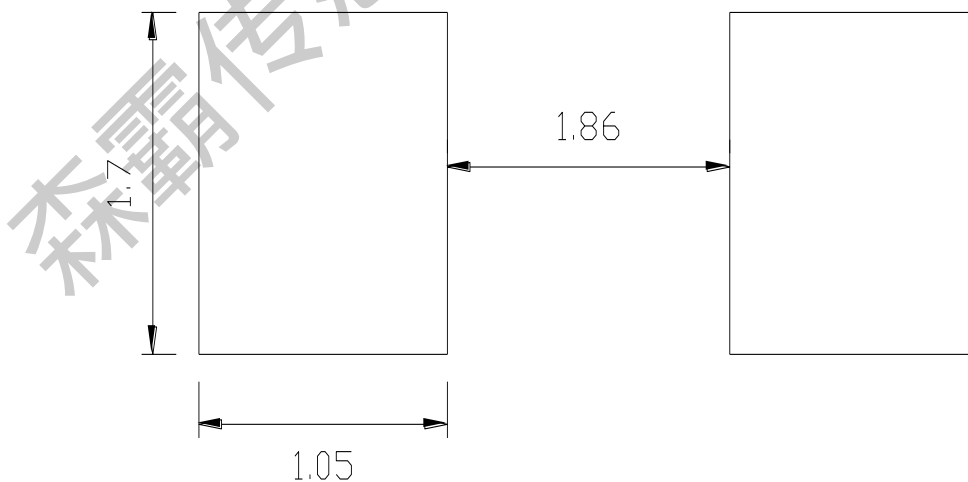
lead-free solder



注：本产品最多只可回焊两次,且在首次回焊后须冷却至室温之后方可进行第二次回焊.

**Notes:** Number of reflow process shall be less than 2 times and cooling process to normal temperature is required between first and Second soldering process.

■ 推荐焊盘式样 (单位:毫米) Recommended Soldering Pattern (Units:mm)





## ■ 使用注意事项 Precautions

### ● 产品储存

1. 打开原始包装后，建议储存环境为：25℃±10℃，湿度 60%以下。

After opening the original package, the recommended storage environment is 25 °C ± 10 °C, and the humidity is below 60%.

2. 打开包装后，需在 12H 内用完，如没用完需做除湿处理，条件为 60℃/12H。

After opening the package, it shall be used up within 12h. If it is not used up, it shall be dehumidified under the condition of 60 °C / 12h.

### ● 焊接 Welding

1. SMD 光敏三极管灌封胶较软，外力易损坏发光面及塑料壳，焊接时要轻拿轻放。

SMD phototriode is soft and easy to damage the luminous surface and plastic shell by external force. It should be handled lightly when welding.

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（手工焊接只可焊接一次）烙铁最大功率应不超过 25W。

Manual welding is only recommended for repair and heavy industry; The maximum welding temperature should not exceed 300 degrees, and must be completed within 3 seconds (manual welding can only be welded once) soldering iron maximum power should not exceed 25W.

3. 焊接过程中，严禁在高温情况下碰触胶体；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。

During the soldering process, do not touch the lens at high temperature, After soldering, any mechanical force on the lens or any excessive vibration shall not be accepted to apply, also the circuit board shall not be bent as well.

4. 本产品为静电敏感器件，所有静电和电涌会损坏产品，要求使用时佩戴防静电腕带，所有的装置、设备、机器、桌子、地面都必须防静电接地。

This product is an electrostatic sensitive device. All static electricity and surge will damage the product. It is required to wear anti-static wrist strap when operating. All devices, equipments, machines, tables and ground must be anti-static grounded.

### ● 清洗 Cleaning

1. 不能用超声波清洗，建议使用纯酒精擦拭或浸渍（浸渍不超过 1 分钟）在室温下放置 15 分钟再使用，清洗后，确保光敏发光面干净，异物会影响光电流输出。

It is not allowed to use ultrasonic cleaning. It is recommended to use pure alcohol to wipe or dip (dip for no more than 1 minute) and place it at room temperature for 15 minutes before use. After cleaning, make sure that the light-emitting surface is clean, and foreign matters will affect the photocurrent output.

2. 应避免接触或污染天那水，三氯乙烯、丙酮、硫化物、氮化物、酸、碱、盐类，这些物质会损伤产品。

Do not contact or pollute Tianna water, trichloroethylene, acetone, sulfide, nitride, acid, alkali, salt, which may damage the product.