

深圳市鑫永诚光电科技有限公司
Shenzhen Newpoto Optoelectronic Technology Co., Ltd.

产品承认书
SPEC FOR APPROVAL

客户名称 Customer	
产品型号 Model	XYC-PT3A850AC-A7
承认编号 Part No.	PT060-A
编制日期 Compile Date	2017-07-13

核准(Approval)	审核(Checked)	编制(Edit)
谭起富	丁杰	陈创

客户确认(Customer Signatures)		

地址：深圳市宝安区福永镇大洋田福安第三工业城三期二栋

Address: Bldg 1, 3rd Phase, Fu'an Industrial City, Dayangtian, Fuyong Town, Baoan District, Shenzhen, China

电话(Tel): 0755—81459333

网址(Web site): <http://www.xycgd.com>

传真(Fax): 0755—29580358

邮箱(E-mail): xycgd888@163.com

目录 Contents

封面 cover	1
产品信息 Product information	3
极限参数 Absolute Maximum Ratings at (Ta=25°C).....	4
光学特性 Optical Characteristics (Ta=25°C).....	4
可靠性试验 Reliability Test	5
光电特性曲线 Typical photoelectric characteristics curves	6
产品外型尺寸 Size of products and dimensions	9
包装规格 Packing Specification	10
焊接 Soldering.....	11
使用注意事项 Precautions	13



鑫永诚 PT850 红外 LED 是一款高灵敏度的光敏传感器 插件式外型封装, 是传统 CDS 光敏电阻的理想替代产品。

NEW OPTOPT850 infrared LED is a high sensitivity of the optical sensor, in DIP package, is the ideal substitute for traditional CDS photosensitive resistor products

特性 Features

- 峰值波长 850nm Peak wavelength $\lambda_p=850\text{nm}$
- 高可靠性 High reliability
- 低功耗 Low Power Consumption
- 符合 RoHS RoHS compliant

应用 Applications

- 替代传统 CDS 光敏电阻 Instead of conventional CDS photosensitive resistors
- 适用于各类光控照明产品：如小夜灯等 Suitable for all kinds of light products: such as night lamp etc.
- 自动调节背景光：如 LCD、手机、照像机、电脑摄像头等 As LCD, phone, camera, computer camera etc.
- 控制各类光控影控玩具 Control all kinds of light controlled picture control toys
- 各类光控红外检测测试设备等 All kinds of light controlled infrared inspection and testing equipment

量身订制 Tailor made

- 品种齐全,生产周期短,小批量库存备货
Variety complete, production cycle is short, small batch inventory stocking
- 可按要求提供不同外型,角度,方便安装于产品的任何位置
Can be provided in different shapes, angles, easy to install in any position of the product
- 可按需求提供最佳的规格,以便让产品效果更好,更具市场竞争力
The best specifications can be provided in order to make the product better and more competitive

极限参数 Absolute Maximum Ratings at (Ta=25°C)

电气特性 Electrical characteristics	符号 Symbol	额定值 Rated Value	单位 Unit
集电极—发射极电压 Collector-emitter Breakdown Voltage	V _{CEO}	30	V
发射极—集电极电压 Emitter-Collector Breakdown Voltage	V _{ECO}	6	V
功耗 Power	PC	100	mW
工作温度 Operating Temperature	Topr	-30--+85	°C
储存温度 Storage Temperature	Tstg	-40--+100	°C

Note : * Pulse width ≤ 100μs, Duty ≤ 1%

光学特性 Optical Characteristics (Ta=25°C)

参数 Parameter	符号 Symbol	测试条件 Test Condition	最小 Min	典型 Typ	最大 Max	单位 Unit
感光峰值波长 Photosensitive peak wavelength	λ _p	\	--	850	--	nm
感光波宽范围 Sensitivity wave width	λ	\	400	--	1100	nm
集电极—发射极电压 Collector-emitter Breakdown Voltage	B _{vceo}	I _C =100μA E _e =0mW/cm ²	30	--	--	V
发射极—集电极电压 Emitter-Collector Breakdown Voltage	B _{veco}	I _E =10μA E _e =0mW/cm ²	6	--	--	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
光电流 Photocurrent	IL(1)	V _{CE} =5V v=10Lux	3	7	11	μA
	IL(2)	V _{CE} =5V E _v =30Lux	9	21	33	μA
	IL(3)	V _{CE} =5V E _v =100Lux	30	70	110	μA
暗电流 dark current	I _{ceo}	V _{CE} =5V E _v =0Lux	--	--	0.1	μA
开启时间 Opening time	t _r	V _{CE} =5V I _C =1mA	15			us
关闭时间 Closing time	t _f	RL=1000Ω 成	15			

可靠性试验 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	Ac/Re
耐焊接热 Resistance to Soldering Heat	JESD22-B106	260°C±5°C	10 sec	22PCS	0/1
冷热循环 Temperature	JESD22-A104	+100°C(15min) 5min -10°C(15min)	50 cycles	22PCS	0/1
冷热冲击 Thermal Shock	JESD22-A104	+105°C(30min) 5min -45°C(30min)	50 cycles	22PCS	0/1
高温贮存 High Temperature storage	JESD22-A103	+100°C	1000H	22PCS	0/1
低温贮存 Low Temperature storage	JESD22-A119	-40°C	1000H	22PCS	0/1
寿命测试 Temperature Operating Life	JESD22-A108	VCE=5V	1000H	22PCS	0/1
高温高湿 High Temperature High Humidity	JESD22-A101	85°C/85%	168H	22PCS	0/1

光电特性曲线 Typical electro-optical characteristics curves

感光特性曲线 Photographic property Curve

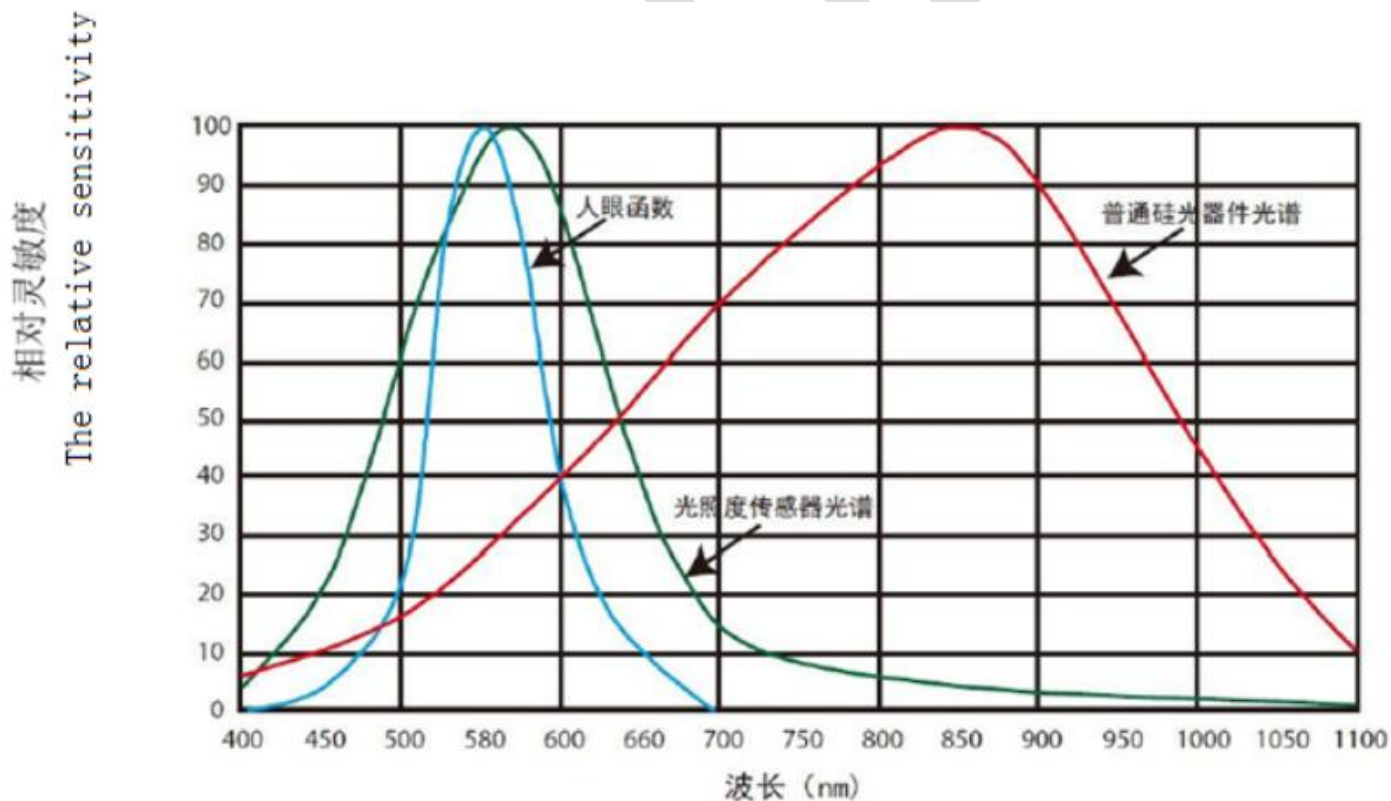
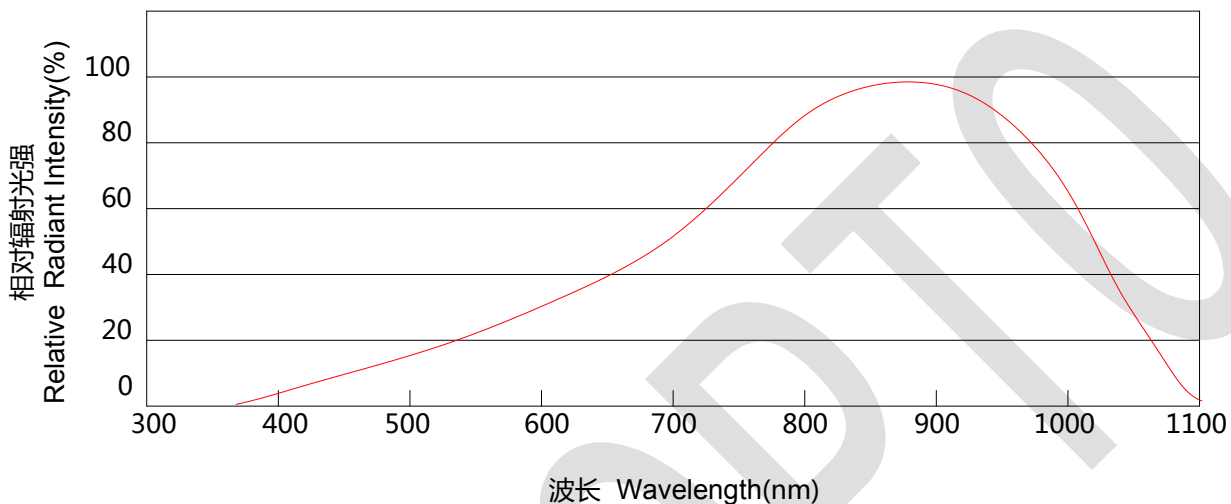
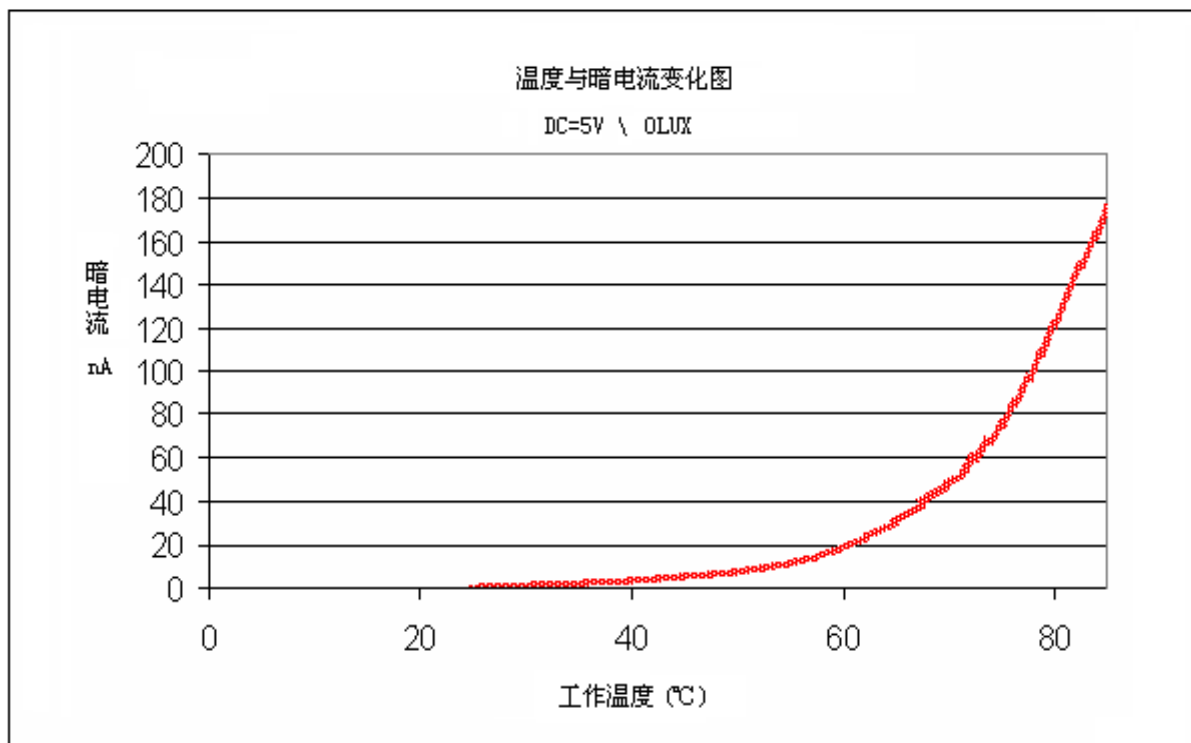
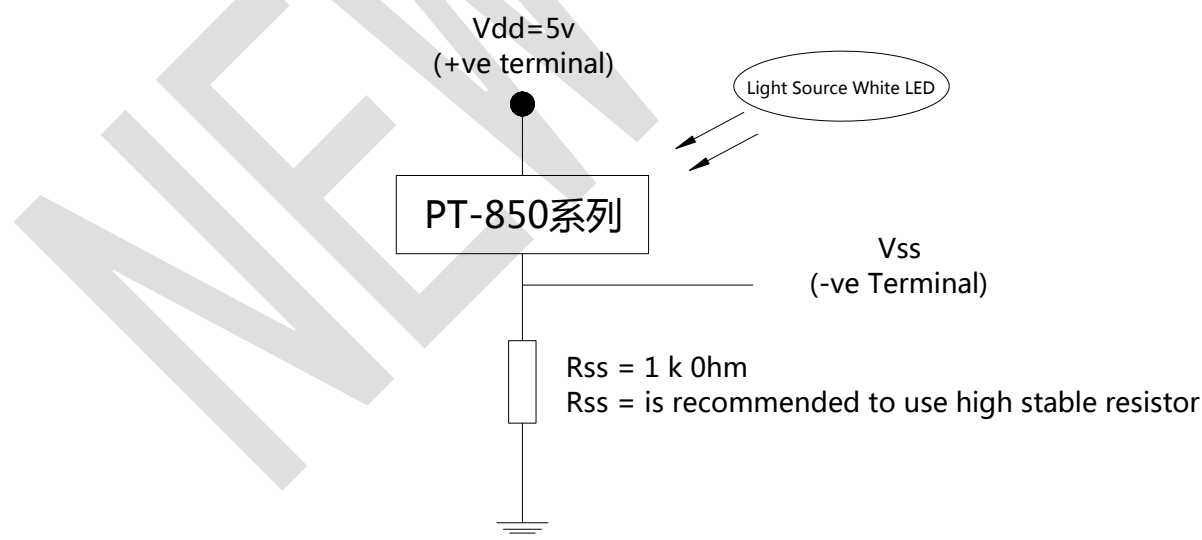


图 1-1 Photoreceptor curve XYC/PT850 Visible light sensor curve

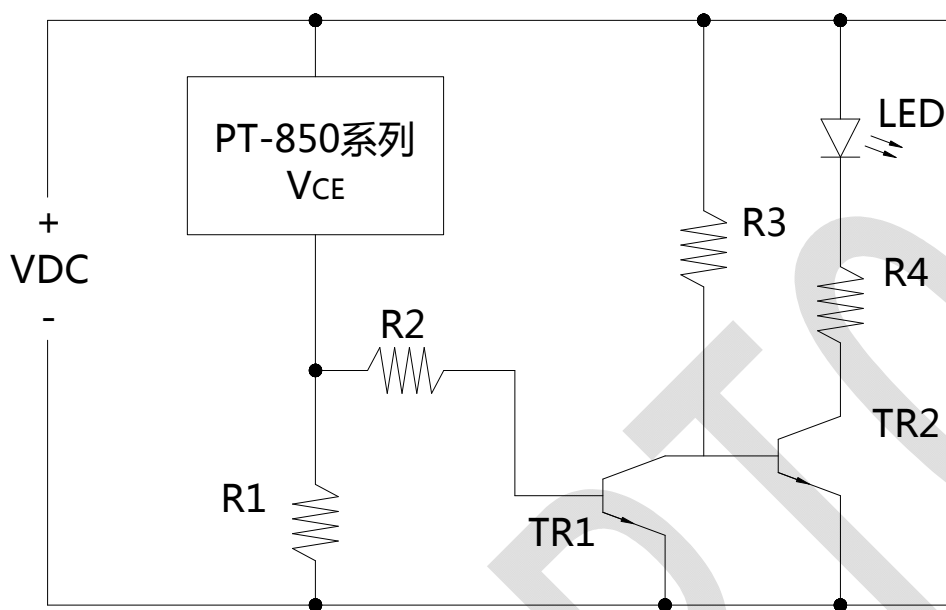
Environment temperature VS Dark



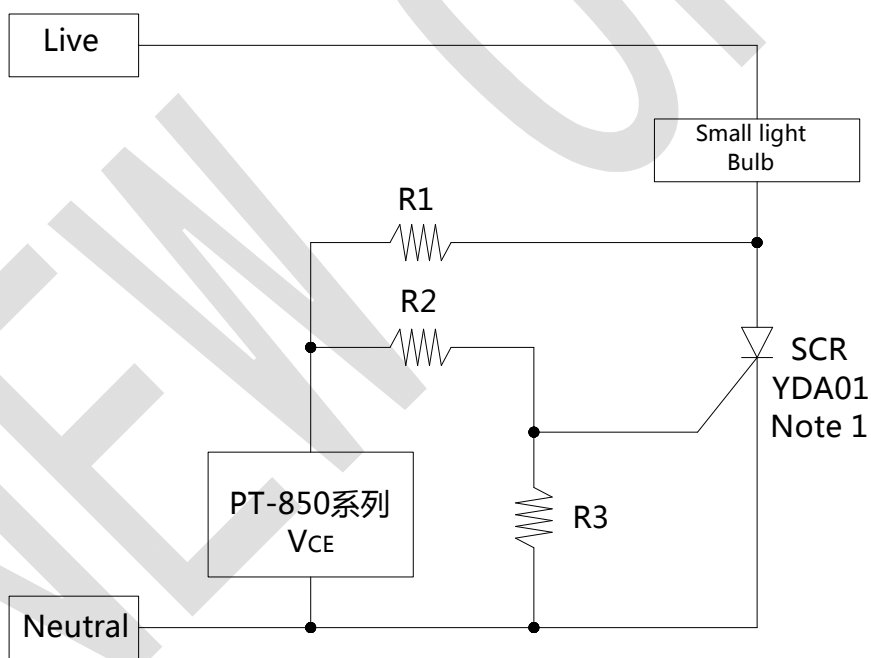
一般应用示意图



LED通用驱动电路

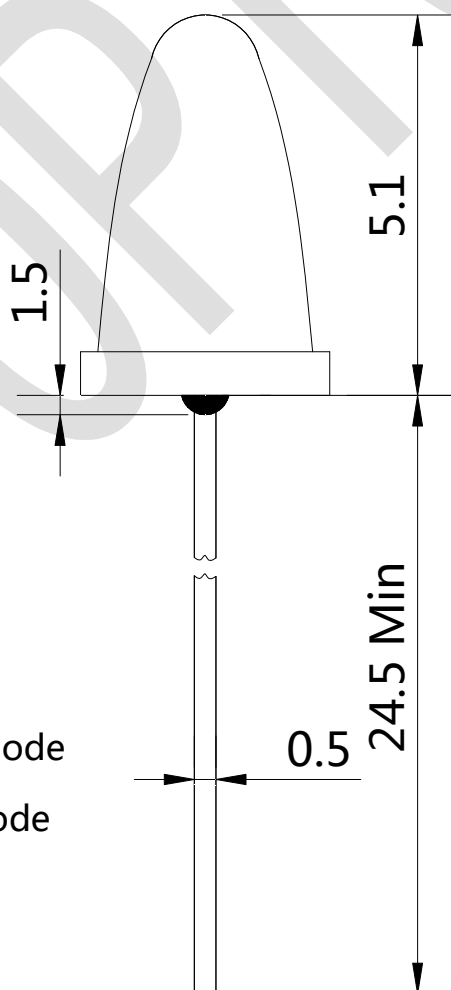
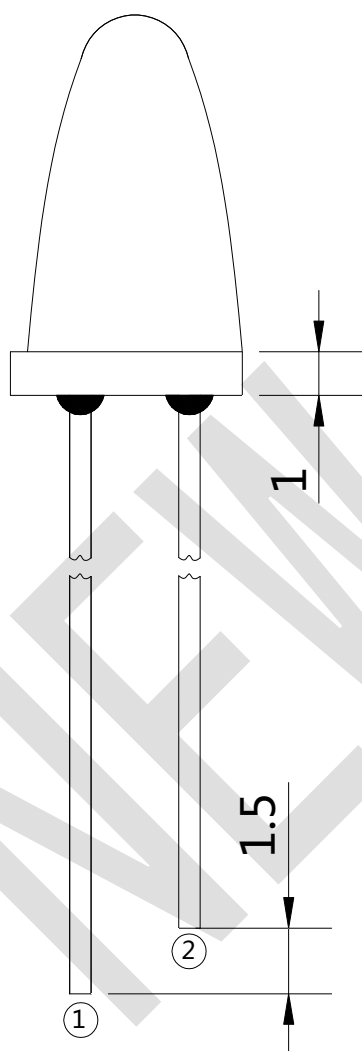
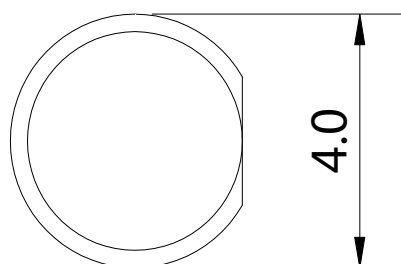


当光照低于光照阈值时，TR1三极管关闭，TR2三极管导通，LED导通。当环境光照大于光照阈值时，TR1降低的电流并使TR2截止，LED不导通。



该电路需要一个敏感的可控硅。灯泡的电流是由敏感的可控硅开关空置。当光量超过阈值时，该Vdd与Vss引脚之间的电流转移了可控硅的栅极电流。光切换阈值可通过选择R2和R3不同的值进行调整。

产品外型尺寸 Package outline dimensions



- ① Cathode
- ② Anode

备注：所有尺寸单位均为 mm，如无特殊说明误差范围为±0.15mm

Note : All dimensions in mm,tolerance is ±0.15mm unless otherwise noted

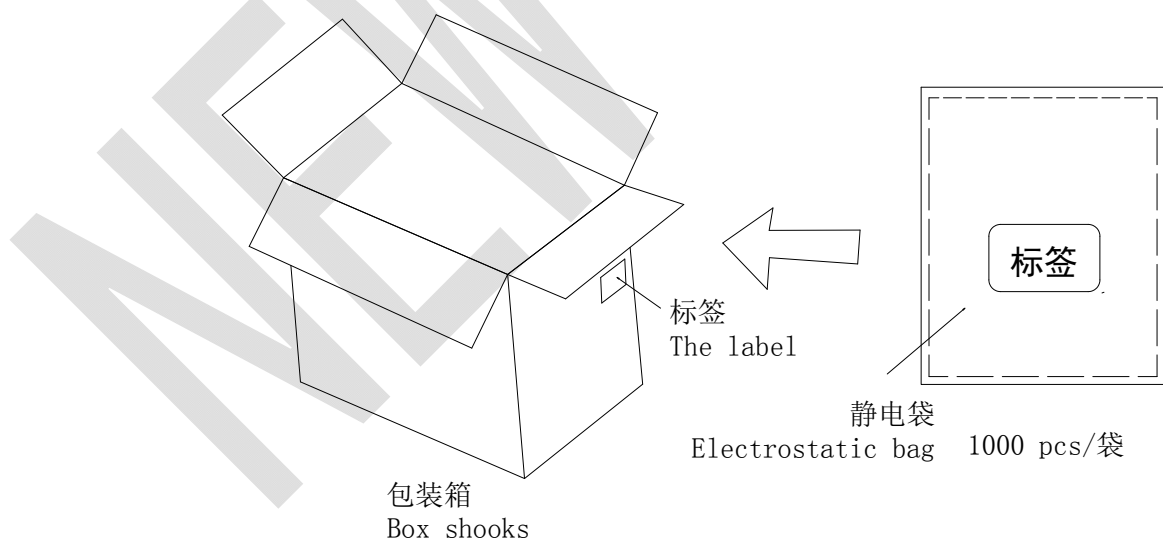
包装规格 Packing Specification

■ 标签规格 Label specification

 惠州市鑫永诚光电科技有限公司 鑫永诚光电	
Tel : 0752-7987222 Fax : 0752-7987000	
http://www.xycgd.com	
料号	Material Number
型号	Model Number
单号	Lot.Number
箱号	Box Number
数量	Quantity
日期	Date



■ 静电袋包装



焊接 Soldering

焊接过程中的不慎操作将会引起产品的损坏，请务必注意。焊接过程中应避免对产品支架或封装部分施加压力。焊接时，请保证焊接位置与封装树脂底部有一定的距离，该距离因不同的焊接方法而有所不同，请参照以下推荐焊接条件。

Be careful because damages always caused during soldering. Please note that stress to the leads and expose bulb should be avoided during soldering particularly when heated. When soldering, leave certain distance from soldering joint to base, the distance is determined by different soldering techniques. It is recommended that soldering be performed based on the following conditions.

推荐焊接条件 Recommended Soldering Conditions

焊接模式 Mode		固定形式 Fixed form
手工焊接 Hand Soldering	烙铁温度 Soldering Iron Temperature	最高温度 300°C(功率最大 30 瓦) 300°C Max(30w Max)
	焊接时间 Soldering Time	时间不超过 3 秒 3 sec Max
	焊接位置 Soldering Position	大于 3mm (从焊点到胶体) 3mm Min.(Form soldering joint to case)
波峰焊接 DIP Soldering	预热 PreHeat	最高温度 100°C 不超过 60 秒 100°C Max.60 sec.Max
	温度 Temperature	最高 260°C 260°C Max.
	焊接时间 Soldering Time	不超过 5 秒 5 sec Max
锡炉焊接 DIP Soldering	预热 PreHeat	最高温度 100°C 不超过 60 秒 100°C Max.60 sec.Max
	浸焊温度 PreHeat Temperature	最高 260°C 260°C Max.
	浸焊时间 Soldering Time	不超过 5 秒 5 sec Max
	焊接位置 Soldering Position	大于 2mm (从焊点到胶体) 2mm Min.(Form soldering joint to case)

- 本产品不适合做回流焊接。
It's unsuitable for circumfluence soldering.
- 手工焊接只可焊接一次。
The hand solder should be done only one time
- 器件外部温度在 40°C 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。
Handling of the SMD LED should be done when the package has been cooled down to below 40°C or less. This is to prevent LED failures due to thermal-mechanical stress during handing.
- 在焊接温度回到正常以前，必须避免使 LED 受到任何震动或外力
After soldering the LED should keep out off any shake or outer force before it come to normal temperature
- 在焊接后推荐使用酒精进行清洗，在温度不高于 30°C 的条件下持续 1 分钟，不高于 50°C 的条件下持续 30 秒。使用其他类似溶剂清洗前，请先确认使用的溶剂不会对 LED 的封装和环氧树脂部分造成损伤。
It is recommended that alcohol be used as a solvent for cleaning after soldering. Cleaning is to go under 30°C for 3 minutes or 50°C for 30 seconds. When using other solvents, it should be confirmed beforehand whether the solvents will dissolve the package and the resin or not.

注意：此一般指导原则并不适用于所有 PCB 设计和焊接设备的配置。具体工艺受到诸多因素的影响，请根据特定的 PCB 设计和焊接设备来确定焊接方案。

Note : This general guideline may not apply to all PCB designs and configurations of all soldering equipment. The technique in practice is influenced by many factors, it should be specialized base on the PCB designs and configurations of the soldering equipment.

使用注意事项 Precautions

感谢您使用深圳市鑫永诚光电科技有限公司的系列 LED 产品，为增进您对我公司产品特性的了解，也为方便您快速掌握产品的基本操作，为尽量减少或避免因人为等因素造成不必要的产品损坏，使其能够更好的为您的生产服务，特针对使用过程中的一些规范使用作相应说明，同时即使是同一规格 LED，在实际应用领域其可靠性与整体系统设计水平、作业方式、使用条件均相关。本使用说明不可能涵盖客户使用过程中可能碰到的所有问题，由此带来的不便，敬请谅解！

Thanks for using relevant LED products of Shenzhen Newpoto Optoelectronic Technology Co., Ltd. in order to enhance your understanding of the characteristics of our products, as far as possible to reduce or avoid unnecessary damage to the product due to human factors, and make it can better service your production. we give corresponding instructions, According to the characteristic in the process of standard use. At the same time, even if the same specifications LED, in the practical application field its reliability are related to overall system design level, mode of operation and conditions of use. This Instructions can't cover all questions may encounter during customer use process, We sincerely apologize for any inconvenience this may cause !

■ 产品声明 Product Declaration

- 使用本产品之前，请贵司务必预先进行测试，以便确认是否适合使用目的，产品介绍的用途并不保证不抵触任何专利，有关 LED 产品的进出口法律责任应由客户担负，请预先查清每个国家或地区的有关规定，产品可能会因性能提供或规格参数改变等缘故，恕不经预告更改，我们要求量产前签订正式的产品规格书

In order to confirm if it is right for the purpose, Pretest is necessary before use the product. This product presentation does not guarantee not contravene any patent. Relate to imports and exports LED product Legal liability should be responsible by customer please verify relevant provision about the LED product in your Target market. we may change specifications from time to time in the interest of product development, without prior notification or public announcement. An agreement of formal product specifications is required prior to mass production.

■ 储存 Storage

- 在温度不高于 30°C，湿度不高于 60%RH 的条件下，产品保存期限为 6 个月。将产品保存在密封的容器中并附带干燥剂可以在一定程度上延续产品的储存日期。不良的储存条件会导致产品引脚的腐蚀或产品性能的改变。

Under the storage conditions of 30°C or less and humidity less than 60%RH, the LEDs can be storage for 6months. Storage in a sealed container with moisture absorbent material can prolong the storage time to a certain extent bad storage conditions may cause the lead frames to corrode or degradation of LED characteristics. It is recommended that the LEDs be used as soon as possible.

- 开封后，产品必须 24 小时内使用完(建议工作环境温度不高于 30°C,湿度不高于 60%)，如未使用完，余料须存放在温度不高于 30°C,湿度不高于 10%的环境中。

After opening the package, the product should be soldered within 24 hours. If not, please store at 30°C or less and humidity less than 10%RH. It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60%RH.

- 对于尚未焊接的 LED,如果吸湿剂或包装失效,或者产品没有符合以上有效存储条件,烘烤可以起到一定的性能恢复效果. 烘烤条件:65±5°C,持续时间 24H.

If the moisture absorbent material has fade away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition : 65±5°C for 24 hours.

■ 静电 Static electricity

- 静电和电涌会导致产品特性发生改变，例如正向电压降低等，如果情况严重甚至会损毁产品，所以在使用时必须采取有效的防静电措施。所有相关的设备和机器都应该正确的接地，同时必须采取其他防静电和电涌的措施。使用防静电手环，防静电垫子，防静电工作服，工作鞋，手套，防静电容器，都是有效的防止静电和电涌的措施。

Static electricity of surge voltage damages the LED .Damaged LED will show some unusual chrematistics such as the forward voltage becomes lower or the LED do not light at the low current even not light. All devices equipment and machinery must be properly grounded. At the same time, it is recommended that wrist Bands or anti-electrostatic gloves anti-electrostatic containers be used when dealing with the LED.

■ 设计建议 Design Consideration

- 设计电路时，加载在光敏管 LED 两端的电压不能超过规定的最大值，同时还需要使用分压电阻，以便产品在有光照的情况下将电流变化转换为电压变化，以电压变化进行结果输出从而达到电路控制的效果。

The design of the circuit, the voltage loaded on the photosensitive tube, both ends of the LED can not exceed the specified maximum, but also need to use pressure resistance, so that the product in the light of the change of current is converted to voltage changes in output voltage changes so as to achieve the effect of control circuit.

- 光敏管 LED 的特性容易因为其他电子元器件的发热和环境的温度的改变而发生变化。温度的升高会使电子的漂移运动加剧增大暗电流，影响原先产品的电路设计，所以在设计时应充分考虑散热的问题和使用环境的问题。

The characteristics of photosensitive tube LED easily because other electronic components of the heat and the environment temperature changes. High temperature will cause the electrons drift motion increases the dark current increases, affecting the original circuit design, so the design should take full account of the heat problem and environment problem.

■ 支架整形 Lead Forming

- 支架的整形必须在焊接之前进行。整形时，支架的弯曲位置必须至少在封装树脂底部 3mm 处，同时避免对同一位置进行多次的弯曲。

Any lead forming must be done before soldering, not during or after soldering. When forming leads ,the leads should bent at a point at least 3mm from the base of the expose bulb. Bending at the same point twice or even more should be avoided.

- 整形时请使用合适的工具固定支架，避免对树脂施加压力。特别是不能管脚与树脂的连接部分作为支点，这样产生的应力会直接对产品内部的发光结构造成损伤，导致产品特性的改变甚至损毁。

Please use proper tools to hold and bent the leads, do not use the base of the lead frame as a fulcrum during lead forming .Bending s tress to the base of the lead frame may cause character is tics change on LED or even break it.

- 基于同样的原因，在装配产品的时候，PCB 板上焊孔间的距离必须于产品的管脚间距严格匹配。

Just for the same reason, when mounting the LED on to printed circuit board, the holes on the circuit board should be exactly aligned with the leads of the LED.