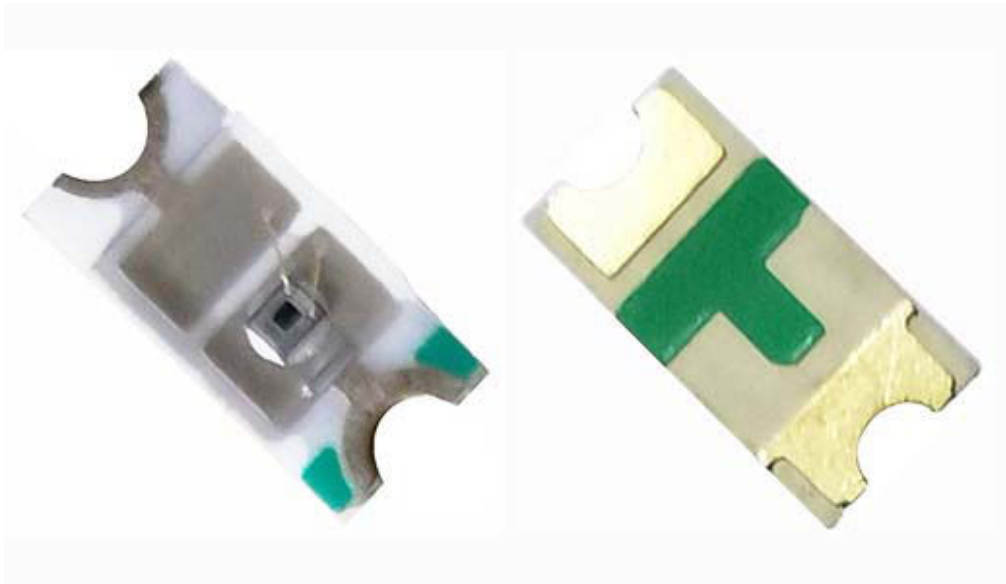


# 产 品 规 格 书

Product Specification

**光敏I C 传感器**  
**( P T 5 5 0 - 1 2 0 6 )**



## 1、描述/Describe :

该产品是一款低成本可见光传感器,它提供一个与光照强度成比例的输出电流。芯片内置一个光学滤波器和一个电流放大器,对可视光谱具有响应特性,这个响应特性近似人眼特点。/The product is a low cost visible light sensor, with a current output which is directly proportional to the light level. It has a built in optical filter to provide a response which is close to the human eye.

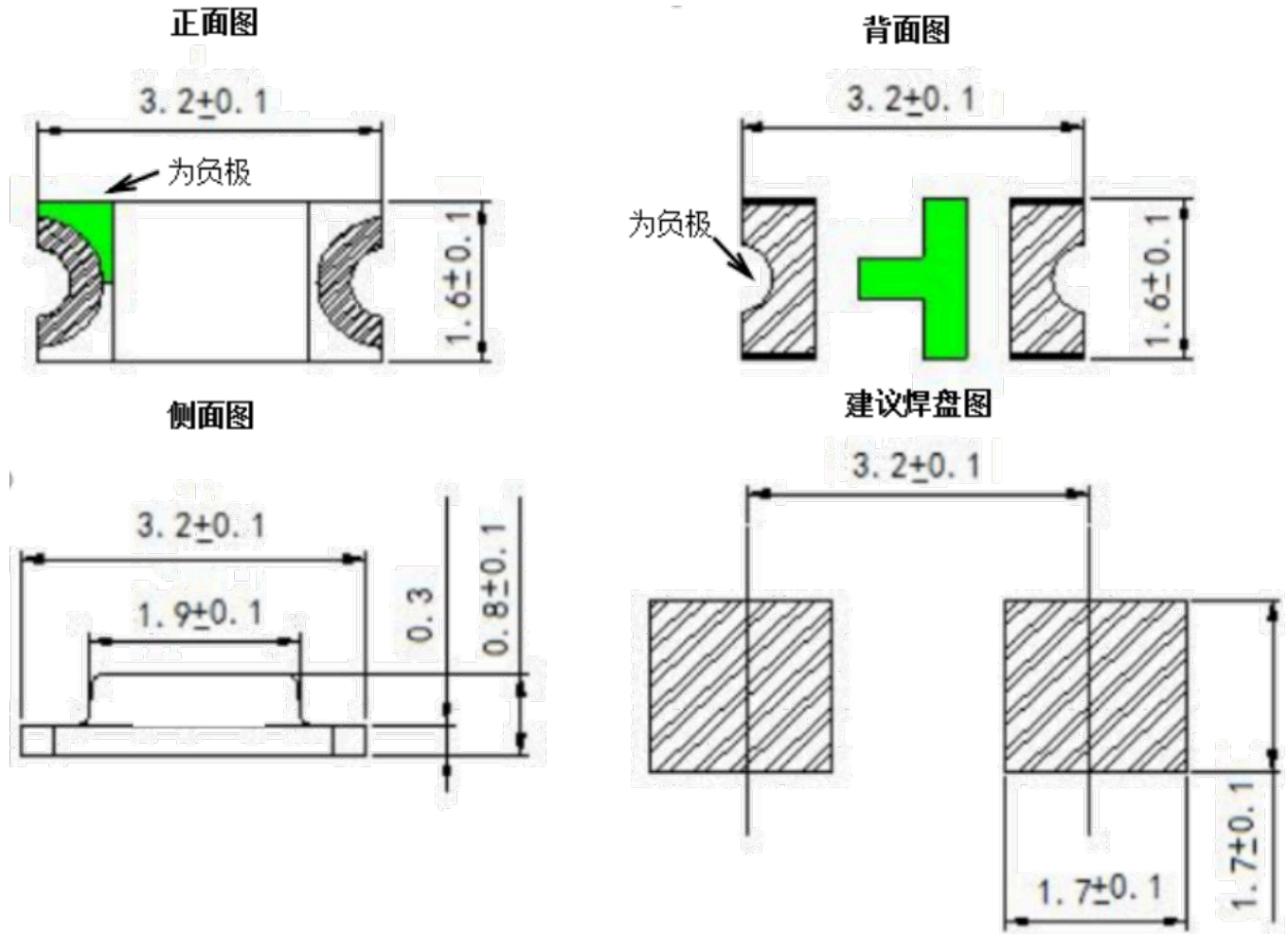
## 2、特征 /Feature:

- 2.1 内部 IC 集成芯片一致性非常好/Internal IC integration chip consistency is very good;
- 2.2 输出电流对光通量的高线性度/Current output highly linear Vs light level;
- 2.3 温度特性稳定,高温暗电流极小/Temperature stability, The high temperature dark current is very low;
- 2.4 低照度感应灵敏/Sensitive to low illumination;
- 2.5 高线性度感应曲线/High linearity induction curve;
- 2.6 替代传统 CDS 光敏电阻,不含镉、铅等有害物质,符合欧盟 ROHS 标准/Instead of the traditional DS photosensitive resistance, contain cadmium, lead and hazardous substances, ROHS compliant;

## 3、应用/Applications:

- 3.1 黎明、黄昏感应传感器/Dawn and dusk sensors
- 3.2 安全灯/Safety Light
- 3.3 笔记本显示器背光、手机、液晶电视/Notebook Monitor backlight, mobile phone, LCD TV
- 3.4 夜间照明灯/Night Light
- 3.5 控制各类光控影控玩具/Control all kinds of light control toys
- 3.6 各类光控检测测试设备等/All kinds of optical control test equipment, etc.

4、封装尺寸/Package Size:



注解/Notes: 1. 所有尺寸都以毫米为单位/All dimensions are in millimeters;

2. 公差为  $\pm 0.20$  毫米除非另有说明 (Tolerance is  $\pm 0.20$  mm unless otherwise noted)

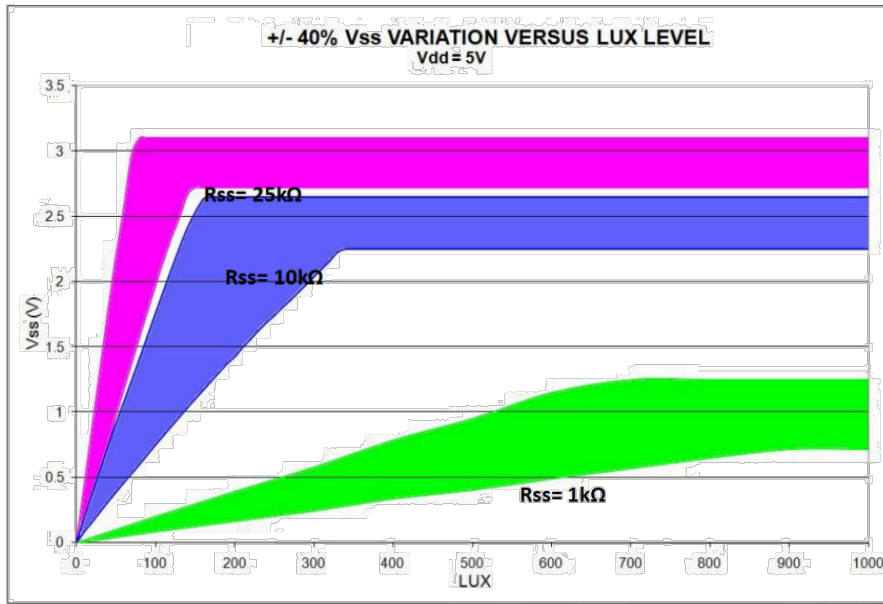
**5、绝对最大额定值 (TA=25° C) /Absolute Maximum Ratings (TA=25° C) :**

参数 Parameter	符号 Symbol	最大额定值 Rating	单位 Units
工作电压 Supply input Voltage	VCEO	1~10	V
工作环境温度 Operating Temperature	Topr	-30~+10 0	°C
储存环境温度 Storage Temperature	Tstg	-40~+85	°C
焊接温度 Lead Soldering Temperature	Tsol	260	°C
抗静电指数 Antistatic index	ESD	2500	V

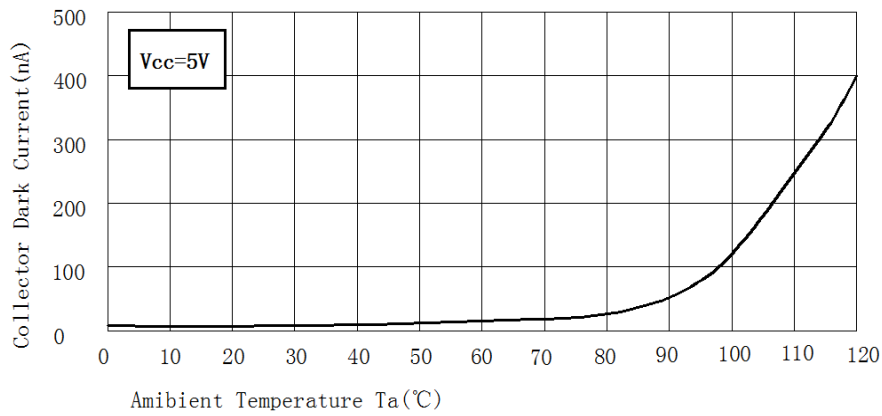
**6、光电特性 (TA=25° C) /Electro-Optical characteristics(At TA=25° C):**

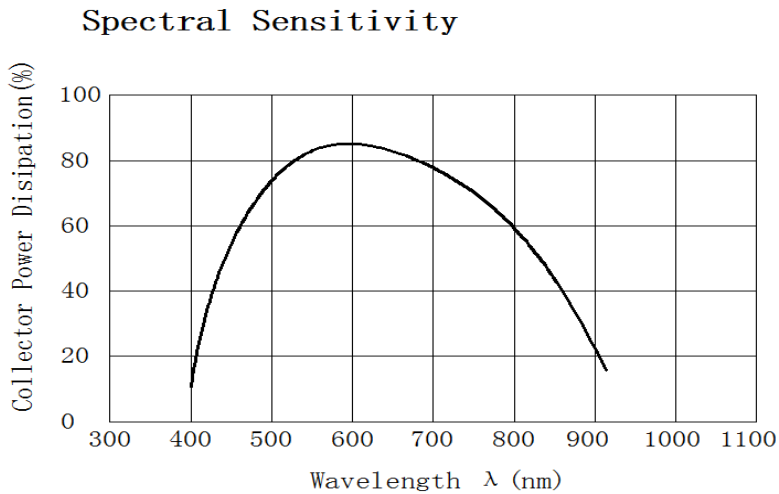
参数 Parameter	符号 Symbol	条件 Condition	最小值 Min.	中间值 Typ.	最大值 Max.	单位 Unit
接收光谱 Wavelength of Peak Sensitivity	$\lambda_p$	---	400	---	900	nm
工作电压 Working voltage	V <sub>c</sub>	---	1	---	10	V
启动延时 Rise time	T <sub>r</sub>	VCC=5V Ic=1mA	---	15	---	$\mu$ S
关闭延时 Fall Time	T <sub>f</sub>	RL=1000 $\Omega$	---	15	---	$\mu$ S
暗电流 Collector Dark Current	I <sub>d</sub>	E <sub>v</sub> =0Lux T=85°C	---	---	40	nA
亮电流 On StatCollector Current	I <sub>l</sub> (1)	E <sub>v</sub> =5Lux 590nm Vcc=5V	12	15	18	$\mu$ A
	I <sub>l</sub> (2)	E <sub>v</sub> =10Lux 590nm Vcc=5V	35	40	45	$\mu$ A
	I <sub>l</sub> (3)	E <sub>v</sub> =30Lux 590nm Vcc=5V	120	130	140	$\mu$ A

7、典型特性曲线/Typical characteristics curves:

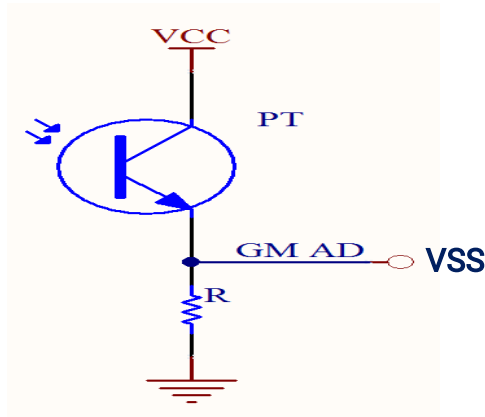


Collector Dark Current vs. Ambient Temperature





## 8、一般应用电路/General application circuits



## 9、使用注意事项/Precautions:

### 8.1、温度保护: / The safe temperature for LEDs working:

因为半导体温漂特性, 本产品建议适用于在环境温度 85°C 以下场合应用。客户需全面考量本光敏产品在不同环境下及不同应用产品时的适用性, 我司不承担由于客户在不同应用情形下而产生的风险及损失。 / Because of the temperature drift of the semiconductor, this product is suitable for use in the environment temperature 85 degrees celsius. Customers need to fully consider the application of this photosensitive products in different environments and different applications, I do not assume the company due to the customer in different applications and the risk of.

8.2、存储要求: 1.1 推荐储存环境: 温度: 5° C – 30° C ; 湿度: 相对湿度 60% 以下; / Storage requirements: 1.1 Recommended storage environment: temperature: 5 °C -30 °C; Humidity: Relative humidity below 60 %

8.3、防潮袋密封包装储存时间为 15 天, 起始时间以包装标签日期为准, 包装袋封口良好并无漏气现象, 如超过 15 天的 LED 需放进 65 ± 5°C; 相对湿度 ≤ 10%RH 的烤箱烘烤, 烘烤时间: 24 小时; / The storage time of the waterproof bag sealed packaging is 15 days. The starting time is based on the

date of the packaging label. The packaging bag has a good sealing and no leakage. For example, LEDs over 15 days need to be put into  $65 \pm 5^\circ\text{C}$ ; Relative humidity  $\leq 10\%$  RH oven baking time: 24 hours □

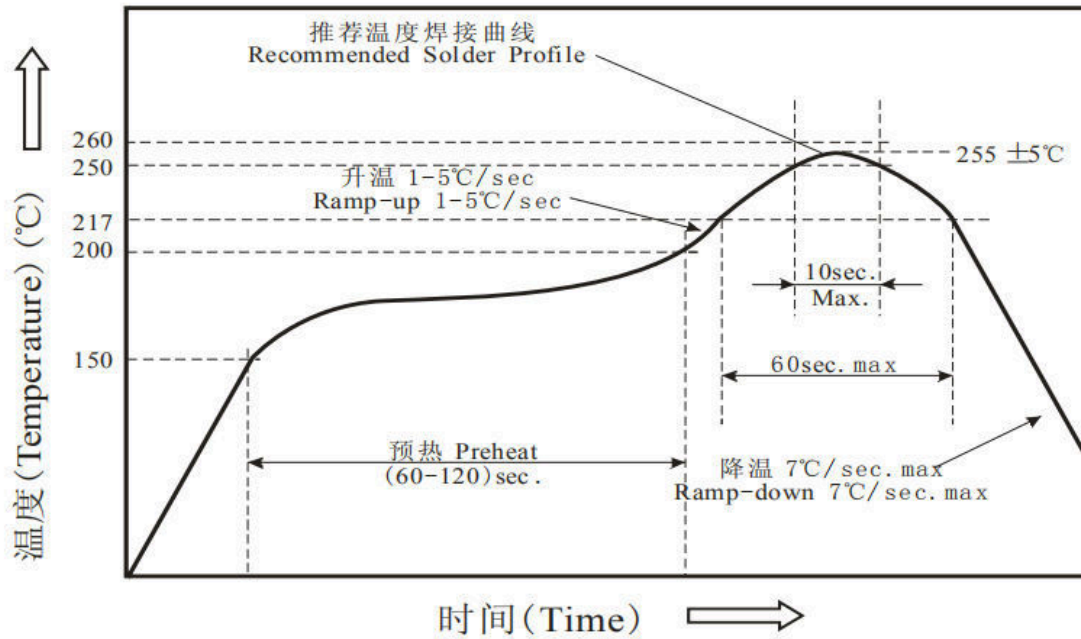
8.4、表面贴装器件(SMDs)属于潮湿敏感性元件,空气中的湿气通过扩散渗透到产品中。当 SMD 元件焊接到电路板上的过程是将其通过温度为  $150^\circ\text{C}$ – $260^\circ\text{C}$ 的回流焊,在高温状态下,渗入其中的湿气快速膨胀产生足够的蒸汽压力损伤或毁坏 LED 元件,从而出现材料内胶裂、分层或金线损失等可靠性失效问题; /Surface mount devices(SMDs) are moist sensitive elements, and moisture in the air penetrates the product through diffusion. When the SMD component is welded to the circuit board, it is welded through a return welding at a temperature of  $150^\circ\text{C}$  - $260^\circ\text{C}$ . At a high temperature, the moisture that infiltrates it rapidly expands to produce enough steam pressure damage or damage to the LED component. Therefore, there are reliability failure problems such as internal cracking, delamination or gold wire loss □

8.5、除潮烘烤条件:低温除湿,即去除铝箔袋后将料盘放置在柜式干燥箱内进行  $65 \pm 5^\circ\text{C}$ /相对湿度 $\leq 10\%$ RH,烘烤时间 $\geq 24$ 小时的除湿作业(如属热风烤箱则建议除湿时关闭烤箱进风口开关,关键确保箱内相对湿度 $\leq 10\%$ RH)!且回温过程必须在干燥的环境下进行!建议产品除湿后在12个小时内完成贴片固焊作业; /Dehumidification baking conditions: low temperature dehumidification, that is, after removing aluminum foil bags, the tray is placed in a cabinet drying box for  $65 \pm 5^\circ\text{C}$  / relative humidity of  $10\%$  RH, The baking time is a 24-hour dehumidification(in the case of a hot air oven, it is recommended to close the oven inlet switch when dehumidifying, and the key is to ensure that the relative humidity in the box is  $10\%$  RH)! And the warming process must be carried out in a dry environment! Recommends that the product be dehumidified and finished within 12 hours □

8.6、产品拆封后,LED 在温度 $\leq 30^\circ\text{C}$ ,相对湿度 $\leq 60\%$ RH 的条件下,请在12H内使用完,若没有使用完的产品需以  $65 \pm 5^\circ\text{C}/24\text{H}$  除潮后密封,建议放入干燥柜中存放; /After the product is unsealed, the LED is used within 12H under conditions of temperature  $\leq 30^\circ\text{C}$  and relative humidity  $\leq 60\%$  RH. If the product is not used, it must be sealed after dehumidification with  $65 \pm 5^\circ\text{C} / 24\text{H}$ . Suggestions for storage in drying cabinets □

8.7、回流焊注意事项: /Attention to Reflow Welding □

8.7.1、无铅锡膏的温度曲线建议,作业前检查回流焊设备的峰值温度/时间是否控制在  $255+0\text{~-}5^\circ\text{C}/\leq 10$  秒! /The temperature curve of lead-free solder paste is recommended. Before operation, check whether the peak temperature / time of the reflux welding equipment is controlled at  $255+0\text{~-}5^\circ\text{C} / <\text{UNK}> 10$  seconds!



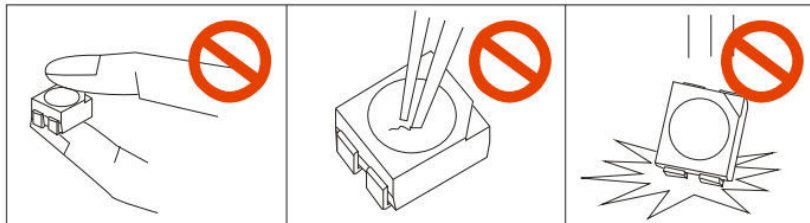
8.7.2、回流焊接最多只能进行一次。/Reflow soldering should not be done more than one time.

8.7.3、焊接期间, 加热时不要在 LED 上添加任何压力; /Do not add any pressure to the LEDs when heated during welding □

8.7.4、在焊接完成后,待产品温度下降到室温后, 再进行其他处理。/After soldering, do not deal With the product before its temperature drop down to room temperature.

8.8、其他注意事项: /Other points of note:

8.8.1、直接用手拿取产品不但会污染封装树脂表面, 也可能由于静电等因素导致产品性能的改变。过度的压力也可能直接影响封装内部的管芯和金线, 因此请勿对产品施加过度压力, 特别当产品处于高温状态下, 例如在回流焊接过程中。/The direct use of hand-delivered products will not only contaminate the resin surface, but also may cause changes in product performance due to static electricity and other factors. Excessive pressure may also directly affect the inner core and gold wire of the package, so do not exert excessive pressure on the product, especially when the product is at high temperature, such as during reflow welding.





8.8.2、LED 环氧树脂封装部分相当脆弱，请勿用坚硬、尖锐的物体刮、擦封装树脂部分。在镊子夹取得时候也应当小心注意。/LED epoxy resin packaging parts are quite fragile, do not use hard, sharp objects to scrape, wipe the resin parts. Care should also be taken when getting tweezers.

8.8.3 不同 BIN 号之 LED 建议分开使用，若需安装在同一个组件时，请先确认是否可满足相关电气及光学特性要求，如电流是否均衡，光色、亮度的一致性。/The LEDs of different BIN numbers are recommended to be used separately. If you need to install on the same component, please first confirm whether the relevant electrical and optical characteristics can be met, such as whether the current is balanced, the consistency of light color, brightness, etc.

**注/Note:**

- 1.如需更加详细产品规格信息请联系销售代表，谢谢！/For more detailed product specification information, please contact the sales representative, thank you!
- 2.此规格书以中英文方式书写，若有冲突以中文版文本为准。 /This specification is written in both Chinese and English. In case conflict, Chinese version shall prevail.
- 3.此规格书的最终解释权归由本公司。/The final interpretation of this specification shall be vested in the company.