



**Nanyang-Pa Sensing Technology Co., Ltd.**

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## **Environmental type photosensor**

### **Product Specification**

<b>client's name</b>	
<b>date</b>	
<b>Product number</b>	<b>SMD0805-20</b>
<b>Product order number</b>	
<b>Customer Type</b>	

<b>Customer acknowledges</b>	<b>signature Approval</b>	<b>Make</b>
		<b>Liang Jin</b>

China Sales Center

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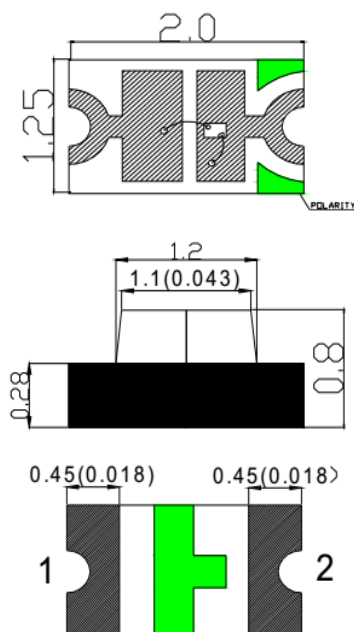
## Product Features

- Alternative to traditional photoresistor ( CdS ) , Does not contain cadmium, lead and hazardous substances, in line with EU ROHS standard
- Adjusting the background light, such as LCD Monitors, televisions, PDA , Cameras and mobile phones
- Monitoring products dedicated to infrared, the infrared light illumination control work, without the casing, the filter

## Product Features

- Analog photosensitive human eye, the peak photosensitive wavelength 850nm
- Batch consistency, completely solve the infrared lamp start too early or poor consistency and other phenomena
- **Fast response, stable performance, + 80 °C high temperature / 65% Under conditions of high humidity aging 1000H Starting point does not drift**
- Demand can provide the most suitable products light current \ dark current (light resistance \ dark resistance), so that a better product consistency, more in line with market demand

## Product Outline drawing



Pin name	description
1	Emitter
2	collector

### Note:

- All dimensions are in millimeters (mm)
- Not specified tolerance:  $\pm 0.1\text{mm}$

## Maximum Ratings ( Ta = 25 ° C)

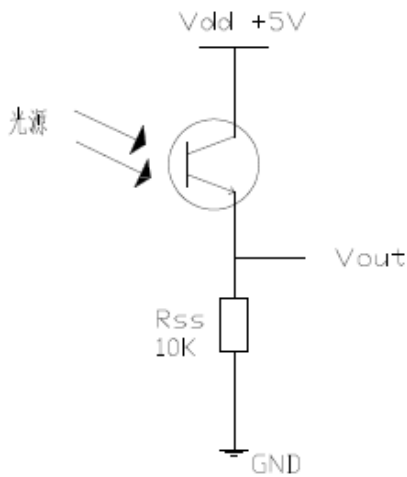
Electrical Characteristics	symbol	Ratings	unit
The collector - emitter voltage	$V_{CEO}$	10	V
Emitter - collector voltage	$V_{ECO}$	5	V
Power	$P_C$	70	mW
Operating temperature	$T_{opr}$	-25 + 80	° C
Storage temperature	$T_{stg}$	- 40 ~ + 80	° C

## Optical characteristics ( Ta = 25 ° C)

Electrical parameters		symbol	Test Conditions	Min	Typ	Max	Units
Photocurrent ( 1)		$I_L (1)$	$V_{DD} = 5V, E_v = 10Lux$	18	twenty three	35	$\mu A$
Photocurrent ( 2)		$I_L (2)$	$V_{DD} = 5V, E_v = 50Lux$	~	80	~	$\mu A$
Photocurrent ( 3)		$I_L (3)$	$V_{DD} = 5V, E_v = 100Lux$	~	130	~	$\mu A$
Dark current collector		ICEO	$V_{DD} = 5V, E_v = 0Lux, T_a = 25\text{ }^{\circ}C \sim$		~	0.2	$\mu A$
Collector-emitter operating voltage		$V_{DD} (I_{ss})$	$V_{DD} = 5V, E_v = 100Lux$	~	~	5	V
Photosensitive peak wavelength		$\lambda_p$			850		nm
Sensitive wavelength range		$\lambda_d$		450	~	1050	nm
Half angle		$2\theta$			120		$^{\circ}$
Reaction time	opening time	tr	$V_{CE} = 5V, I_C = 1mA$ $R_L = 10k\Omega$	10			$\mu s$
	Closing time	tr		15			

Tip: The output capacitor can affect the switching time, the test light source 2850K Color temperature LED.

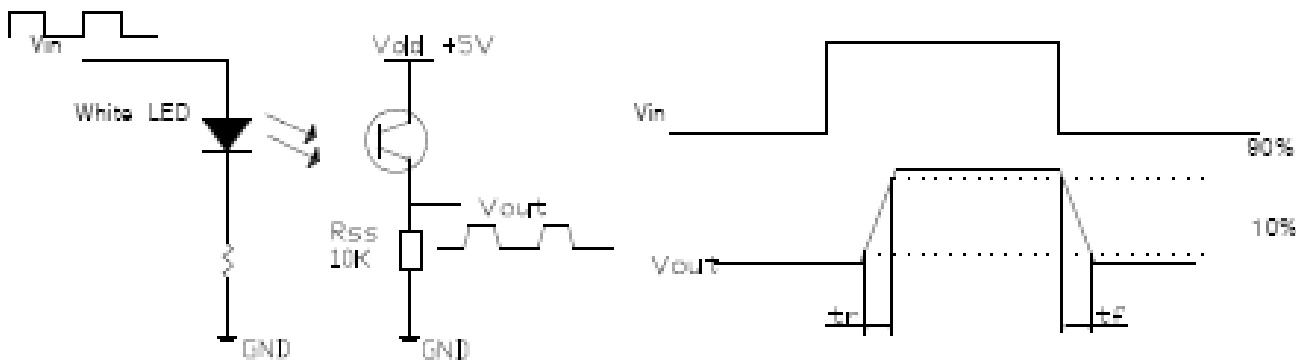
■ Test Schematic



$$\text{Photocurrent} = V_{\text{out}} / R_{\text{ss}}$$

\* We recommend the use of high stability resistor

Map 1 Test circuit photocurrent



Map 2 Switching time measurement

## Optical characteristic

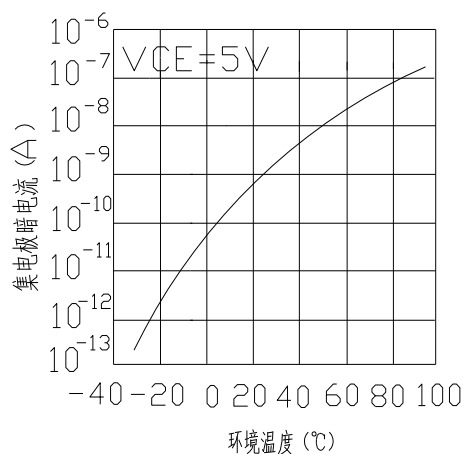


图1 环境温度 $V_{CE}$  暗电流

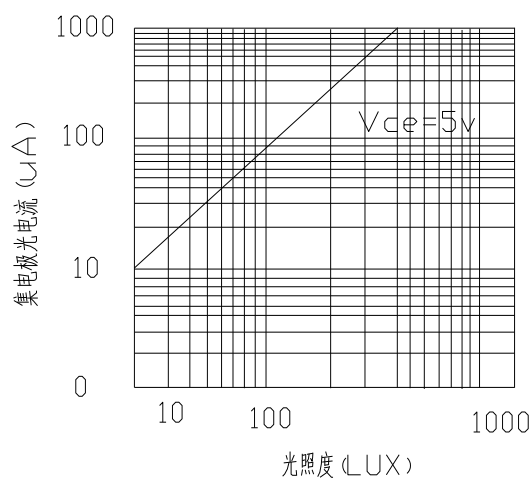


FIG photocurrent  $I_{ph}$  / S 光照度

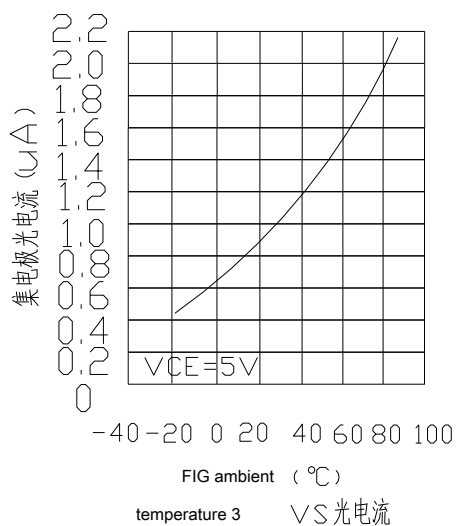


FIG ambient temperature 3  $V_{CE}$  光电流

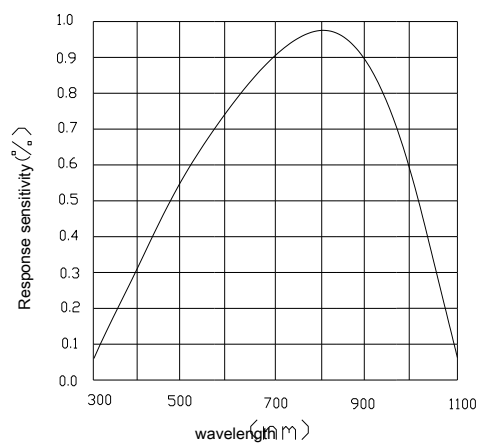


FIG sensor sensitivity wavelength VS.

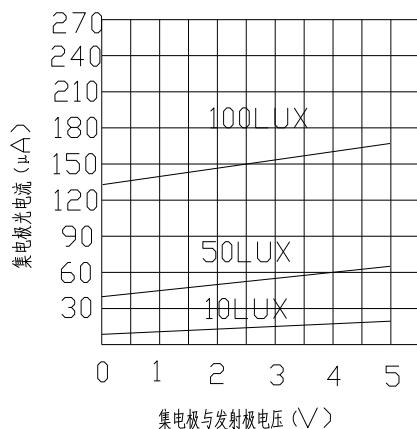


图5 集电极与发射极电压 $V_{CE}$  光电流  $I_{ph}$

## ■ Precautions

### ● Storage Products

1. Under the original packaging without opening the case, the proposed storage environment: room temperature 0-40 °C, humidity 80% the following.
2. After opening the original packaging, recommended storage environment: 25 °C ± 10 °C, humidity 60% the following.
3. The product is a moisture-sensitive device, in order to avoid product moisture absorption, it is recommended After opening the package, it must be stored in a sealed container with a desiccant, moisture or cabinet.
4. After opening the package, to be in 12H The run, such as do not need to run the dehumidifying process conditions 60 °C / 12H .

### ● Caution

1. After unpacking the product, prior to use of welding, such as prolonged exposure to moisture in the welding process may cause damage to the product.
2. Product during use, table / Equipment Instruments / iron complex must have a good grounding, the operator should wear grounding wrist strap.

### 3. Practice (below)

如需要夹取产品，请不要用金属镊子，须使用防静电非金属镊子	夹取产品，请注意镊子正确的使用方法。	夹取产品时，不允许用镊子或手指碰触胶体表面	要选择合适的吸嘴吸取LED
			

4. Temperature Time manual welding: welding Artificial allow only done once, as the ferrochrome temperature 300 Time ≤ °C 3S , Reflow soldering: reflow allowed only do once, lowest temperature 150-170 The degree you can, the maximum temperature is best 240-245 Degree (adjustable up to 260 ,in case 245 The degree of melting tin can, then it is not transferred 260 ), 220 Or more of the time can not exceed 60 Second, if the temperature increase in the case, 260 The time of no more than 10 second. if 7 Temperature zone, you can refer to the following settings: 160 , 170 , 175 , 180 , 190 , 210 , 245 , 220 , Not to squeeze the heat dissipation plate after completion of reflow.