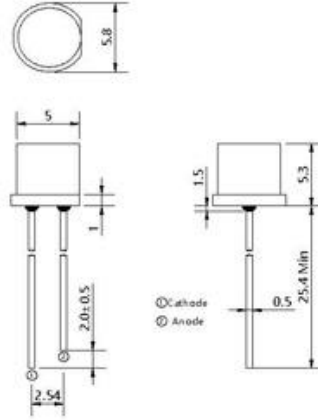


Silicon Phototransistors

CNLDPT5P520GC-IC



PACKAGE DIMENSIONS unit (mm)



PT520 环境光传感器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，模拟人眼感光，峰值波长 520nm，专用于红外监控类产品，控制红外灯低照度下开启。

PT520 ALS is a high sensitivity optical sensor, in DIP package. It's the ideal substitute for traditional CDS photosensitive resistor, Simulation of the human eye sensitivity, the peak wavelength of 520nm, dedicated to the infrared monitoring products, control the infrared light under low illumination opening.

特性 Features

- 1) 感光峰值波长 520nm Photosensitive peak wavelength $\lambda_p=520\text{nm}$
- 2) 高可靠性 High reliability
- 3) 低功耗 Low Power Consumption
- 4) 符合 RoHS RoHS compliant

额定参数 Absolute Maximum Ratings (Ta=25°C)

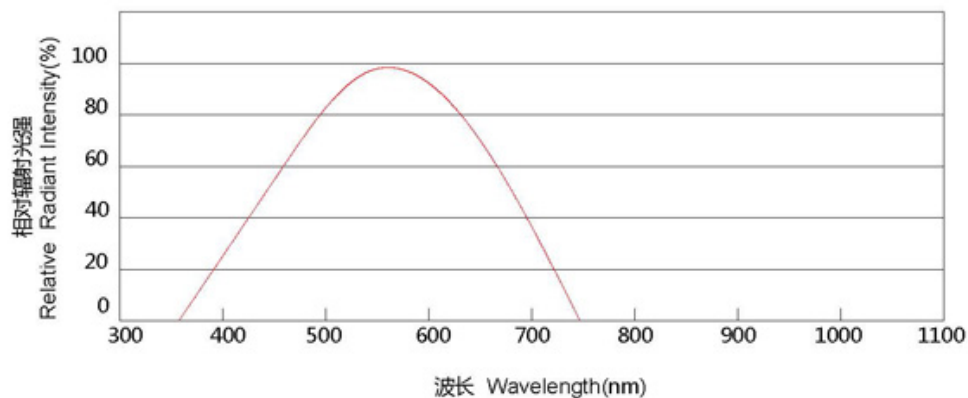
电气特性 Electrical characteristics	Symbol	Rated Value		Unit
		Min.	Max.	
工作电压 Operating voltage	Vcc			V
		1	10	V
功耗 Power Dissipation	PC	70		mW
工作温度 Operating Temperature	Topr	-30--+85		°C
储存温度 Storage Temperature	Tstg	-40--+100		°C

光电特性 Elector-Optical Characteristics (Ta=25°C)

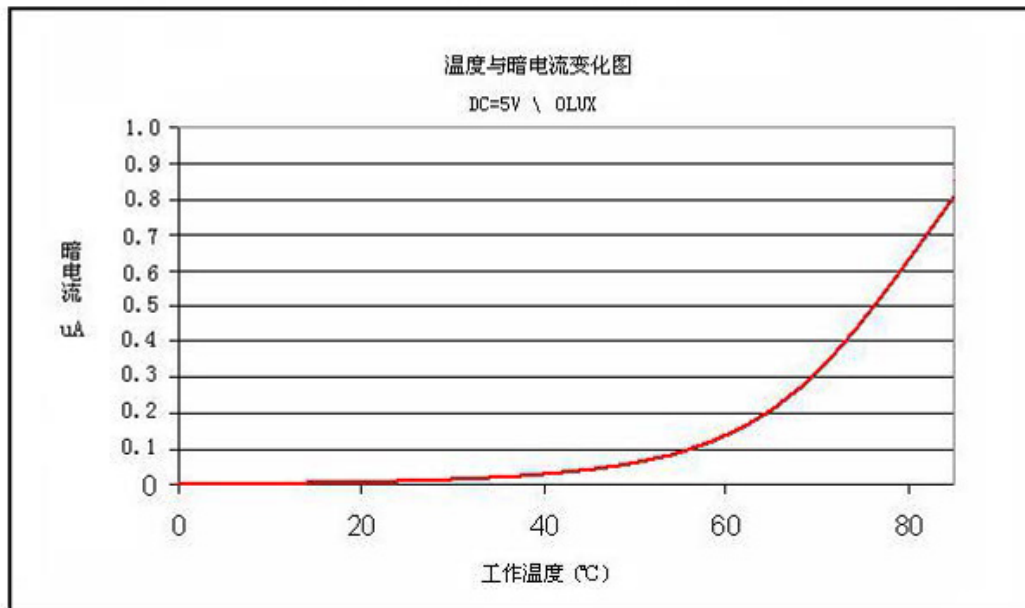
参数 Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
感光峰值波长 Photosensitive peak wavelength	λ_p	\	--	520	--	nm
感光波宽范围 Sensitivity wave width	λ	\	400	--	700	nm
工作电压 Operating voltage	VCC	\	--	5	--	V
光电流 Photo-current	IL(1)	VCC=5V Ev=10Lux	2	3.5	6	μ A
	IL(2)	VCC=5V Ev=30Lux	6	10.5	18	μ A
	IL(3)	VCC=5V Ev=100Lux	20	35	60	μ A
暗电流 dark current	Id	VCC=5V/85°C Ev=0Lux	--	--	0.8	μ A
红外接收电流 Infrared Light Current	IIR	VCC=5V/850nm IR led Ee=1mW/c m ²	--	--	0.1	μ A
开启时间 Rise time	tr	VCC=5V IC=1mA RL=1000 Ω	4.5			ms
关闭时间 Fall time	tf		4.5			

光电特性曲线 Typical photoelectric characteristics curves

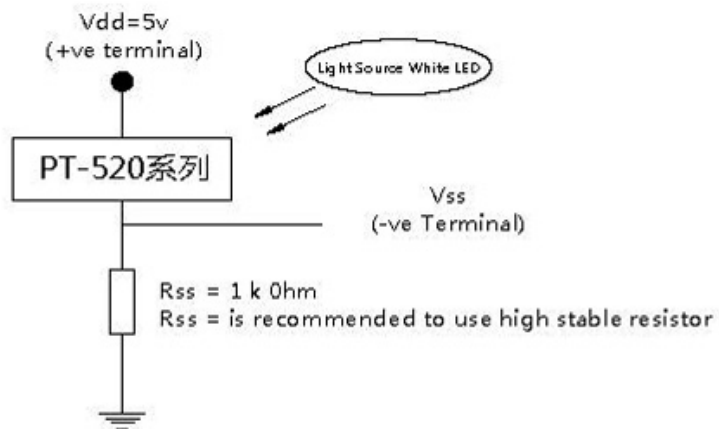
感光特性曲线 Photographic property Curve



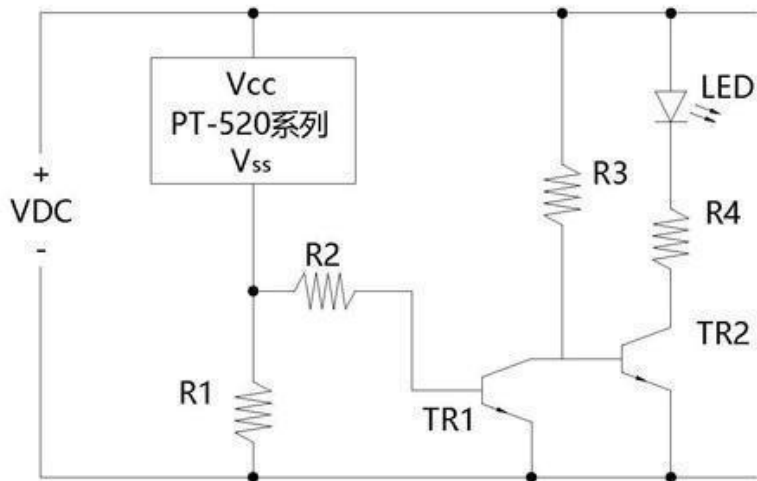
温度与暗电流关系图 Environment Temperature VS Dark Current



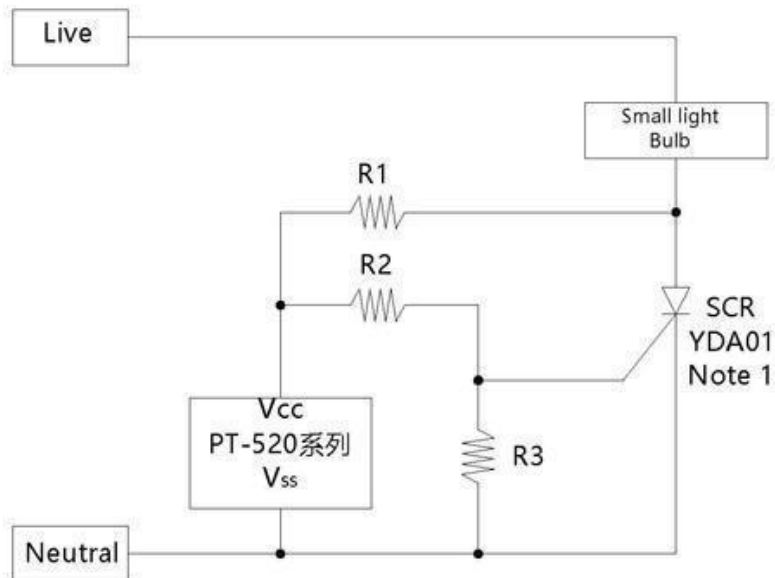
应用电路 application circuit



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。