Ambient light detector
Photosensitive sensor

（Replacement of CdS）

Model：HW5P-1

Shenzhen Haiwang Sensor Co.,Ltd

2014

HW5P-1

Typical applications

Backlight Adjusting：
TV、Computer Display、LCD backlight、Cell Phone、Digital Camera、MP4、PDA、GPS；
Energy-Saving control：
Outdoor Ad machines、Induction Lighting Appliances、Toys；
Instruments:
The instruments for testing illuminance and the industrial control.
Environmental-Protection Substitution:
Replacement of CdS、Light Diode、Light Triod

Features

Built-in optical filter for spectral response similar to that of the human eye.
Linear output conforming to illuminance.
Temperature Stable.
Low dark current and Low working Lux..
RoHS Compliant / Pb-free / Cd-free；

MAXIMUM RATINGS (Ta= 25° C)Ta=25℃

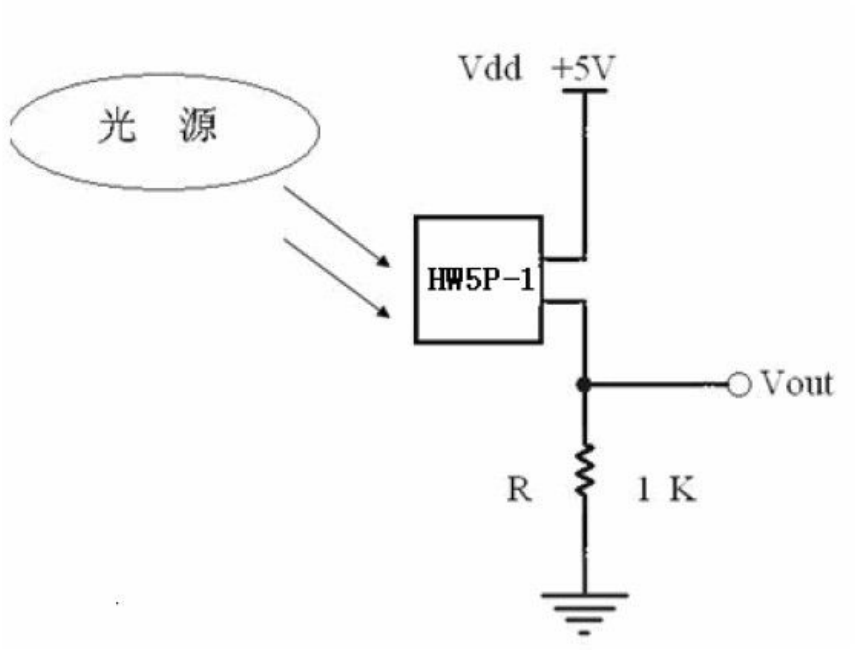
Characteristics	Symbol	Rating	Unit
supply voltage	Vdd	3-15	V
Quiescent current	I	<5uA@<1Lus	uA
Working temperature	Topr	-25~+90	℃
Storage temperature	Tstg	-40~+120	℃
Welding temperature (5 seconds)※※1	Tsol	260	℃

ELECTRICAL AND OPTICAL CHARACTERISTICS (Ta= 25° C)

Paramete		Symnol	Test conditions	Min	Type	Max	Unit
Collector photo-current	HW5P-1	IC （Vdd=5 V Rss=1k）	10 Lux,Vdd=5	50	60	70	uA
Collector dark current		I_{drk}	0Lux,Vdd=10V			100	nA
Spectrum sensitivity		λp	0Lux,Vdd=10V	480		1050	nM
The collector - emission level saturation pressure drop		Vdd-Vss	Lss=100mA		0.3		V
The reaction time (rise)		t_r	V_{dd}=10V, Iss=5mA R_L=100		2		μS
The reaction time (down)		t_f			2		μS

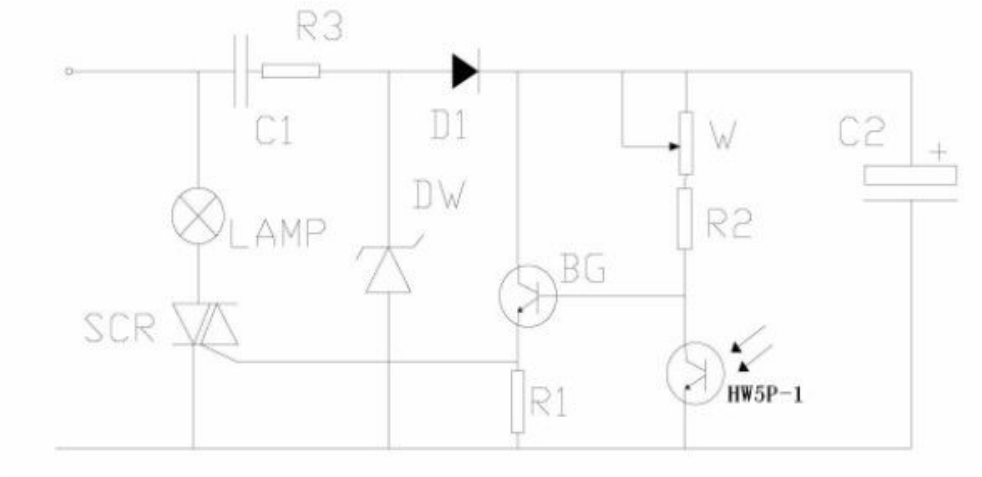
※ 2 Ev ,Ee With white LED light source test

测试原理图
Testing principle diagram



Examples of application

Optical lamp principle diagram



In the chart, capacitor C1, C2, R3 and diode D1 and stabile volt DW, composes the simple electric capacity voltage dropping resistor leveling circuit, after meets the circular telegram to obtain about 12V the DC voltage. Triode BG, photosensitive tube HW5P-1 and bidirectional silicon-controlled rectifier and so on, composition photoelectricity switching circuit.

In the daytime, the photosensitive tube HW3Y-1 resistance, the BG tube base electric potential drops extremely, causes BG to cut off, on resistance R1 non-voltage output, therefore bidirectional silicon-controlled rectifier SCR is at the shutdown condition, light bulb LAMP is not bright.When the curtain of night arrives, HW3Y-1 dark anti- increases, causes the BG base electric potential ascension the breakover, the voltage triggering silicon-controlled rectifier SCR breakover which on R1 outputs, the street light to result in the electricity to lighten extremely. Adjustment potentiometer W, may adjust the BG base extremely electric potential height, namely has adjusted the sensitivity which the light controls.

Note

Do not use the sensors under conditions that exceed the range of its specifications. Application circuit diagrams and circuit constants contained herein are shown as examples of

standard use and operation. Please pay careful attention to the peripheral conditions when designing circuits and deciding upon circuit constants in the set. CMOS IC is contained, so static electricity should be avoided . Be sure to perform soldering at values within the maximum ratings.

Take care so that no external force is applied to the lead during and immediately after soldering.

Do not perform reflow soldering.

The product is compliant with ECC RoHS. The photocurrent

will be influenced if the dirty or destroy on the surface. The sensors are small, transparent, plastic packages. They are sensitive to moisture and come

in sealed, moisture proof packages. Small packing for 1000PCS, Big packing for 10000PCS.

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