

PREE ELECTRONICS CO., LTD.

PRODUCT SPECIFICATION

CDS PHOTORESISTORS

Tel: 86 -29-824 8508 827 0169

Fax:86 -29-824 8546

URL:<http://www.pree.com.cn>

EMAIL: webmaster@pree.com.cn

**Address: No.6 Rongxin Road,
Hi-Tech Industry Development Zone,
Xian China 710065**

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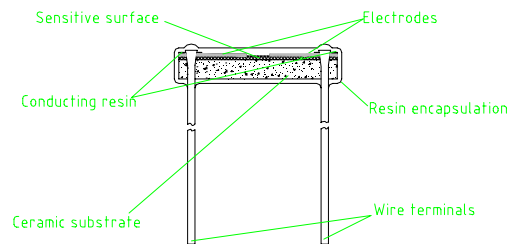
PREE

General

Description

Photoresistors are thin film devices which resistance changes with change of the light falling on it.(see fig.1)This product specifications provides the mechanical data,electronic characteristics and test conditions of PREE photoresistors of 5mm,12mm,20mm type.

Fig.1



Outline dimensions (see fig.2-fig.4)

Fig.2 (5mm type)

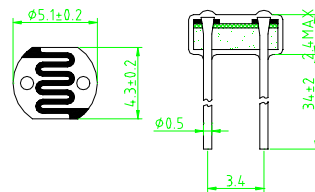


Fig.3 (12mm type)

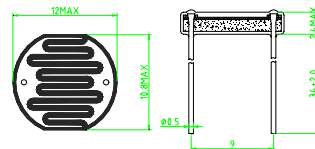
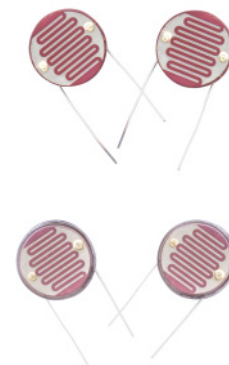
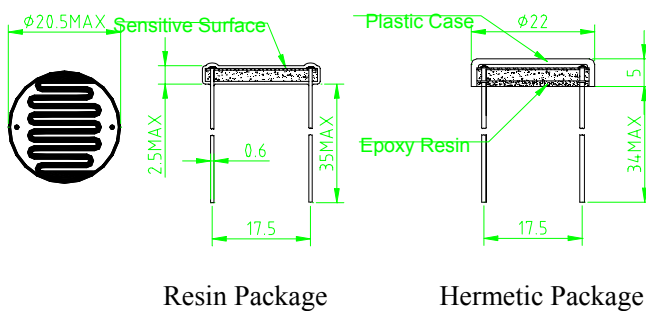


Fig.4 (20mm type)



Note:All dimensions are in mm and NTS.

Electronics characteristics (see tab.1-tab.3)

Tab1 (5mm type)

Model	V _{max} (VDC)	P _{max} (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx)(KΩ)	Dark Resistance (MΩ)min	γ _{min}	Response Time (ms)	
								Rise	Decay
PGM5506	100	90	-30 ~ +70	540	2 ~ 6	0.15	0.6	30	40
PGM5516	100	90	-30 ~ +70	540	5 ~ 10	0.2	0.6	30	40
PGM5526	150	100	-30 ~ +70	540	8 ~ 20	1.0	0.6	20	30
PGM5537	150	100	-30 ~ +70	540	16 ~ 50	2.0	0.7	20	30
PGM5539	150	100	-30 ~ +70	540	30 ~ 90	5.0	0.8	20	30
PGM5549	150	100	-30 ~ +70	540	45 ~ 140	10.0	0.8	20	30
PGM5616D	150	100	-30 ~ +70	560	5 ~ 10	1.0	0.6	20	30
PGM5626D	150	100	-30 ~ +70	560	8 ~ 20	2.0	0.6	20	30
PGM5637D	150	100	-30 ~ +70	560	16 ~ 50	5.0	0.7	20	30
PGM5639D	150	100	-30 ~ +70	560	30 ~ 90	10.0	0.8	20	30
PGM5649D	150	100	-30 ~ +70	560	50 ~ 160	20.0	0.8	20	30
PGM5659D	150	100	-30 ~ +70	560	150 ~ 300	20.0	0.8	20	30

Tab2 (12mm type)

Model	V _{max} (VDC)	P _{max} (mw)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lux)(KΩ)	Dark Resistance (0Lux)(MΩ) min	γ _{min}	Response Time (ms)	
								Rise	Decay
PGM1200	250	250	-30 ~ +70	560	2~5	1.0	0.6	30	40
PGM1201	250	250	-30 ~ +70	560	4~10	2.0	0.7	30	30
PGM1202	250	250	-30 ~ +70	560	8~20	5.0	0.7	30	30
PGM1203	250	250	-30 ~ +70	560	18~50	10	0.8	30	30
PGM1204	250	250	-30 ~ +70	560	45~150	20	0.8	30	30
PGM1205	250	250	-30 ~ +70	560	140~300	20	0.8	30	30

Tab3 (20mm type)

Model	V _{max} (VDC)	P _{max} (mw)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lux)(KΩ)	Dark Resistance (0Lux)(MΩ) min	γ _{min}	Response Time (ms)	
								Rise	Decay
PGM2000	500	500	-30 ~ +70	560	2~5	1.0	0.6	30	40
PGM2001	500	500	-30 ~ +70	560	4~10	2.0	0.7	30	30
PGM2002	500	500	-30 ~ +70	560	8~20	5.0	0.7	30	30
PGM2003	500	500	-30 ~ +70	560	18~50	10	0.8	30	30
PGM2004	500	500	-30 ~ +70	560	45~150	20	0.8	30	30
PGM2005	500	500	-30 ~ +70	560	140~300	20	0.8	30	30

Notes

1. Light Resistance:

Measured at 10 lux with standard light A (2854K-color temperature) and 2hr. preillumination at 400-600 lux prior testing.

2. Dark Resistance :

Measured at 10th seconds after closing 10 lux.

3. Gamma characteristic:

Under 10 lux and 100 lux and given by

$$\gamma = \log(R_{10}/R_{100}) / \log(100/10) = \log(R_{10}/R_{100})$$

R₁₀, R₁₀₀: resistance at 10 lux and 100 lux.

4. P_{max}:

Max power dissipation at ambient temperature of 25°C. At higher ambient temperature, the maximum power permissible may be lowered.

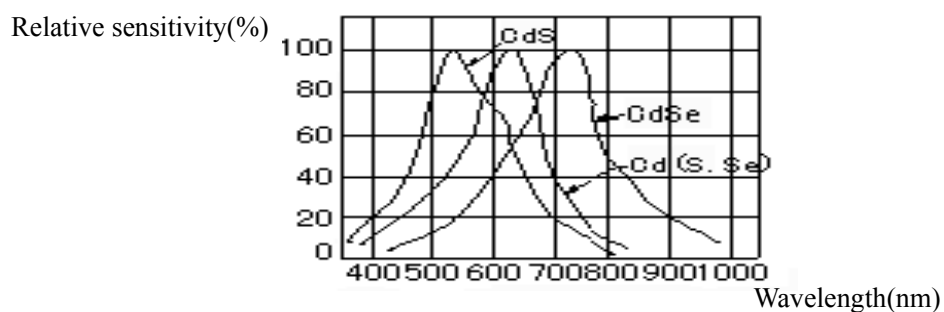
5. V_{max}:

Max voltage in darkness that may be applied to the device continuously.

6. Spectral peak:

Spectral sensitivity of photoresistors depends on the wavelength of light they are exposed to and in accordance with fig 5. The tolerance of spectral peak is ±50nm.

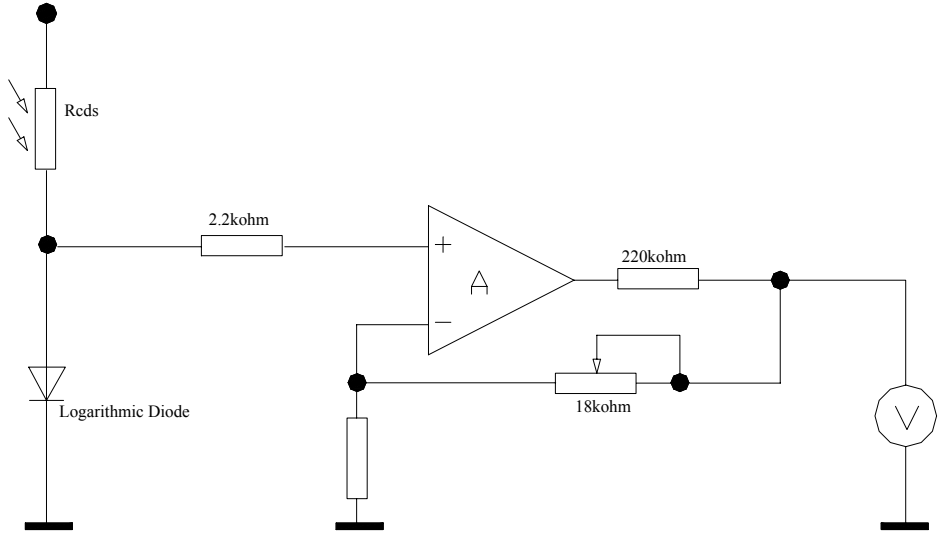
Fig.5



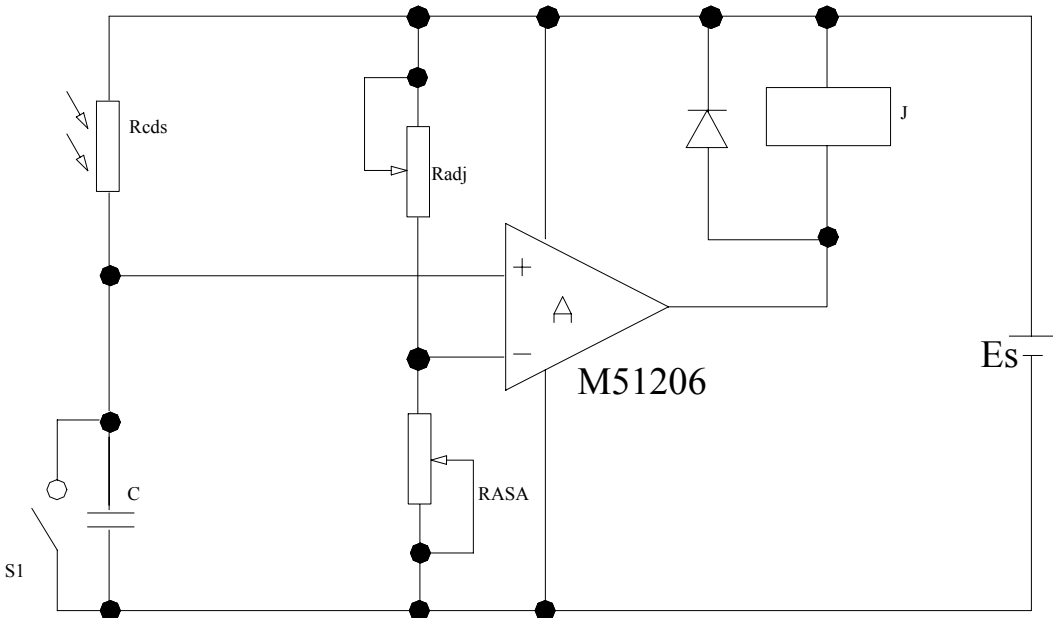
Test

TEST/TEST CONDITIONS	PERFORMANCE
<p>Solderability Put the terminals into welding tank at temp. $230\pm 5^{\circ}\text{C}$ for $2\pm 0.5\text{s}$(terminal roots are 5mm away from the tin surface).</p>	<p>wetting: $>95\%$</p>
<p>Change of temperature in accordance with: TA: -40°C TB: $+60^{\circ}\text{C}$ Number of cycles: 5 Exposure duration: 30min</p>	<p>Drift of $R_{10} = \pm 20\%$ No visible damage</p>
<p>Constant low temperature Temperature: $-45\pm 2^{\circ}\text{C}$ Duration: 48h</p>	<p>Drift of $R_{10} = \pm 20\%$ No visible damage</p>
<p>Constant humidity and heat: 1.Put the device in test box at Temperature: $60\pm 5^{\circ}\text{C}$ Humidity: 90-95% Illumination: 0lux Duration: 100h 2.Take the device and measure after 24h at normal temperature and humidity.</p>	<p>Drift of $R_{10} = \pm 30\%$ No visible damage</p>
<p>Constant load Temperature: $25\pm 5^{\circ}\text{C}$ Illumination: 150lux at rated power Duration: 600h</p>	<p>Drift of $R_{10} = +50/-25\%$ No visible damage</p>
<p>Strength of the wire terminals Bend the wire terminal at its root to 90 degree, and then bend it to a opposite direction.</p>	<p>No visible damage</p>
<p>Vibration Frequency: 50Hz Swing: 1.5mm 2 directions: parallel to ceramic substrate normal to ceramic substrate Duration: 2h</p>	<p>No visible damage</p>

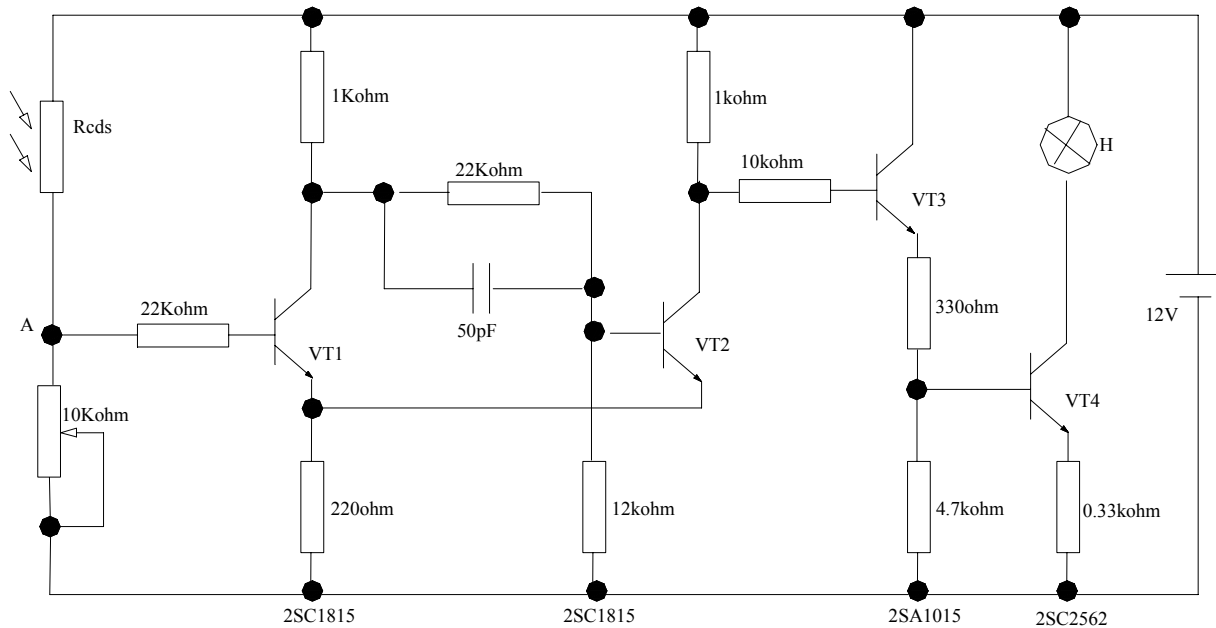
Application Circuits



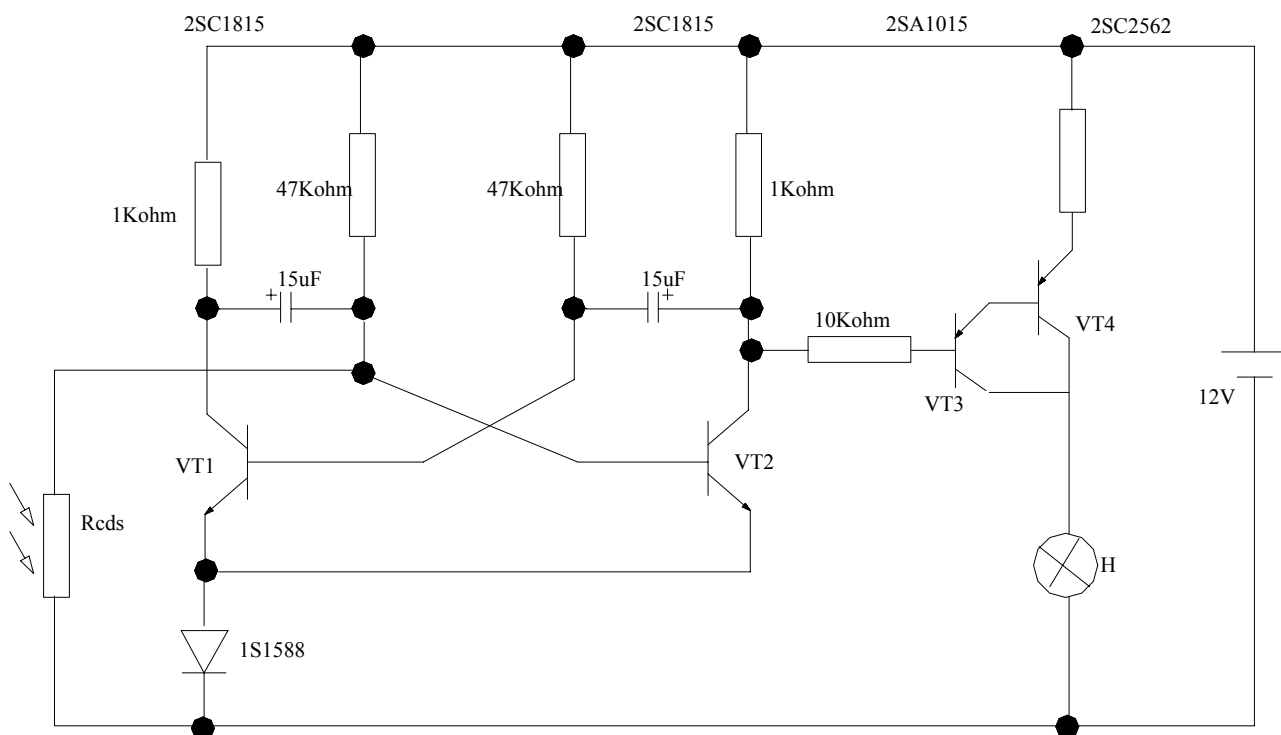
Luminometer



Timer



Light Control



Sparkler control