



# General Resistors

## LDR Photo Resistors - PGM Series

LDR Photo Resistors - PGM series specification provides the mechanical data, electronic characteristics and test conditions in terms of 5mm, 12mm, and 20mm. Token LDR resistors can be customized designs and tighter tolerances available on request. Application of LDR resistors specific designs also available including different photo resistance and response time specifications adjusted to resistance requirements.

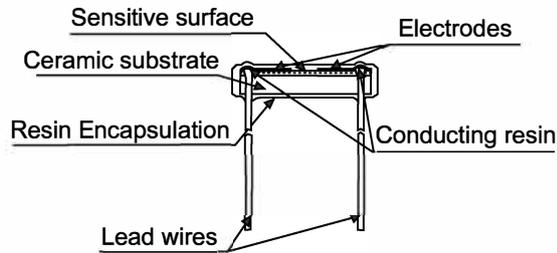
### ► Features

1. Epoxy or hermetical package
2. Reliable Performance
3. Quick Response
4. Good Characteristic of Spectrum

### ► Applications

1. Auto Flash for Camera
2. Industrial Control
3. Photoelectric Control
4. Photoswitch; Electronic Toys

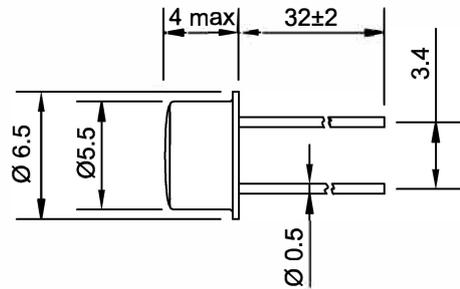
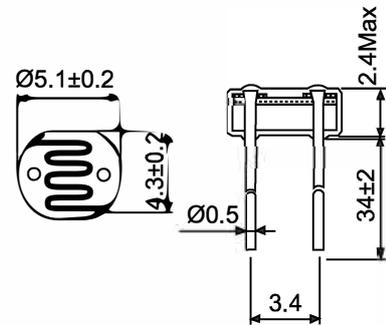
### ► 5mm CDS Resistor Photoresistors Configurations & Dimensions



PGM5\*\*\*\* series  
Epoxy resin package



PGM55\*\*-MP series  
Hermetical package



Note: All dimensions are in mm and NTS.

### ► PGM5\*\*\*\* series Resistor Electronics Characteristics

Model	Vmax (VDC)	Pmax (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	4 ~ 7	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



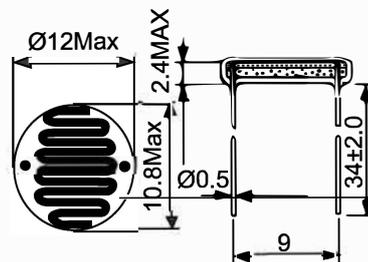
# General Resistors

## ▶ PGM55\*\*-MP series Resistor Electronics Characteristics

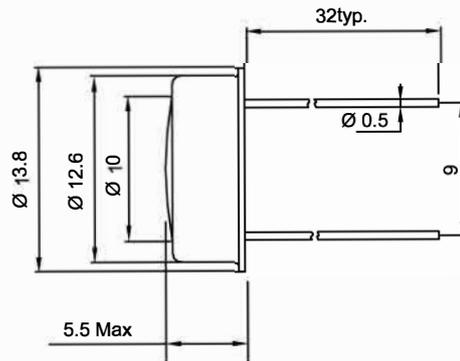
Model	Vmax (VDC)	Pmax (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx) (KΩ)	Dark Resistance (MΩ)min	γ <sub>min</sub>	Response Time (ms)	
								Rise	Decay
PGM5506-MP	100	90	-30 ~ +70	540	2 ~ 6	0.15	0.6	30	40
PGM5516-MP	100	90	-30 ~ +70	540	5 ~ 10	0.2	0.6	30	40
PGM5526-MP	150	100	-30 ~ +70	540	8 ~ 20	1.0	0.6	20	30
PGM5537-MP	150	100	-30 ~ +70	540	16 ~ 50	2.0	0.7	20	30
PGM5539-MP	150	100	-30 ~ +70	540	30 ~ 90	5.0	0.8	20	30
PGM5549-MP	150	100	-30 ~ +70	540	45 ~ 140	10.0	0.8	20	30

## ▶ 12mm LDR Photoresistors Resistor Configurations & Dimensions

PGM12\*\* series  
Epoxy resin package



PGM12\*\*-MP series  
Hermetical package



**Note:**All dimensions are in mm and NTS.

## ▶ PGM12\*\* series Resistor Electronics Characteristics

Model	Vmax (VDC)	Pmax (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx) (KΩ)	Dark Resistance (MΩ)min	γ <sub>min</sub>	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





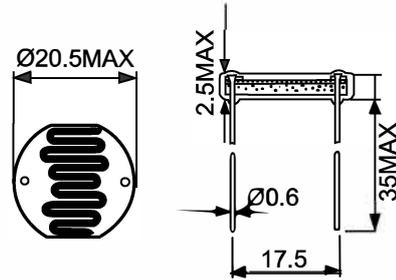
# General Resistors

## ▶ PGM12\*\*-MP series Resistor Electronics Characteristics

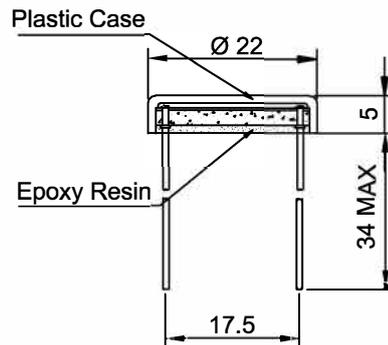
Model	Vmax (VDC)	Pmax (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx) (KΩ)	Dark Resistance (MΩ)min	γ min	Response Time (ms)	
								Rise	Decay
PGM1200-MP	250	250	-30 ~ +70	560	2~5	1.0	0.6	30	40
PGM1201-MP	250	250	-30 ~ +70	560	4~10	2.0	0.7	30	30
PGM1202-MP	250	250	-30 ~ +70	560	8~20	5.0	0.7	30	30
PGM1203-MP	250	250	-30 ~ +70	560	18~50	10	0.8	30	30
PGM1204-MP	250	250	-30 ~ +70	560	45~150	20	0.8	30	30
PGM1205-MP	250	250	-30 ~ +70	560	140~300	20	0.8	30	30

## ▶ 20mm LDR Resistor Photoresistors Configurations & Dimensions

PGM20\*\* series  
Epoxy resin package



PGM20\*\*-MP series  
Hermetical package



**Note:**All dimensions are in mm and NTS.

## ▶ PGM20\*\* series Resistor Electronics Characteristics

Model	Vmax (VDC)	Pmax (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx) (KΩ)	Dark Resistance (MΩ)min	γ min	ResponseTime (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





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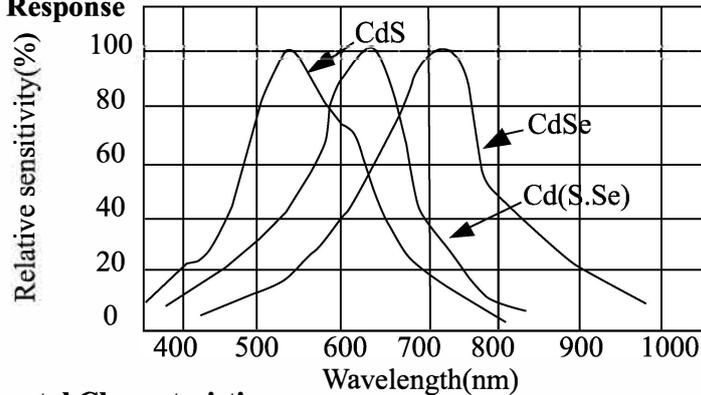
## ▶ PGM20\*\*-MP series Resistor Electronics Characteristics

Model	Vmax (VDC)	Pmax (mW)	Ambient Temp (°C)	Spectral Peak (nm)	Photo Resistance (10Lx) (KΩ)	Dark Resistance (MΩ)min	γ min	Response Time (ms)	
								Rise	Decay
PGM2000-PP	500	500	-30 ~ +70	560	2~5	1.0	0.6	30	40
PGM2001-PP	500	500	-30 ~ +70	560	4~10	2.0	0.7	30	30
PGM2002-PP	500	500	-30 ~ +70	560	8~20	5.0	0.7	30	30
PGM2003-PP	500	500	-30 ~ +70	560	18~50	10	0.8	30	30
PGM2004-PP	500	500	-30 ~ +70	560	45~150	20	0.8	30	30
PGM2005-PP	500	500	-30 ~ +70	560	140~300	20	0.8	30	30

## ▶ Terminology

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. The tolerance of  $\gamma$  is  $\pm 0.1$ .
4. Pmax: Max power dissipation at ambient temperature of 25°C. At higher ambient temperature, the maximum power permissible may be lowered.
5. Vmax: 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 2. The tolerance of spectral peak is  $\pm 50\text{nm}$ .

## ▶ LDR Resistor Spectral Response



## ▶ Physical and Environmental Characteristics

ITEM	CONDITIONS	PERFORMANCE
Solderability	Put the terminals into welding tank at temp. 230±5°C for 2±0.5s (terminal roots are 5mm away from the tin surface).	wetting>95%
Temperature Changing	Change of temperature in accordance with: TA: -40°C TB: +60°C Number of cycles: 5 Exposure duration: 30min	Drift of R10 = ± 20% No visible damage
Constant humidity and heat	1. Put the device in test box at Temperature: 60±5° CHumidity: 90-95% Illumination: 0lux Duration: 100h 2. Take the device and measure after 24h at normal temperature and humidity.	Drift of R10 = ± 30% No visible damage
Constant load Temperature	At 25±5°C Illumination: 150lux at rated power Duration: 600h	No visible damage
Wire Terminals Strength	Bend the wire terminal at its root to 90 degree, and then bend it to a opposite direction.	No visible damage
Vibration	Frequency: 50Hz Swing: 1.5mm with Directions: parallel to ceramic substrate normal to ceramic substrate. Duration: 2h	No visible dam