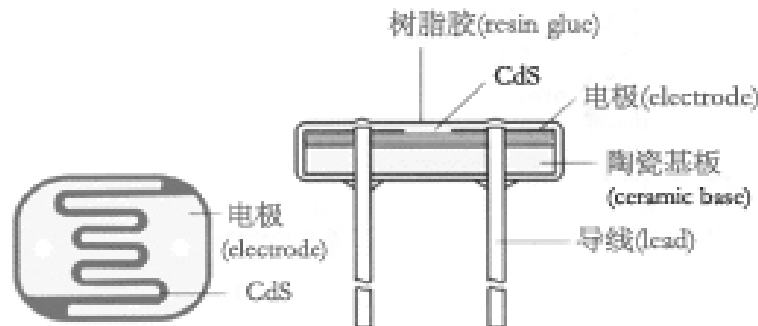


PFW205 Series Photoresistor

Photoresistor is a resistor which made of semi-conductor material, and the conductance changes with luminance variation. The photoresistor can be manufactured with different figures and illuminated area based on this characteristic. Photoresistor is widely used in many industries, such as toys, lamps, camera, etc.

Schematic Drawing



Performances and Features

Coated with epoxy
Small volume
Fast response

Good reliability
High sensitivity
Good spectrum characteristic

Typical Applications

Camera automatic photometry
Indoor ray control
Industrial control
Light control lamp

Photoelectric control
Annunciator
Light control switch
Electronic toy

Types and Specifications

Specification	Type	Max. Voltage	Max. power	Environmental temp.	Spectrum peak value
Φ 12 series	PFW2051	250	200	-30~+70	560
	PFW2052	250	200	-30~+70	560
	PFW2053	250	200	-30~+70	560
	PFW2053-2	250	200	-30~+70	560
	PFW20539	250	200	-30~+70	560

Specification	Light resistance (10Lux) (KΩ)	Dark resistance (MΩ)	γ_{10}^{100}	Response time (ms)		Illuminance resistance Fig. No.
				Increase	Decrease	
Φ 12 series	5-10	1	0.6	30	30	3
	10-20	2	0.6	30	30	3
	20-30	3	0.7	30	30	4
	30-50	5	0.7	30	30	4
	50-100	8	0.8	30	30	6

Test Conditions

Max. external voltage: Maximum voltage to be continuously given to component in the dark.

Dark resistance: Refer to the resistance ten seconds after the 10Lux light is shut up.

Max. power consumption: Maximum power at the environmental temperature 25°C.

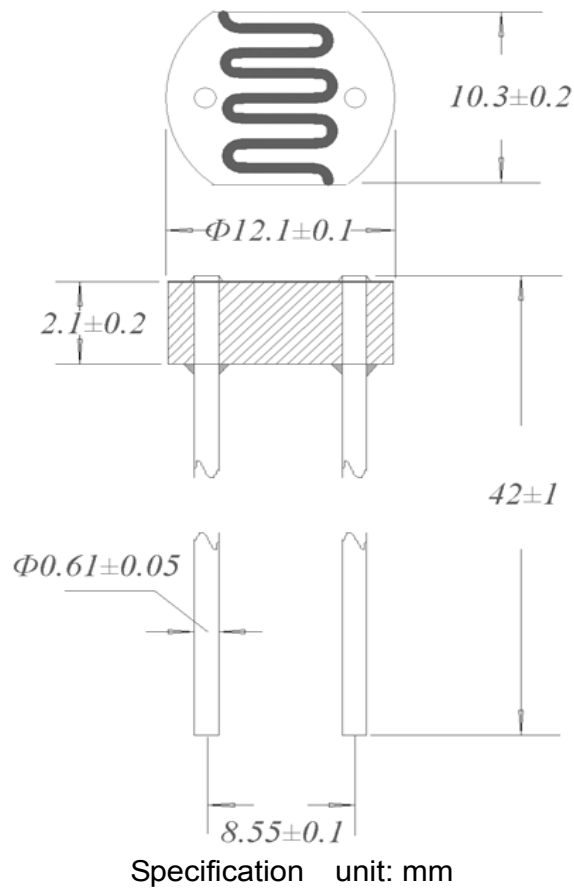
Light resistance: Irradiated by 400-600Lux light for two hours, then test with 10Lux under standard light source A(as colour temperature 2856K).

γ value: Logarithm of the ratio of the standard resistance value under 10Lux and that under 100Lux.

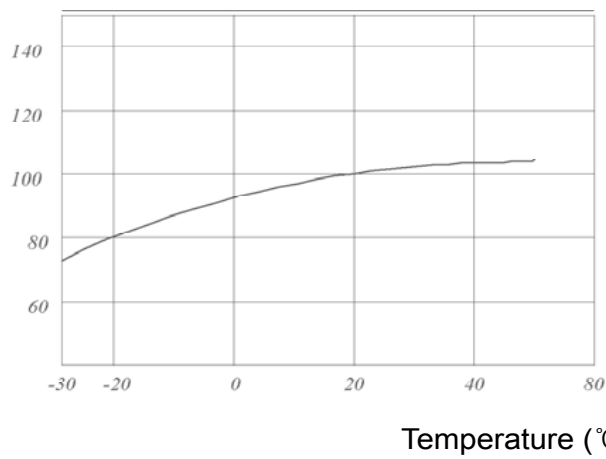
$$\gamma = \frac{\text{Lg}(R_{10}/R_{100})}{\text{Lg}(100/10)} = \text{Lg}(R_{10}/R_{100})$$

R₁₀,R₁₀₀ are the resistances under 10Lux and 100Lux respectively.

Main Characteristics Curve and Dimensions

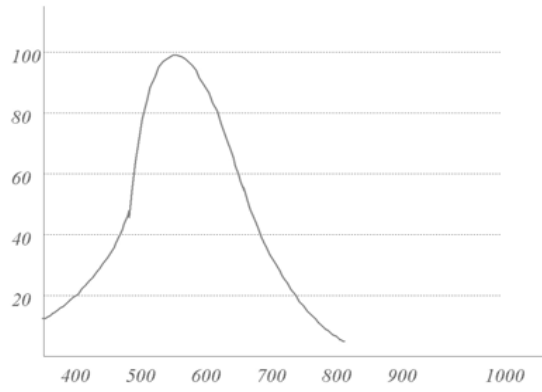


Relative Resistance (%)



Temperature-Property

Relative Response (%)



Wavelength λ (nm)

Spectrum Response Characteristic

Illuminance-Resistance Characteristics Curve

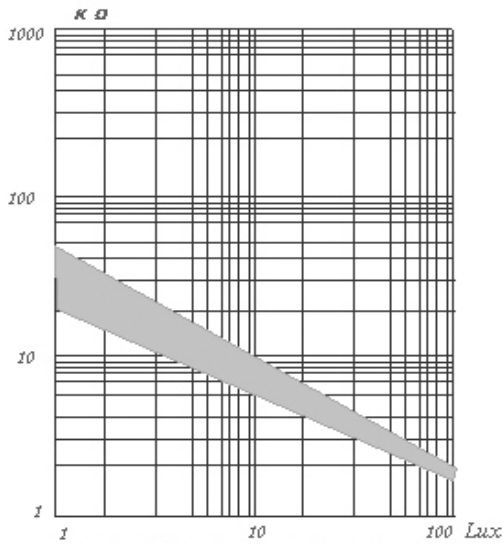


Fig. 1

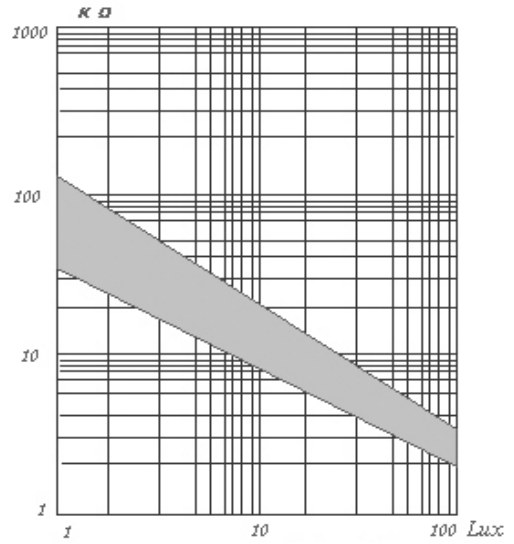


Fig. 2

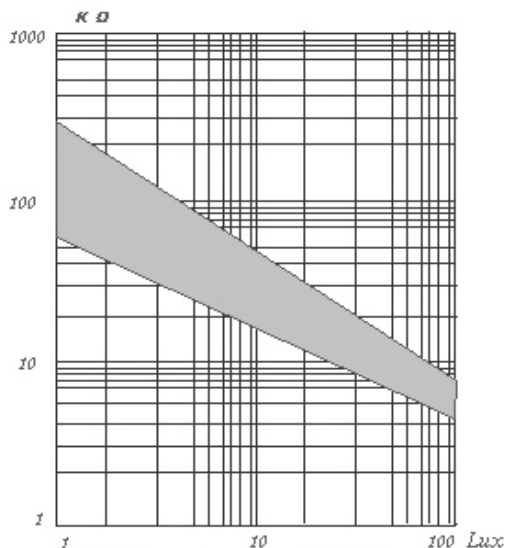


Fig.3

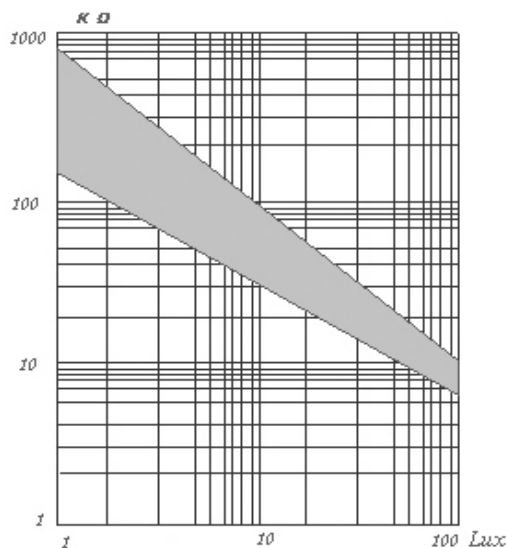


Fig.4

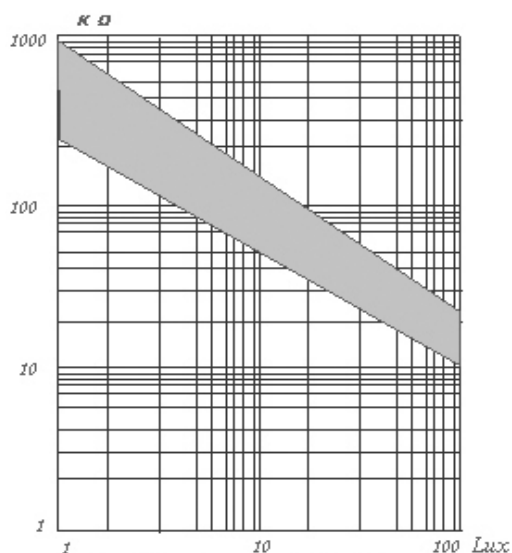


Fig. 5

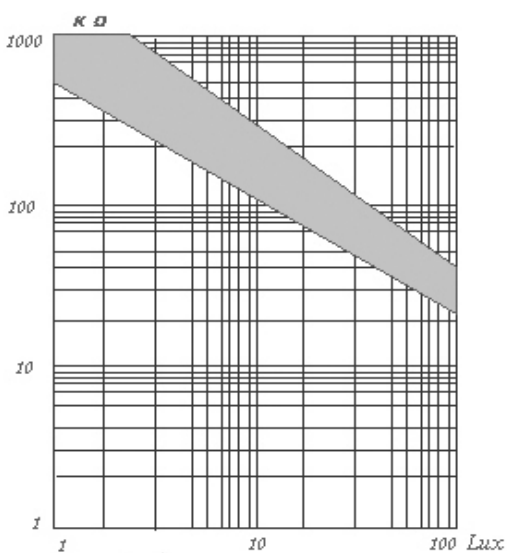


Fig. 6

Packing and Precaution

Avoid high temperature and humidity for storing.
 Soldering should be completed in the shortest possible time.
 It is recommended that the soldering should keep 4mm away from ceramic substrate.