

## **Photo Conductive Cell (CdS)**

### **General Description :**

*CdS is a kind of photosensitive semiconductor, which has the features of high delicacy, quick response and fine agreement between the spectrum character and  $\gamma$  value. It can work well with high stability under severe conditions such as high temperature and humidity.*

### **Features :**

- ✧ Low Cost
- ✧ Exceptional temperature stability
- ✧ Fast response time
- ✧ Excellent chopping capability

### **Applications :**

- ✧ Automatic dimmer
- ✧ Automatic flasher
- ✧ Camera
- ✧ Counting machine
- ✧ Light controlled toys

### **Testing Terms And Conditions :**

1. Photo Resistance

Exposed in 400–600 Lux, then to test with 10 Lux and 100 Lux under standard illuminance.  
(Light Source : 2856K)

2. Dark Resistance

Measured after 10 sec. removal of 10 Lux

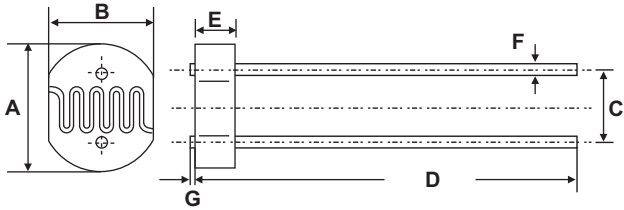
3.  $\gamma$  represents the standard value under both 10 Lux and 100 Lux. ( $\pm 0.1$  unless otherwise stated)

$$\gamma_{10}^{100} = \frac{\text{Log}(R100) - \text{Log}(R10)}{\text{Log}(E100) - \text{Log}(E10)}$$

Where R100, R10 are cell resistance at 100 Lux and 10 Lux respectively

E100, E10 are illumination at 100 Lux and 10 Lux respectively

4. The rise time is the time required for the cell conductance to be risen to 63% of the saturated level.  
The requirement for cell conductance of decay from the saturated level to 37%



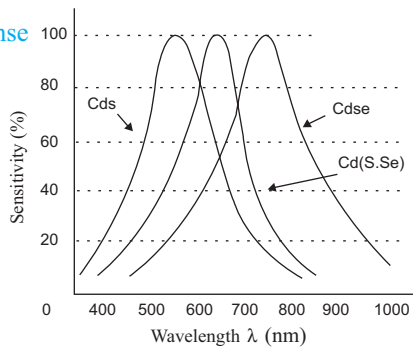
Series	A	B	C	D	E	F	G
GB 44 series $\phi 4$	4.3 $\pm$ 0.1	3.6 $\pm$ 0.1	2.5 $\pm$ 0.05	36 $\pm$ 2	1.8 $\pm$ 0.1	0.4 $\pm$ 0.05	0.2 $\pm$ 0.05
GB 55 series $\phi 5$	5.1 $\pm$ 0.2	4.3 $\pm$ 0.2	3.4 $\pm$ 0.1	36 $\pm$ 2	1.8 $\pm$ 0.1	0.5 $\pm$ 0.05	0.2 $\pm$ 0.1

(Unit: mm)

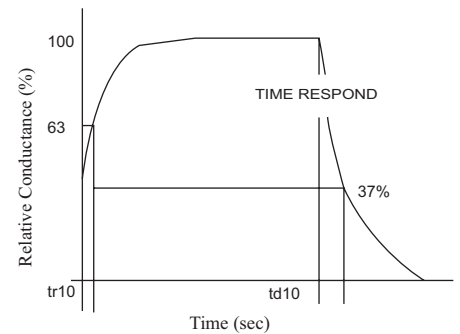
## Dimensions and Specifications

Type	Max. Rating			Features						
	Applied Voltage	Allowable Power Dissipation	Ambient Temp.	Peak Response Wavelength	Light Cell Resistance At 10 Lux (K $\Omega$ )		Dark Cell Resistance	$\gamma_{100/10}$	Response Time (ms)	
	(VDC)	(mw)	( $^{\circ}$ C)	(nm)	Min	Max	(M $\Omega$ )		Rise	Fall
GB-CD5506	100	90	-30 ~ +70	540	4 - 6	$\leq 1$	0.2	0.6	30	40
GB-CD5516	100	90	-30 ~ +70	540	5 - 10	1 - 2	0.5	0.6	30	40
GB-CD5527	100	100	-30 ~ +70	540	10 - 20	2 - 4	1.0	0.7	20	30
GB-CD5537	100	100	-30 ~ +70	540	20 - 30	4 - 6	2.0	0.7	20	30
GB-CD5547	100	100	-30 ~ +70	540	30 - 50	6 - 10	5.0	0.7	20	30
GB-CD5548	100	100	-30 ~ +70	540	50 - 100	10 - 20	10	0.8	20	30
GB-CD5558	100	100	-30 ~ +70	540	100-200	20 - 35	20	0.8	20	30
GB-CD4406	100	90	-30 ~ +70	560	4 - 6	$\leq 1$	0.5	0.6	30	40
GB-CD4416	100	90	-30 ~ +70	560	5 - 10	1 - 2	1.0	0.6	30	40
GB-CD4427	100	100	-30 ~ +70	560	10 - 20	2 - 4	2.0	0.7	30	30
GB-CD4437	100	100	-30 ~ +70	560	20 - 30	4 - 6	5.0	0.7	20	30
GB-CD4447	100	100	-30 ~ +70	560	30 - 50	6 - 10	10	0.8	20	30
GB-CD4448	100	100	-30 ~ +70	560	50 - 100	10 - 20	20	0.8	20	30
GB-CD4458	100	100	-30 ~ +70	560	100-200	20 - 35	20	0.8	20	30

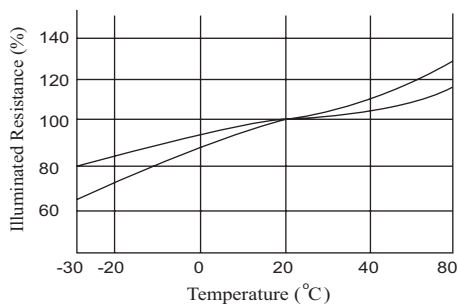
Graph 1.  
Spectral Response Character



Graph 2.  
Response Time



Graph 3.  
Character of Temperature



Graph 4  
Resistance—illuminance Character

