CdS photoconductive cell
Resin coating type (5R type)

Standard type designed for general-purpose, wide application

CdS photoconductive cells utilize photoconductive effects in semiconductors that decrease their resistance when illuminated by light. These sensors are non-polar resistive elements with spectral response characteristics close to the human eye (luminous efficiency), thus making their operating circuits simple and small.

Features

- Small size, thin package
- Low price
- Wide range of sensor lineup

Applications

- Programed electronic shutter and stroboscope light control for compact camera
- Auto dimmer for digital display, CRT and room illumination
- Sensor for automatic light on/off
- Sensor for electronic toy and teaching aid material

■ Absolute maximum ratings / Characteristics (Typ. Ta=25 °C, unless otherwise noted)

Type No.	Absolute maximum ratings			Characteristics *1						
	Supply voltage	Power dissipation P	Ambient temperature Ta	Peak sensitivity wavelength λp	Cell resistance *2			γ_{10}^{100} *4	Response time 10 lx *5	
					10 lx, 2856 K		0 lx *3		Rise time tr	Fall time tf
	(Vdc)	(mW)	(°C)	(nm)	Min. (kΩ)	Max. (kΩ)	Min. (MΩ)	100 to 10 lx	(ms)	(ms)
P687-02	100	30	-30 to +50	620	5	20	5.0	0.70	60	25
P1201-04		50	-30 to +60	540	50	200	20	0.90	40	30
P1201-06						100				
P1241-04	50	30	-30 to +60	560	3	9	0.2	0.70	50	40
P1241-05					8	24	0.5	0.70		
P1241-06					5	20	0.5	0.75		
P1444	100		-30 to +50	620	10	50	5.0	0.85	40	10
P1445					48	140	20			

*1: All characteristics are measured after exposure to light (100 to 500 lx) for one to two hours.
*2: The light source is a standard tungsten lamp operated at a color temperature of 2856 K.
*3: Measured 10 seconds after shutting off the 10 lx light.
*4: Typical gamma characteristics (within ±0.10 variations) between 100 lx to 10 lx

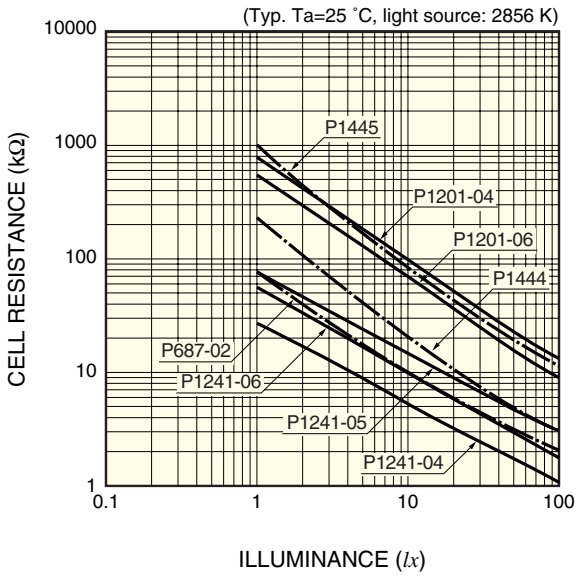
$$\gamma_{10}^{100} = \left| \frac{\log (R_{100}) - \log (R_{10})}{\log (E_{100}) - \log (E_{10})} \right|$$

E_{100}, E_{10}: illuminance 100 lx, 10 lx
R_{100}, R_{10}: resistance at 100 lx and 10 lx respectively

*5: The rise time is the time required for the sensor resistance to reach 63 % of the saturated conductance level (when fully illuminated). The fall time is the time required for the sensor resistance to decay from the saturated conductance level to 37 %.

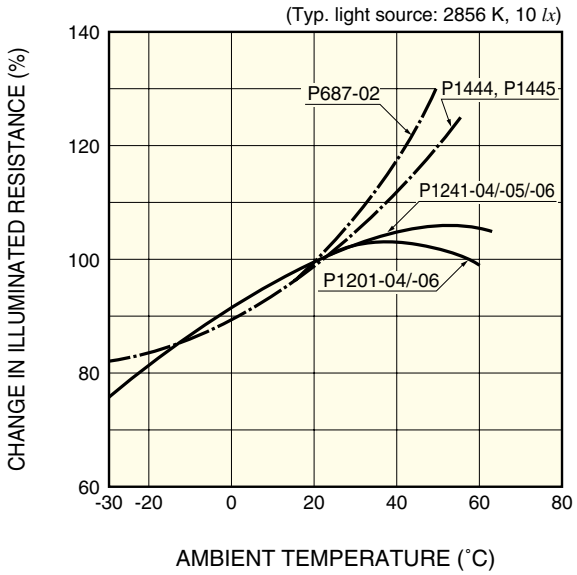
SOLID STATE DIVISION

■ Cell resistance vs. illuminance



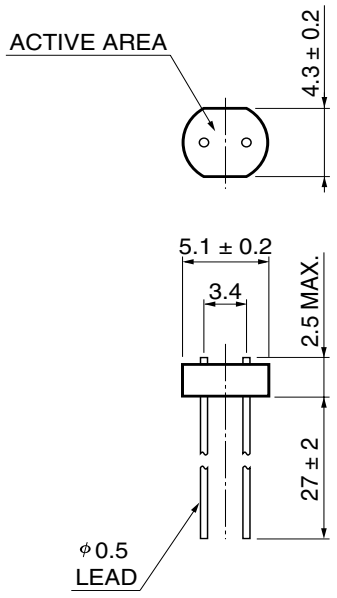
KCDSB0023EA

■ Resistance temperature characteristics



KCDSB0024EA

■ Dimensional outline (unit: mm)



KCDSA0001EA

HAMAMATSU PHOTONICS K.K., Solid State Division
1126-1 Ichino-cho, Hamamatsu City, 435-8558 Japan, Telephone: (81) 053-434-3311, Fax: (81) 053-434-5184, http://www.hamamatsu.com
U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P.O.Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1) 908-231-0960, Fax: (1) 908-231-1218
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 08152-3750, Fax: (49) 08152-2658
France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: 33-(1) 69 53 71 00, Fax: 33-(1) 69 53 71 10
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777
North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171 41 Solna, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01
Italy: Hamamatsu Photonics Italia S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39) 02-935-81-733, Fax: (39) 02-935-81-741

Cat. No. KCDS1005E01
Oct. 2001 DN