

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 (Vdc)	Power dissipation P (mW)	Ambient temperature Ta (°C)	Peak sensitivity wavelength λp (nm)	Cell resistance *2			γ ₁₀ ¹⁰⁰ *4	Response time 10 lx *5	
					10 lx, 2856 K		0 lx *3		Rise time tr (ms)	Fall time tf (ms)
					Min. (kΩ)	Max. (kΩ)	Min. (MΩ)			
P201D-5R	100	50	-30 to +60	520	48	140	20	0.90	30	10
P380-5R		30	-30 to +50	620	12	36	20	0.85	35	20
P722-5R		70	-30 to +60	560	5.3	15	0.5	0.70	50	40
P1082-03			-30 to +80		13	39	0.2			
P1201		70	-30 to +80	540	20	60	5.0	0.75	40	30
P1201-01					30	90				

*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

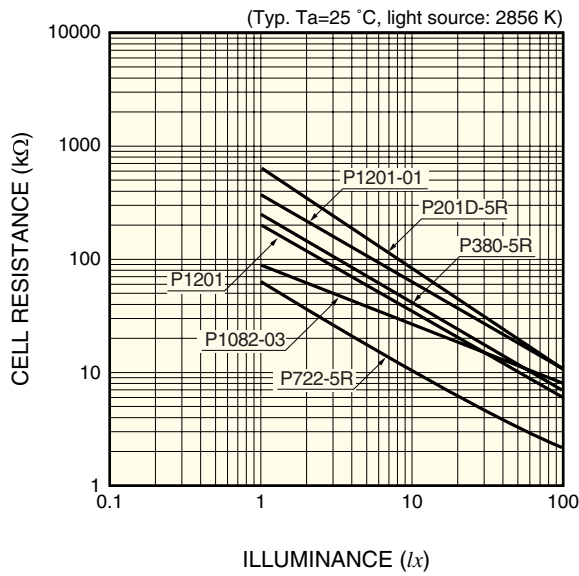
$$\gamma_{10}^{100} = \frac{|\log(R_{100}) - \log(R_{10})|}{|\log(E_{100}) - \log(E_{10})|}$$

E₁₀₀, E₁₀: illuminance 100 lx, 10 lx

R₁₀₀, R₁₀: resistance at 100 lx and 10 lx respectively

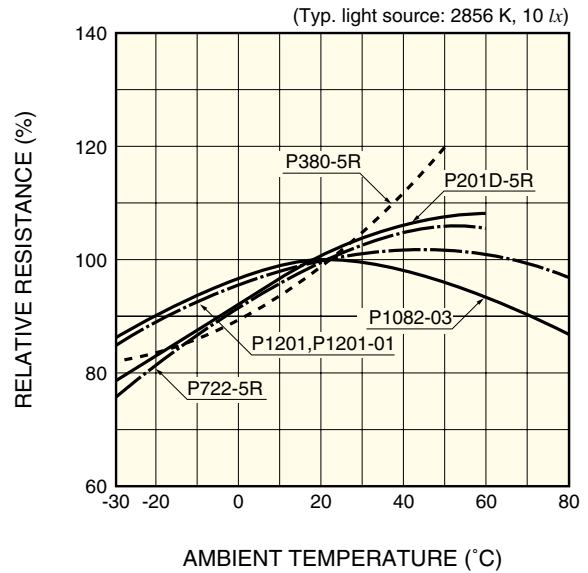
*5: The rise time is the time required for the sensor resistance to reach 63 % of the saturated conductance level (when fully illuminated). The fall time is the time required for the sensor resistance to decay from the saturated conductance level to 37 %.

Cell resistance vs. illuminance



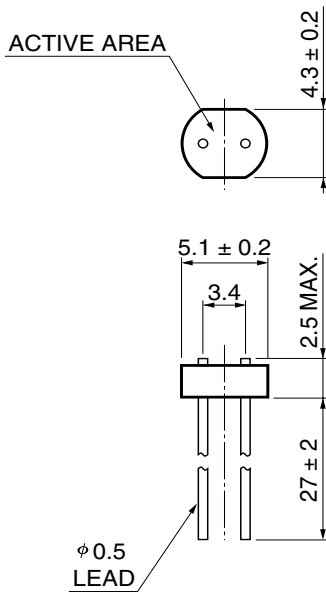
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Resistance vs. ambient temperature



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Dimensional outline (unit: mm)



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