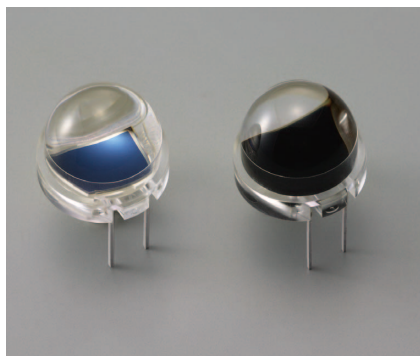


# Si PIN photodiode



S6801/S6968 series

**φ14 mm lens plastic package**

The S6801/S6968 series is a Si PIN photodiode molded into a plastic package with a φ14 mm lens. Four types are provided, S6801, S6968 with a clear plastic package and S6801-01, S6968-01 with a visible-cut package.

## Features

- Plastic packages with φ14 mm lens
- High-speed response (S6968 series): 50 MHz typ. ( $V_R=10\text{ V}$ ,  $\lambda=850\text{ nm}$ )
- High sensitivity (S6801, S6968): 0.63 A/W ( $\lambda=850\text{ nm}$ )
- Directivity: 35 ° (half angle)
- Visible-cut type: S6801-01, S6968-01
- Photosensitive area size: φ14 mm (lens diameter)
- Effective photosensitive area: 150 mm<sup>2</sup>

## Applications

- Spatial light transmission
- Optical communication
- Optical data link
- High-speed optical measurement
- Optical switch
- Laser radar

## Structure / Absolute maximum ratings

Type no.	Package	Photosensitive area size (mm)	Effective photosensitive area (mm <sup>2</sup> )	Absolute maximum ratings		
				Reverse voltage $V_R$ max (V)	Operating temperature $T_{opr}$ (°C)	Storage temperature $T_{stg}$ (°C)
S6801	Plastic	φ14	150	35	-25 to +85	-40 to +100
S6801-01						
S6968						
S6968-01						

Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

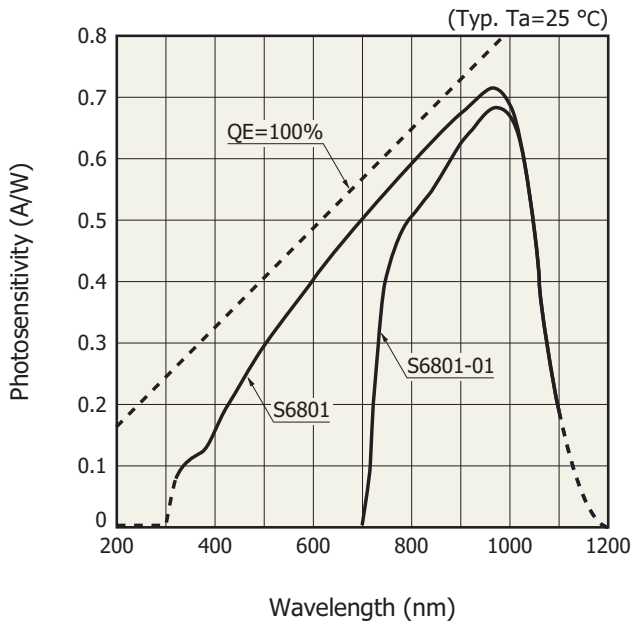
## Electrical and optical characteristics

Type No.	Spectral response range $\lambda$ (nm)	Peak sensitivity wavelength $\lambda_p$ (nm)	Photosensitivity S $\lambda=850\text{ nm}$		Short circuit current $I_{sc}$ 100 lx 2856 K		Dark current $I_D$ $V_R=10\text{ V}$		Temp. coefficient of $I_D$ $T_{CID}$ (times/°C)	Cutoff frequency $f_c$ $V_R=10\text{ V}$ $R_L=50\ \Omega$ $\lambda=850\text{ nm}$ , -3 dB		Terminal capacitance $C_t$ $V_R=10\text{ V}$ $f=1\text{ MHz}$		Half angle * (degree)
			Min. (A/W)	Typ. (A/W)	Min. (μA)	Typ. (μA)	Typ. (nA)	Max. (nA)		Min. (MHz)	Typ. (MHz)	Typ. (pF)	Max. (pF)	
S6801	320 to 1100	960	0.57	0.63	95	120	0.5	10	1.15	7	15	40	80	±35
S6801-01	700 to 1100		0.5	0.55	64	80				30	50	50	100	
S6968	320 to 1060	920	0.57	0.63	83	104	0.5	5		30	50	50	100	
S6968-01	700 to 1060		0.5	0.55	57	72				30	50	50	100	

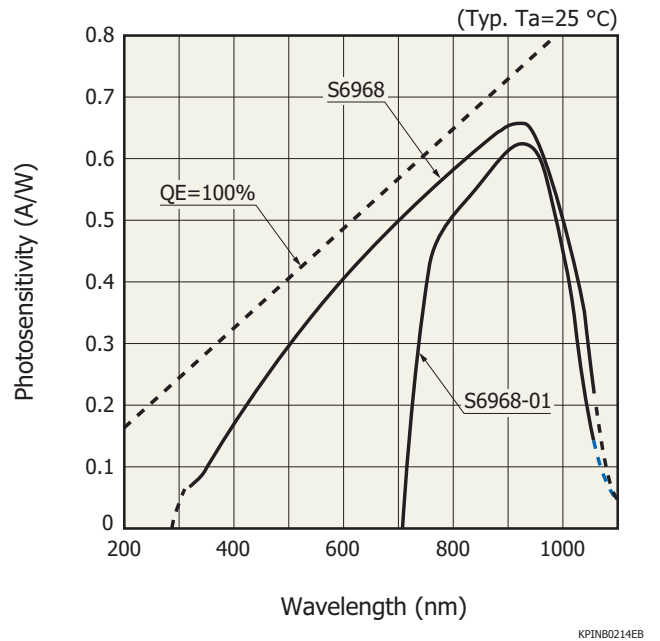
\* Photocurrent generated in a photodiode varies depending on the incident light angle. The half angle is the incident light angle at which the photocurrent is 50% of that generated when the incident light is perpendicular to the photodiode.

**Spectral response**

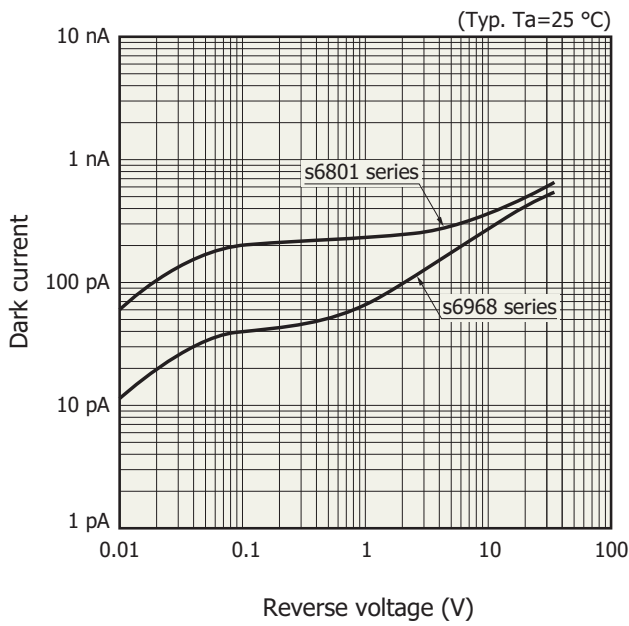
S6801 series



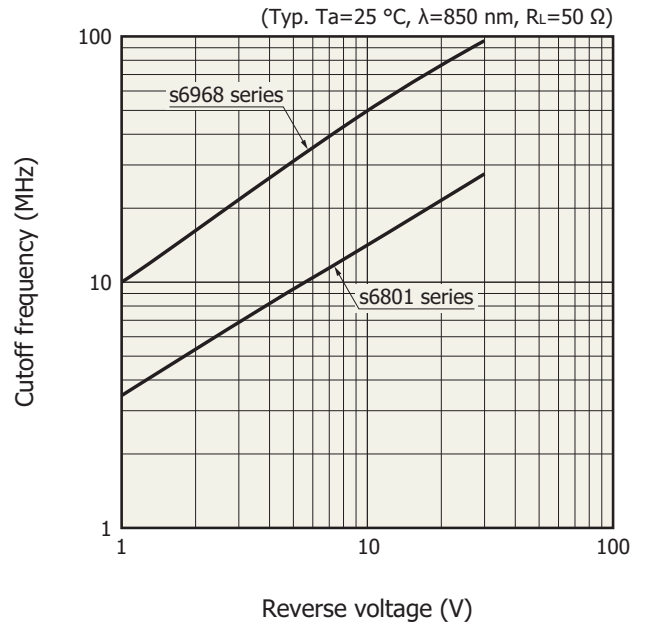
S6968 series



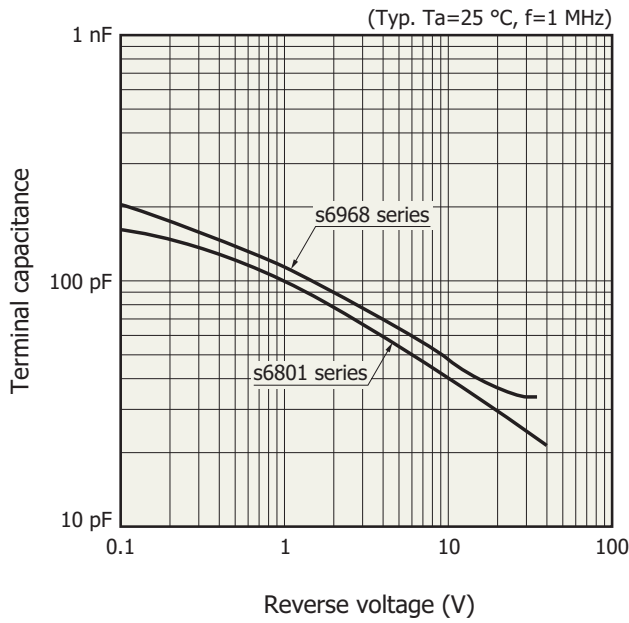
**Dark current vs. reverse voltage**



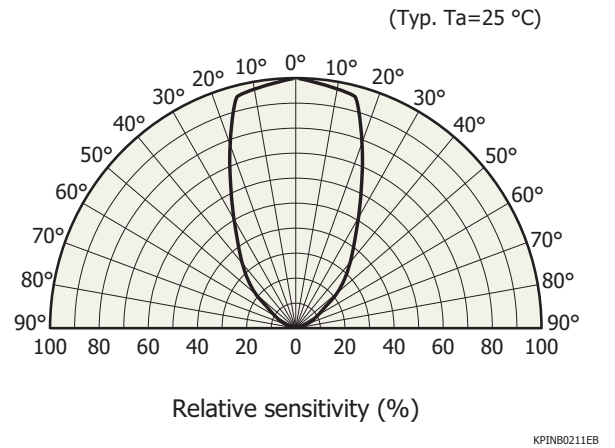
**Cutoff frequency vs. reverse voltage**



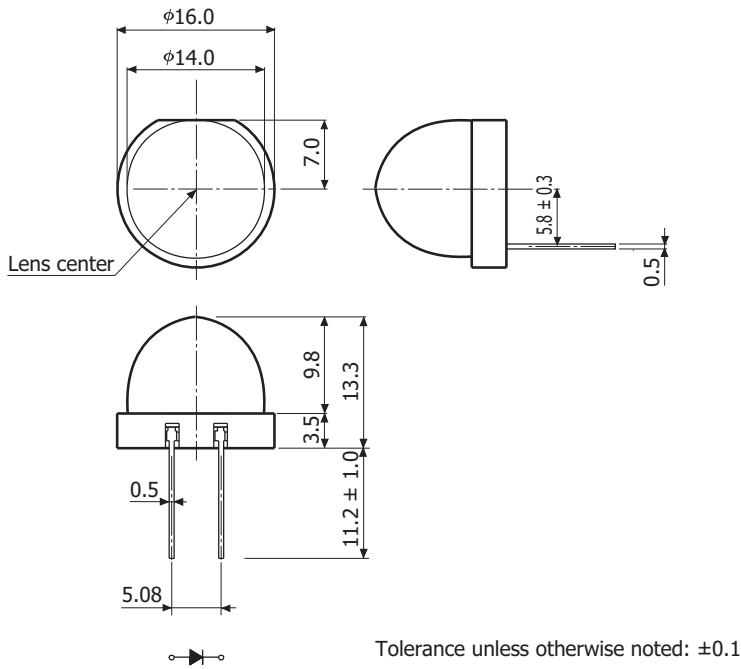
Terminal capacitance vs. reverse voltage



Directivity



Dimensional outline (unit: mm)



## Related information

[www.hamamatsu.com/sp/ssd/doc\\_en.html](http://www.hamamatsu.com/sp/ssd/doc_en.html)

### ■ Precautions

- Disclaimer
- Metal, ceramic, plastic package products

### ■ Technical information

- Si photodiode/Application circuit examples

Information described in this material is current as of October 2017.

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