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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 V, λ=850 nm)**
- **High sensitivity (S6801, S6968): 0.63 A/W (λ=850 nm)**
- **Directivity: 35 ° (half angle)**
- **Visible-cut type: S6801-01, S6968-01**
- **Photosensitive area size: ϕ14 mm (lens diameter)**
- **Effective photosensitive area: 150 mm²**

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 (mm²)	Absolute maximum ratings		
				Reverse voltage V_R max (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S6801	Plastic	ϕ14	150	20	-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.

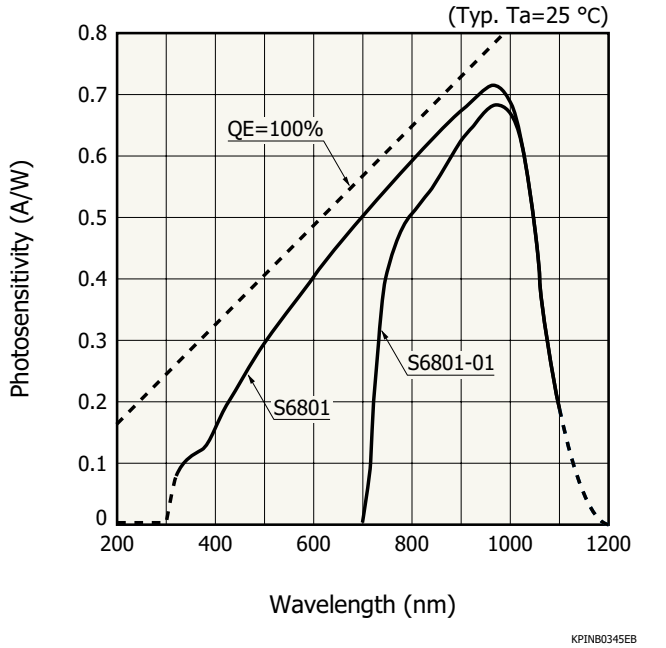
Electrical and optical characteristics

Type No.	Spectral response range λ (nm)	Peak sensitivity wavelength λp (nm)	Photosensitivity S λ=850 nm		Short circuit current Isc 100 lx 2856 K		Dark current I_D V_R=10 V		Temp. coefficient of I_D T_{CID} (times/°C)	Cutoff frequency fc V_R=10 V R_L=50 Ω λ=850 nm, -3 dB		Terminal capacitance Ct V_R=10 V f=1 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								
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								

* 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



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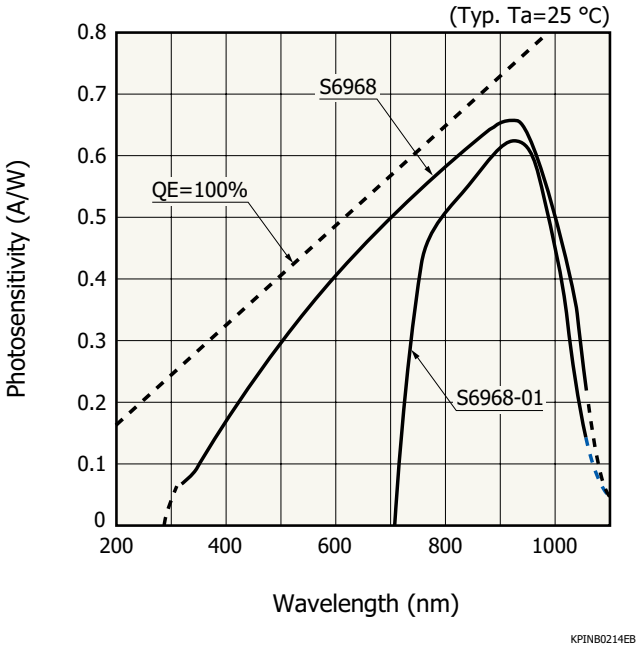
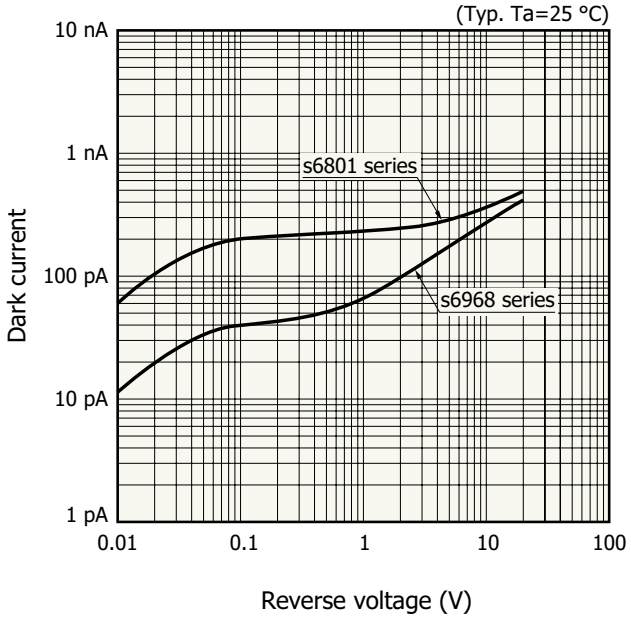
S6968 series



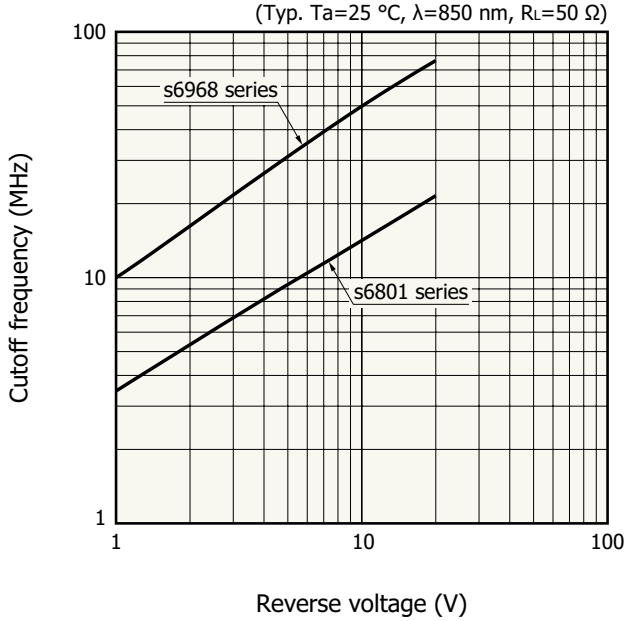
KPINB0214EB

Dark current vs. reverse voltage



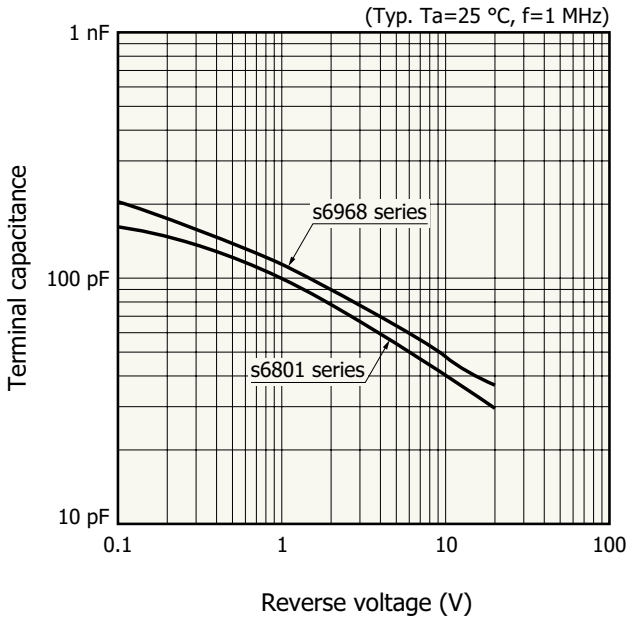
KPINB0205EE

Cutoff frequency vs. reverse voltage



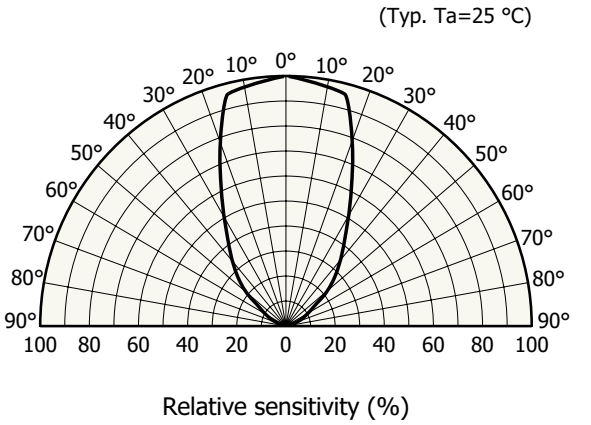
KPINB0241ED

Terminal capacitance vs. reverse voltage



KPINB0207ED

Directivity



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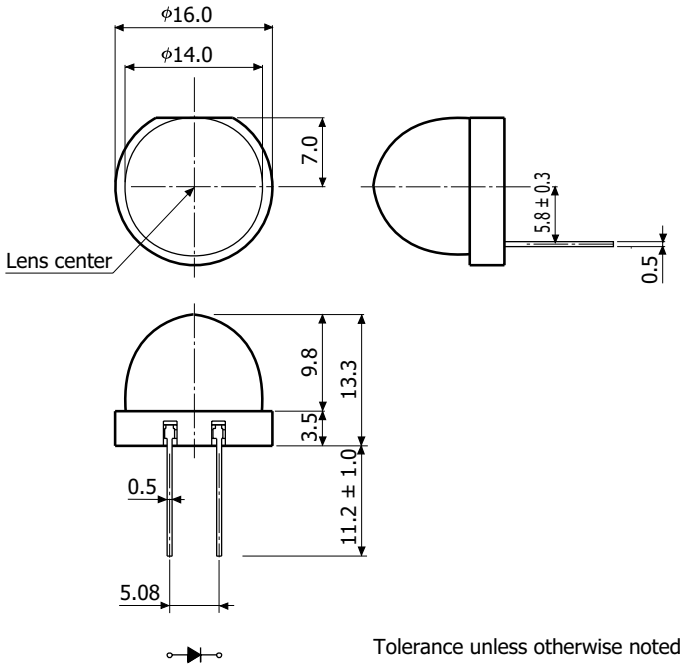
Dimensional outline (unit: mm)



Tolerance unless otherwise noted: ±0.1

KPINA0044EC

Recommended soldering conditions

Parameter	Specification	Remarks
Solder temperature	260 °C max. (once, less than 5 s)	at least 1 mm away from lead roots

Note: When you set soldering conditions, check that problems do not occur in the prouct by testing out the conditions in advance.

Related information

www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions
· Disclaimer
· Metal, ceramic, plastic package products

■ Technical note
· Si photodiodes

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