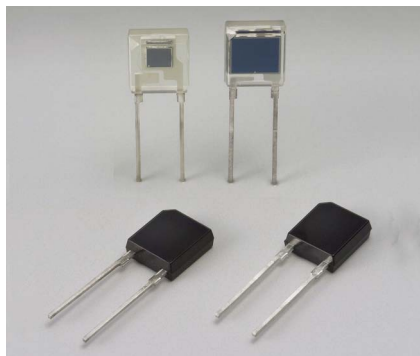


Si PIN photodiodes



S2506/S6775/S6967 series

Plastic SIP (single in-line package)

S2506/S6775 series and S6967 are Si PIN photodiodes with large active areas, molded into a clear or visible-cut plastic SIP for detecting visible to near infrared range or near infrared range only. These Si PIN photodiodes feature a high sensitivity, a high-speed response and large active areas.

Features

- **S2506-02: visible to near infrared range**
S2506-04: visible-cut
S6775, S6967: visible to near infrared range, high sensitivity, high-speed response, large active area
S6775-01, S6967-01: visible-cut, high sensitivity, high-speed response, large active area
- **Plastic package: 7 × 7.8 mm**
- **Photosensitive area size**
S2506 series: 2.77 × 2.77 mm
S6775/S6967 series: 5.5 × 4.8 mm

Applications

- **FSO (free space optics)**
- **Optical switches**
- **Laser radar, etc.**

General ratings / Absolute maximum ratings

Type no.	Package	Photosensitive area size (mm)	Effective photosensitive area (mm ²)	Absolute maximum ratings			
				Reverse voltage V _R max. (V)	Power dissipation P (mW)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S2506-02	Plastic	2.77 × 2.77	7.7	20	150	-25 to +85	-40 to +100
S2506-04					50		
S6775		5.5 × 4.8	26.4		50		
S6775-01							
S6967							
S6967-01							

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 (Typ. T_a=25 °C, unless otherwise noted)

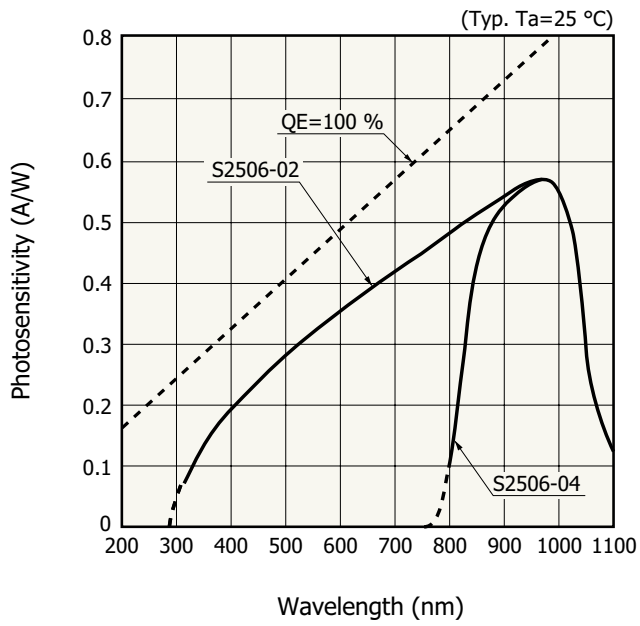
Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λ _p (nm)	Photosensitivity S (A/W)				Short circuit current I _{sc} 100 lx (μA)	Dark current I _D		Temp. coefficient of I _D T _{CID} (times/°C)	Cutoff frequency f _c R _L =50 Ω -3 dB (MHz)	Terminal capacitance C _t f=1 MHz (pF)	NEP (W/Hz ^{1/2})
			λ _p	660 nm	780 nm	830 nm		Typ. (nA)	Max. (nA)				
S2506-02	320 to 1100	960	0.56	0.4	0.48	0.5	7.3	0.1*1	10*1	1.15	25*1	15*1	1.0 × 10 ^{-14*1}
S2506-04	760 to 1100			-	-	0.25	4.1						
S6775	320 to 1100	960	0.7	0.45	0.55	0.6	30	0.5*2	10*2		15*2	40*2	1.8 × 10 ^{-14*2}
S6775-01	720 to 1100			0.68	-	0.48	0.54						
S6967	320 to 1060	900	0.65	0.45	0.55	0.6	26	5*2	50*2		50*2	2.0 × 10 ^{-14*2}	
S6967-01	700 to 1060			0.63	-	0.48	0.54						18

*1: V_R=12 V

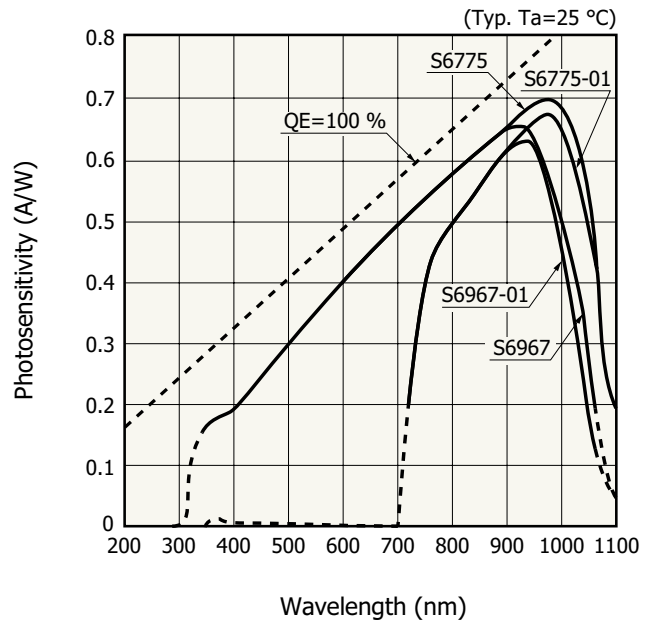
*2: V_R=10 V

Spectral response

S2506 series

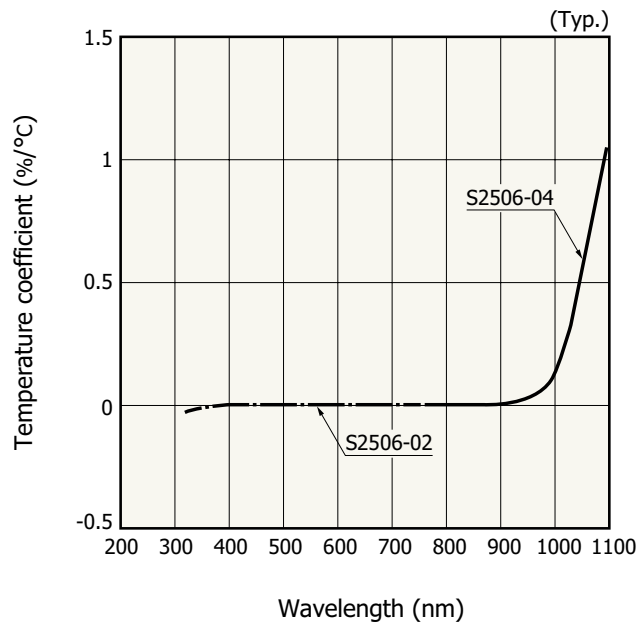


S6775/S6967 series

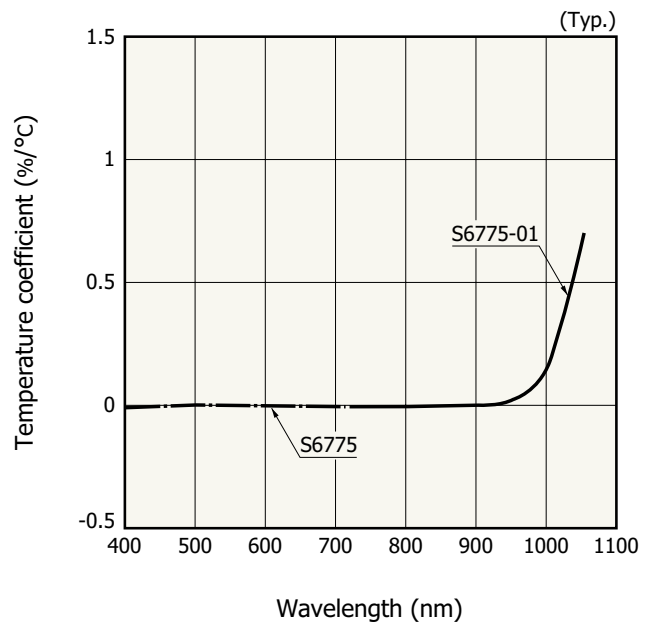


Photosensitivity temperature characteristics

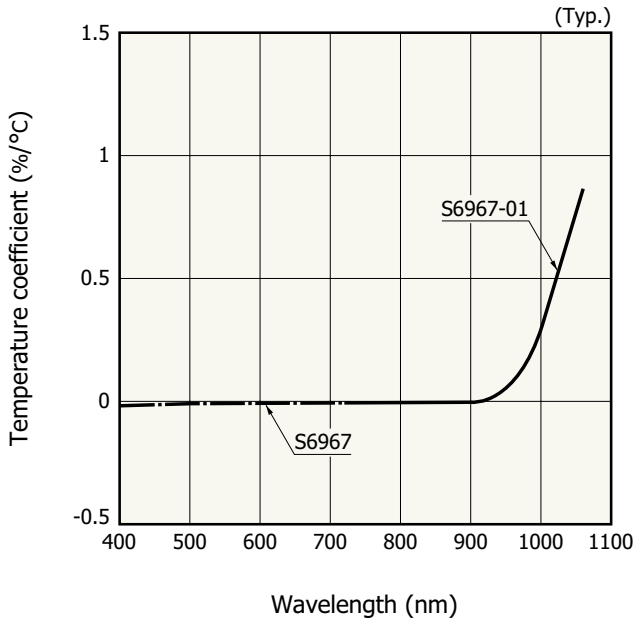
S2506 series



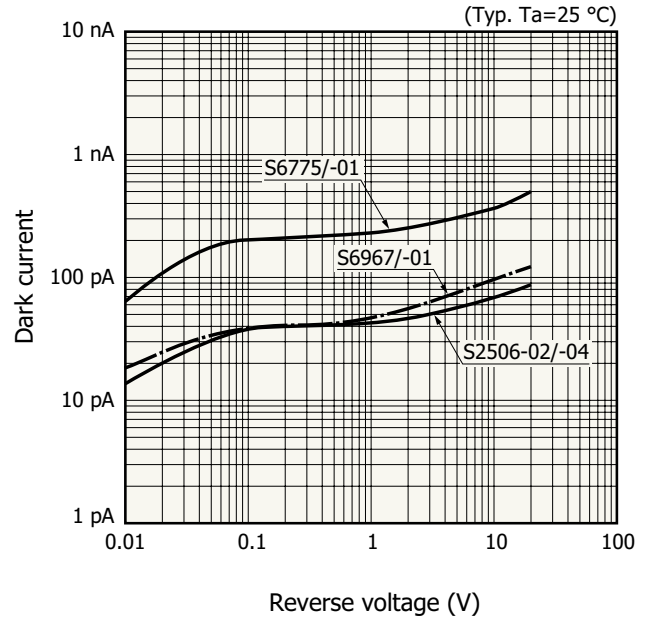
S6775 series



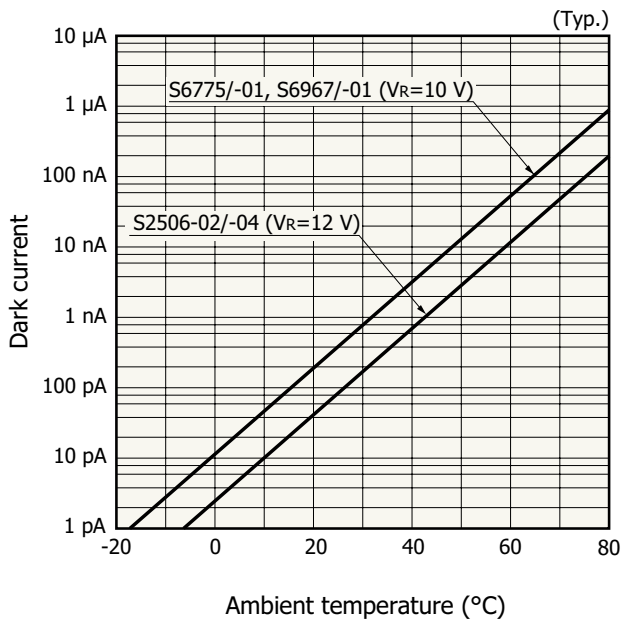
S6967 series



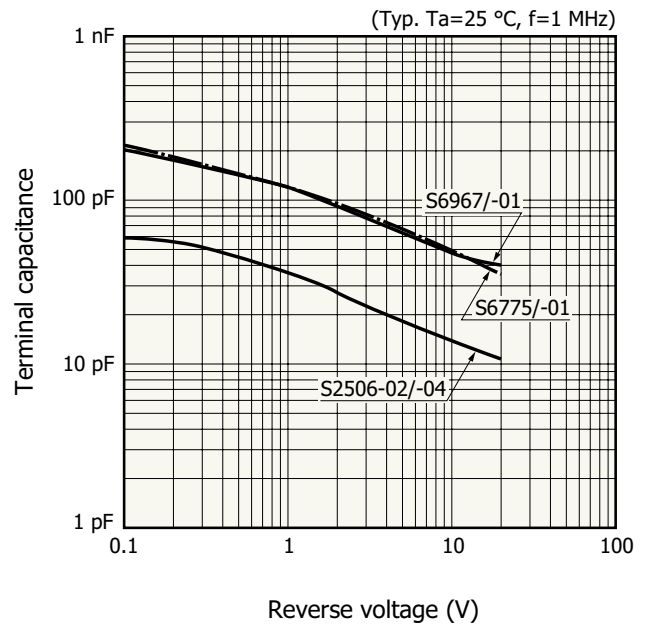
Dark current vs. reverse voltage



Dark current vs. ambient temperature

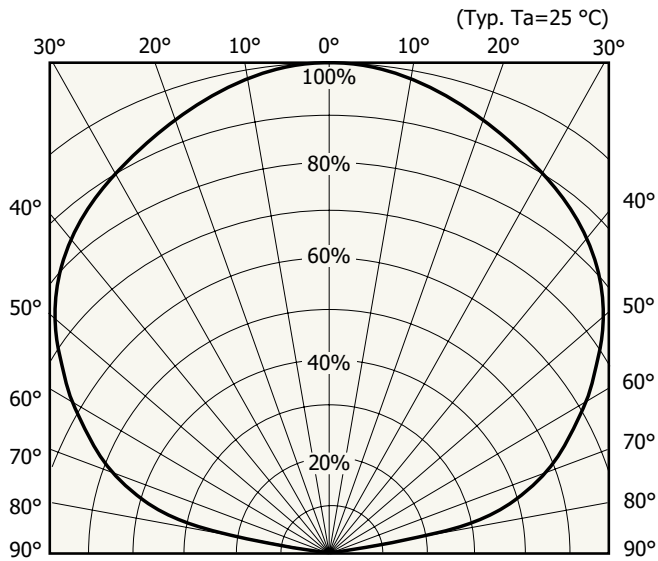


Terminal capacitance vs. reverse voltage



Directivity

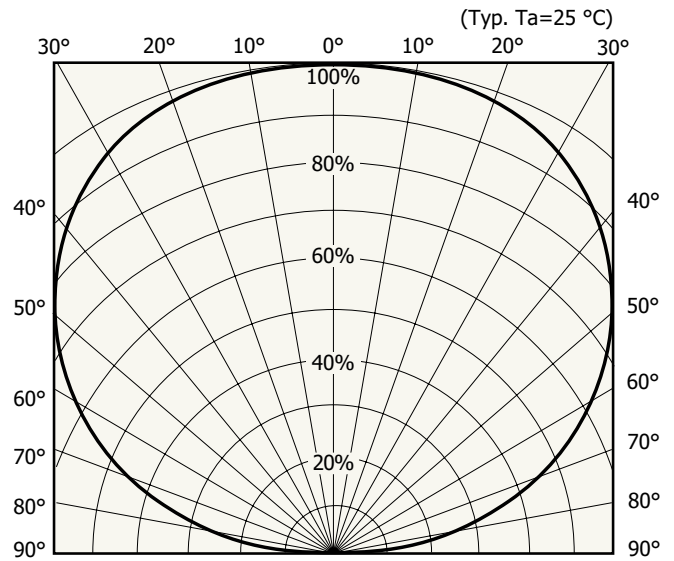
S2506 series



Relative sensitivity

KPINB0065EB

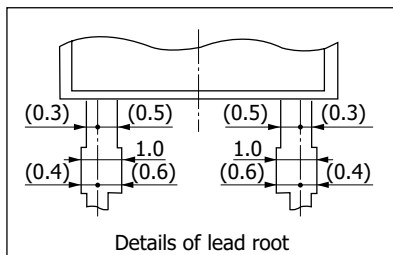
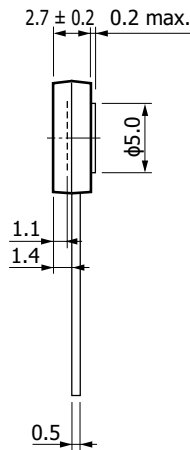
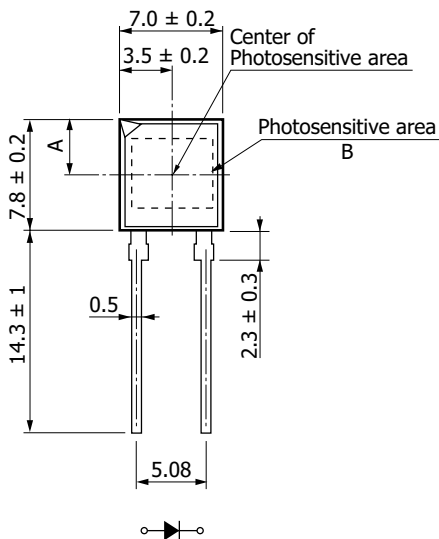
S6775/S6967 series



Relative sensitivity

KPINB0401EA

Dimensional outline (unit: mm)



Type no.	A	B
S2506 series	2.8 ± 0.2	2.77 × 2.77
S6775/S6967 series	3.65 ± 0.2	5.5 × 4.8

Tolerance unless otherwise noted: ±0.1
 Packing: Polyethylene pack [anti-static type]
 Values in parentheses indicate reference values.

KPINA0084EF

Recommended soldering conditions

Parameter	Specification	Remarks
Solder temperature	260 °C max. (once, 10 s or less)	at least 2 mm away from lead roots

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

Related information

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

■ Precautions

- Notice
- Metal, ceramic, plastic package products

■ Technical note

- Si photodiodes

Information described in this material is current as of May 2022.

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