



S9119-01

## Si PIN photodiode for visible to near infrared

The S9119-01 is a wide directional Si PIN photodiode in a TO-18 package with a potted transparent epoxy resin.

### Features

- Resin potting type
- Low dark current
- Low capacitance, high-speed response
- Wide directivity

### Applications

- Optical switches
- Optical measurement equipment

### Structure

Parameter	Specification	Unit
Photosensitive area	0.88 × 0.88	mm
Package	TO-18	-
Window material	Epoxy resin	-

### Absolute maximum ratings (Ta=25 °C)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		30	V
Operating temperature	Topr	No dew condensation*1	-30 to +85	°C
Storage temperature	Tstg	No dew condensation*1	-30 to +100	°C

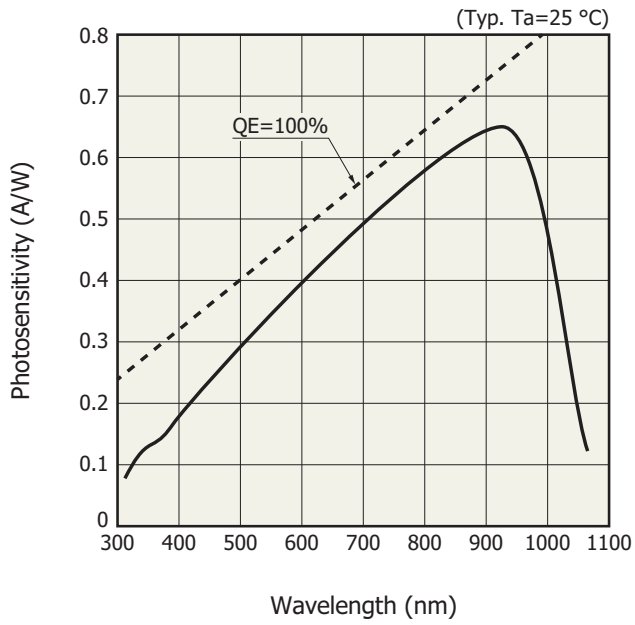
\*1: When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product surface may cause deterioration in characteristics and reliability.

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 (Ta=25 °C)

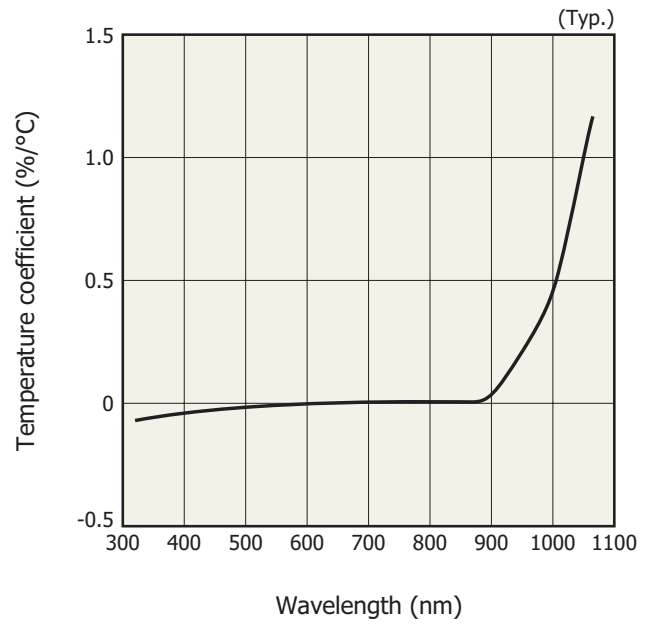
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	$\lambda$		-	320 to 1060	-	nm
Peak sensitivity wavelength	$\lambda_p$		-	920	-	nm
Photosensitivity	S	$\lambda=870$ nm	-	0.63	-	A/W
Short circuit current	Isc	2856 K, 100 lx	1.2	1.8	-	$\mu$ A
Dark current	ID	VR=10 V	-	0.01	10	nA
Temperature coefficient of ID	$\Delta TID$		-	1.15	-	times/°C
Cutoff frequency	fc	VR=10 V, RL=50 $\Omega$ $\lambda=830$ nm, -3 dB	-	80	-	MHz
Terminal capacitance	Ct	VR=10 V, f=1 MHz	-	5	-	pF

**Spectral response**



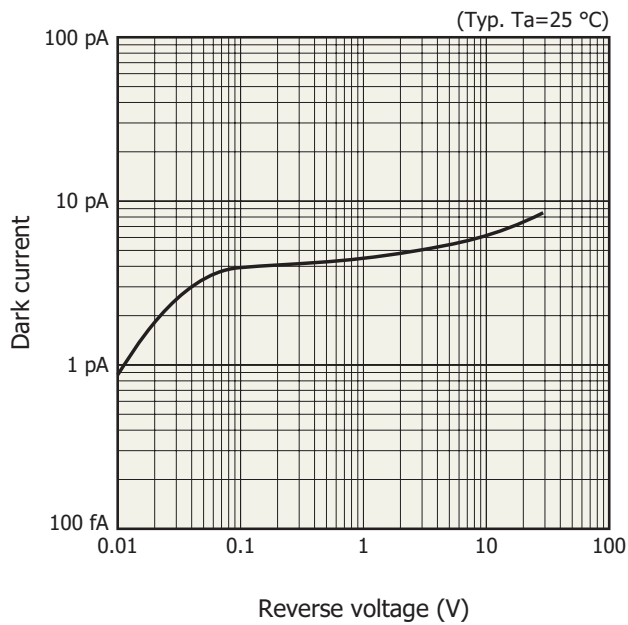
KPINB0446EA

**Photosensitivity temperature characteristics**



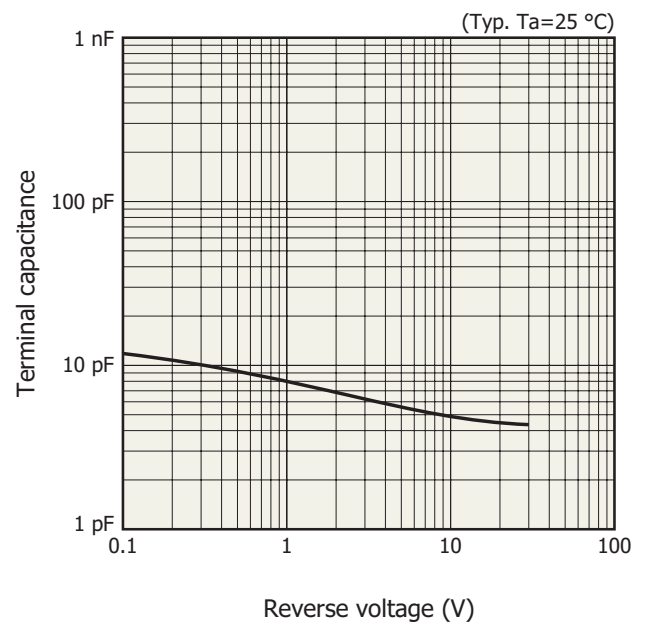
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**Dark current vs. reverse voltage**



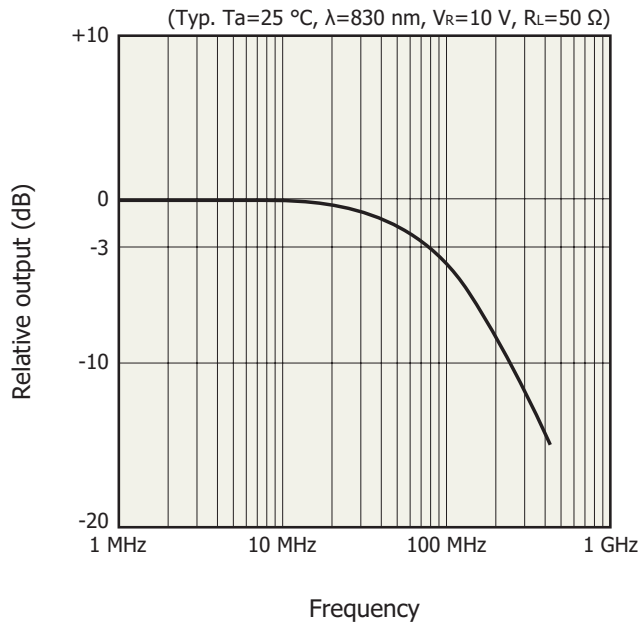
KPINB0448EA

**Terminal capacitance vs. reverse voltage**

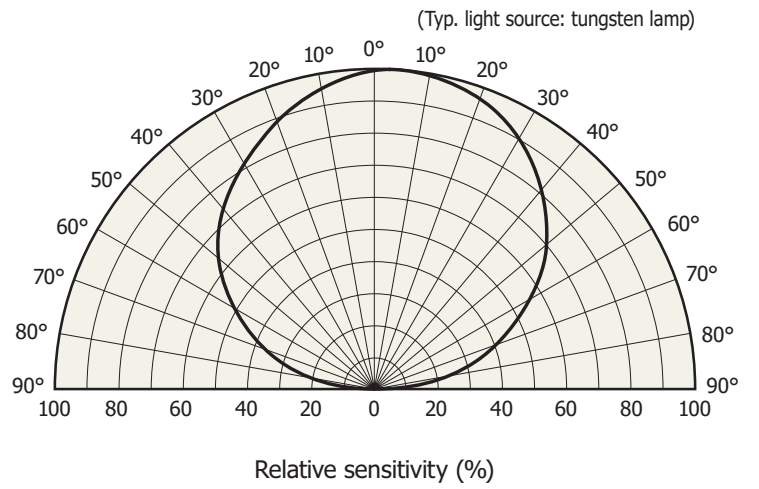


KPINB0449EA

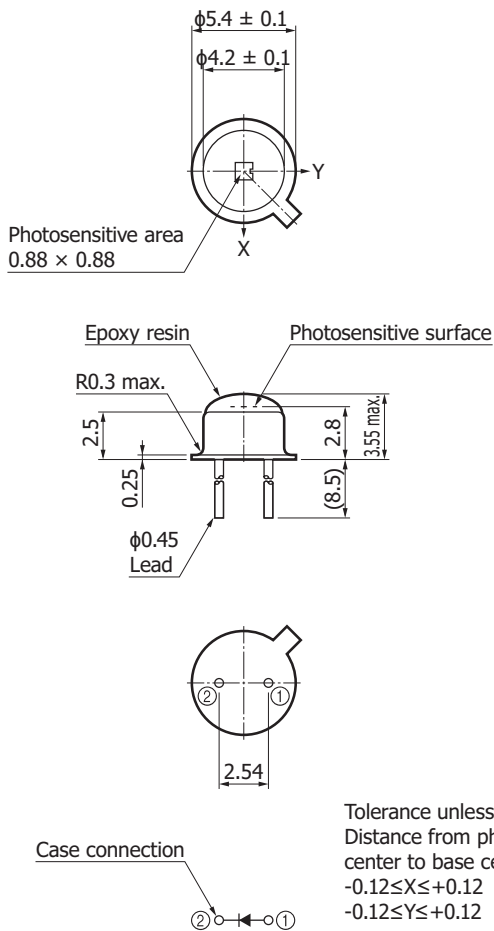
**Frequency response**



**Directivity**



**Dimensional outline (unit: mm)**



KPINA0126EA

### Standard packing specification

- Bagged (polyethylene bag) 1000 pcs max./bag

### Recommended soldering condition

- Solder temperature: 260 °C max. (10 s or less, once)
- Solder the leads at a point at least 1 mm away from the package body.

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

### 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 photodiodes / Technical note

Information described in this material is current as of February 2021.

Product specifications are subject to change without prior notice due to improvements or other reasons. This document has been carefully prepared and the information contained is believed to be accurate. In rare cases, however, there may be inaccuracies such as text errors. Before using these products, always contact us for the delivery specification sheet to check the latest specifications.

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HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81)53-434-3311, Fax: (81)53-434-5184

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J. 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218, E-mail: [usa@hamamatsu.com](mailto:usa@hamamatsu.com)

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8, E-mail: [info@hamamatsu.de](mailto:info@hamamatsu.de)

France: Hamamatsu Photonics France S.A.R.L.: 19, 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, E-mail: [infos@hamamatsu.fr](mailto:infos@hamamatsu.fr)

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777, E-mail: [info@hamamatsu.co.uk](mailto:info@hamamatsu.co.uk)

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01, E-mail: [info@hamamatsu.se](mailto:info@hamamatsu.se)

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41, E-mail: [info@hamamatsu.it](mailto:info@hamamatsu.it)

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuan Beilu, Chaoyang District, 100020 Beijing, P.R.China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866, E-mail: [hpc@hamamatsu.com.cn](mailto:hpc@hamamatsu.com.cn)

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No. 158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081, E-mail: [info@hamamatsu.com.tw](mailto:info@hamamatsu.com.tw)