



Si PIN photodiode

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

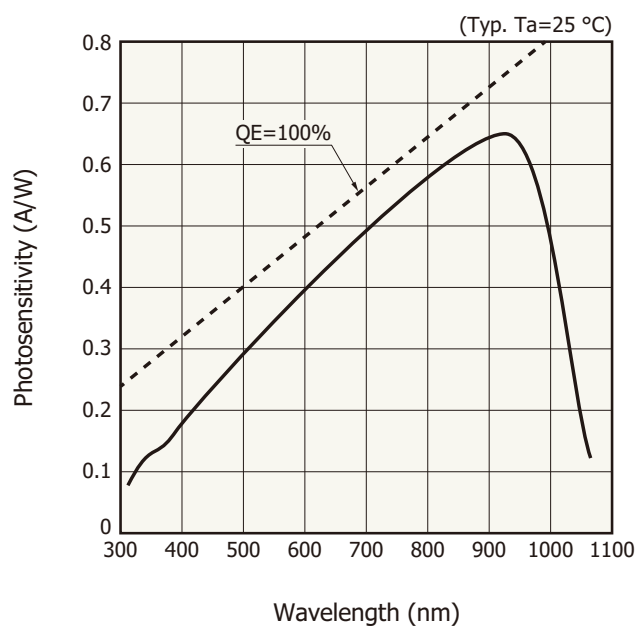
*1: When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product surface may cause deterioration in characteristics and reliability.

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.

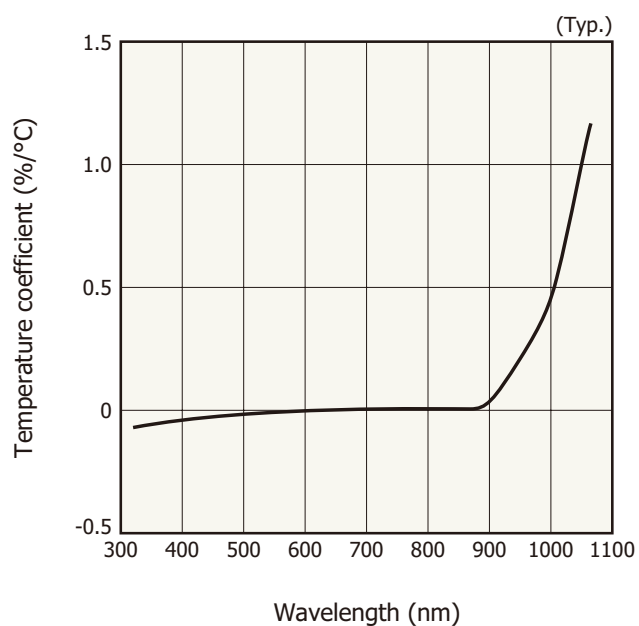
Electrical and optical characteristics (Ta=25 °C)

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

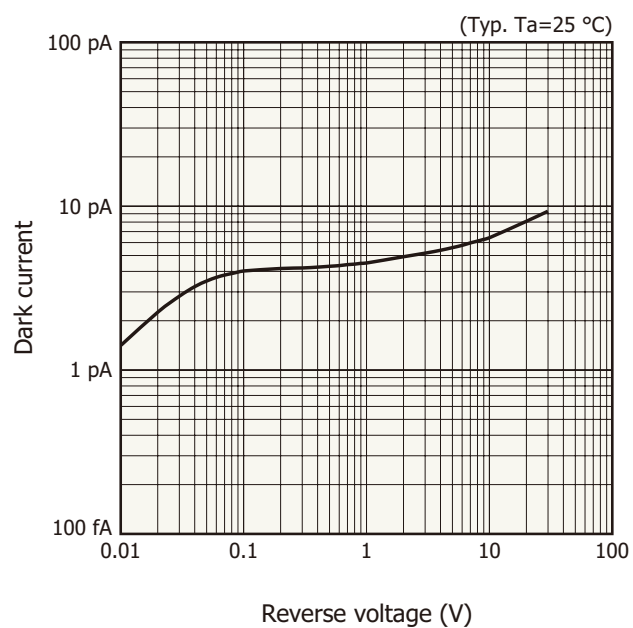
Spectral response



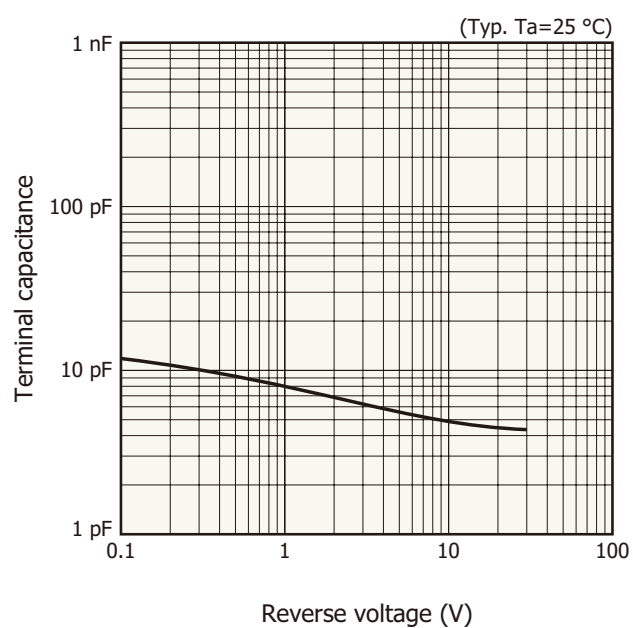
Photosensitivity temperature characteristics



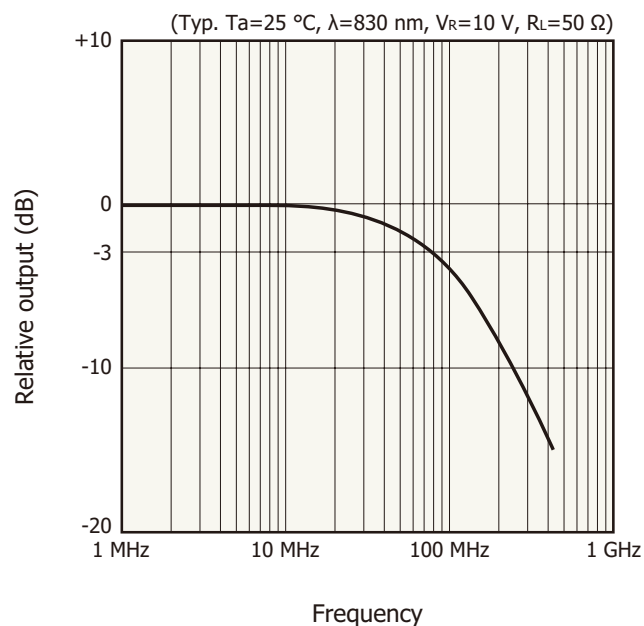
Dark current vs. reverse voltage



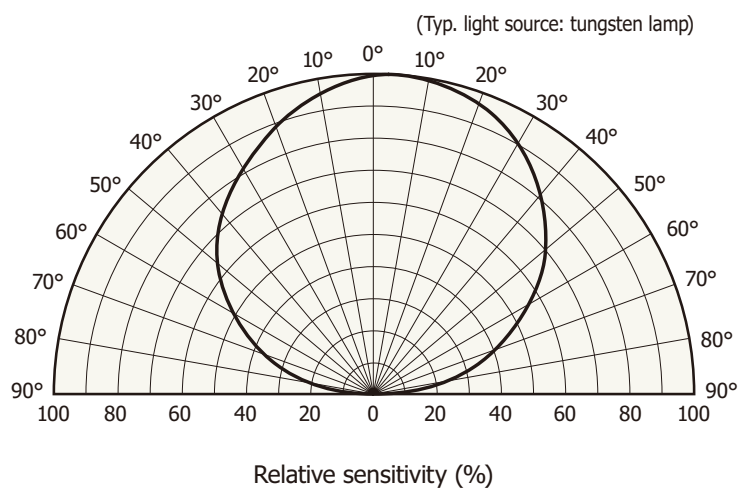
Terminal capacitance vs. reverse voltage



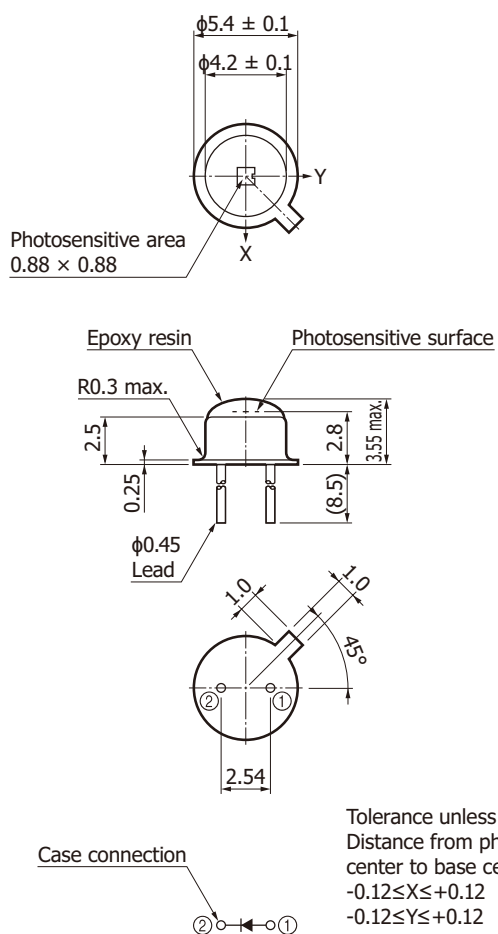
Frequency response



Directivity



Dimensional outline (unit: mm)



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

- Precautions
 - Disclaimer
 - Precautions / Metal, ceramic, plastic package products
- Catalogs
 - Technical note / Si photodiodes

Information described in this material is current as of December 2025.

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.

The product warranty is valid for one year after delivery and is limited to product repair or replacement for defects discovered and reported to us within that one year period. However, even if within the warranty period we accept absolutely no liability for any loss caused by natural disasters or improper product use. Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.