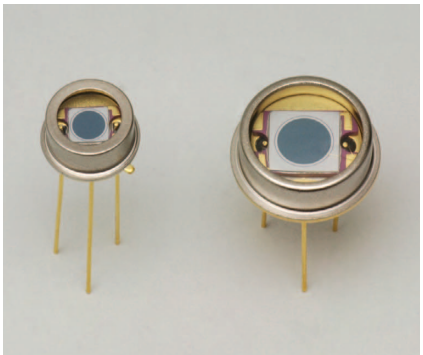
HAMAMATSU
PHOTON IS OUR BUSINESS

IR-enhanced Si PIN photodiodes

S11499 series



Large area, enhanced near IR sensitivity, using a MEMS technology

HAMAMATSU has developed various types of Si detectors that offer enhanced near-infrared sensitivity due to a MEMS structure formed on the back side of the photodiode. The S11499 series is a family of Si PIN photodiodes with drastically improved sensitivity in the near infrared region at wavelengths longer than 900 nm. Compared to our conventional product, the S11499 series has much higher sensitivity to YAG laser light (1.06 µm). It also offers improved temperature characteristics of sensitivity at wavelengths longer than 950 nm.

Features

- **High sensitivity: 0.6 A/W (λ=1060 nm)**
- **Large active area: ϕ5.0 mm (S11499-01)**
- **High reliability package: TO-5/TO-8 metal package**

Applications

- **YAG laser monitor**

Structure

Parameter	S11499	S11499-01	Unit
Package	TO-5	TO-8	-
Window material	Borosilicate glass		-
Photosensitive area	ϕ3.0	ϕ5.0	mm
Effective photosensitive area	7.0	19.6	mm^2

Absolute maximum ratings

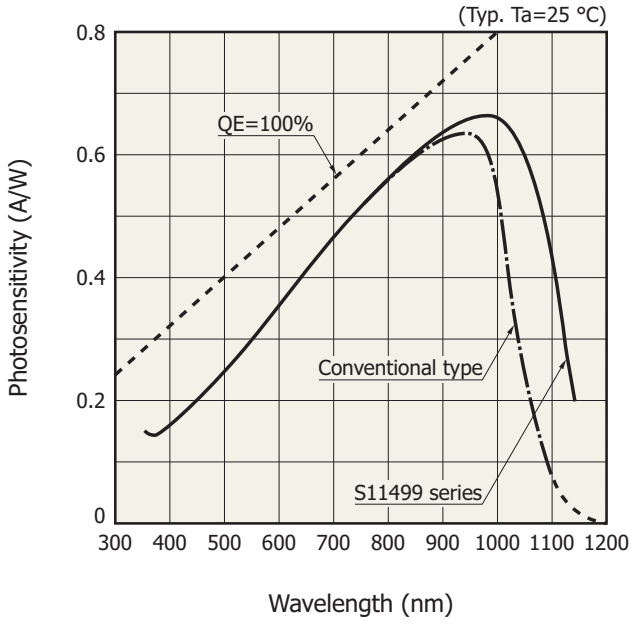
Parameter	Symbol	Condition	S11499	S11499-01	Unit
Reverse voltage	V_R max.	Ta=25 °C	30		V
Operating temperature	Topr		-40 to +100		°C
Storage temperature	Tstg		-55 to +125		°C

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)

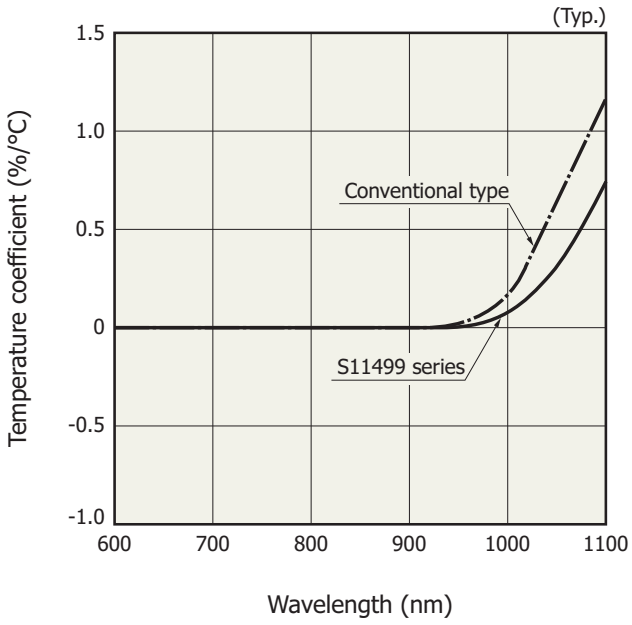
Parameter	Symbol	Condition	S11499			S11499-01			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Spectral response range	λ		-	360 to 1140	-	-	360 to 1140	-	nm
Peak sensitivity wavelength	λp		-	1000	-	-	1000	-	nm
Photosensitivity	S	λ=1060 nm	0.54	0.6	-	0.54	0.6	-	A/W
Short circuit current	Isc	100 *lx*	6.0	7.8	-	15	21	-	µA
Dark current	ID	V_R=20 V	-	0.05	5	-	0.1	10	nA
Cutoff frequency	fc	V_R=20 V, -3 dB, R_L=50 Ω	-	30	-	-	15	-	MHz
Terminal capacitance	Ct	V_R=20 V, f=1 MHz	-	13	-	-	33	-	pF

Spectral response



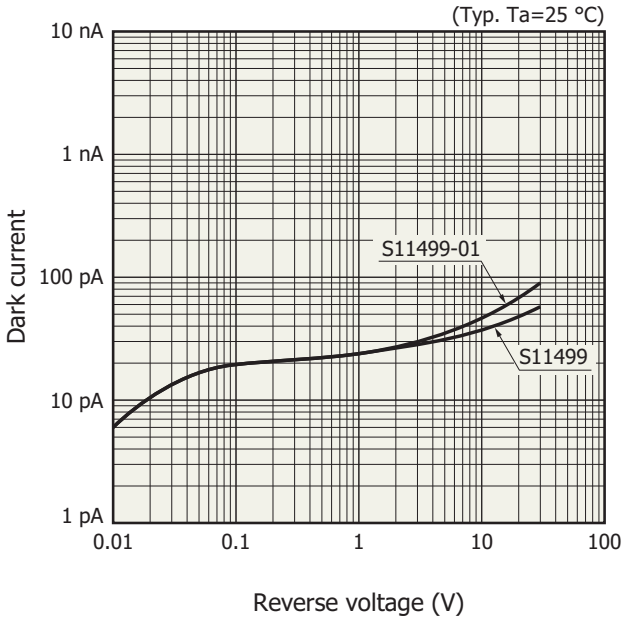
KPINB0368EB

Photosensitivity temperature characteristics



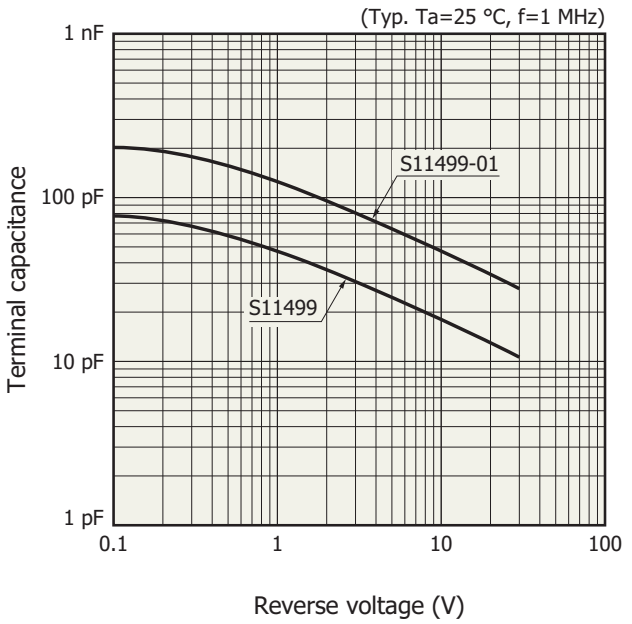
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Dark current vs. reverse voltage



KPINB0370EA

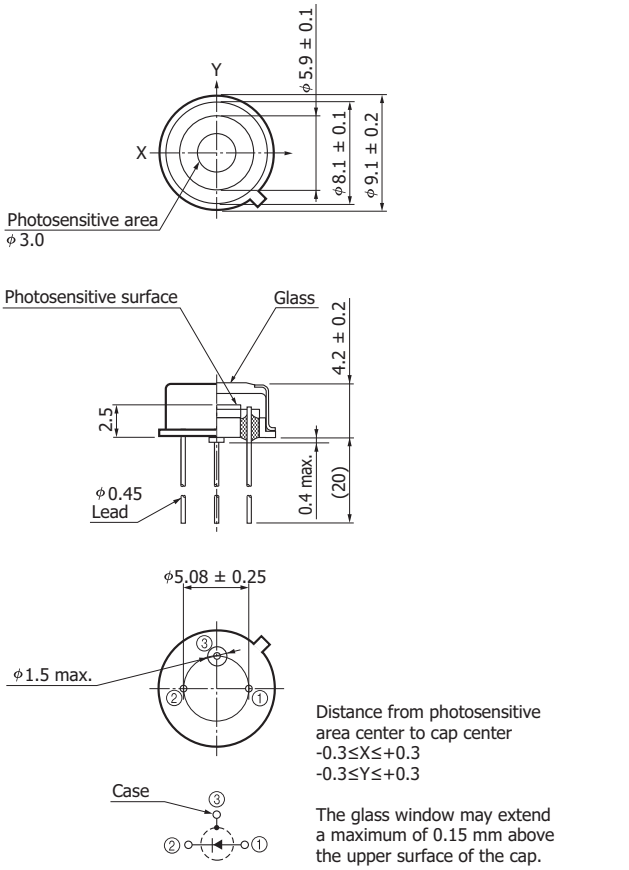
Terminal capacitance vs. reverse voltage



KPINB0371EA

Dimensional outlines (unit: mm)

S11499

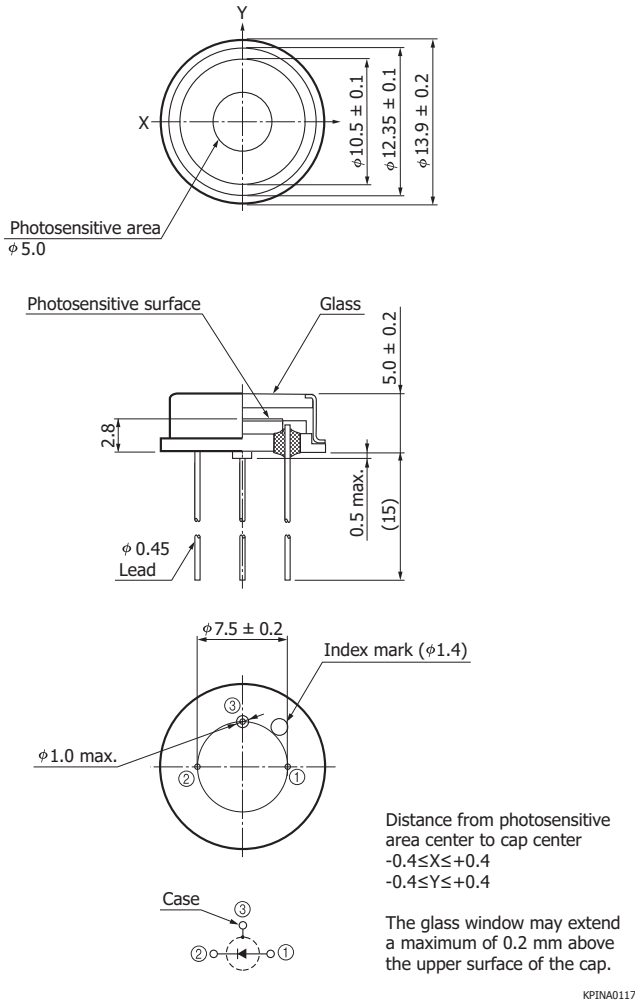


Distance from photosensitive area center to cap center
-0.3≤X≤+0.3
-0.3≤Y≤+0.3

The glass window may extend a maximum of 0.15 mm above the upper surface of the cap.

KPINA0116EA

S11499-01



Distance from photosensitive area center to cap center
-0.4≤X≤+0.4
-0.4≤Y≤+0.4

The glass window may extend a maximum of 0.2 mm above the upper surface of the cap.

KPINA0117EA

Information described in this material is current as of October 2015.
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.
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Cat. No. KPIN1082E03 Oct. 2015 DN