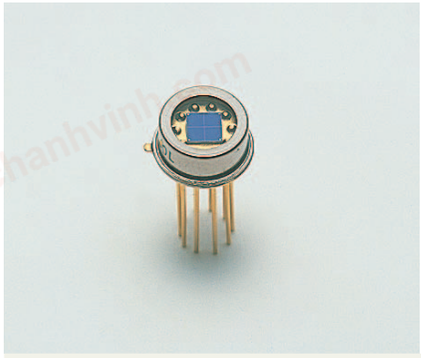
chanhvinh.com

HAMAMATSU
PHOTON IS OUR BUSINESS

Si photodiode



S4349

Quadrant Si PIN photodiode

The S4349 is a quadrant Si PIN photodiode having sensitivity in the UV to near IR spectral range. A quadrant element format allows position sensing such as for laser beam axis alignment.

Features

- **Quadrant (2 × 2) element format**
- **Low crosstalk: 2% max.**
- **Wide spectral response range: 190 to 1000 nm**
- **High-speed response: fc=20 MHz**
- **TO-5 metal package**

Applications

- **Laser beam axis alignment**
- **Position sensing**

Structure

Parameter	Symbol	Value	Unit
Window material	-	Quartz glass	-
Photosensitive area	A	□3.0/4 elements	mm
Element gap	-	100	µm

Absolute maximum ratings

Parameter	Symbol	Value	Unit
Reverse voltage	V_R max	20	V
Operating temperature	Topr	-20 to +60	°C
Storage temperature	Tstg	-55 to +80	°C

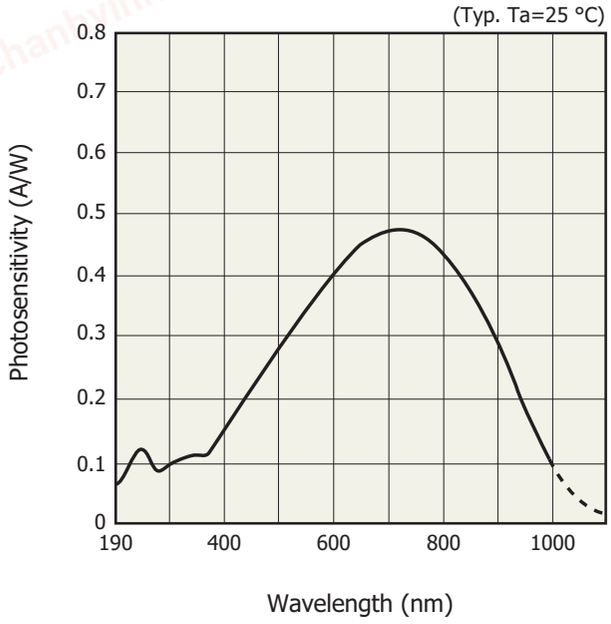
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Ta=25 °C, per 1 element)

Parameter	Symbol	Condition	Typ.	Max.	Unit
Spectral response range	λ		190 to 1000	-	nm
Peak sensitivity wavelength	λp		720	-	nm
Photosensitivity	S	λ=λp	0.45	-	A/W
Dark current	I_D	V_R=5 V	0.01	0.2	nA
Temperature coefficient of I_D	T_{CID}		1.12	-	times/°C
Cutoff frequency	fc	V_R=5 V, R_L=50 Ω λ=780 nm, -3 dB	20	-	MHz
Terminal capacitance	Ct	V_R=5 V, f=1 MHz	25	-	pF
Noise equivalent power	NEP	V_R=5 V, λ=λp	4.0×10^{-15}	-	$W/Hz^{1/2}$
Crosstalk	C_L	V_R=5 V, λ=780 nm	-	2	%

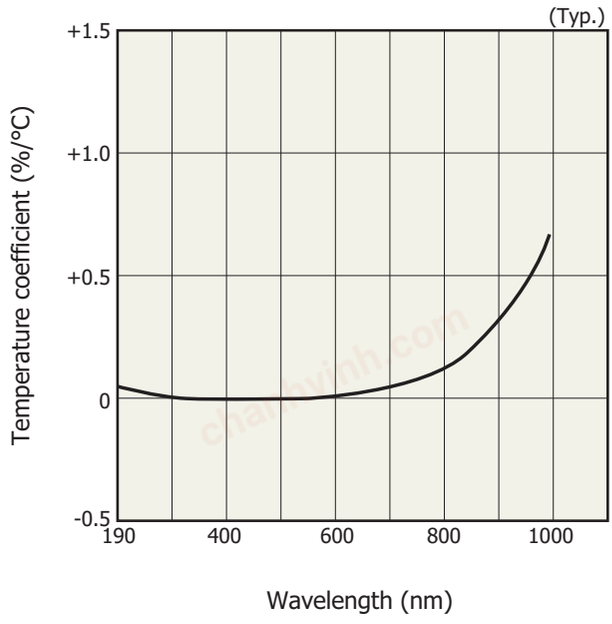
chanhvinh.com

Spectral response



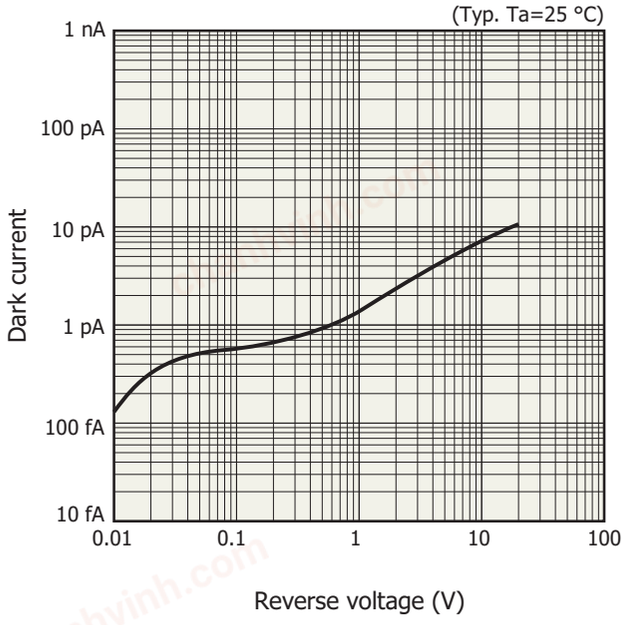
KMPDB0126EA

Photosensitivity temperature characteristics



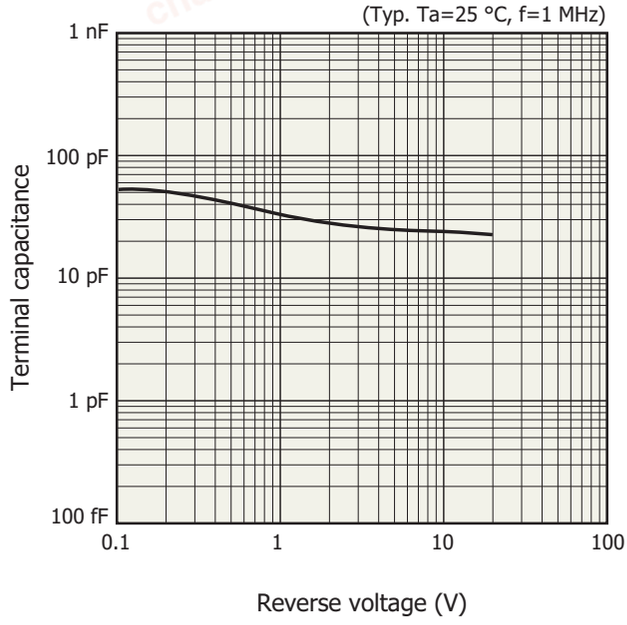
KMPDB0127EA

Dark current vs. reverse voltage



KMPDB0128EA

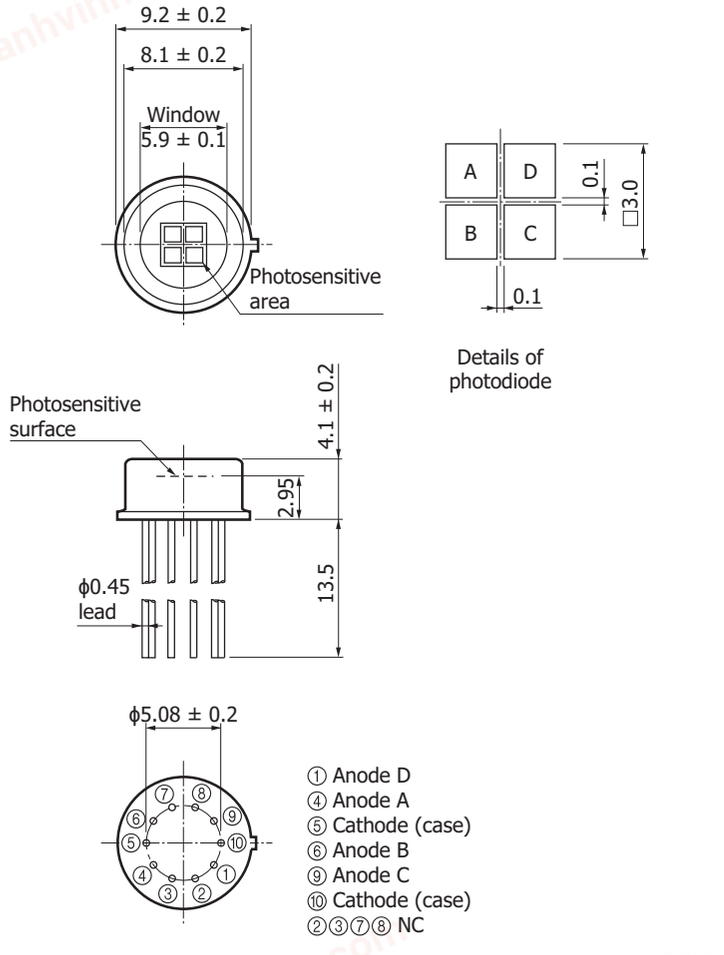
Terminal capacitance vs. reverse voltage



KMPDB0129EA

chanhvinh.com

Dimensional outline (unit: mm)



Precautions against UV light exposure

· When UV light irradiation is applied, the product characteristics may degrade. Such examples include degradation of the product's UV sensitivity and increase in dark current. This phenomenon varies depending on the irradiation level, irradiation intensity, usage time, and ambient environment and also varies depending on the product model. Before employing the product, we recommend that you check the tolerance under the ultraviolet light environment that the product will be used in.

· Exposure to UV light may cause the characteristics to degrade due to gas released from the resin bonding the product's component materials. As such, we recommend that you avoid applying UV light directly on the resin and apply it on only the inside of the photosensitive area by using an aperture or the like.

chanhvinh.com

Related information

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

■ Precautions

· Disclaimer
· Metal, ceramic, plastic package products

■ Technical information

· Si photodiode/Application circuit examples

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.
Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.

HAMAMATSU www.hamamatsu.com

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
Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49) 8152-375-0, Fax: (49) 8152-265-8
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
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44) 1707-294888, Fax: (44) 1707-325777
North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46) 8-509-031-00, Fax: (46) 8-509-031-01
Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39) 02-93581733, Fax: (39) 02-93581741
China: Hamamatsu Photonics (China) Co., Ltd.: B1201, Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86) 10-6586-6006, Fax: (86) 10-6586-2866

Cat. No. KMPD1007E03 Oct. 2015 DN