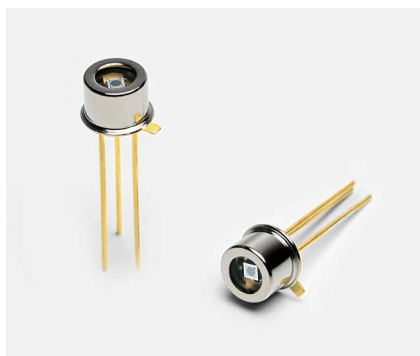


Si PIN photodiode

S16586



High UV resistance, high-speed response, photodiodes for UV monitor

The S16586 is a high-speed response Si PIN photodiode that has achieved high reliability for monitoring ultraviolet light. They exhibit low sensitivity deterioration under UV light irradiation and are suitable for applications such as monitoring intense UV light sources.

Features

- With UV glass window (hermetically sealed)
- High sensitivity in UV region
- High-speed response
- High reliability for monitoring UV light irradiation
- No resin that causes outgassing

Applications

- Power monitor for UV light sources
- Analytical instruments
- Optical measurement equipment

Structure/Absolute maximum ratings (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Specification	Unit
Photosensitive area size			φ0.8	mm
Package			TO-18	-
Window material			UV glass	-
Reverse voltage	VR		30	V
Operating temperature	Topr	No dew condensation*	-40 to +100	°C
Storage temperature	Tstg	No dew condensation*	-55 to +125	°C

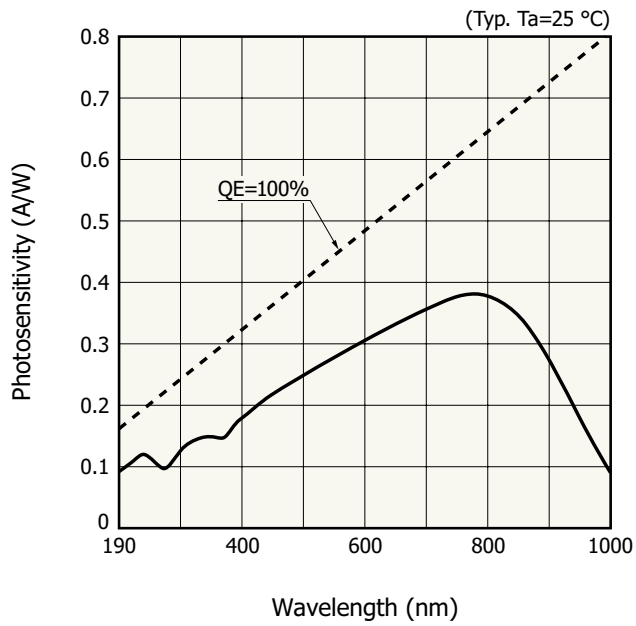
* When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation may cause deterioration in characteristics and reliability.

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)

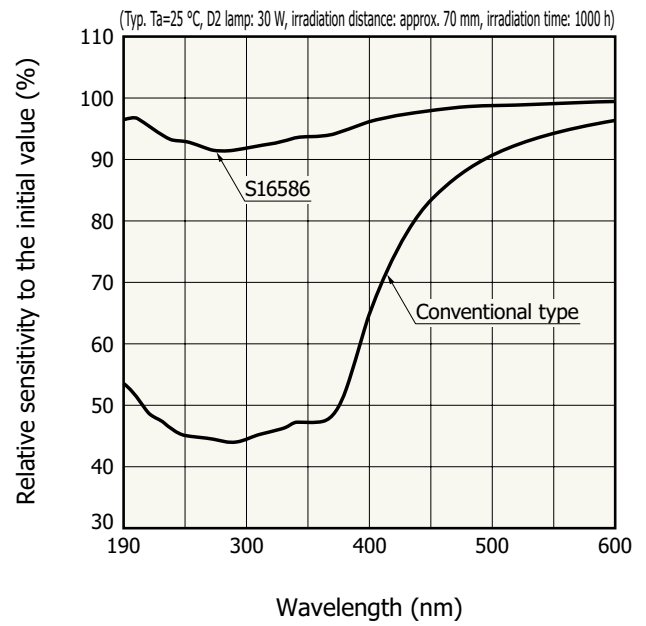
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	190 to 1000	-	nm
Peak sensitivity wavelength	λ_p		-	780	-	nm
Photosensitivity	S	$\lambda = \lambda_p$	-	0.38	-	A/W
Dark current	ID	VR=10 V	-	15	500	pA
Temperature coefficient of ID	ICID	VR=10 V	-	1.15	-	times/°C
Cutoff frequency	fc	VR=10 V, RL=50 Ω -3 dB	-	300	-	MHz
		VR=20 V, RL=50 Ω -3 dB	-	500	-	
Terminal capacitance	Ct	VR=10 V, f=1 MHz	-	3.5	-	pF
Noise equivalent power	NEP	VR=10 V, $\lambda = \lambda_p$		5.8×10^{-15}		W/Hz ^{1/2}

Spectral response



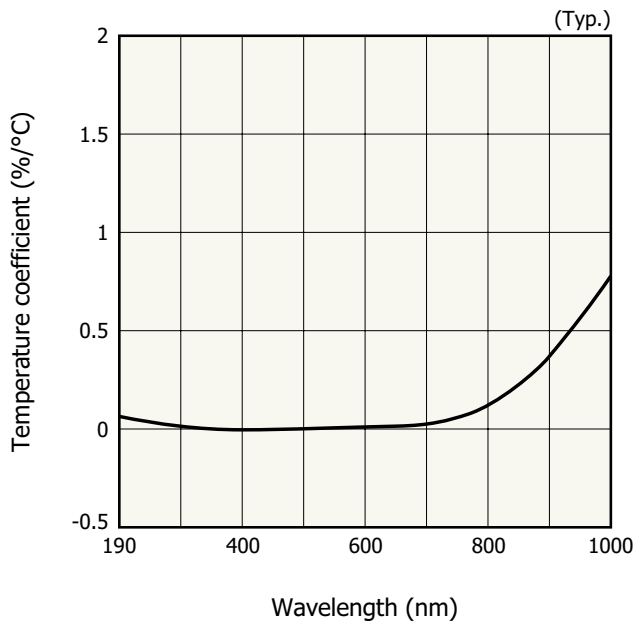
KSPDB0442EB

Changes in spectral response after irradiated with UV light



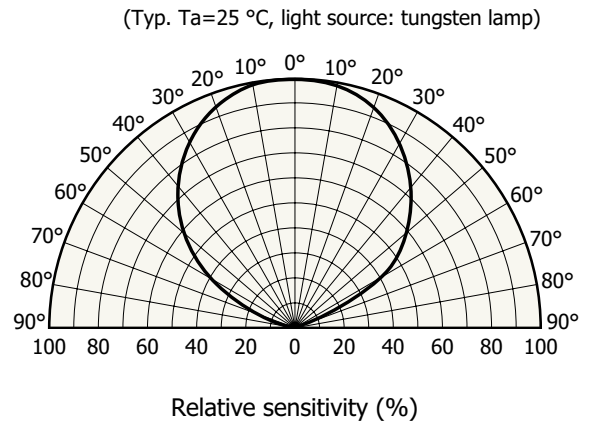
KSPDB0447EB

Photosensitivity temperature characteristics



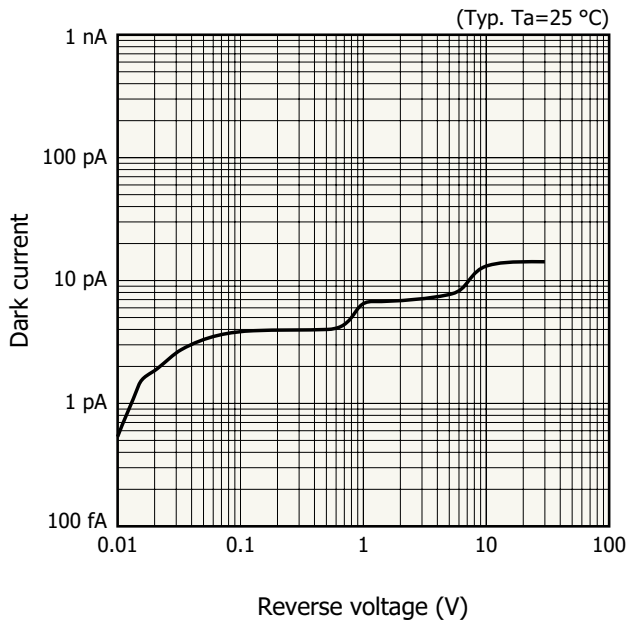
KSPDB0443EA

Directivity

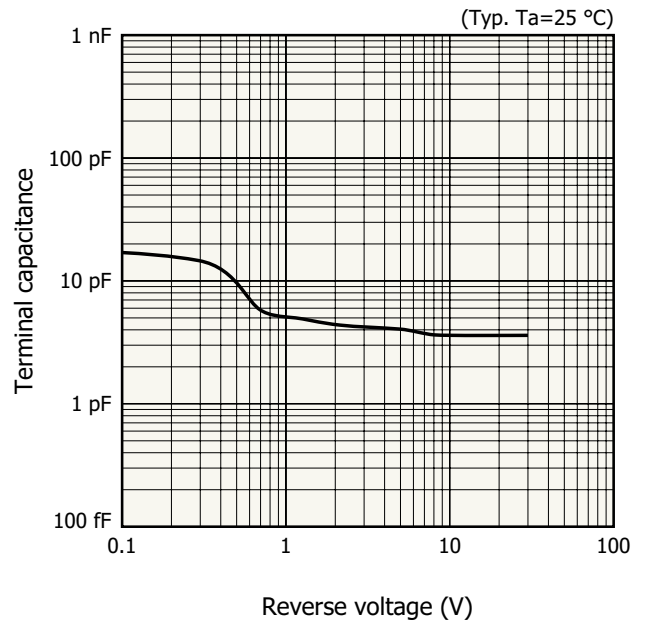


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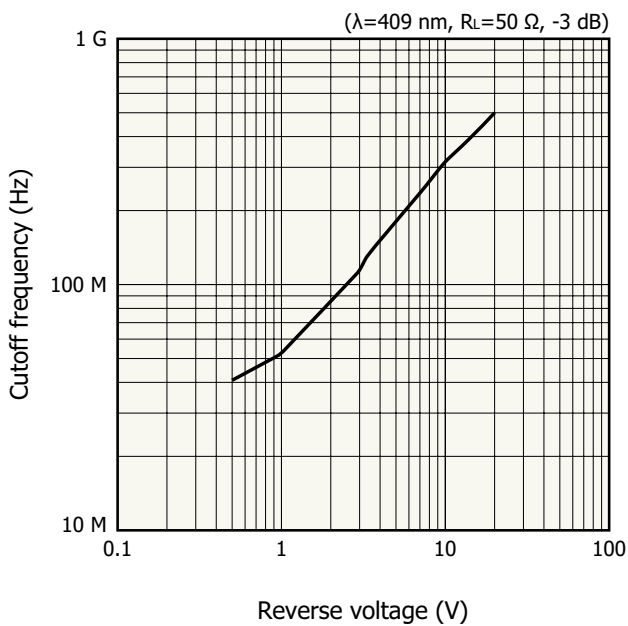
Dark current vs. reverse voltage



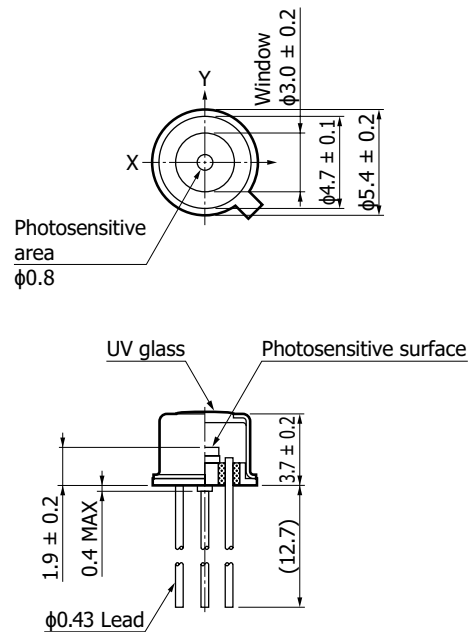
Terminal capacitance vs. reverse voltage



Cutoff frequency vs. Reverse voltage

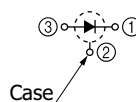


Dimensional outline (unit: mm)



Distance from photosensitive area center to cap center
 $-0.2 \leq X \leq +0.2$
 $-0.2 \leq Y \leq +0.2$

The UV glass window may extend a maximum of 0.1 mm beyond the upper surface of the cap.



KSPDA0232EA

⚠ 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.

⚠ 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 February 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.

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