

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

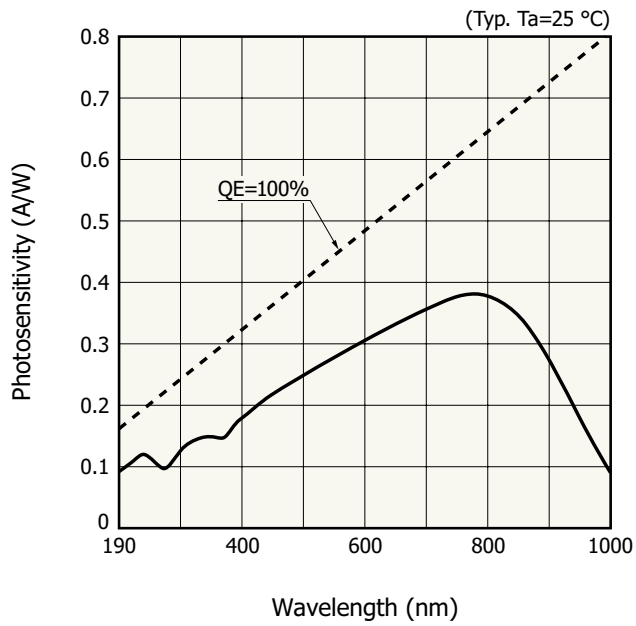
* When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation may cause deterioration in characteristics and reliability.

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)

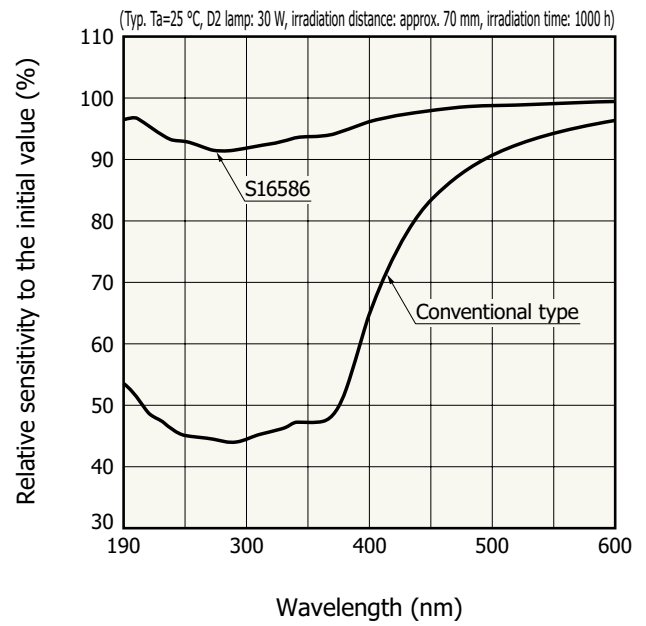
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ		-	190 to 1000	-	nm
Peak sensitivity wavelength	λp		-	780	-	nm
Photosensitivity	S	λ=λp	-	0.38	-	A/W
Dark current	ID	VR=10 V	-	15	500	pA
Temperature coefficient of ID	ICID	VR=10 V	-	1.15	-	times/°C
Cutoff frequency	fc	VR=10 V, RL=50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

Spectral response



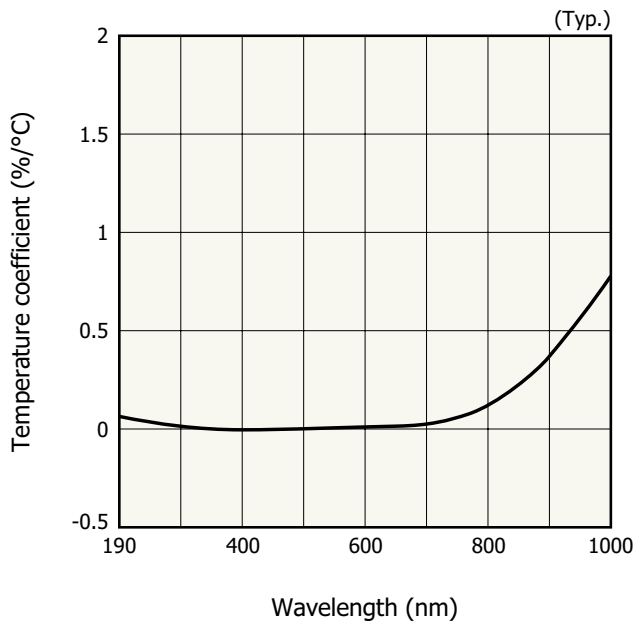
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Changes in spectral response after irradiated with UV light



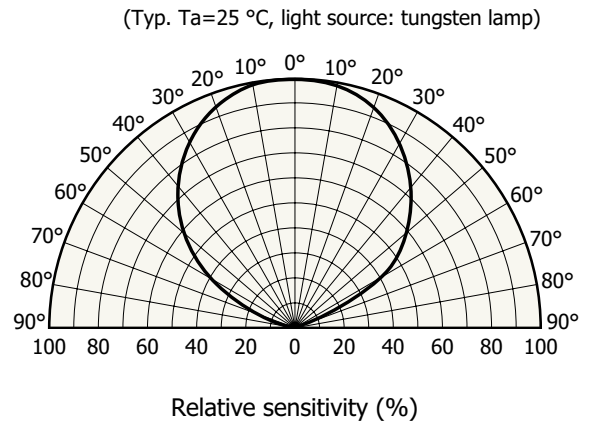
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Photosensitivity temperature characteristics



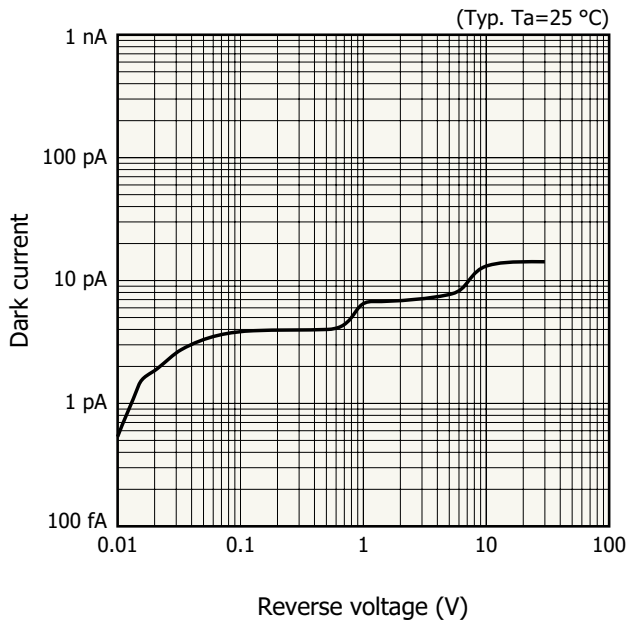
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Directivity

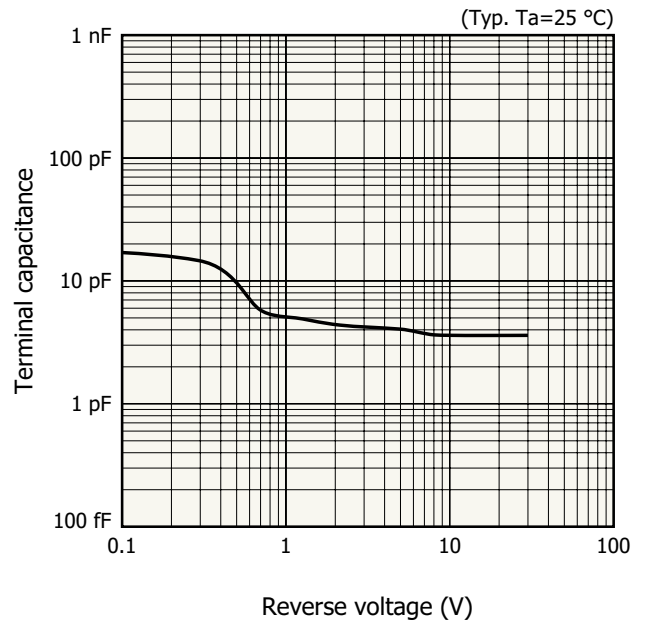


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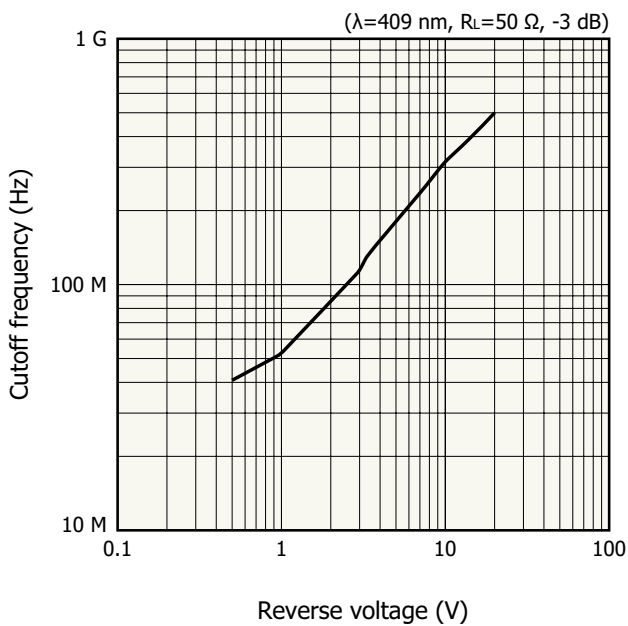
Dark current vs. reverse voltage



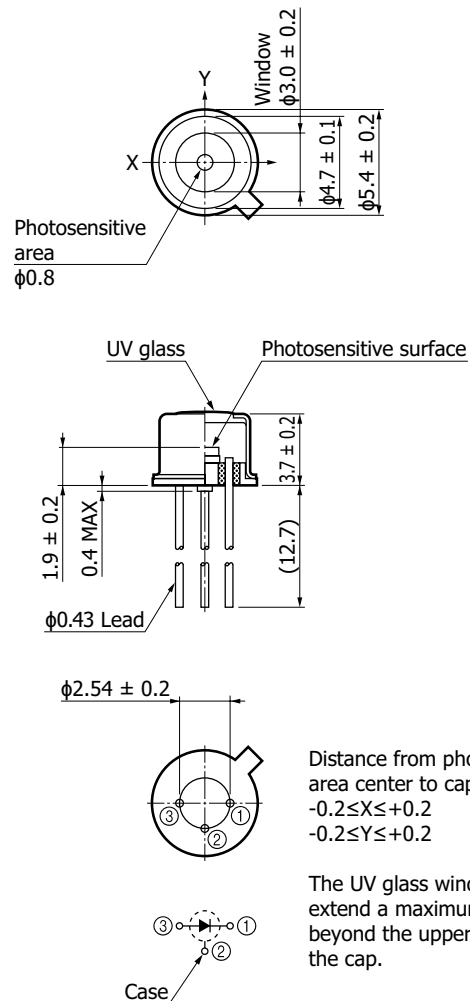
Terminal capacitance vs. reverse voltage



Cutoff frequency vs. Reverse voltage



Dimensional outline (unit: mm)



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
 - Metal, ceramic, plastic package products
- Technical note
 - Si photodiodes

Information described in this material is current as of September 2024.

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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