

S12698 series

High UV resistance, photodiodes for UV monitor

The S12698 series are Si photodiodes that have 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 reliability for monitoring UV light irradiation
- No resin that causes outgassing

Applications

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

Structure / Absolute maximum ratings

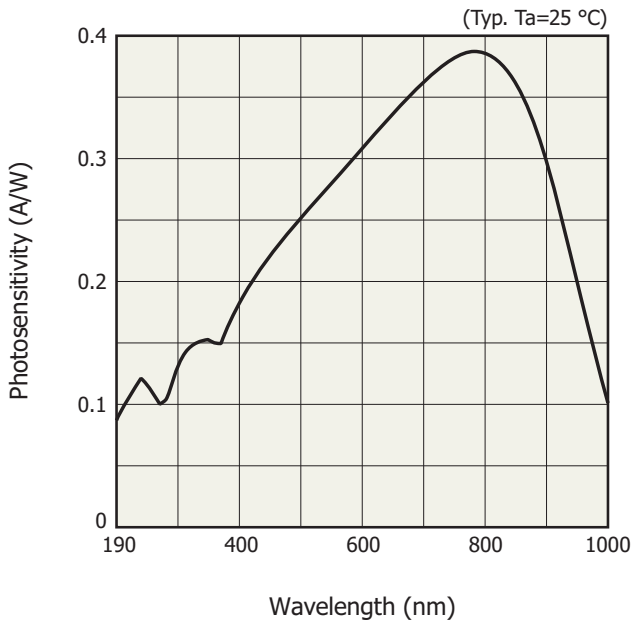
Type no.	Window material	Package	Photosensitive area size (mm)	Absolute maximum ratings		
				Reverse voltage VR max (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S12698	UV glass	TO-18	1.1 × 1.1	5	-40 to +100	-55 to +125
S12698-01		TO-5	2.4 × 2.4			
NEW S12698-04			3.6 × 3.6			
S12698-02		TO-8	5.8 × 5.8			

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 (Typ. Ta=25 °C, unless otherwise noted)

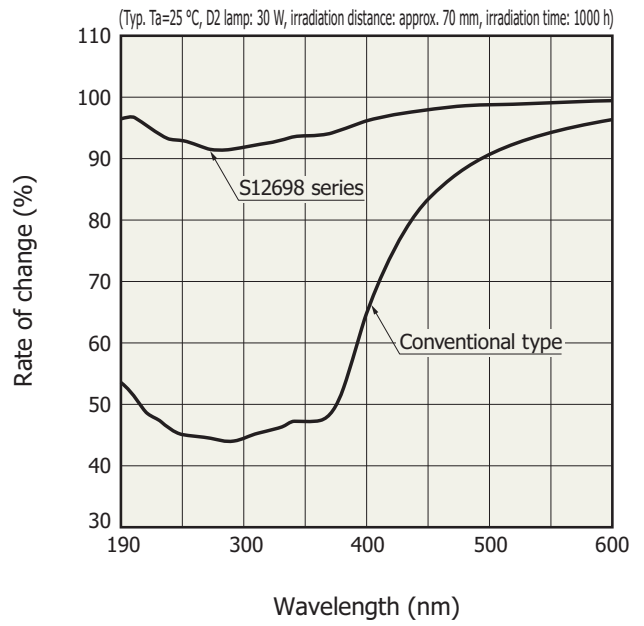
Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λp (nm)	Photosensitivity S λ=λp (A/W)	Short circuit current Isc 100 lx		Dark current ID VR=10 mV max. (pA)	Temp. coefficient of ID TCID (times/°C)	Rise time tr VR=0 V RL=1 kΩ λ=655 nm (μs)	Terminal capacitance Ct VR=0 V f=10 kHz (pF)	Shunt resistance Rsh min. (GΩ)	Noise equivalent power NEP (W/Hz ^{1/2})
				Min. (μA)	Typ. (μA)						
S12698	190 to 1000	800	0.38	0.6	0.8	10	1.12	0.1	25	1	1 × 10 ⁻¹⁴
S12698-01				1.7	2.5	30		0.5	230	0.3	2 × 10 ⁻¹⁴
NEW S12698-04				4.3	6.5	50		0.6	240	0.2	2.5 × 10 ⁻¹⁴
S12698-02				12	18	100		1.5	700	0.1	3.5 × 10 ⁻¹⁴

Spectral response



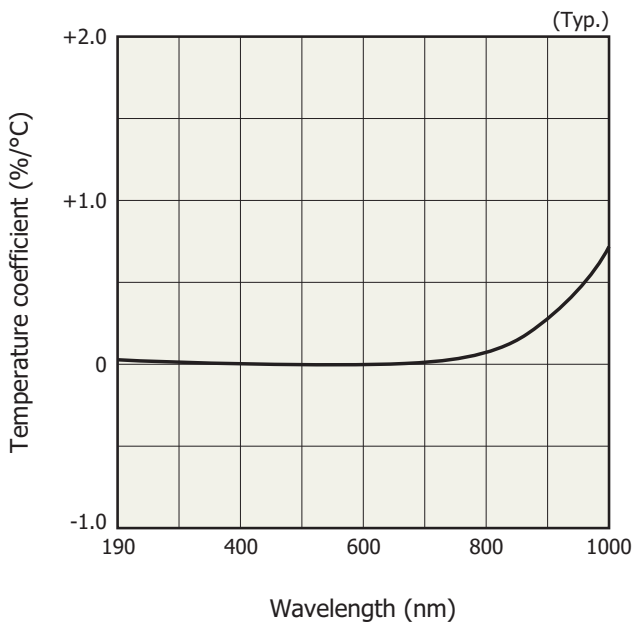
KSPDB0350EB

Changes in spectral response after irradiated with UV light



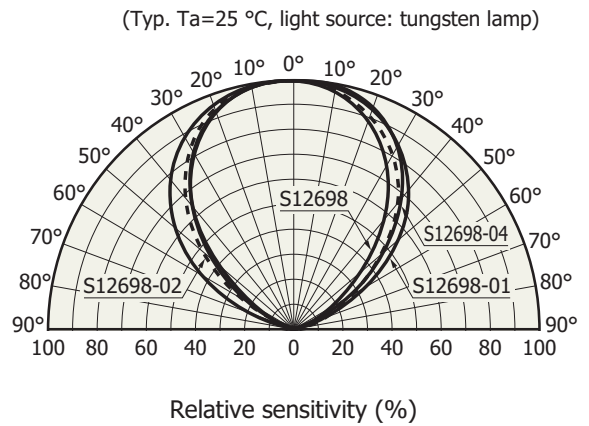
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Photosensitivity temperature characteristics



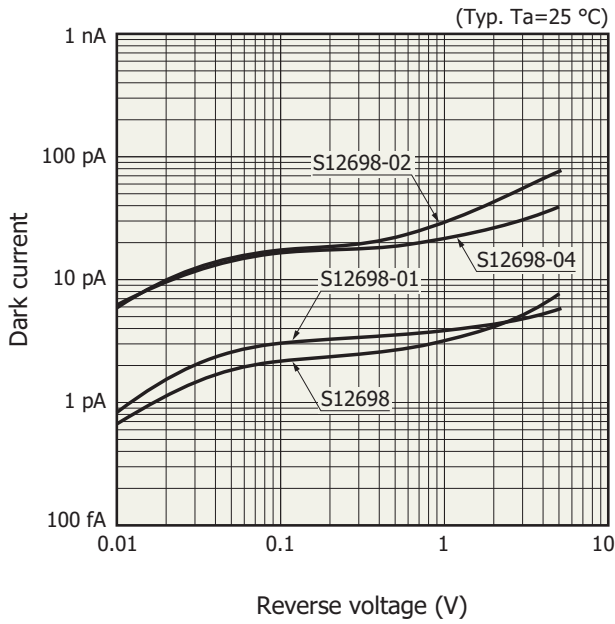
KSPDB0351EC

Directivity



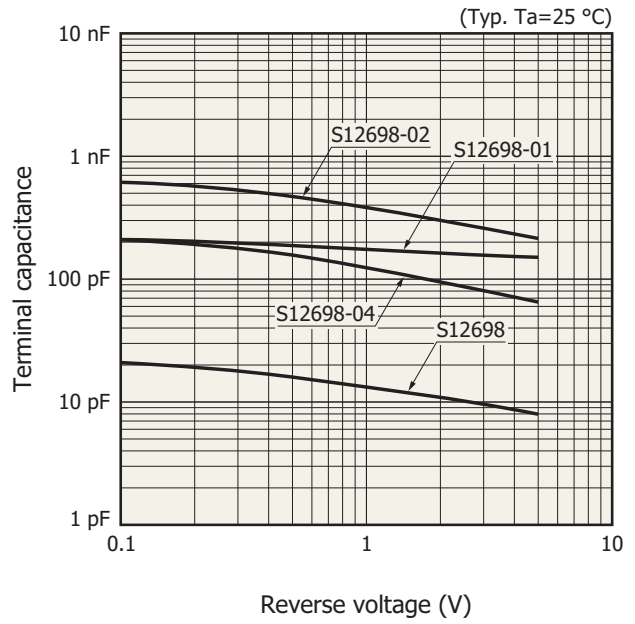
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Dark current vs. reverse voltage



KSPDB0352EB

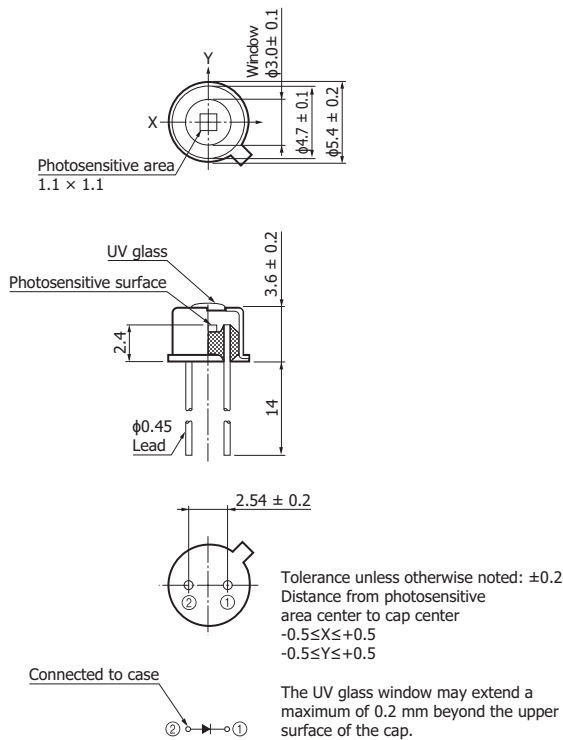
Terminal capacitance vs. reverse voltage



KSPDB0353EB

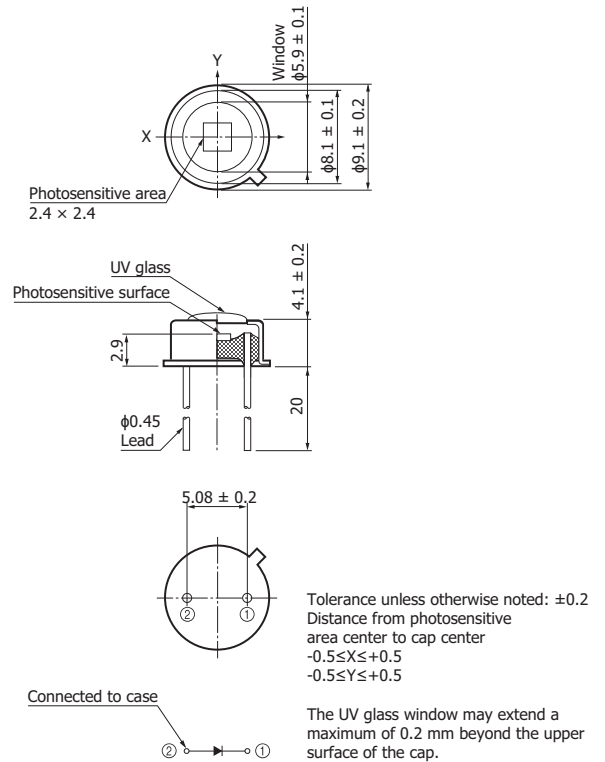
Dimensional outlines (unit: mm)

S12698



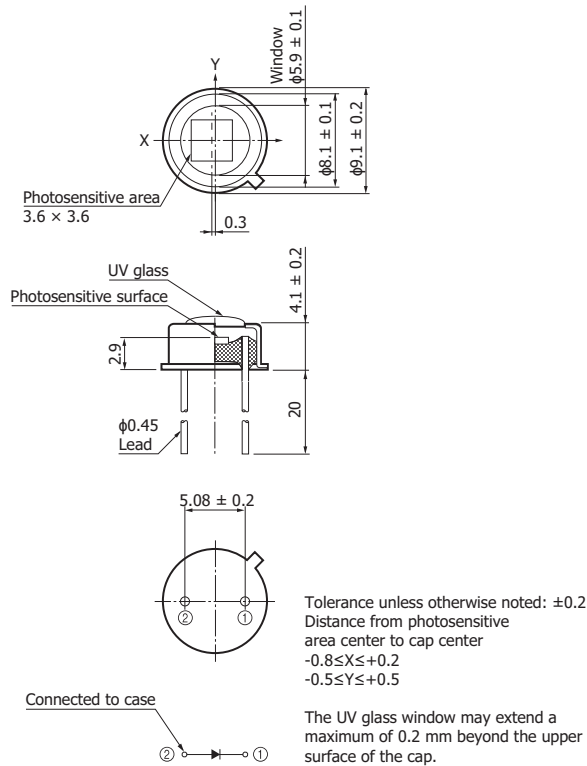
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S12698-01



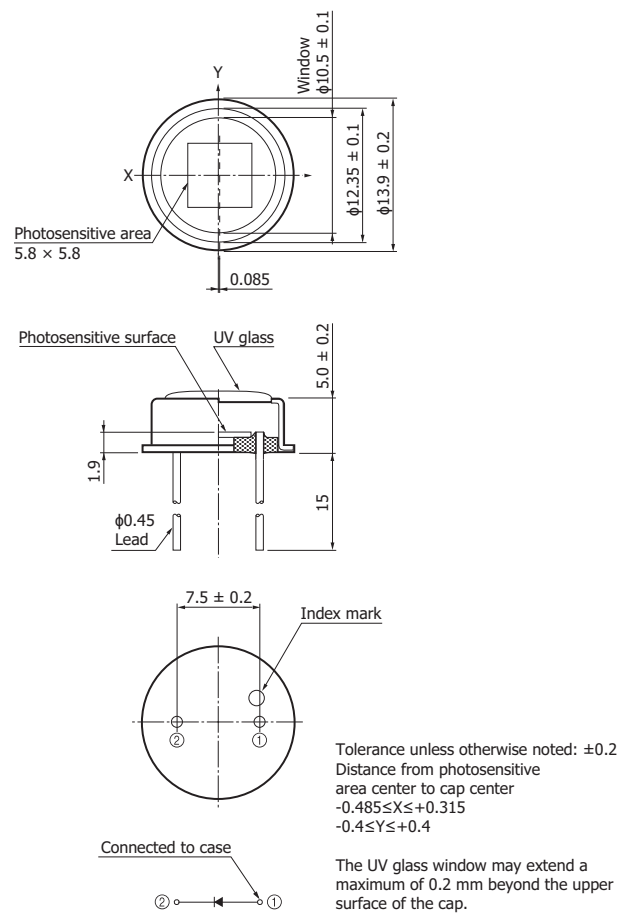
KSPDA0210EB

S12698-04



KSPDA0221EA

S12698-02



KSPDA0211EB

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 information

- Si photodiode / Application circuit example

Information described in this material is current as of January 2020

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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