

S12698 series

High UV resistance, photodiodes for UV monitor

The S12698 series are Si photodiodes that have achieved high reliability for monitoring ultraviolet light by employing a structure that does not use resin. 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
- Resin material not used

Applications

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

Structure / Absolute maximum ratings

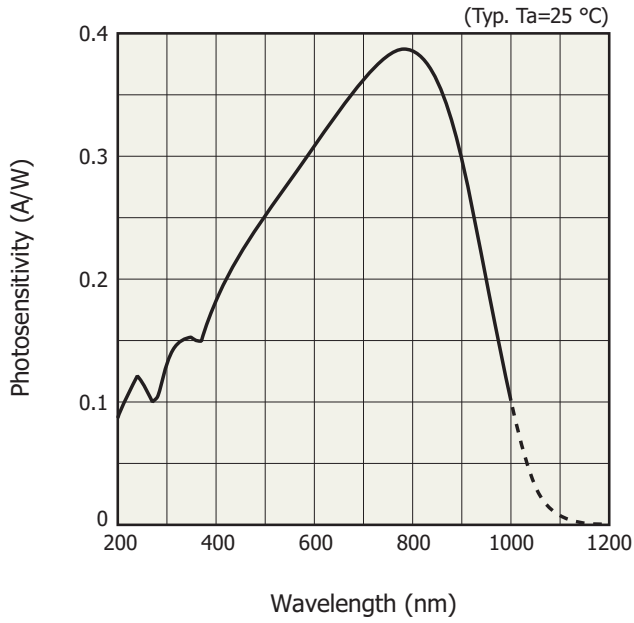
Type no.	Window material	Package	Photosensitive area size (mm)	Effective photosensitive area (mm ²)	Absolute maximum ratings		
					Reverse voltage V _R max (V)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S12698	UV glass	TO-18	1.1 × 1.1	1.2	5	-40 to +100	-55 to +125
S12698-01		TO-5	2.4 × 2.4	5.8			
S12698-02		TO-8	5.8 × 5.8	33.6			

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.

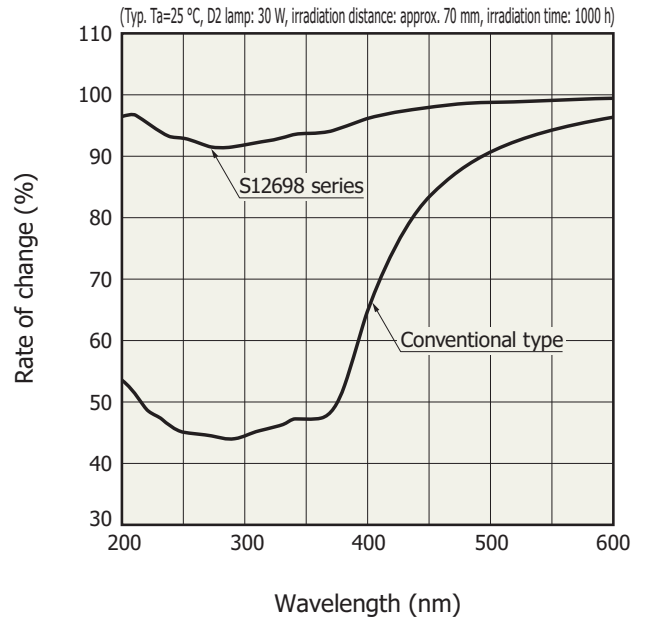
Electrical and optical characteristics (Typ. T_a=25 °C, unless otherwise noted)

Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength λ _p (nm)	Photosensitivity S λ=λ _p (A/W)	Short circuit current I _{sc} 100 lx		Dark current I _D V _R =10 mV max. (pA)	Temp. coefficient of I _D T _{CI_D} (times/°C)	Rise time t _r V _R =0 V R _L =1 kΩ λ=655 nm (μs)	Terminal capacitance C _t V _R =0 V f=10 kHz (pF)	Shunt resistance R _{sh} 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					
S12698-02				12	18	100					

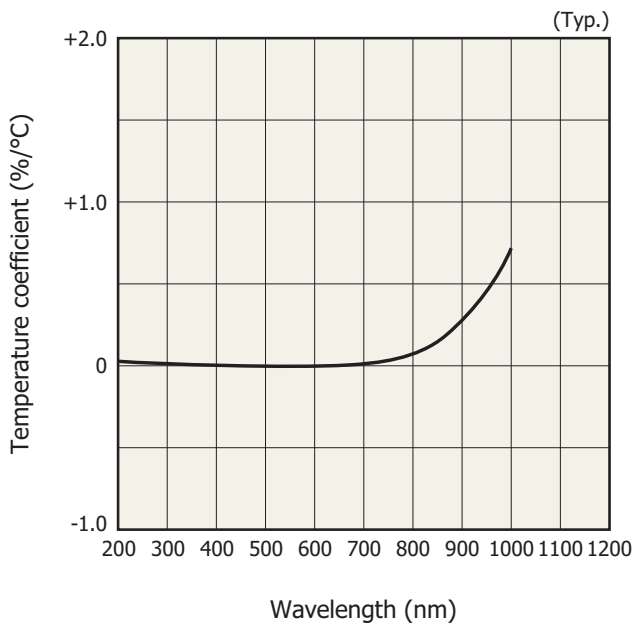
Spectral response



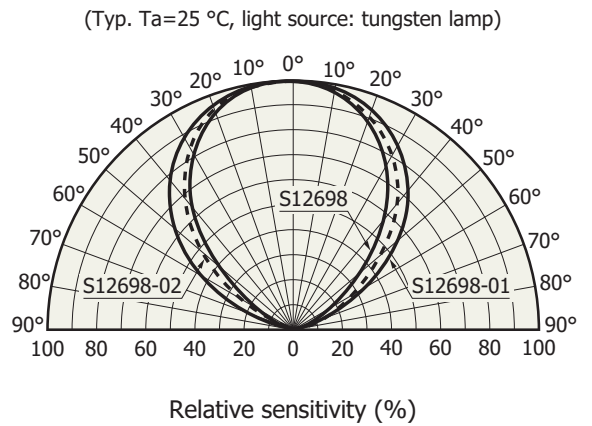
Changes in spectral response after irradiated with UV light



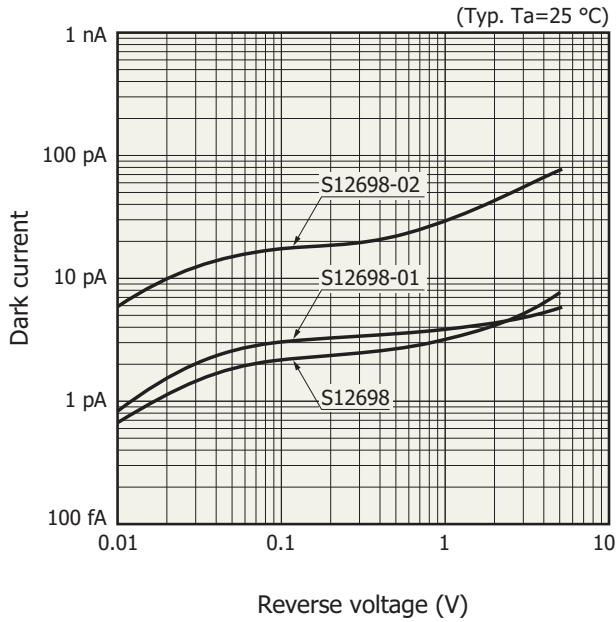
Photosensitivity temperature characteristics



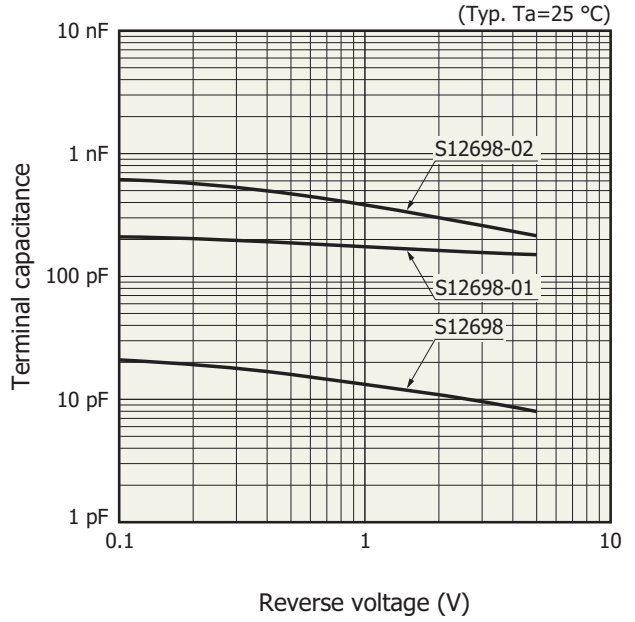
Directivity



Dark current vs. reverse voltage

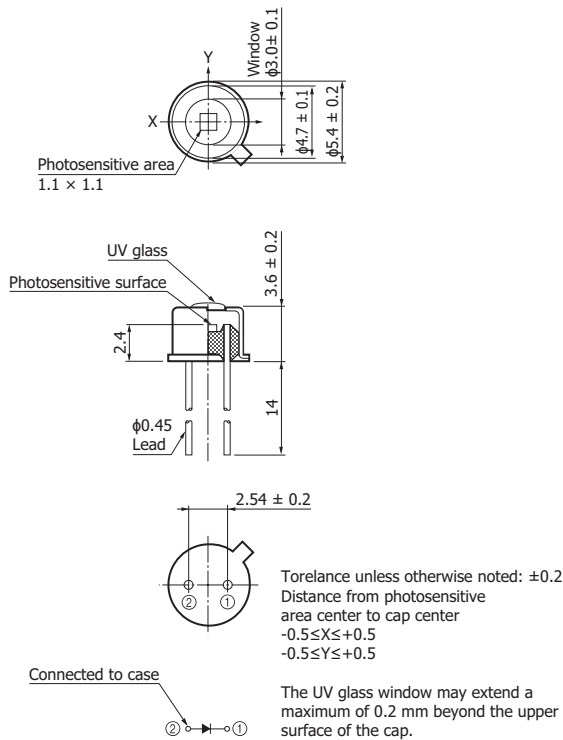


Terminal capacitance vs. reverse voltage

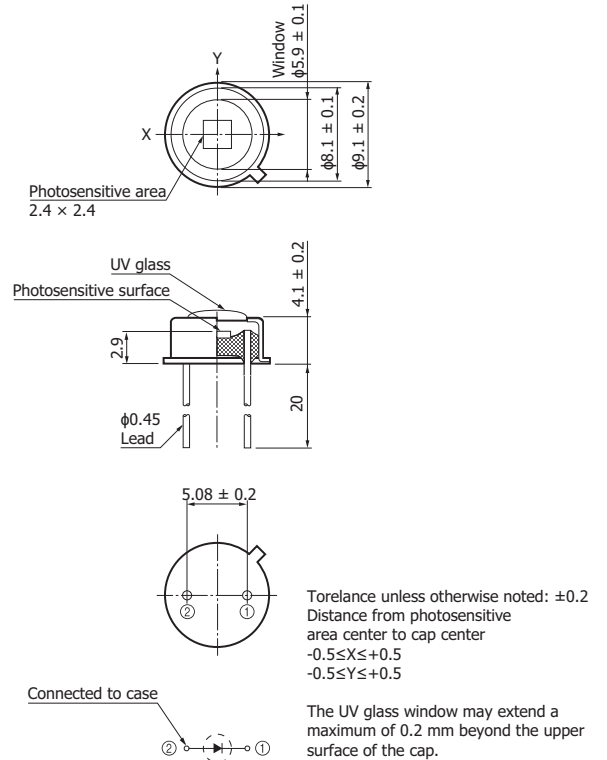


Dimensional outlines (unit: mm)

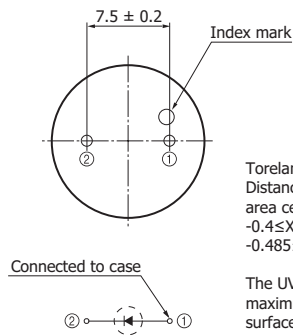
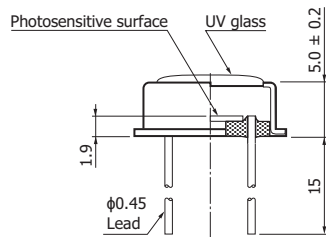
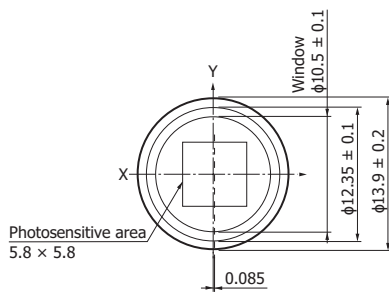
S12698



S12698-01



S12698-02



Tolerance unless otherwise noted: ± 0.2
 Distance from photosensitive
 area center to cap center
 $-0.4 \leq X \leq +0.4$
 $-0.485 \leq Y \leq +0.315$

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

KSPDA0211EA

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 December 2018.

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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