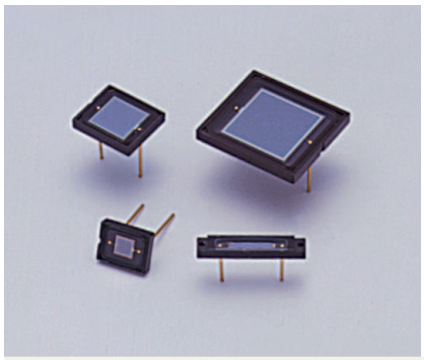
HAMAMATSU
PHOTON IS OUR BUSINESS

Si photodiodes



S1227 series

For UV to visible, precision photometry; suppressed IR sensitivity

These Si photodiodes have suppressed IR sensitivity. They are suitable for low-light-level detection in analysis and the like.

Features

- **High UV sensitivity (quartz window type): QE 75 % (λ=200 nm)**
- **Suppressed IR sensitivity**
- **Low dark current**

Applications

- **Analytical equipment**
- **Optical measurement equipment, etc.**

Structure / Absolute maximum ratings

Type no.	Window material	Package (mm)	Photosensitive area size (mm)	Effective photosensitive area (mm^2)	Absolute maximum ratings		
					Reverse voltage V_R max (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S1227-16BQ*	Quatz	2.7 × 15	1.1 × 5.9	5.9	5	-20 to +60	-20 to +80
S1227-16BR	Resin potting						
S1227-33BQ*	Quatz	6 × 7.6	2.4 × 2.4	5.7			
S1227-33BR	Resin potting						
S1227-66BQ*	Quatz	8.9 × 10.1	5.8 × 5.8	33			
S1227-66BR	Resin potting						
S1227-1010BQ*	Quatz	15 × 16.5	10 × 10	100			
S1227-1010BR	Resin potting						

* Refer to "Precautions against UV light exposure."

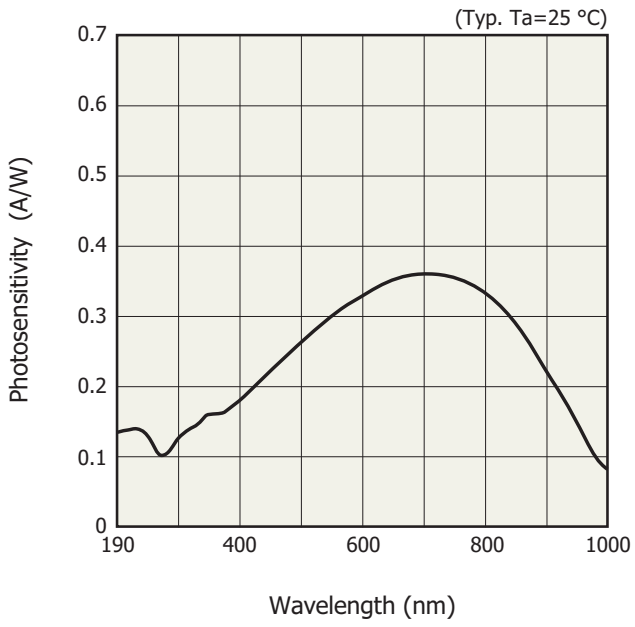
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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 (A/W)				Short circuit current Isc 100 lx		Dark current I_D V_R=10 mV Max. (pA)	Temp. coefficient T_{CID} (times/°C)	Rise time tr V_R=0 V R_L=1 kΩ (μs)	Terminal capacitance Ct V_R=0 V f=10 kHz (pF)	Shunt resistance Rsh V_R=10 mV (GΩ)		Noise equivalent power NEP (W/$Hz^{1/2}$)
			λp	200 nm		He-Ne Laser 633 nm	Min. (μA)	Typ. (μA)					Min.	Typ.	
				Min.	Typ.										
S1227-16BQ	190 to 1000	720	0.36	0.10	0.12	0.34	2.0	3.2	5	1.12	0.5	170	2	20	2.5×10^{-15}
S1227-16BR	340 to 1000		0.43	-	-	0.39	2.2	3.7							2.1×10^{-15}
S1227-33BQ	190 to 1000		0.36	0.10	0.12	0.34	2.0	3.0	5		0.5	160	2	20	2.5×10^{-15}
S1227-33BR	340 to 1000		0.43	-	-	0.39	2.2	3.7							2.1×10^{-15}
S1227-66BQ	190 to 1000		0.36	0.10	0.12	0.34	11	16	20		2	950	0.5	5	5.0×10^{-15}
S1227-66BR	340 to 1000		0.43	-	-	0.39	13	19							4.2×10^{-15}
S1227-1010BQ	190 to 1000		0.36	0.10	0.12	0.34	32	44	50		7	3000	0.2	2	8.0×10^{-15}
S1227-1010BR	340 to 1000		0.43	-	-	0.39	36	53							6.7×10^{-15}

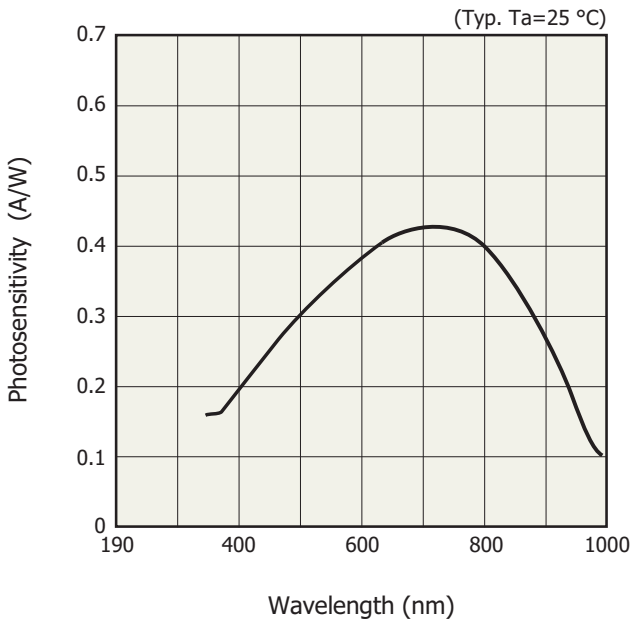
Spectral response

S1227-BQ series



KSPDB0094EC

S1227-BR series



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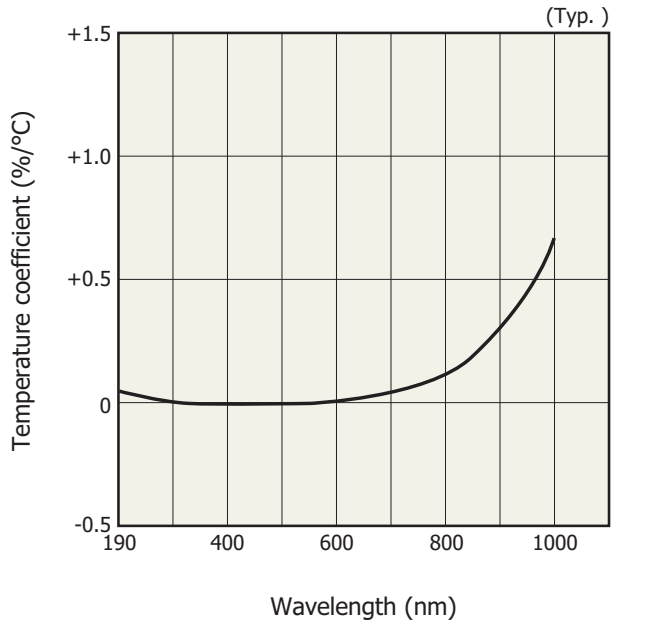
Photosensitivity temperature characteristics



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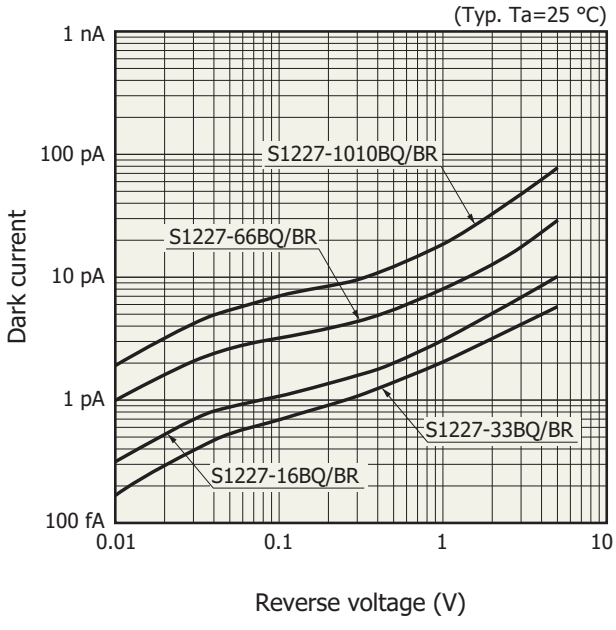
Dark current vs. reverse voltage



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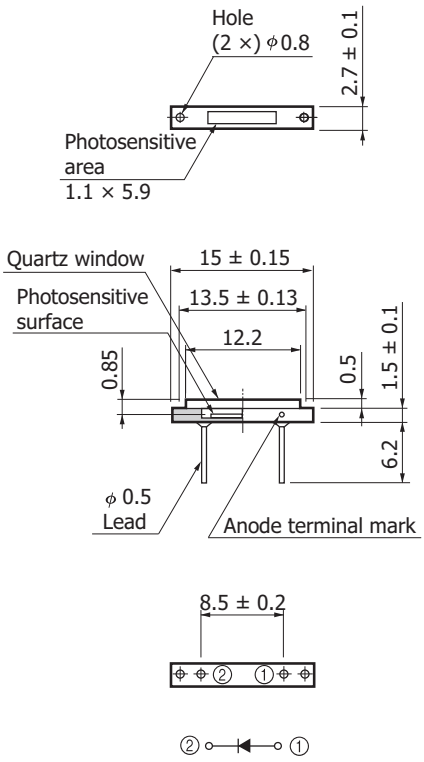
Dimensional outlines (unit: mm)

S1227-16BQ



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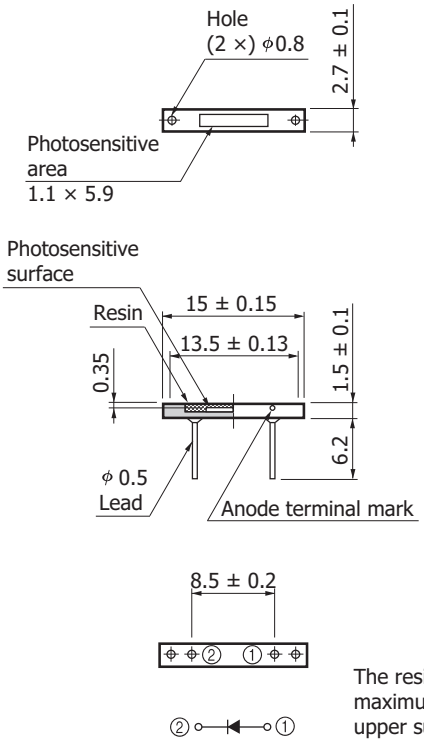
S1227-16BR



The resin potting may extend a maximum of 0.1 mm above the upper surface of the package.

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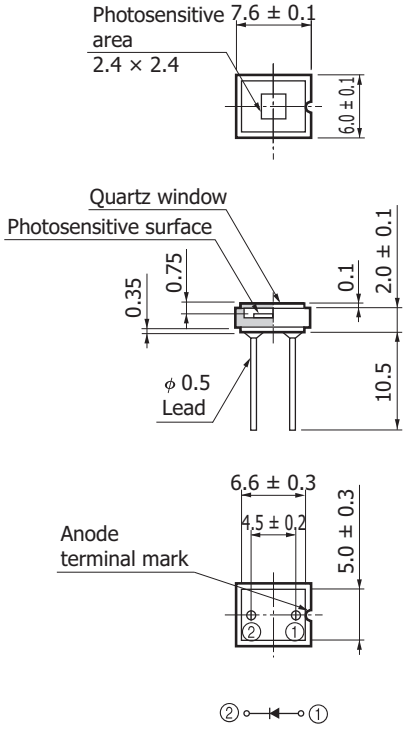
S1227-33BQ



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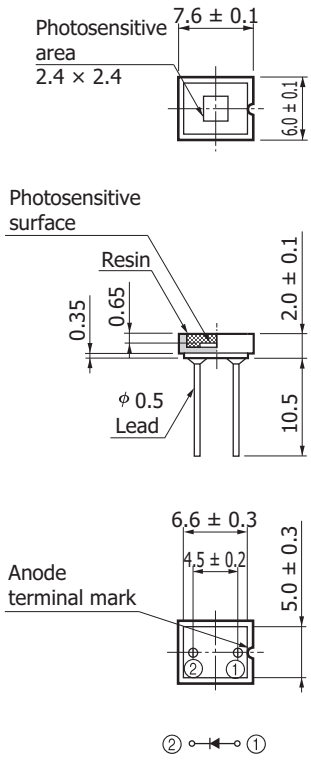
S1227-33BR



The resin potting may extend a maximum of 0.1 mm above the upper surface of the package.

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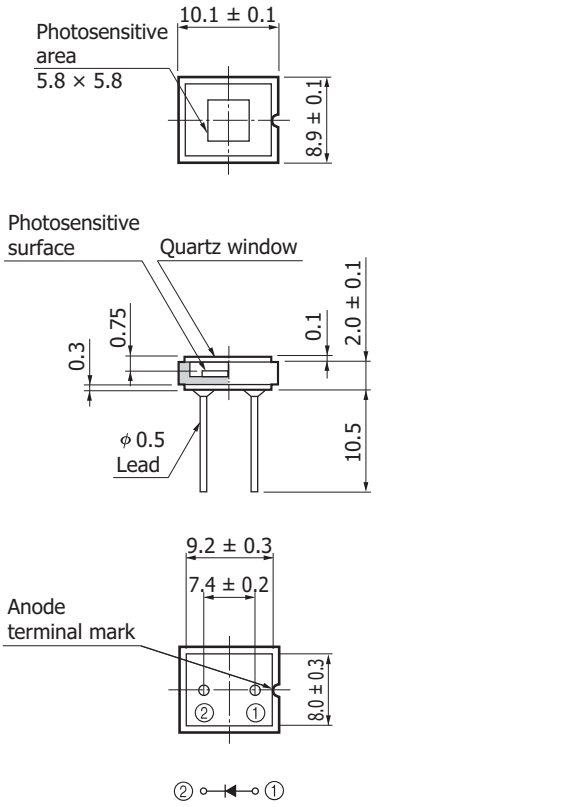
S1227-66BQ



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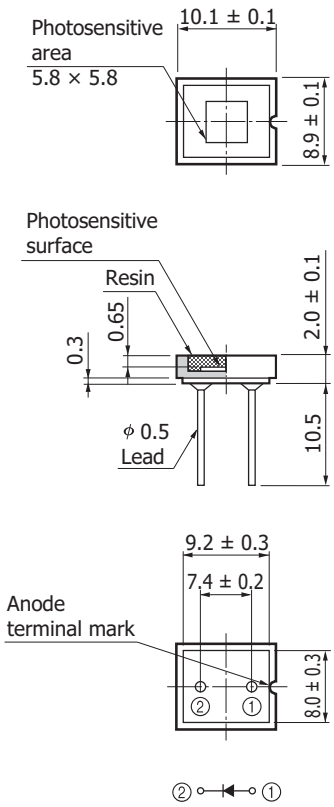
S1227-66BR



The resin potting may extend a maximum of 0.1 mm above the upper surface of the package.

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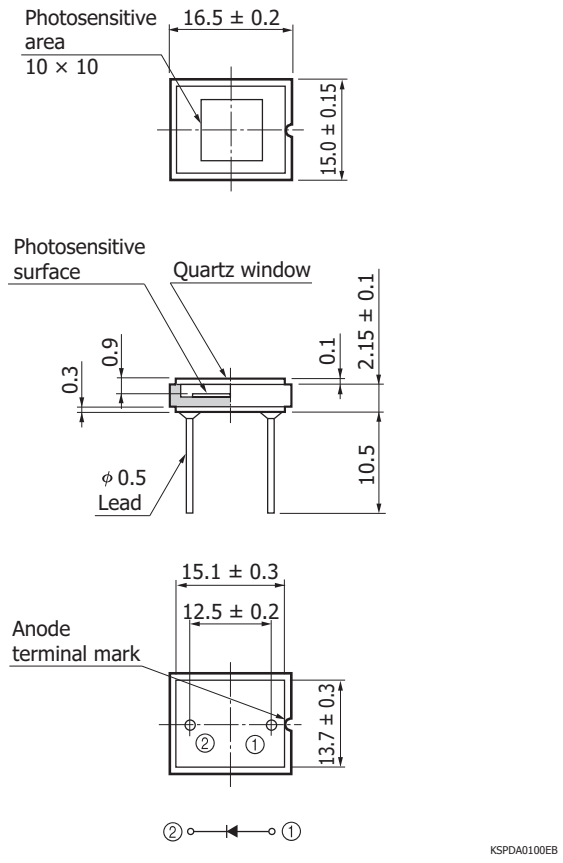
S1227-1010BQ



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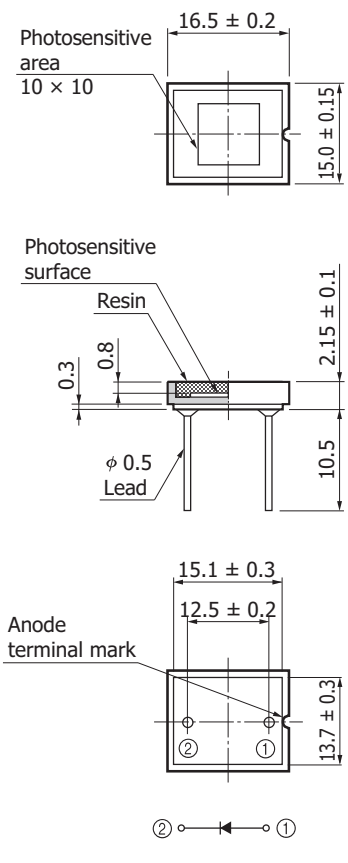
S1227-1010BR



The resin potting may extend a maximum of 0.1 mm above the upper surface of the package.

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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.

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.
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