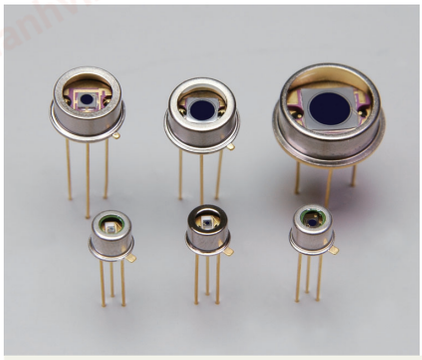
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Si APD



S12053-02/-05/-10
S9075, S5344, S5345

Short wavelength type APD, for 600 nm band

These are short wavelength APDs with improved sensitivity in the UV to visible range. They offer high gain, high sensitivity, and low noise in the short wavelength range. They are suitable for applications such as low-light-level measurement and analytical instrument.

Features

- **High sensitivity and low noise in UV to visible range**

Applications

- **Low-light-level measurement**
- **Analytical instrument**

Structure / Absolute maximum ratings

Type no.	Dimensional outline/ Window material*1	Package	Effective photosensitive*2 area size (mm)	Absolute maximum ratings	
				Operating temperature Topr (°C)	Storage temperature Tstg (°C)
S12053-02	(1)/U	TO-18	ϕ0.2	-20 to +60	-55 to +100
S12053-05			ϕ0.5		
S12053-10			ϕ1.0		
S9075	(2)/U	TO-5	ϕ1.5		
S5344			ϕ3.0		
S5345	(3)/U	TO-8	ϕ5.0		

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.
*1: U=UV glass
*2: Area in which a typical gain can be obtained

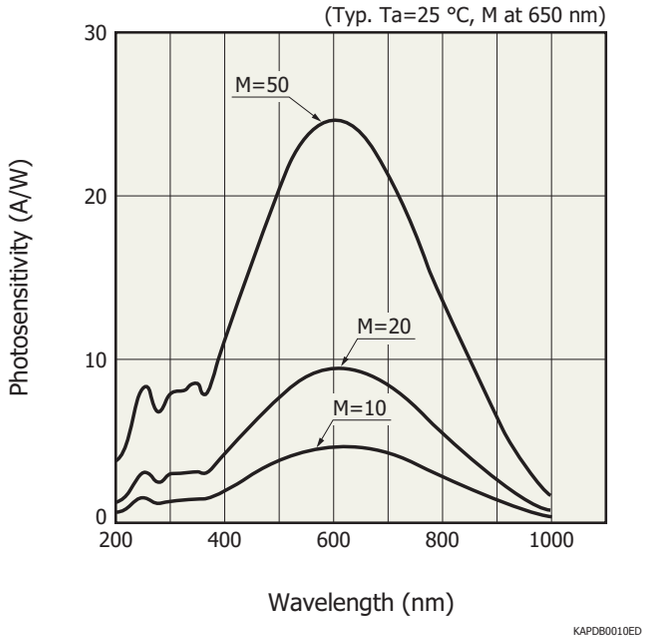
Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

Type no.	Spectral response range λ (nm)	Peak*3 sensitivity wavelength λp (nm)	Photo-sensitivity S M=1 λ=620 nm (A/W)	Quantum efficiency QE M=1 λ=620 nm (%)	Breakdown voltage VBR ID=100 μA		Temp. coefficient of VBR (V/°C)	Dark*3 current ID		Cutoff*3 frequency fc RL=50 Ω (MHz)	Terminal*3 capacitance Ct (pF)	Excess*3 noise figure x λ=650 nm	Gain M λ=650 nm
					Typ. (V)	Max. (V)		Typ. (nA)	Max. (nA)				
S12053-02	200 to 1000	620	0.42	80	150	200	0.14	0.2	5	900	2	0.28	50
S12053-05										400	5		
S12053-10										250	15		
S9075								0.5	15	100	30		
S5344								1	30	25	120		
S5345								3	100	8	320		

*3: Values measured at a gain listed in the characteristics table

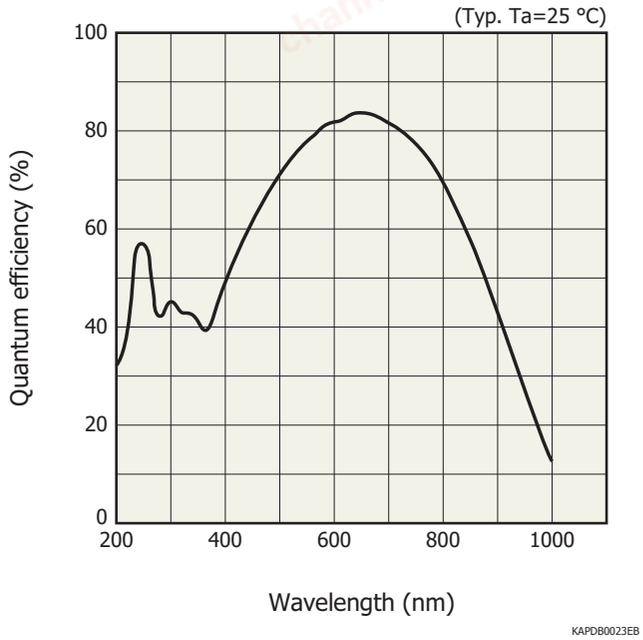
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Spectral response



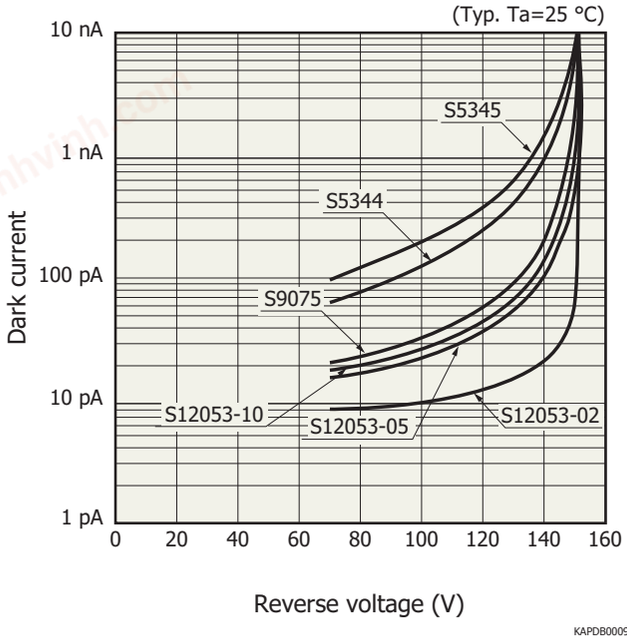
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Quantum efficiency vs. wavelength



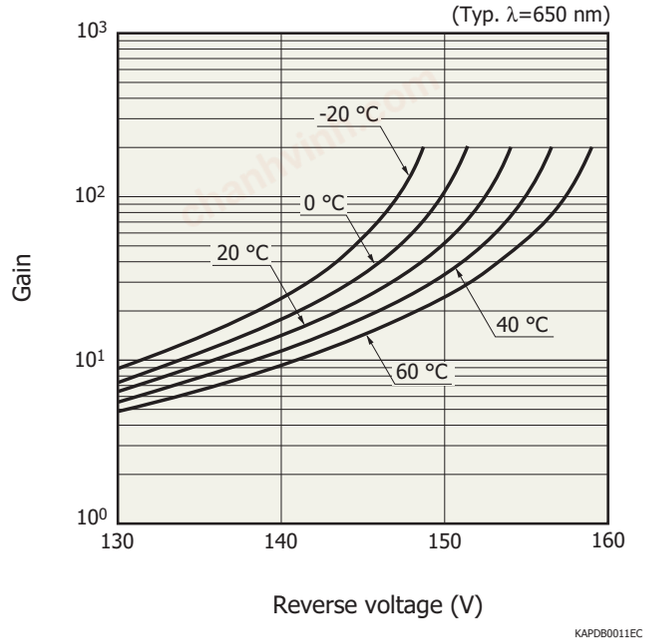
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Dark current vs. reverse voltage



KAPDB0009EE

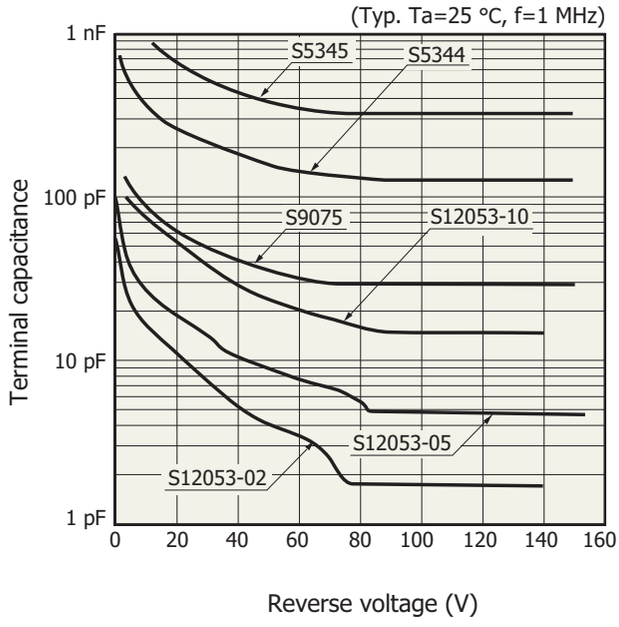
Gain vs. reverse voltage



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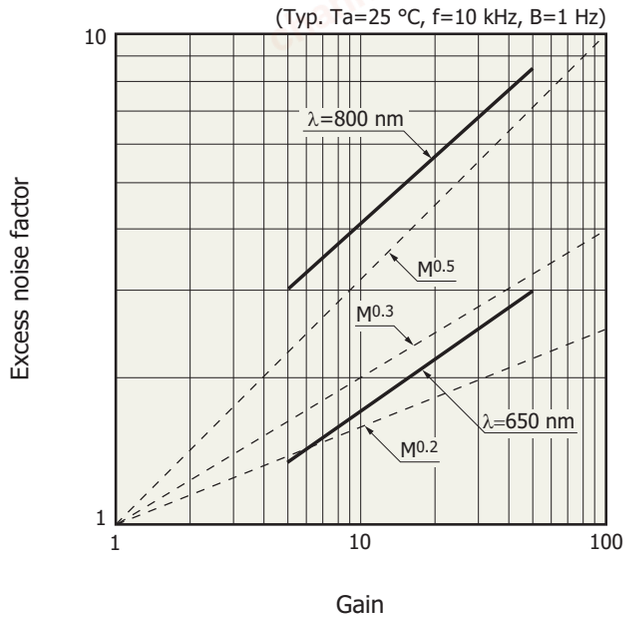
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Terminal capacitance vs. reverse voltage



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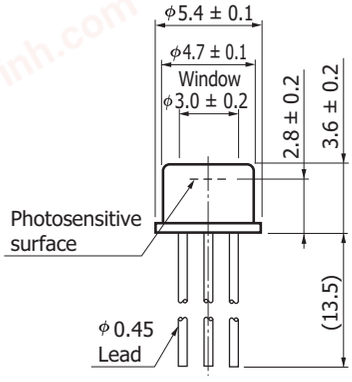
Excess noise factor vs. gain

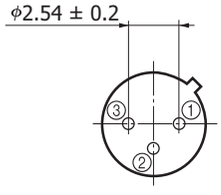


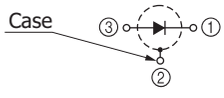
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Dimensional outlines (unit: mm)

(1) S12053-02/-05/-10





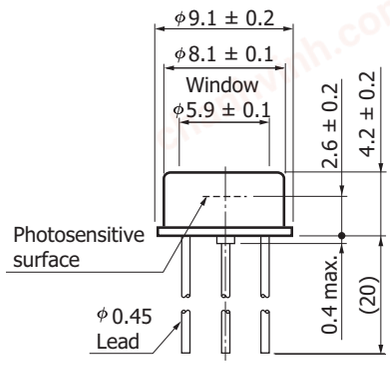


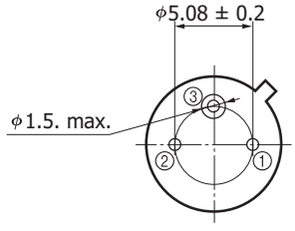
Distance from photosensitive area center to cap center
-0.2≤X≤+0.2
-0.2≤Y≤+0.2

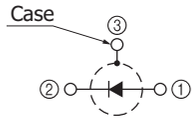
The glass window may extend a maximum of 0.1 mm above the upper surface of the cap.

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(2) S9075, S5344







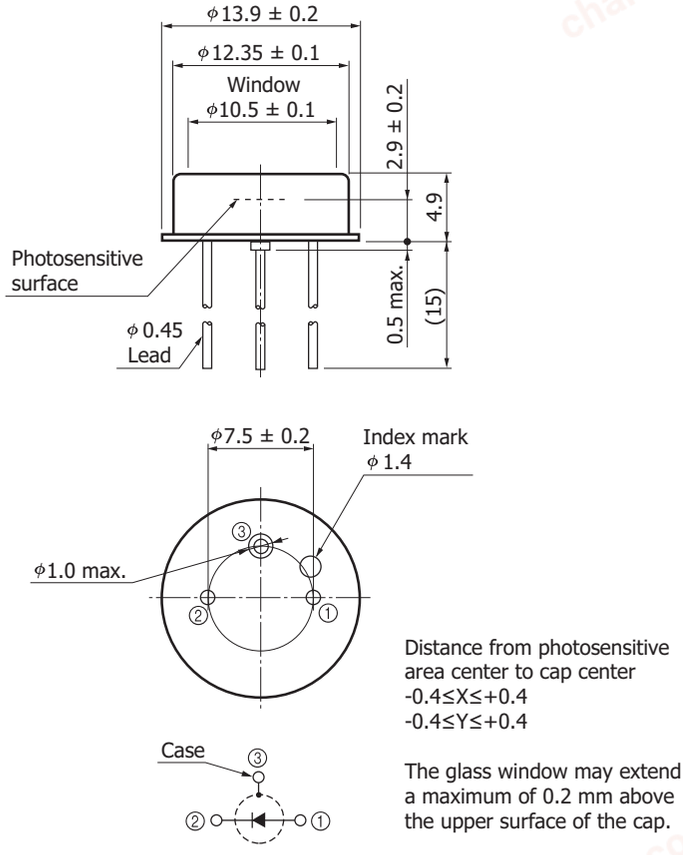
Distance from photosensitive area center to cap center
-0.3≤X≤+0.3
-0.3≤Y≤+0.3

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

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(3) S5345



KAPDA0016EC

Precautions

Long-term exposure to UV will cause produt characteristics deteriorate.
Avoid exposing the products to any unnecessary UV irradiation.

Related information

http://www.hamamatsu.com/sp/ssd/doc_en.html

■ Precautions
· Notice
· Metal, ceramic, plastic package products / Precautions

■ Technical information
· Si APD / Technical information

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Information described in this material is current as of October, 2013.
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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