HAMAMATSU
PHOTON IS OUR BUSINESS

NEW

Si APD

S17353 series

High sensitivity from short wavelength to 800 nm

These are APDs with improved sensitivity from short wavelength to 800 nm range. They offer high gain, high sensitivity, and low noise in the wide wavelength range. They are suitable for applications such as low-light-level measurement and analytical instrument.

Features

- **High sensitivity and low noise from short wavelength to 800 nm**

Applications

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

Structure / Absolute maximum ratings

Type no.	Dimensional outline/ Window material*1	Package	Effective*2 photosensitive area size (mm)	Absolute maximum ratings			
				Operating emperature*3 Topr (°C)	Storage temperature*3 Tstg (°C)	Reverse current IR max (μA)	Forward current IF max (mA)
S17353-02K	①/K	TO-5	ϕ0.2	-20 to +60	-55 to +100	200	10
S17353-05K			ϕ0.5				
S17353-10K			ϕ1.0				
S17353-20K			ϕ2.0				
S17353-30K	②/K	TO-8	ϕ3.0				
S17353-50K			ϕ5.0				

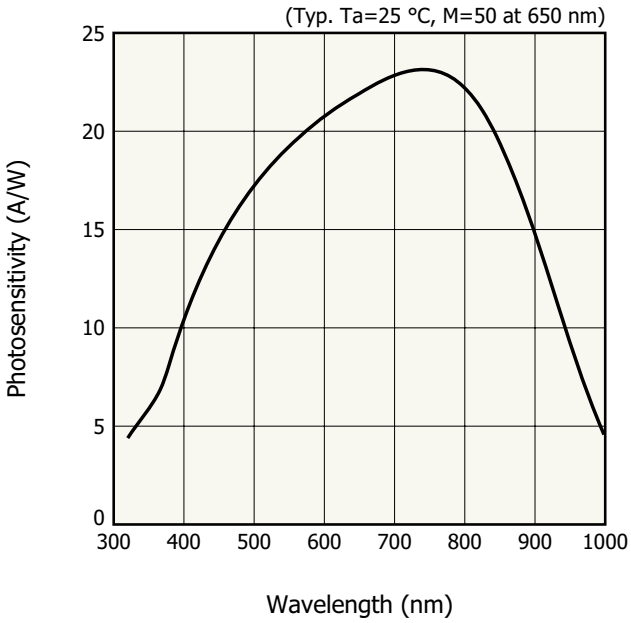
*1: K=borosilicate glass
*2: Area in which a typical gain can be obtained
*3: No dew condensation.
When there is a temperature difference between a product and the surrounding area in high humidity environments, dew condensation may occur on the product surface. Dew condensation on the product may cause 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 (Typ. Ta=25 °C, unless otherwise noted)

Type no.	Spectral response range λ (nm)	Peak sensitivity wavelength*4 λp (nm)	Photosensitivity S M=1 λ=650 nm (A/W)	Quantum efficiency QE M=1 λ=650 nm (%)	Breakdown voltage VBR ID=100 μA			Temp. coefficient of VBR (V/°C)	Dark current*4 ID		Cutoff frequency*4 fc RL=50 Ω (MHz)	Terminal capacitance*4 Ct (pF)	Excess noise figure*4 x λ=650 nm	Gain M λ=650 nm
					Min. (V)	Typ. (V)	Max. (V)		Typ. (nA)	Max. (nA)				
S17353-02K	320 to 1000	750	0.44	83	300	400	500	0.55	1	5	1000	1	0.28	50
S17353-05K									1.5	8	900	2.2		
S17353-10K									2	10	500	5.5		
S17353-20K									5	25	200	15		
S17353-30K									10	50	90	35		
S17353-50K									25	130	35	85		

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

Spectral response



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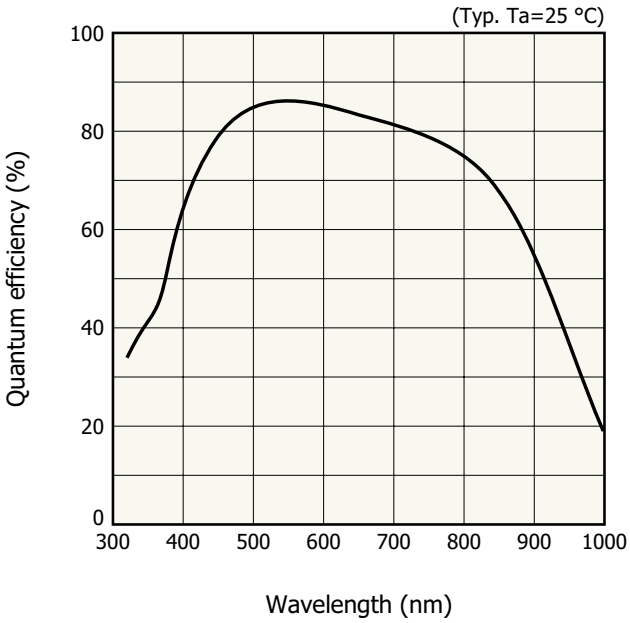
Quantum efficiency vs. wavelength



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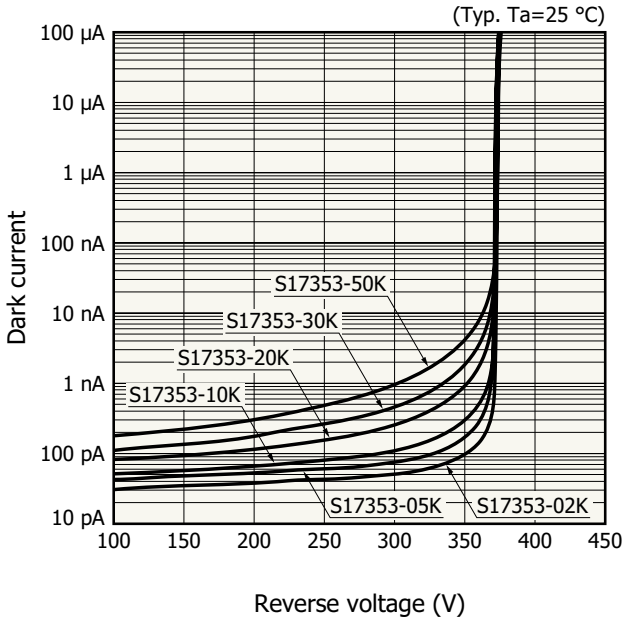
Dark current vs. reverse voltage



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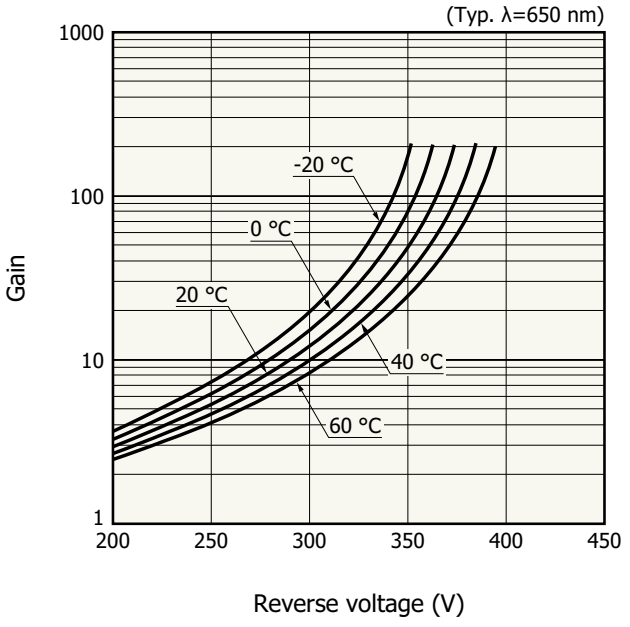
Gain vs. reverse voltage



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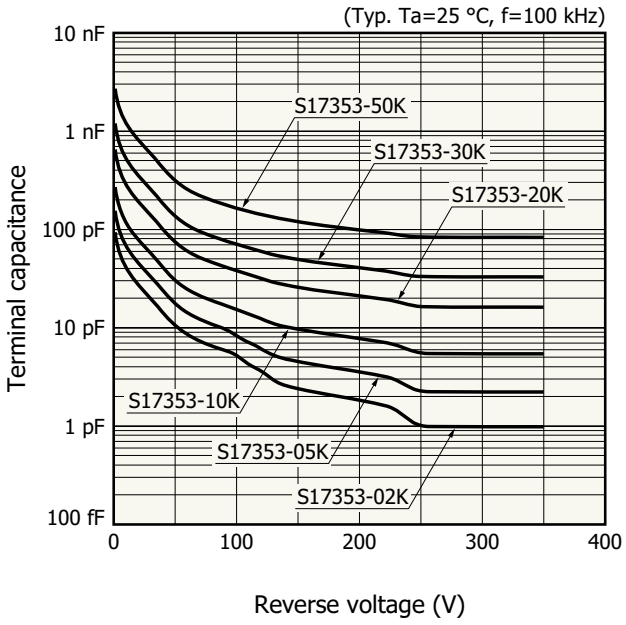
Terminal capacitance vs. reverse voltage



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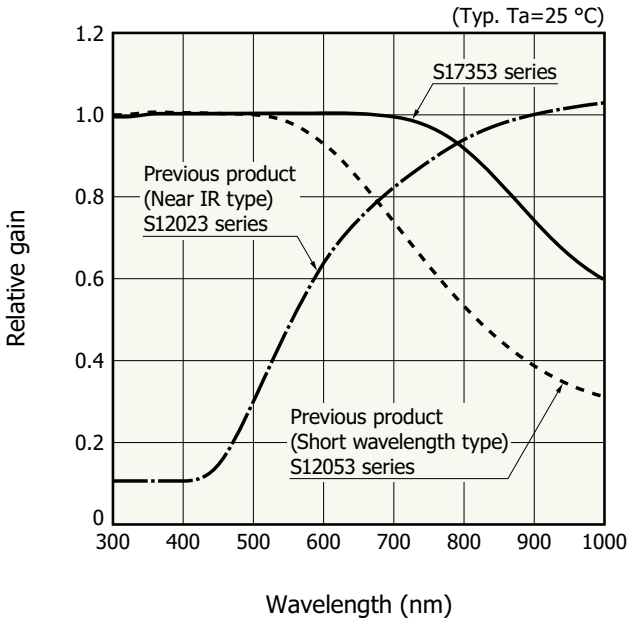
Gain wavelength dependence



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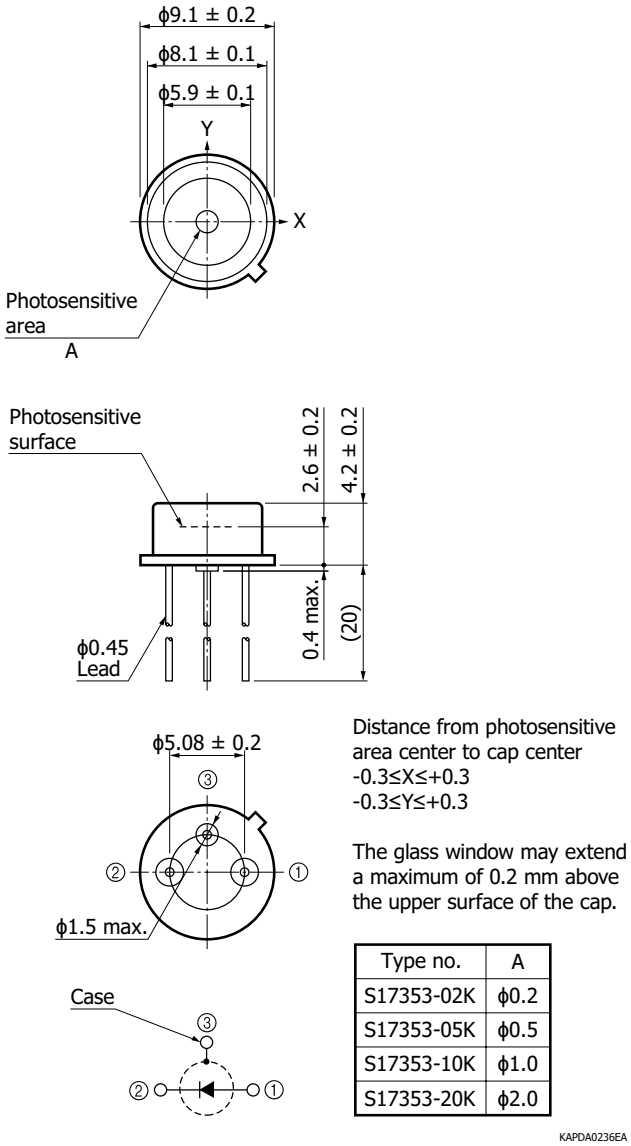
Dimensional outlines (unit: mm)

① S17353-02K/-05K/-10K/-20K



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.

Type no.	A
S17353-02K	ϕ0.2
S17353-05K	ϕ0.5
S17353-10K	ϕ1.0
S17353-20K	ϕ2.0

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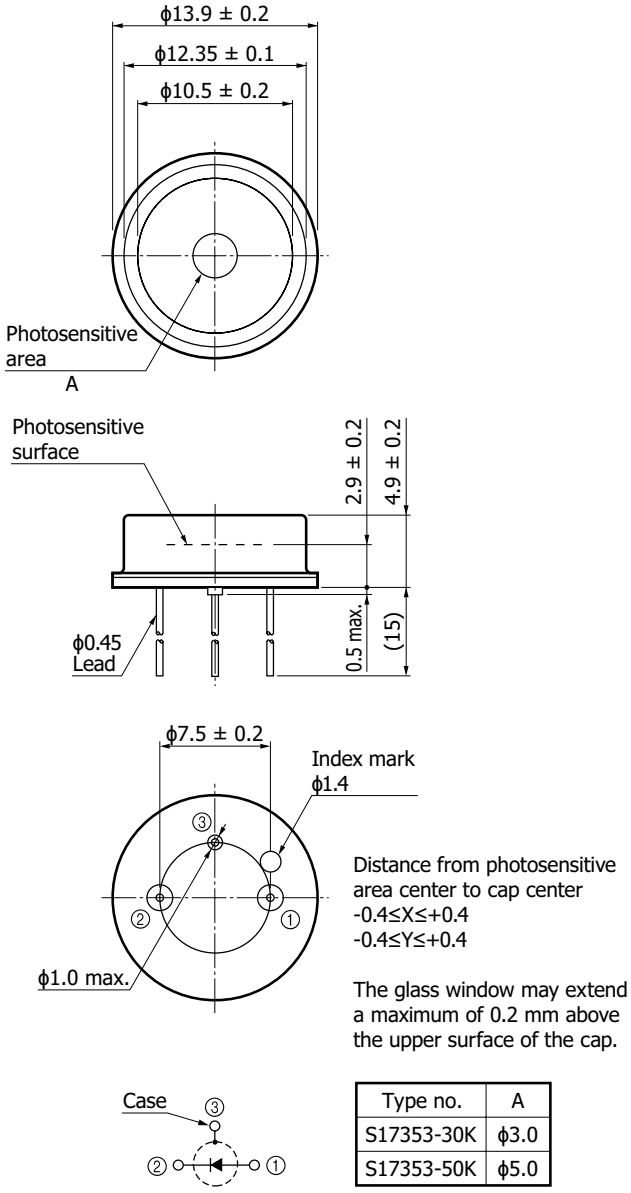
② S17353-30K/-50K



Distance from photosensitive area center to cap center
-0.4≤X≤+0.4
-0.4≤Y≤+0.4

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

Type no.	A
S17353-30K	ϕ3.0
S17353-50K	ϕ5.0

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Recommended soldering conditions

Solder temperature: 260 °C (10 s or less, once)
Solder the leads at a point at least 1 mm away from the package body.

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
· Disclaimer
· Precautions / Metal, ceramic, plastic package products

■ Catalogs
· Technical note / Si APD

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Cat. No. KAPD1093E01 Feb. 2025 DN