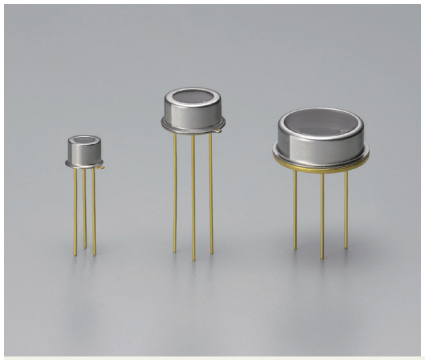
HAMAMATSU
PHOTON IS OUR BUSINESS

InGaAs PIN photodiodes



G8370-81/-82/-83/-85

Low PDL (Polarization Dependence Loss)

InGaAs PIN photodiodes G8370-81/-82/-83/-85 have low PDL at 1.55 µm, large shunt resistance and very low noise. Hamamatsu provides various types of InGaAs PIN photodiodes with photosensitive areas from ϕ1 to ϕ5 mm.

Features

- **Low PDL**
- **Low noise, low dark current**
- **Large photosensitive area**
- **Various photosensitive area sizes available**

Applications

- **Laser monitor**
- **Optical power meter**
- **Laser diode life test**

Structure/Absolute maximum ratings

Type no.	Dimensional outline/ Window material*1	Package	Photosensitive area (mm)	Absolute maximum ratings		
				Reverse voltage VR max (V)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
G8370-81	(1)/A	TO-18	ϕ1	5	-40 to +85	-55 to +125
G8370-82	(2)/A	TO-5	ϕ2	2		
G8370-83			ϕ3			
G8370-85	(3)/A	TO-8	ϕ5	1		

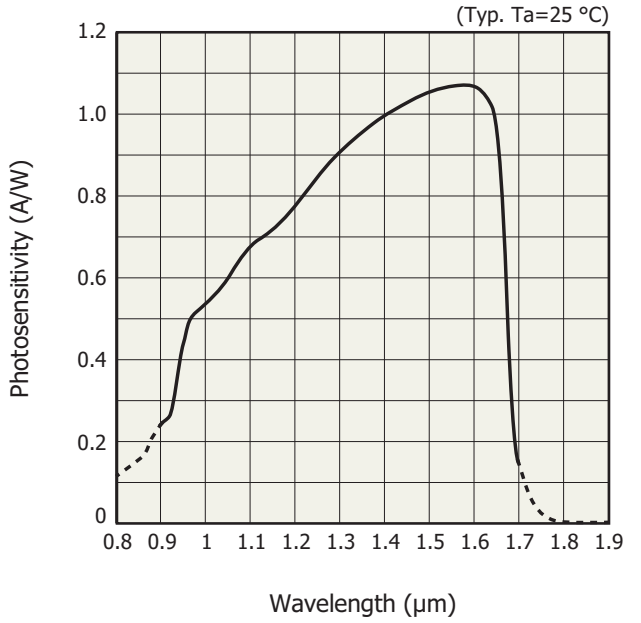
*1: A=Borosilicate glass with anti-reflective coating (optimized for 1.55 µm peak)
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

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

Type no.	Spectral response range (µm)	Peak sensitivity wavelength λp (µm)	Photosensitivity S				Dark current ID VR=1 V		Cutoff frequency fc VR=1 V RL=50 Ω -3 dB (MHz)	Terminal capacitance Ct VR=1 V f=1 MHz (pF)	Shunt resistance Rsh VR=10 mV (MΩ)	PDL λ=λp		D* λ=λp (cm·Hz$^{1/2}$/W)	NEP λ=λp (W/Hz$^{1/2}$)
			1.3 µm		λ=λp										
			Min. (A/W)	Typ. (A/W)	Min. (A/W)	Typ. (A/W)	Typ. (nA)	Max. (nA)				Typ. (mdB)	Max. (mdB)		
G8370-81	0.9 to 1.7	1.55	0.8	0.9	0.85	1.1	1	5	35	90	100	5	10	5×10^{12}	2×10^{-14}
G8370-82							5	25	4	550	25				4×10^{-14}
G8370-83							15	75	2	1000	10				6×10^{-14}
G8370-85							25*2	125*2	0.6	3500	3				1×10^{-13}

*2: VR=0.1 V

Spectral response



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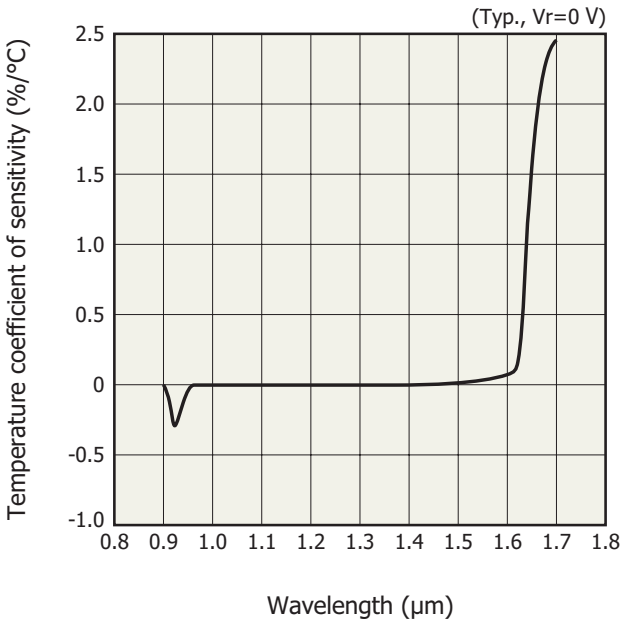
Photosensitivity temperature characteristics



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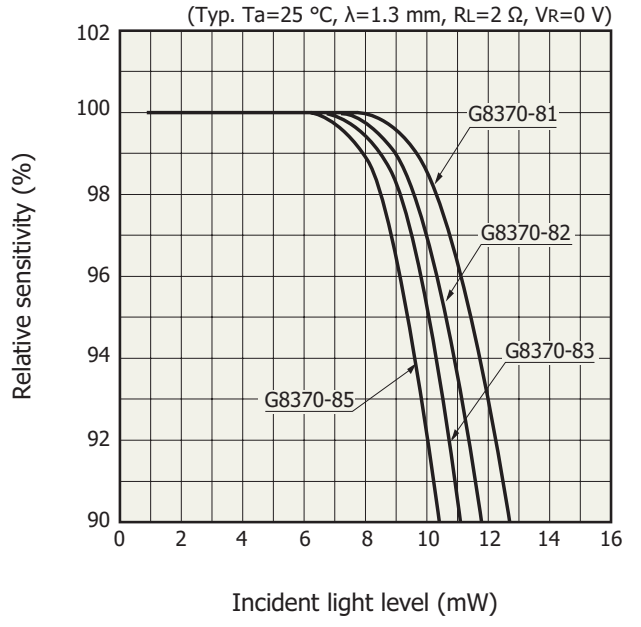
Photosensitivity linearity



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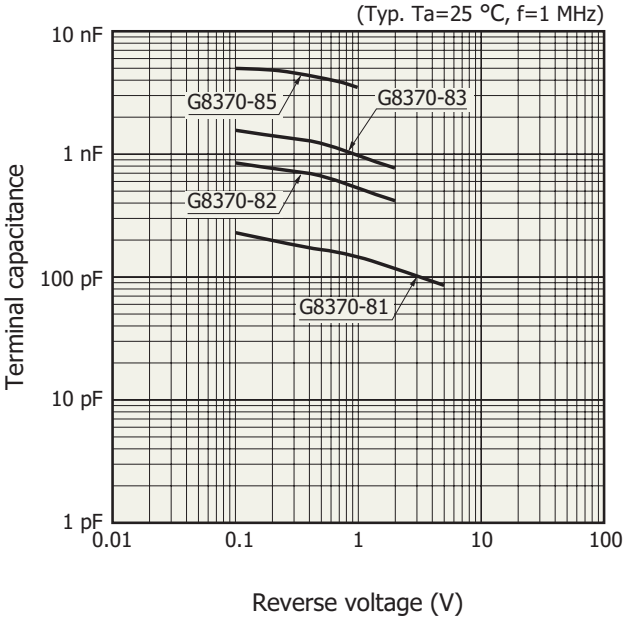
Terminal capacitance vs. reverse voltage



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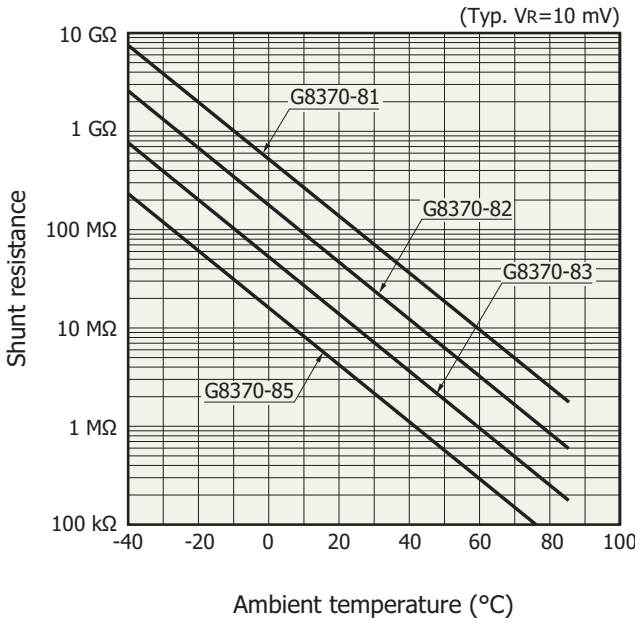
Shunt resistance vs. ambient temperature



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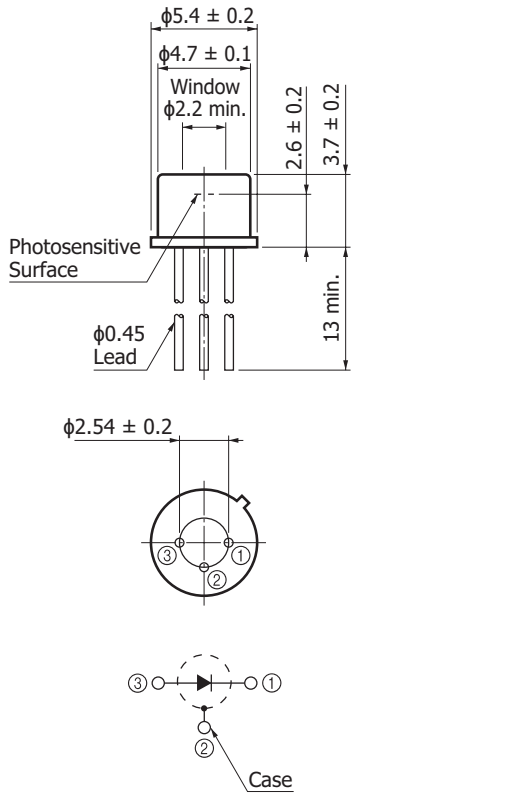
Dimensional outlines (unit: mm)

(1) G8370-81



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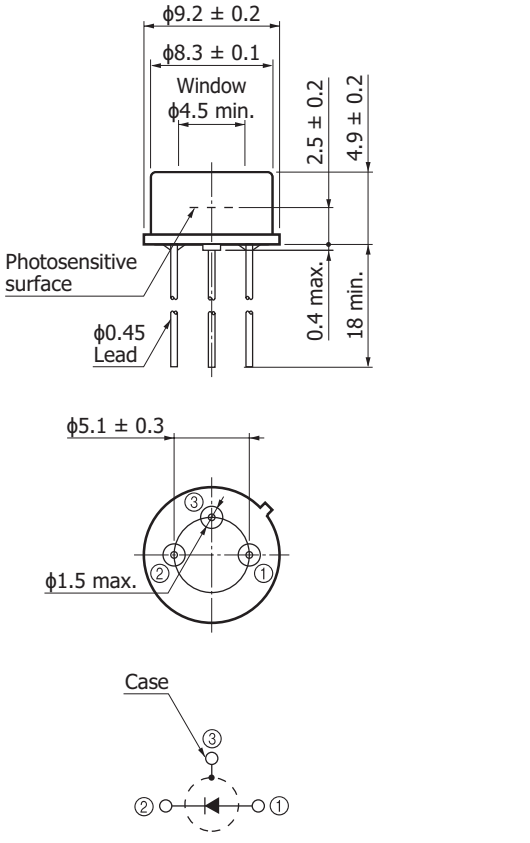
(2) G8370-82/-83



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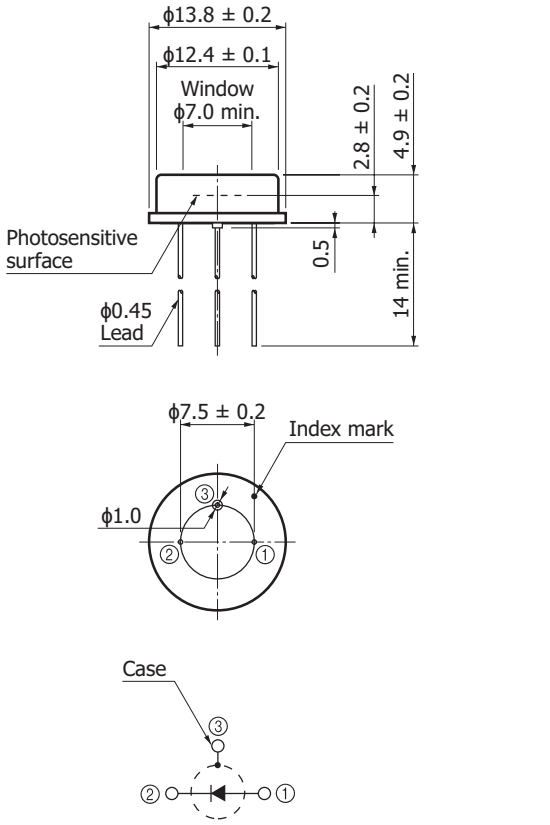
(3) G8370-85



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Related information

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

■ Precautions

· Disclaimer
· Metal, ceramic, plastic package products
· Compound opto-semiconductors (photosensors, light emitters)

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