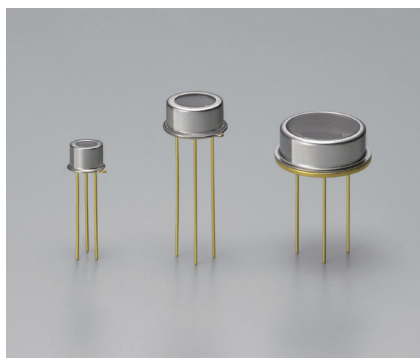




InGaAs PIN photodiodes

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 $\phi 1$ to $\phi 5$ 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)

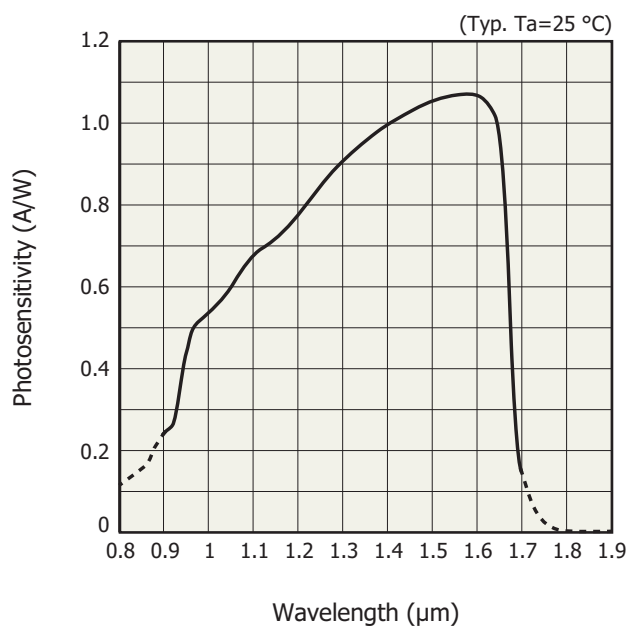
Note: Exceeding the absolute maximum ratings even momentarily may cause a drop in product quality. Always be sure to use the product within the absolute maximum ratings.

Electrical and optical characteristics (Typ. $T_a=25^{\circ}\text{C}$, unless otherwise noted)

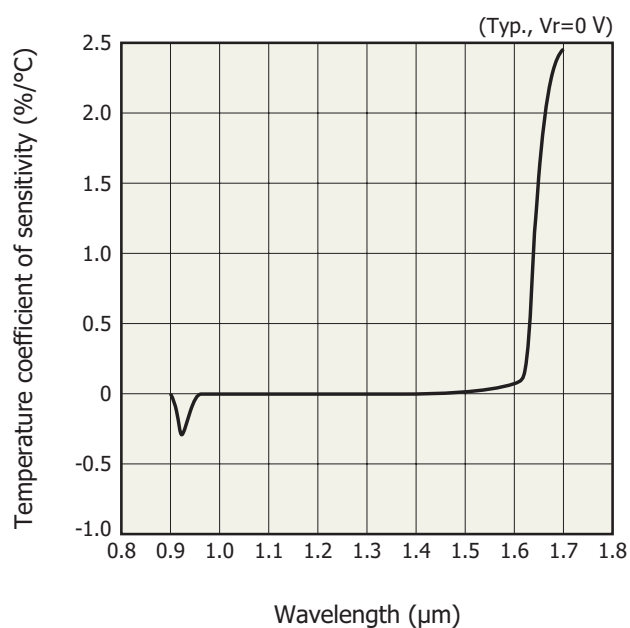
Type no.	Spectral response range (μm)	Peak sensitivity wavelength λp (μm)	Photosensitivity S				Dark current ID VR=1 V		Cutoff frequency fc VR=1 V RL=50 Ω -3 dB (MHz)	Terminal capacitance Ct VR=1 V f=1 MHz (pF)	Shunt resistance Rsh VR=10 mV (MΩ)	PDL λ=λp		D* λ=λp (cm²Hz¹/²/W)	NEP λ=λp (W/Hz¹/²)
			1.3 μm		λ=λp		Typ. (nA)	Max. (nA)				Typ. (mB)	Max. (mB)		
			Min. (A/W)	Typ. (A/W)	Min. (A/W)	Typ. (A/W)									
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 × 10¹²	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: $V_R=0.1\text{ V}$

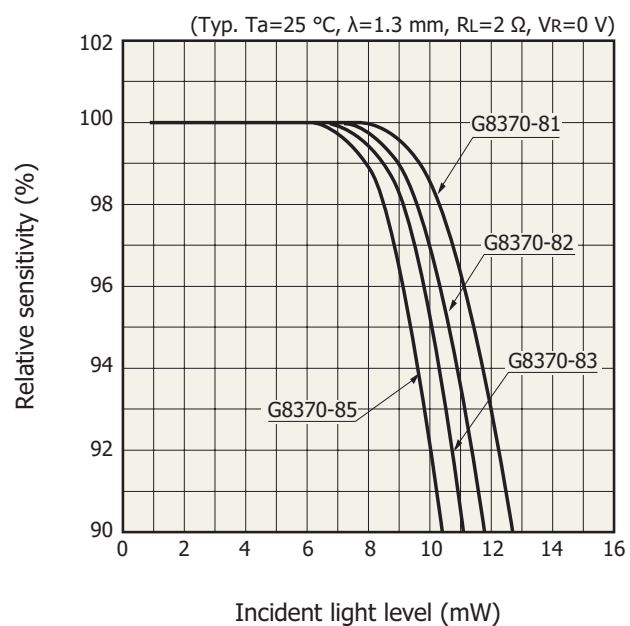
Spectral response



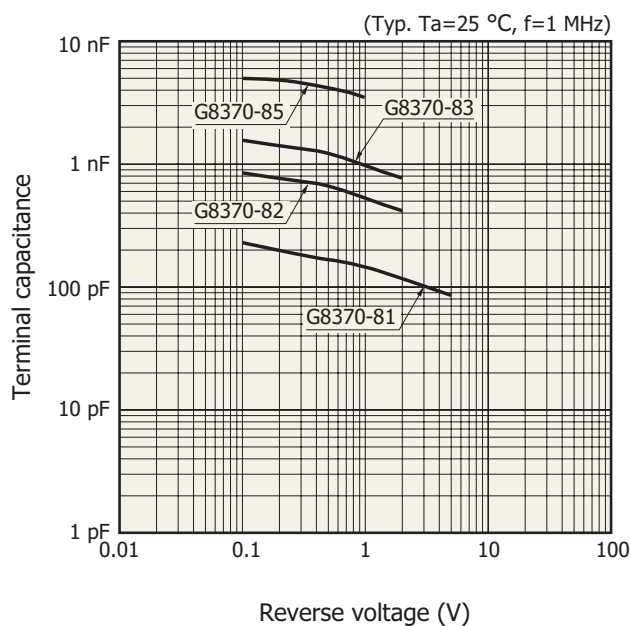
Photosensitivity temperature characteristics



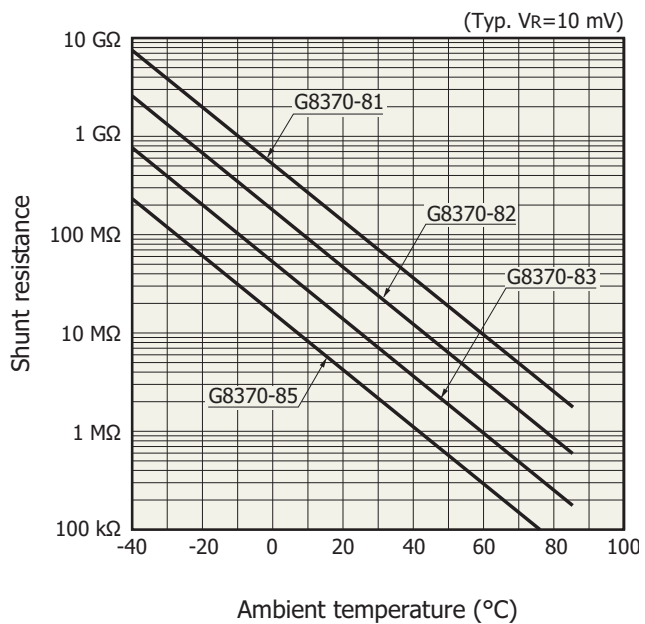
Photosensitivity linearity



Terminal capacitance vs. reverse voltage

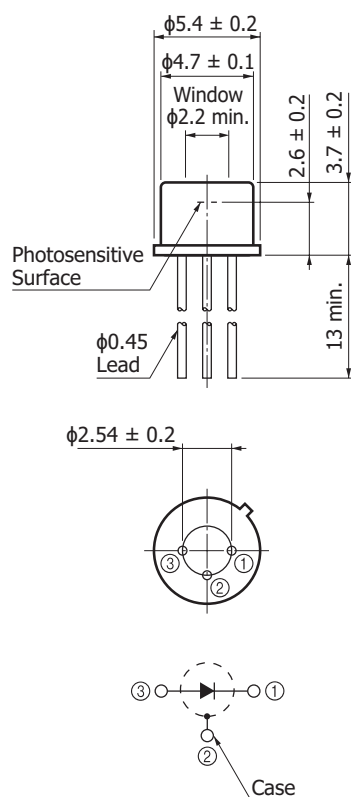


Shunt resistance vs. ambient temperature

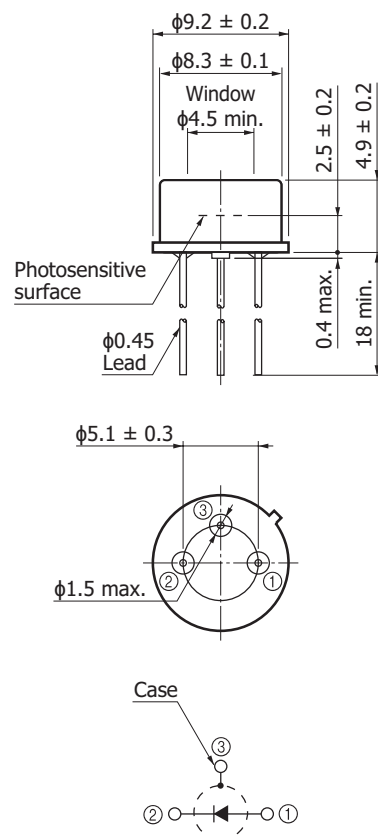


Dimensional outlines (unit: mm)

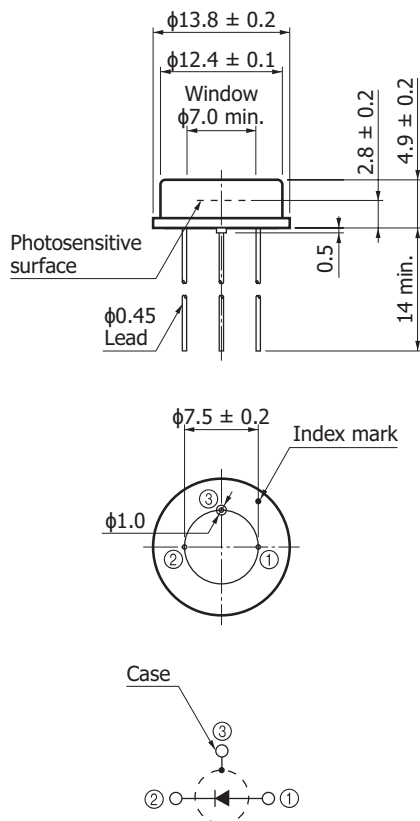
(1) G8370-81



(2) G8370-82/-83



(3) G8370-85



KIRDAD0052EC

■ Related information

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

■ Precautions

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

Information described in this material is current as of July, 2020.

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. Copying or reprinting the contents described in this material in whole or in part is prohibited without our prior permission.

HAMAMATSU

www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Solid State Division

1126-1 Ichino-cho, Higashi-ku, Hamamatsu City, 435-8558 Japan, Telephone: (81)53-434-3311, Fax: (81)53-434-5184

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, Bridgewater, N.J. 08807, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218, E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-265-8, E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10, E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, UK, Telephone: (44)1707-294888, Fax: (44)1707-325777, E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 16440 Kista, Sweden, Telephone: (46)8-509 031 00, Fax: (46)8-509 031 01, E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93 58 17 33, Fax: (39)02-93 58 17 41, E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jiaming Center, 27 Dongsanhuang Beilu, Chaoyang District, 100020 Beijing, P.R.China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866, E-mail: hpc@hamamatsu.com.cn

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No. 158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)3-659-0080, Fax: (886)3-659-0081, E-mail: info@hamamatsu.com.tw