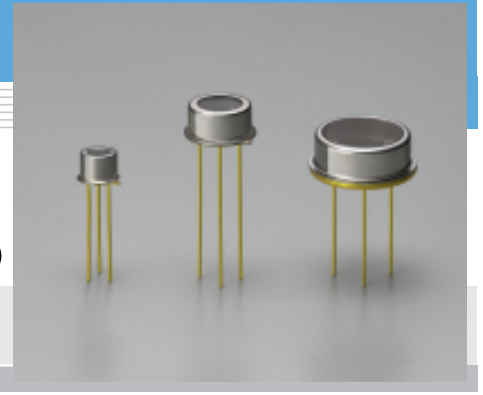


InGaAs PIN photodiode

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

Low PDL (Polarization Dependence Loss)



InGaAs PIN photodiodes G8370-81/-82/-83/-85 have low PDL (Polarization Dependence Loss) at 1.55 μm , large shunt resistance and very low noise. Hamamatsu provides various types of InGaAs PIN photodiodes with active areas from $\phi 1$ to $\phi 5$ mm.

Features

- Low PDL (Polarization Dependence Loss)
- Low noise, low dark current
- Large active area
- Various active area sizes available

Applications

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

Specifications / Absolute maximum ratings

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

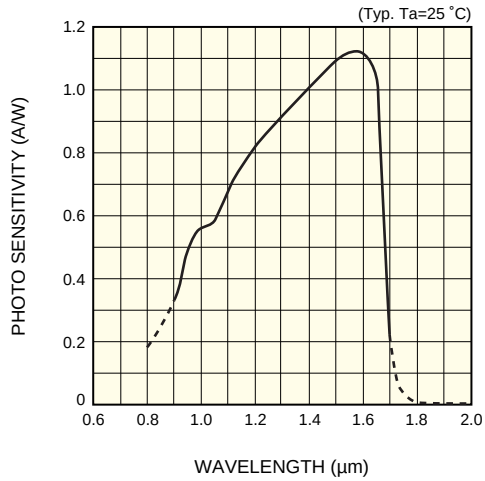
Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

Type No.	Spectral response range (μm)	Peak sensitivity wavelength λp (μm)	Photo sensitivity S				Dark current ID VR=1 V (nA) (nA)		Cut-off 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							Typ. (mdB)	Max. (mdB)		
			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 × 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

*1: Window material K: borosilicate glass with anti-reflective coating (optimized for 1.55 μm peak)

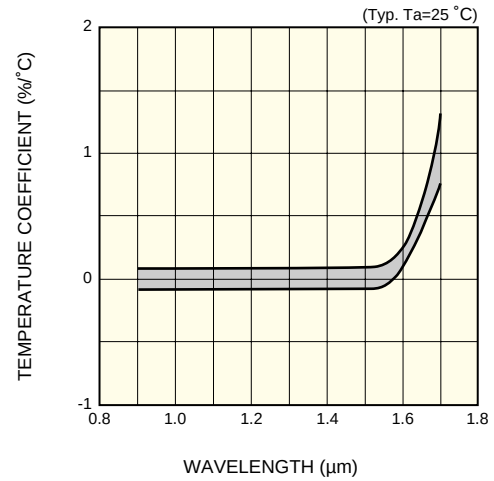
*2: VR=0.1 V

Spectral response



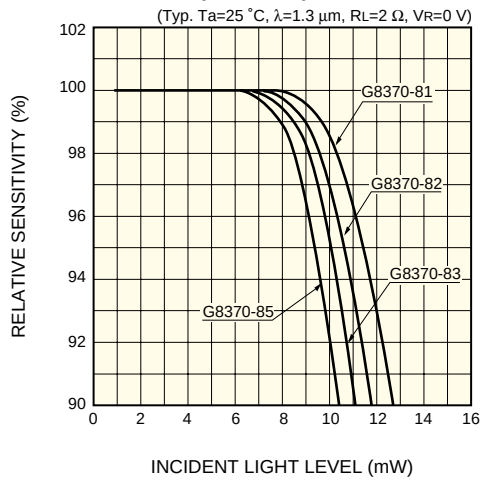
KIRDB0374EA

Photo sensitivity temperature characteristic



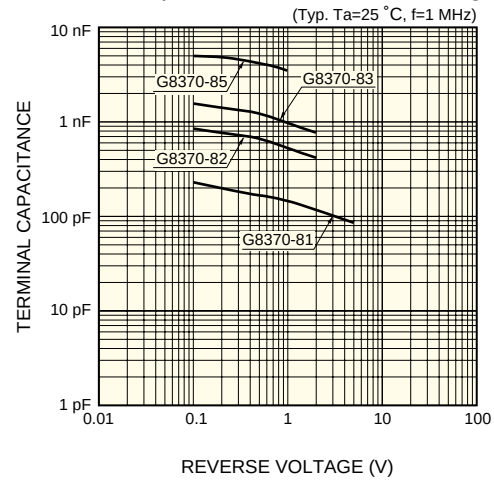
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Photo sensitivity linearity



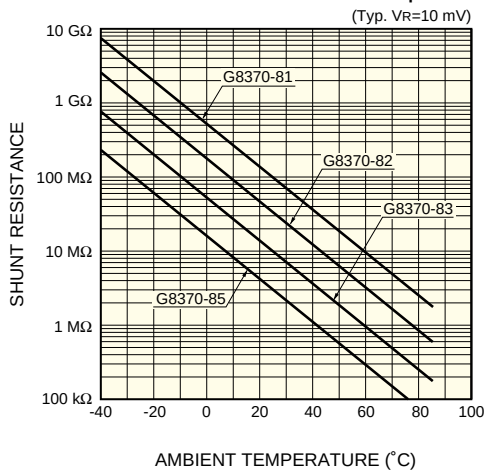
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Terminal capacitance vs. reverse voltage



KIRDB0299EA

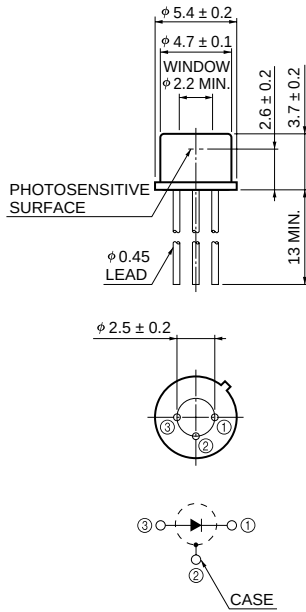
Shunt resistance vs. ambient temperature



KIRDB0300EA

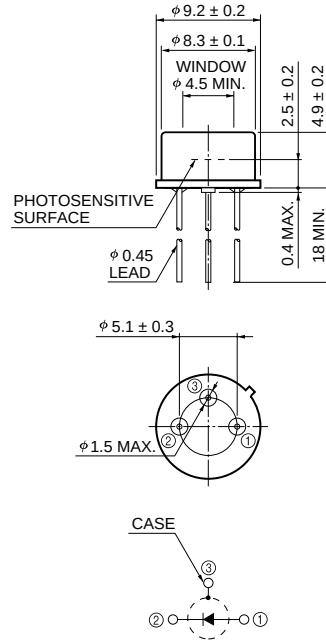
■ Dimensional outlines (unit: mm)

① G8370-81



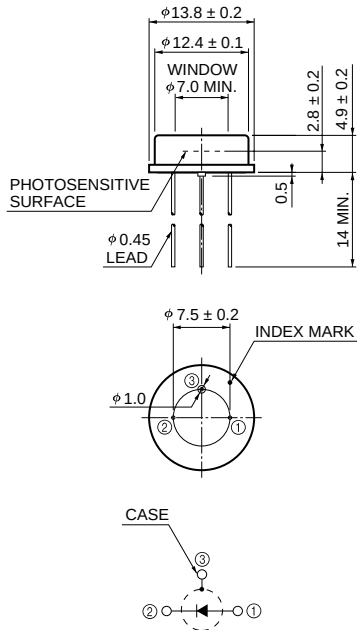
KIRDB0189EA

② G8370-82/-83



KIRDA0155EB

③ G8370-85



KIRDA0052EC

HAMAMATSU

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