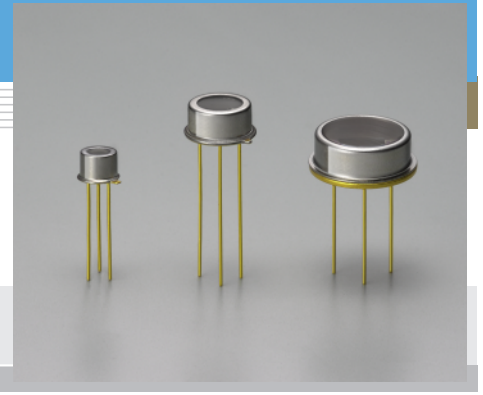


# InGaAs PIN photodiode G8370 series

Large active areas from  $\phi 1$  to  $\phi 5$  mm



InGaAs PIN photodiodes have large shunt resistance and feature very low noise. Hamamatsu provides various types of InGaAs PIN photodiodes with active areas from  $\phi 1$  to  $\phi 5$  mm.

## Features

- 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 $V_R$ Max. (V)	Operating temperature $T_{opr}$ (°C)	Storage temperature $T_{stg}$ (°C)
G8370-01	①/K	TO-18	$\phi 1$	10	-40 to +85	-55 to +125
G8370-02	②/K	TO-5	$\phi 2$	5		
G8370-03			$\phi 3$			
G8370-05	③/K	TO-8	$\phi 5$	2		

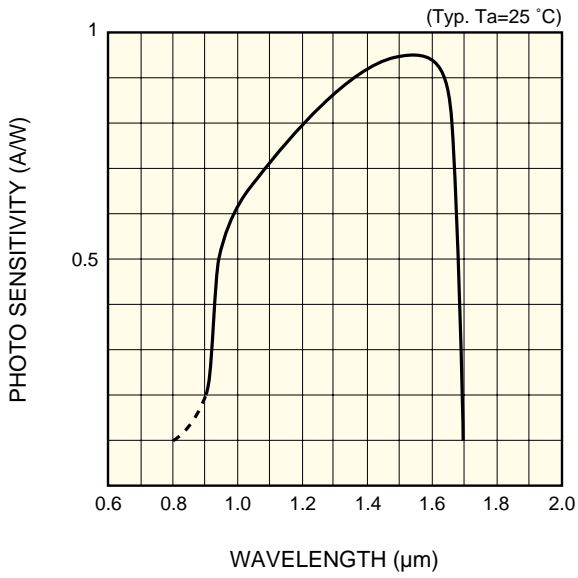
## Electrical and optical characteristics (Typ. $T_a=25$ °C, unless otherwise noted)

Type No.	Spectral response range ( $\mu\text{m}$ )	Peak sensitivity wavelength $\lambda_p$ ( $\mu\text{m}$ )	Photo sensitivity S		Dark current $I_D$ $V_R=1$ V		Cut-off frequency $f_c$ $V_R=1$ V $R_L=50$ $\Omega$ -3 dB (MHz)	Terminal capacitance $C_t$ $V_R=1$ V $f=1$ MHz (pF)	Shunt resistance $R_{sh}$ $V_R=10$ mV (M $\Omega$ )	$D^*$ $\lambda=\lambda_p$ ( $\text{cm} \cdot \text{Hz}^{1/2}/\text{W}$ )	NEP $\lambda=\lambda_p$ ( $\text{W}/\text{Hz}^{1/2}$ )
			1.3 $\mu\text{m}$ (A/W)	$\lambda=\lambda_p$ (A/W)	Typ. (nA)	Max. (nA)					
G8370-01	0.9 to 1.7	1.55	0.9	0.95	1 *2	5 *2	35 *2	90 *2	100	$5 \times 10^{12}$	$2 \times 10^{-14}$
G8370-02					5	25	4	550	25		$4 \times 10^{-14}$
G8370-03					15	75	2	1000	10		$6 \times 10^{-14}$
G8370-05					25	125	0.6	3500	3		$1 \times 10^{-13}$

\*1: Window material K: borosilicate glass with anti-reflective coating (optimized for 1.55  $\mu\text{m}$  peak)

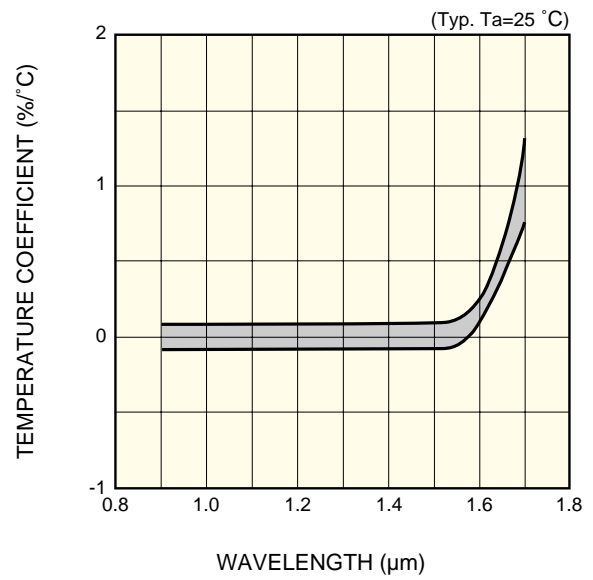
\*2:  $V_R=5$  V

## ■ Spectral response



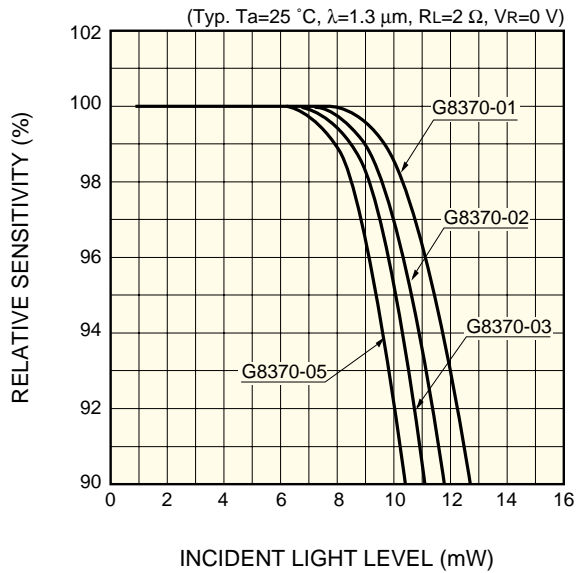
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## ■ Photo sensitivity temperature characteristic



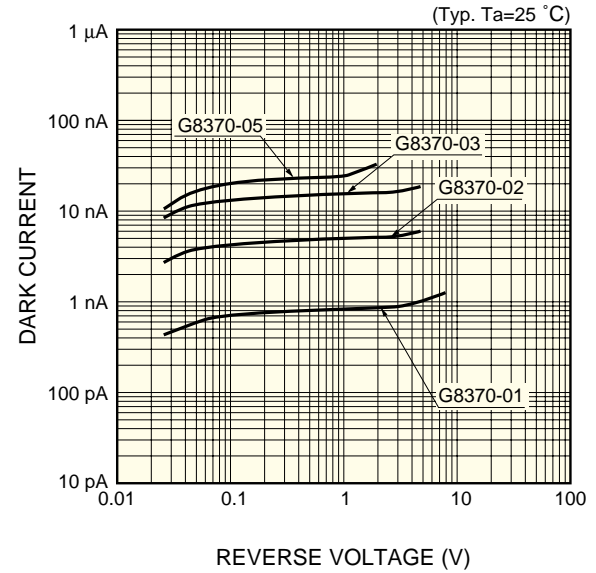
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## ■ Photo sensitivity linearity



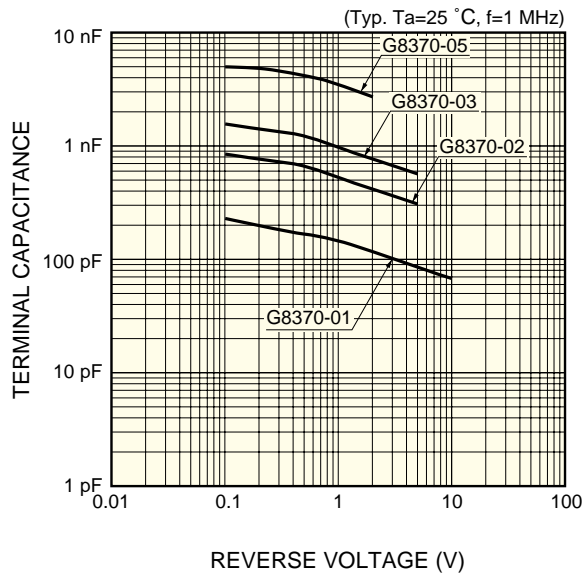
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## ■ Dark current vs. reverse voltage



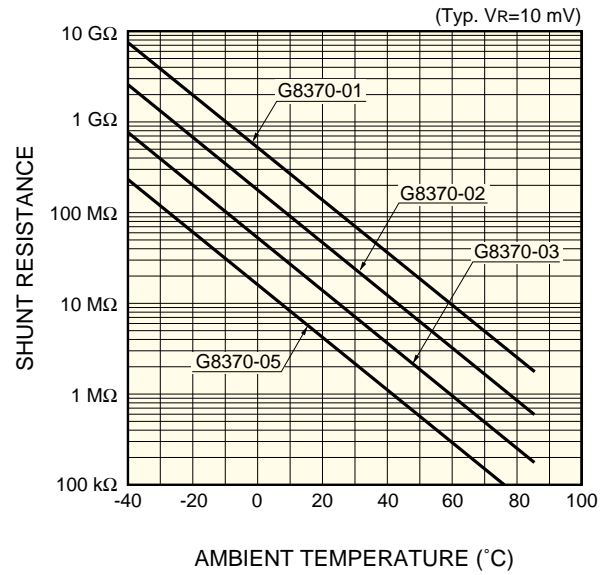
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## Terminal capacitance vs. reverse voltage



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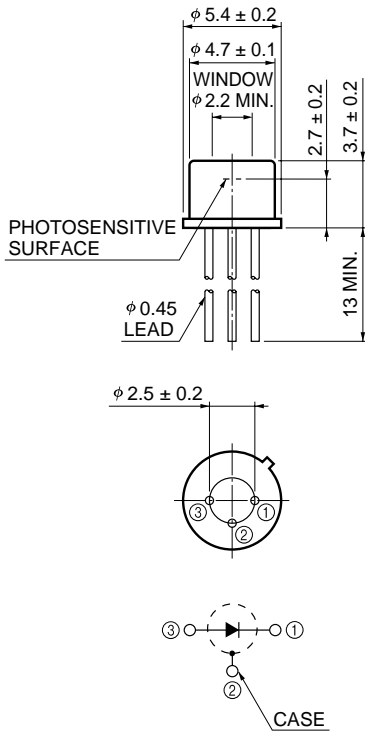
## Shunt resistance vs. ambient temperature



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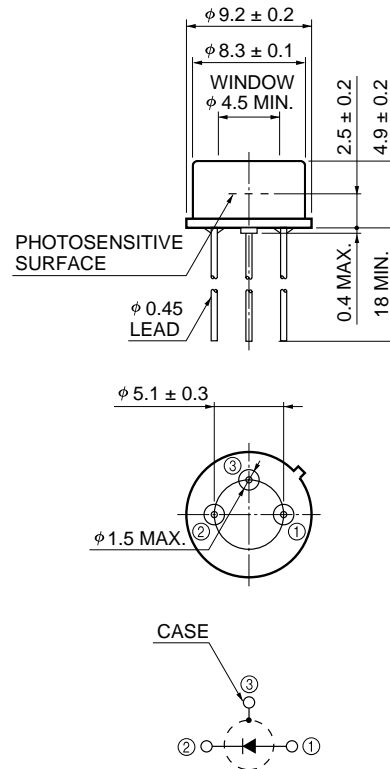
## Dimensional outlines (unit: mm)

### ① G8370-01



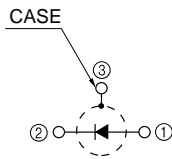
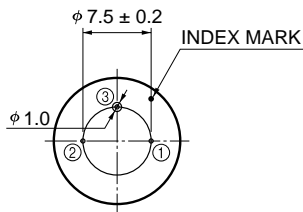
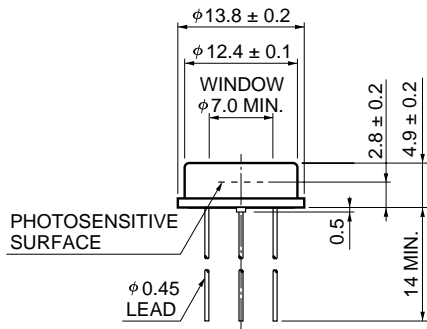
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### ② G8370-02/-03



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## ③ G8370-05



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