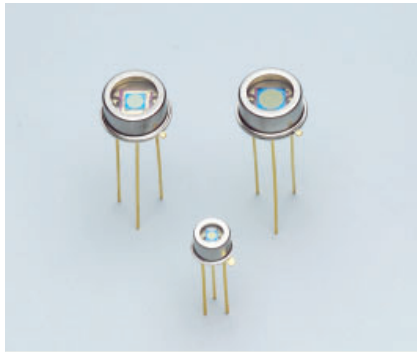


InGaAs PIN photodiodes

G10899 series **25-06179**



Wide spectral response range (0.5 to 1.7 μm)

The G10899 series is an InGaAs PIN photodiode that covers a wide spectral response range from 0.5 μm to 1.7 μm . While standard InGaAs PIN photodiodes have spectral response ranging from 0.9 μm to 1.7 μm , the G10899 series has sensitivity extending to 0.5 μm on the shorter wavelength side. A wide range of spectrum can be detected with a single detector. The G10899 series also features low noise and low dark current.

Features

- Wide spectral response range
- Low noise, low dark current
- Large active area available

Applications

- Spectroanalysis
- Thermometer

Specifications / absolute maximum ratings

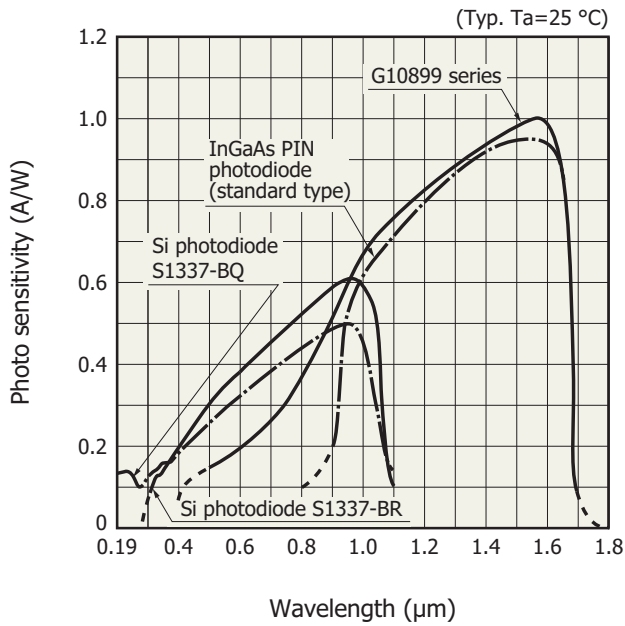
Type no.	Window material	Package	Active area (mm)	Absolute maximum ratings			
				Reverse voltage V_R (V)	Forward current I_f (mA)	Operating temperature T_{opr} ($^{\circ}\text{C}$)	Storage temperature T_{stg} ($^{\circ}\text{C}$)
G10899-003K	Borosilicate glass	TO-18	$\phi 0.3$	5	10	-40 to +85	-55 to +125
G10899-005K			$\phi 0.5$				
G10899-01K			$\phi 1$				
G10899-02K		TO-5	$\phi 2$	2			
G10899-03K			$\phi 3$				

Electrical and optical characteristics ($T_a=25^{\circ}\text{C}$)

Type no.	Spectral response range λ (μm)	Peak sensitivity wavelength λ_p (μm)	Photo sensitivity S								Dark current I_D $V_R=1\text{ V}$		Cut-off frequency f_c $V_R=1\text{ V}$ $R_L=50\ \Omega$ (MHz)	Terminal capacitance C_t $V_R=1\text{ V}$ $f=1\text{ MHz}$ (pF)	Shunt resistance R_{sh} $V_R=10\text{ mV}$ ($\text{M}\Omega$)	D^* $\lambda=\lambda_p$ ($\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$)	NEP $\lambda=\lambda_p$ ($\text{W}/\text{Hz}^{1/2}$)	
			$\lambda=0.65\ \mu\text{m}$		$\lambda=0.85\ \mu\text{m}$		$\lambda=1.3\ \mu\text{m}$		$\lambda=\lambda_p$		Typ. (nA)	Max. (nA)						
			Min. (A/W)	Typ. (A/W)	Min. (A/W)	Typ. (A/W)	Min. (A/W)	Typ. (A/W)	Min. (A/W)	Typ. (A/W)								
G10899-003K	0.5 to 1.7	1.55									0.3	1.5	300	10	1000	5×10^{12}	5×10^{-15}	
G10899-005K											0.5	2.5	150	20	300		9×10^{-15}	
G10899-01K											1	5	45	70	100		2×10^{-14}	
G10899-02K												5	25	10	300		25	4×10^{-14}
G10899-03K												15	75	5	600		10	6×10^{-14}

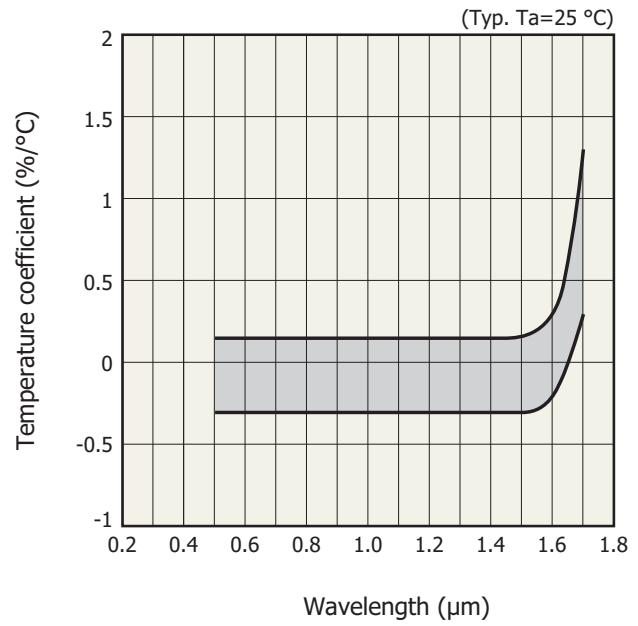
The G10899 series may be damaged by electrostatic discharge, etc. Be careful when using the G10899 series.

Spectral response



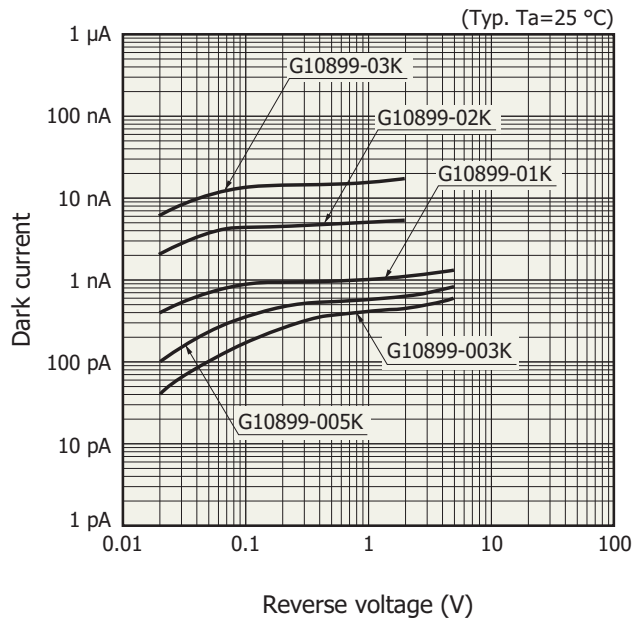
KIRDB0408EA

Photo sensitivity temperature characteristic



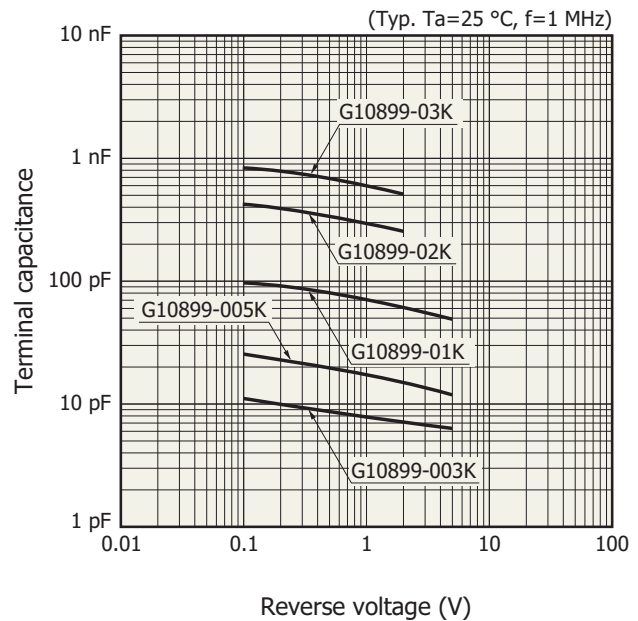
KIRDB0409EA

Dark current vs. reverse voltage



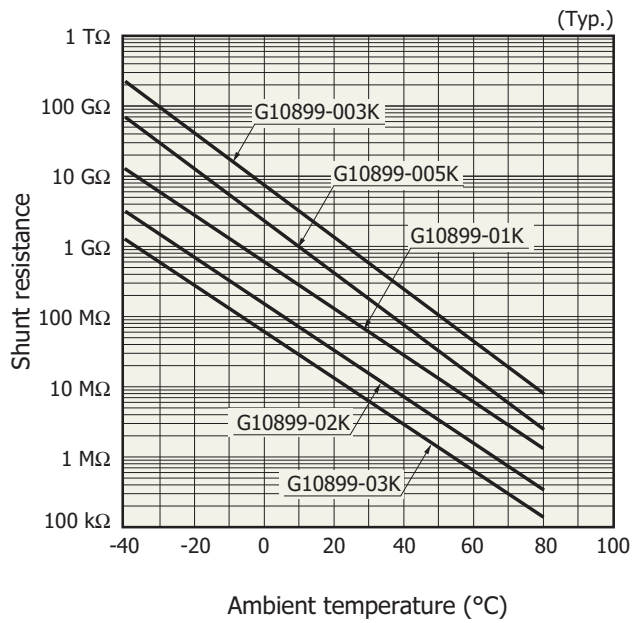
KIRDB0414EC

Terminal capacitance vs. reverse voltage



KIRDB0410EC

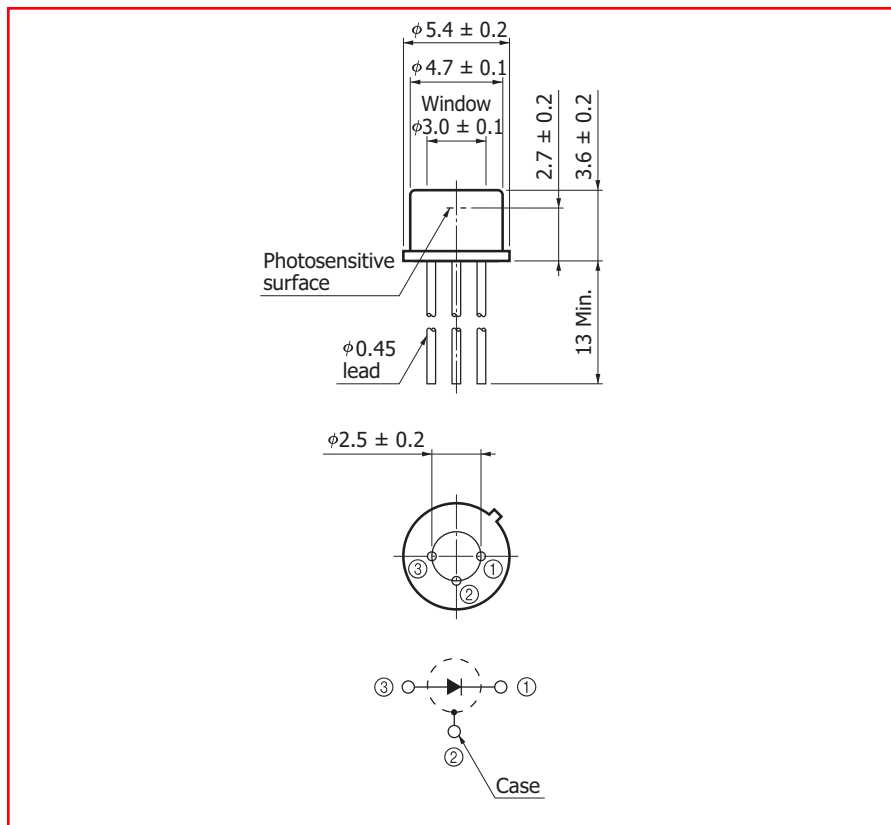
Shunt resistance vs. ambient temperature



KIRD8041.1EC

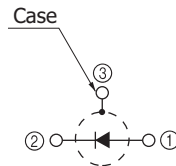
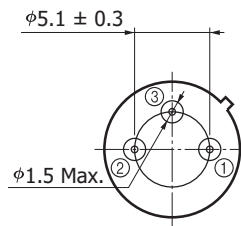
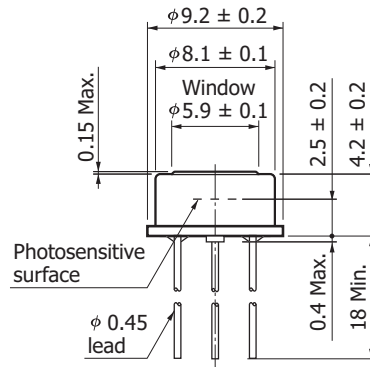
Dimensional outlines (unit: mm)

G10899-003K/-005K/-01K



KIRDA0150EA

G10899-02K/-03K



KIRDA0151EA

Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions.

Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein.

Type numbers of products listed in the specification sheets or supplied as samples may have a suffix "(X)" which means tentative specifications or a suffix "(Z)" which means developmental specifications. ©2010 Hamamatsu Photonics K.K.

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