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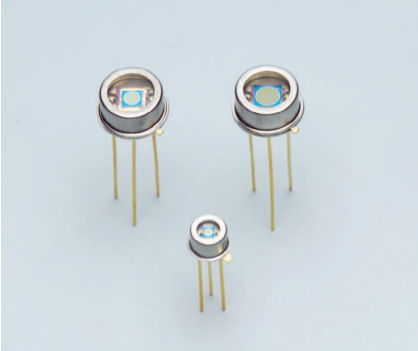
PHOTON IS OUR BUSINESS

InGaAs PIN photodiodes



G10899 series

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**

Structure

Type no.	Photosensitive area (mm)	Window material	Package
G10899-003K	φ0.3	Borosilicate glass	TO-18
G10899-005K	φ0.5		
G10899-01K	φ1		
G10899-02K	φ2		TO-5
G10899-03K	φ3		

Absolute maximum ratings

Type no.	Reverse voltage V_R max (V)	Forward current I_F max (mA)	Operating temperature*1 Topr (°C)	Storage temperature*1 Tstg (°C)
G10899-003K	5	10	-40 to +85	-55 to +125
G10899-005K				
G10899-01K				
G10899-02K	2			
G10899-03K				

*1: No dew condensation
When there is a temperature difference between a product and the surrounding area in high humidity environment, dew condensation may occur on the product surface. Dew condensation on the product may cause deterioration in characteristics and reliability.

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.

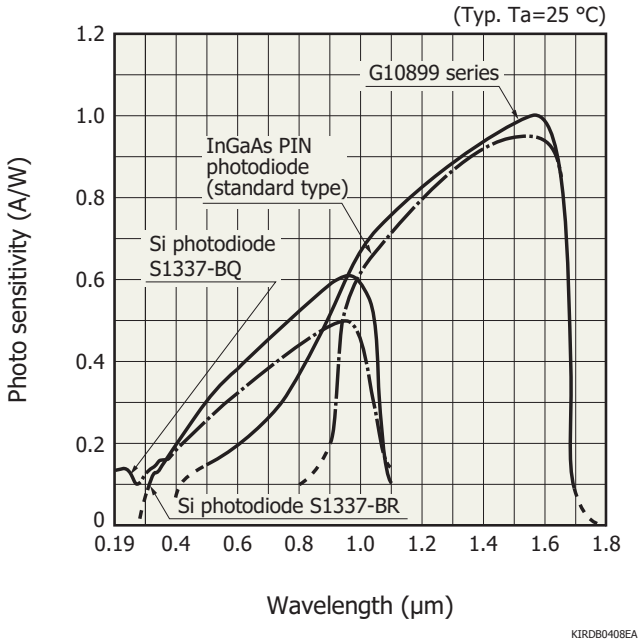
Electrical and optical characteristics (Ta=25 °C)

Type no.	Spectral response range λ (μm)	Peak sensitivity wavelength λp (μm)	Photosensitivity S λ=0.65 μm Min. (A/W)	λ=0.65 μm Typ. (A/W)	λ=0.85 μm Min. (A/W)	λ=0.85 μm Typ. (A/W)	λ=1.3 μm Min. (A/W)	λ=1.3 μm Typ. (A/W)	λ=λp Min. (A/W)	λ=λp Typ. (A/W)	Dark current ID VR=1 V Typ. (nA)	Dark current ID VR=1 V Max. (nA)	Temp. coefficient of dark current ΔTID VR=1 V (times/°C)
G10899-003K	0.5 to 1.7	1.55	0.15	0.22	0.35	0.45	0.8	0.9	0.85	1	0.3	1.5	1.07
G10899-005K											0.5	2.5	
G10899-01K											1	5	
G10899-02K											5	25	
G10899-03K											15	75	

Type no.	Cutoff frequency fc VR=1 V RL=50 Ω Min. (MHz)	Cutoff frequency fc VR=1 V RL=50 Ω Typ. (MHz)	Terminal capacitance Ct VR=1 V f=1 MHz Typ. (pF)	Terminal capacitance Ct VR=1 V f=1 MHz Max. (pF)	Shunt resistance Rsh VR=10 mV Min. (MΩ)	Shunt resistance Rsh VR=10 mV Typ. (MΩ)	D* λ=λp Min. (cm · Hz$^{1/2}$/W)	D* λ=λp Typ. (cm · Hz$^{1/2}$/W)	NEP λ=λp Typ. (W/Hz$^{1/2}$)	NEP λ=λp Max. (W/Hz$^{1/2}$)
G10899-003K	150	300	10	15	100	1000	1×10^{12}	5×10^{12}	5×10^{-15}	2×10^{-14}
G10899-005K	75	150	20	30	30	300			9×10^{-15}	4×10^{-14}
G10899-01K	25	45	70	130	10	100			2×10^{-14}	6×10^{-14}
G10899-02K	4	10	300	800	2.5	25			3×10^{-14}	2×10^{-13}
G10899-03K	2	5	600	1200	1	10			5×10^{-14}	2×10^{-13}

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

Spectral response



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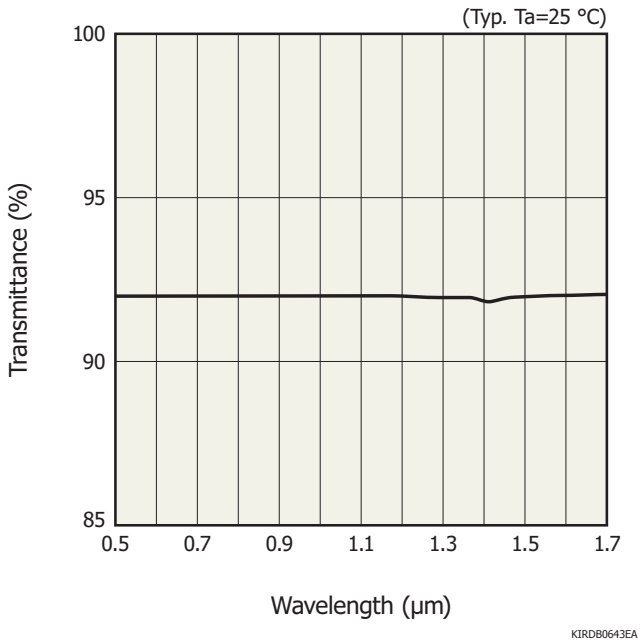
Spectral transmittance characteristics of window material



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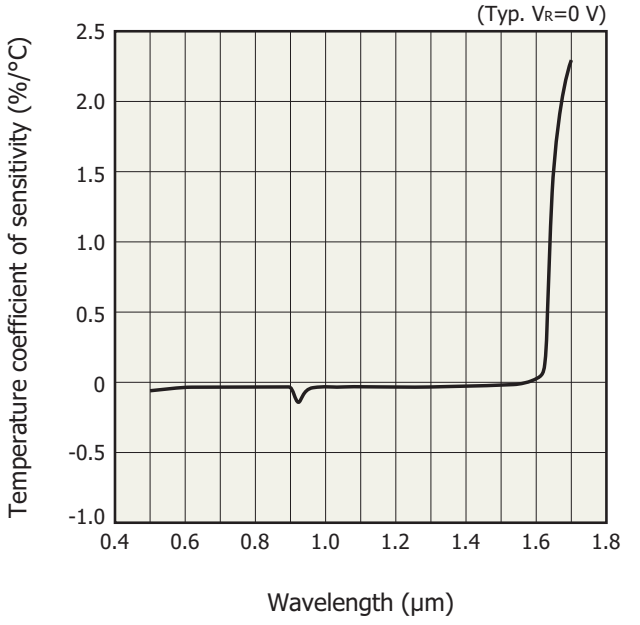
Photosensitivity temperature characteristics



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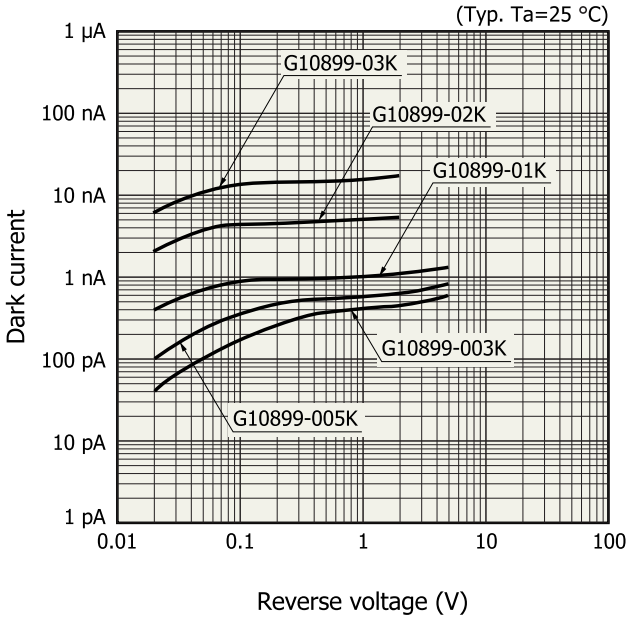
Dark current vs. reverse voltage



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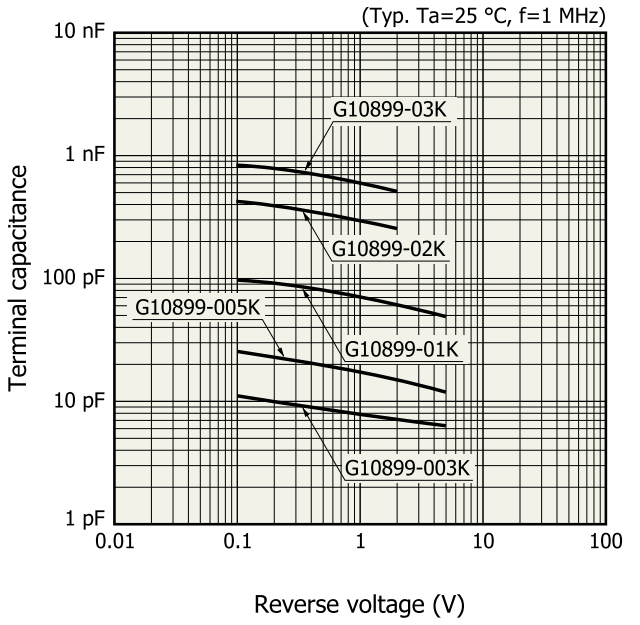
Terminal capacitance vs. reverse voltage



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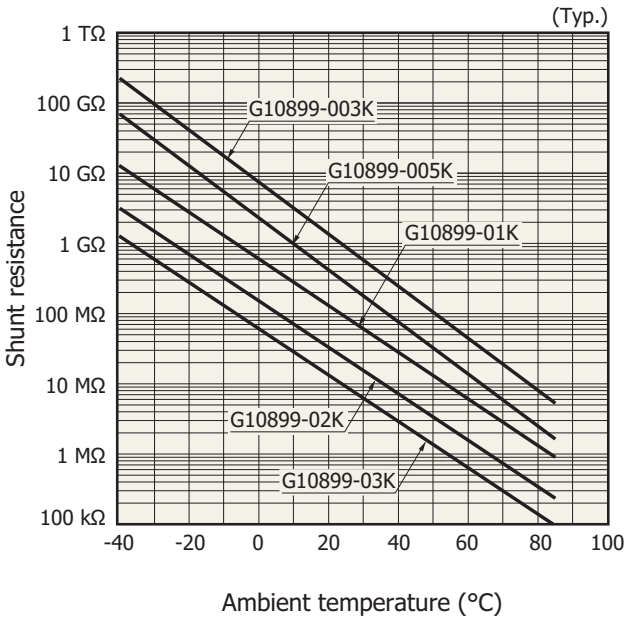
Shunt resistance vs. ambient temperature



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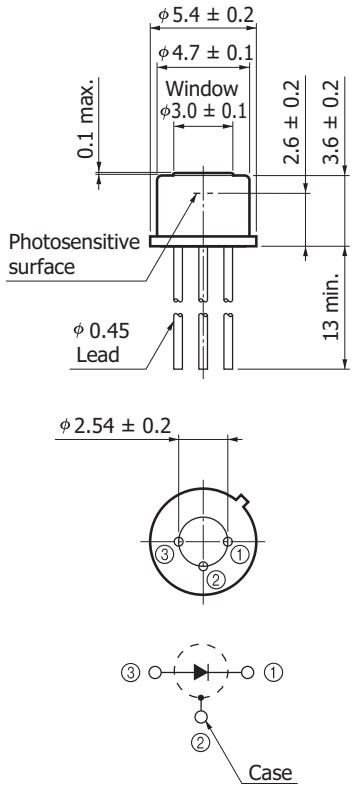
Dimensional outlines (unit: mm)

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



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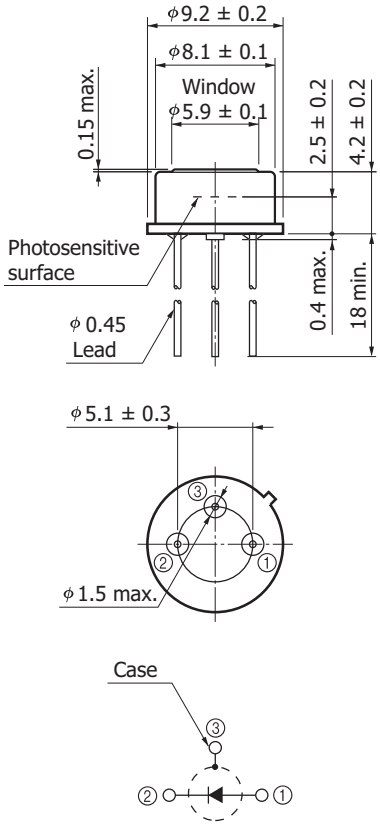
G10899-02K/-03K



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Related information

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

■ Precautions
· Disclaimer
· Safety consideration
· Metal, ceramic, plastic package products

■ Technical information
· Infrared detectors

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