HAMAMATSU

NEW

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**

Specifications / absolute maximum ratings

Type no.	Window material	Package	Active area (mm)	Absolute maximum ratings			
				Reverse voltage V_R (V)	Forward current If (mA)	Operating temperature Topr (°C)	Storage temperature Tstg (°C)
G10899-003K	Borosilicate glass	TO-18	φ0.3	5	10	-40 to +85	-55 to +125
G10899-005K			φ0.5				
G10899-01K			φ1				
G10899-02K		TO-5	φ2	2			
G10899-03K			φ3				

Electrical and optical characteristics (Ta=25 °C)

Type no.	Spectral response range λ (μm)	Peak sensitivity wavelength λp (μm)	Photo sensitivity 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 I_D V_R=1 V Typ. (nA)	Dark current I_D V_R=1 V Max. (nA)	Cut-off frequency fc V_R=1 V R_L=50 Ω (MHz)	Terminal capacitance Ct V_R=1 V f=1 MHz (pF)	Shunt resistance Rsh V_R=10 mV (MΩ)	D* λ=λp (cm · $Hz^{1/2}$/W)	NEP λ=λp (W/$Hz^{1/2}$)
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	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

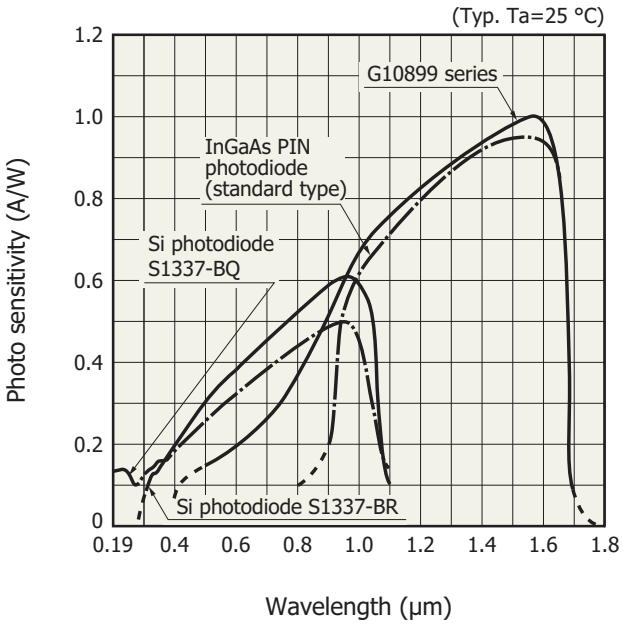

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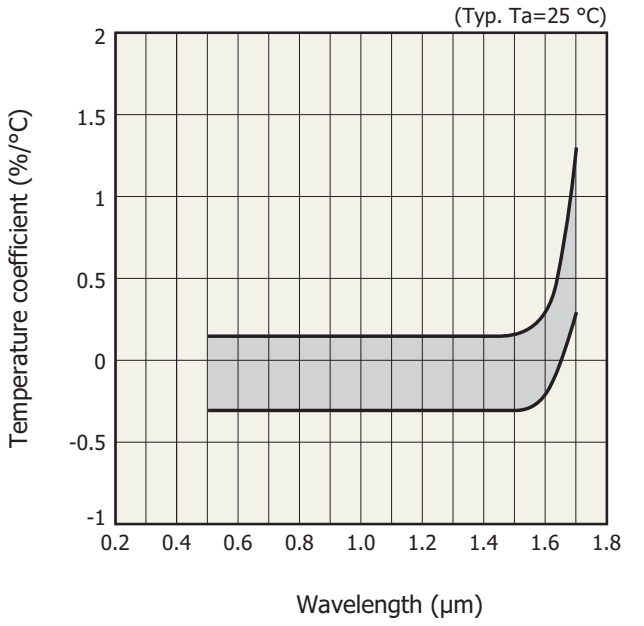
Photo sensitivity temperature characteristic



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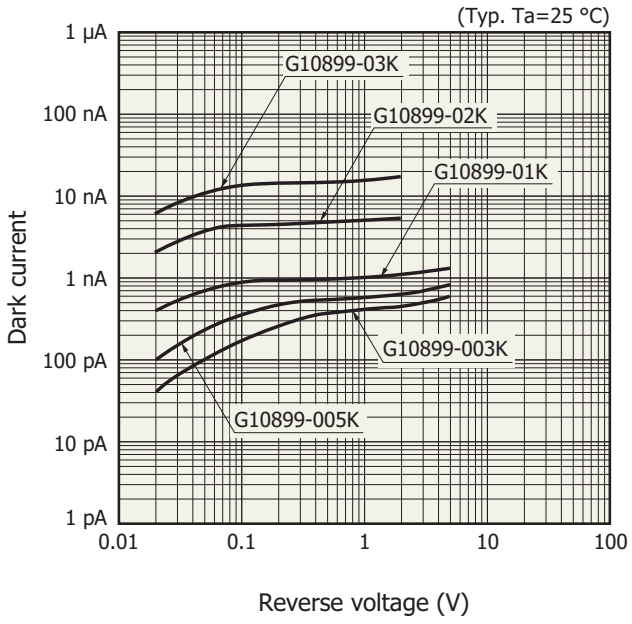
Dark current vs. reverse voltage



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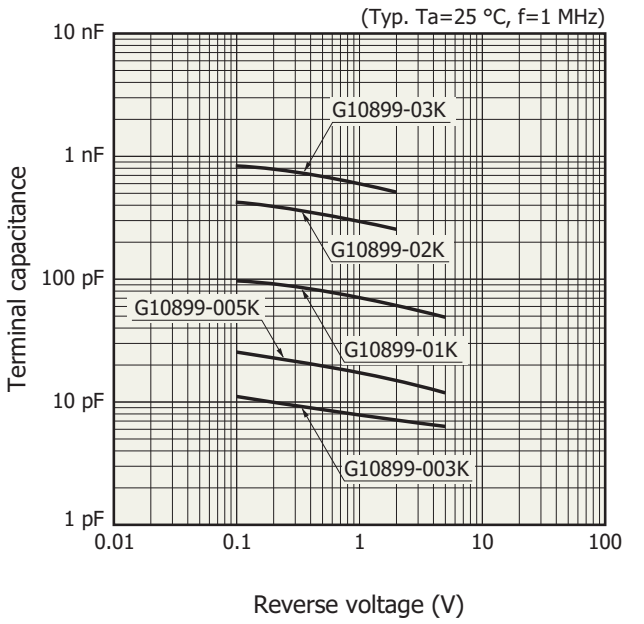
Terminal capacitance vs. reverse voltage



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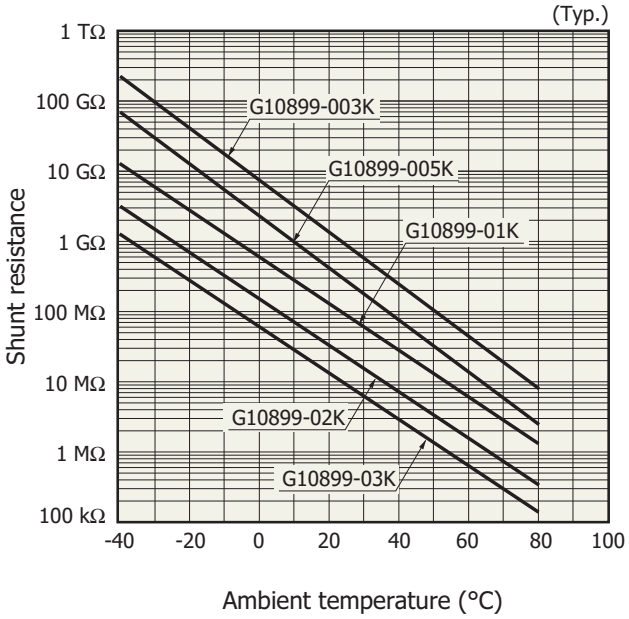
Shunt resistance vs. ambient temperature



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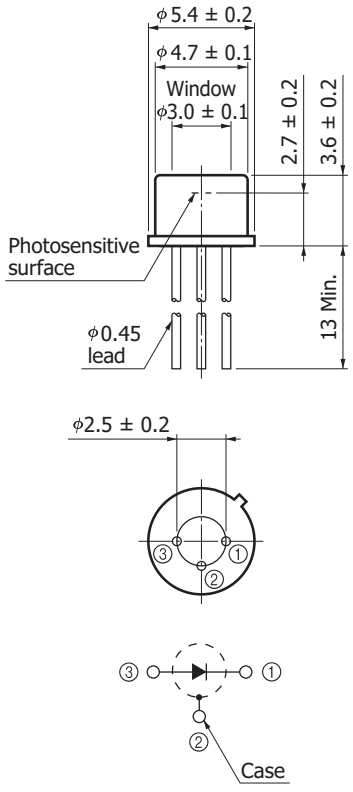
Dimensional outlines (unit: mm)

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



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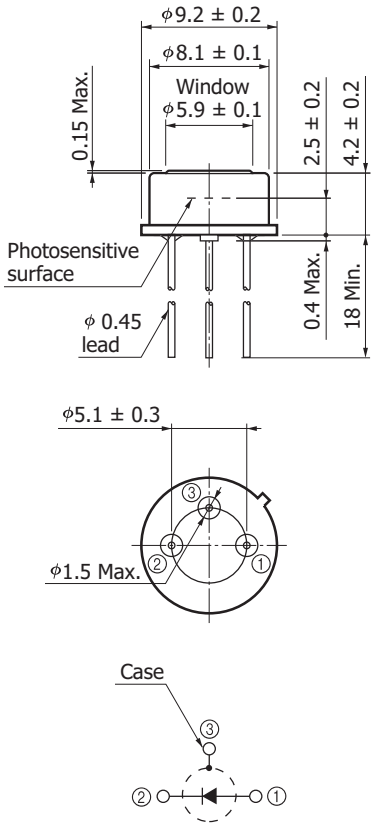
G10899-02K/-03K



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