ILX Lightwave LTS-9300

Laser Diode Life-Test and Burn-In System, 64-Channel, Butterfly Package Type

Limited Availability
Used and in Excellent Condition

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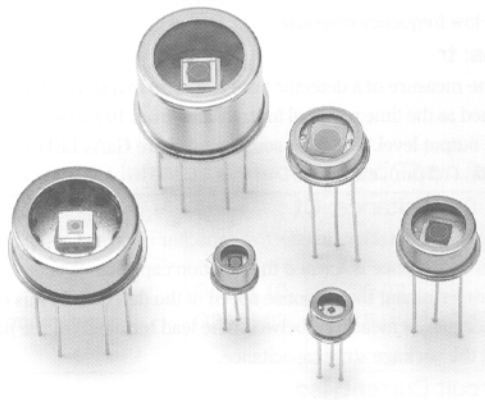
https://www.artisantg.com/66674-1

InGaAs PIN Photodiodes (Standard Types)

Spectral Response Range: 0.7 to 1.7/0.9 to 1.7 µm

High-speed and low noise NIR (Near Infrared) detectors



InGaAs PIN photodiodes have small terminal capacitance and therefore achieve high-speed response. In addition, these devices feature low noise operation due to high shunt resistance.

■A wide range of device types are available:

Large area types, short-wavelength enhanced types, etc.

Standard Types

A wide range of device types are available, ranging in active area from 0.08 mm diameter to 5 mm diameter.

Short-Wavelength (0.7 to 0.9 µm) Enhanced Types

These InGaAs PIN photodiodes have enhanced responsivity in the 0.7 to 0.9 µm region. With a single detector, it is possible to cover a wide spectral range from the short wavelength band to the long wavelength band for use in such fields as optical communications and optical measurement systems.

TE-Cooled Types

Thermoelectrically-cooled devices can greatly reduce the dark current, achieving an improved D* value. Thus these devices are ideally suited for low-level-light detection in the NIR (near infrared) region. The thermoelectric cooler is available in a one-stage (-10 °C) or two-stage (-20 °C) configuration.

■ACCESSORIES (Optional)

Preamplifier for InGaAs PIN photodiodes (High-speed application)	: C4159-02
Preamplifier for InGaAs PIN photodiodes (Low-light-level detection)	: C4159-03
Heatsink for one-stage TE-cooled	: A3179
Heatsink for two-stage TE-cooled	: A3179-01
Temperature controller for TE-cooled Types	: C1103-04

■SPECIFICATIONS (Common)

Peak Sensitivity Wavelength	1.55 µm
Window Material	Borosilicate glass
Operating Temperature	-40 to +85 °C (G7151-16: -25 to +70 °C)
Storage Temperature	-55 to +125 °C (G7151-16: -25 to +70 °C)

■SPECIFICATIONS (TE-cooled Types)

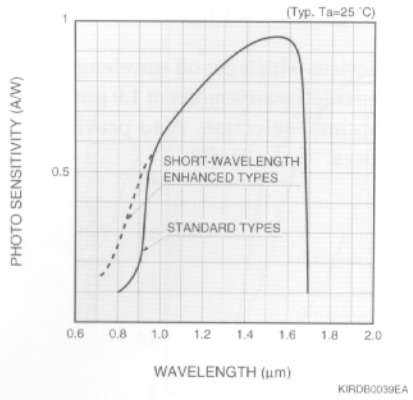
Operating Temperature	-40 to +70 °C
Storage Temperature	-55 to +85 °C
Thermistor Allowable Dissipation	0.2 mW
Peltier Element Allowable Current	1.5 A (one-stage types) 1.0 A (two-stage types)

(Unless otherwise noted, Typ. Ta=25 °C)

Type No.	Outline No. (P. 34,35)	Package	Active Area (mm)	Photo Sensitivity S 0.78 µm (A/W)	S 1.3 µm (A/W)	S 1.55 µm (λp) (A/W)	Dark Current ID VR=5 V Typ. (nA)	ID VR=5 V Max. (nA)	Shunt Resistance Rsh VR=10 mV (MΩ)	D* λ=λp (cm • Hz$^{1/2}$/W)	NEP λ=λp (W/Hz$^{1/2}$)	Cut-off Frequency fc VR=5 V RL=50 Ω (MHz)	Terminal Capacitance Ct VR=5 V f=1 MHz (pF)	Maximum Reverse Voltage VR Max. (V)
■Standard Types (0.9 to 1.7 µm)														
G3476-01	❶	TO-18	φ0.08	-	0.9	0.95	0.08	0.4	8000	5 × 10^{12}	2 × 10^{-15}	2 (GHz)	1	20
G3476-03			φ0.3	-	0.9	0.95	0.3	1.5	1000	5 × 10^{12}	4 × 10^{-15}	400	5	20
G3476-05			φ0.5	-	0.9	0.95	0.5	2.5	300	5 × 10^{12}	8 × 10^{-15}	200	12	20
G5832-01			φ1.0	-	0.9	0.95	1	5	100	5 × 10^{12}	2 × 10^{-14}	35	90	10
G5832-02	❷	TO-5	φ2.0	-	0.9	0.95	5 *1	25 *1	25	5 × 10^{12}	4 × 10^{-14}	4 *1	550 *1	5
G5832-03			φ3.0	-	0.9	0.95	15 *1	75 *1	10	5 × 10^{12}	6 × 10^{-14}	2 *1	1000 *1	5
G5832-05	❸	TO-8	φ5.0	-	0.9	0.95	25 *1	125 *1	3	5 × 10^{12}	1 × 10^{-13}	0.6 *1	3500 *1	2
■16-element Array														
G7151-16	⓬	DIP	0.08 × 0.2 (16 elements)	-	0.9	0.95	0.2 *1	1 *1	3000	5 × 10^{12}	3 × 10^{-15}	500 *1	6 *1	5
■Short-wavelength (0.7 to 0.9 µm) Enhanced Types														
G5125-03	❶	TO-18	φ0.3	0.25	0.9	0.95	0.3	1.5	1000	5 × 10^{12}	4 × 10^{-15}	400	5	6
G5125-10			φ1.0	0.25	0.9	0.95	1	5	100	5 × 10^{12}	2 × 10^{-14}	40	30	6

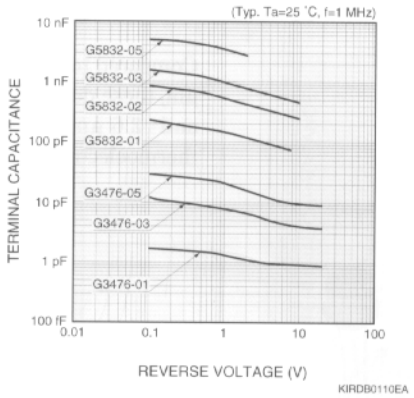
*1: VR=1 V

■Spectral Response



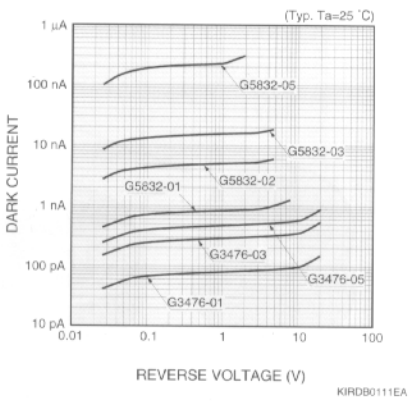
The cut-off wavelengths of the TE-cooled devices shift to shorter wavelengths as compared to the room temperature operating devices.
one-stage TE : 1.67 µm
two-stage TE : 1.65 µm

■Terminal Capacitance vs. Reverse Voltage



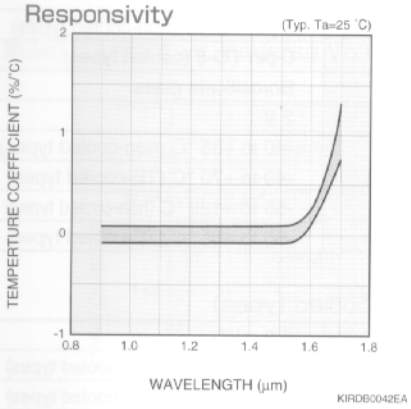
For high-speed applications, the lead length should be as short as possible to minimize the terminal capacitance.

■Dark Current vs. Reverse Voltage

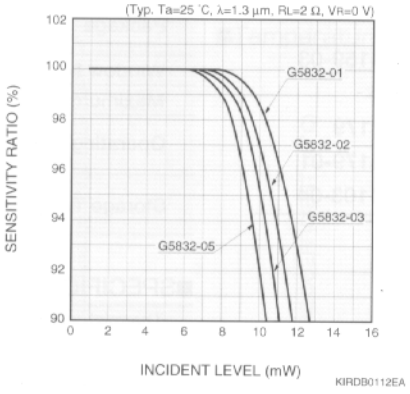


The dark current increases with the application of reverse voltage, but the frequency response and linearity are improved.

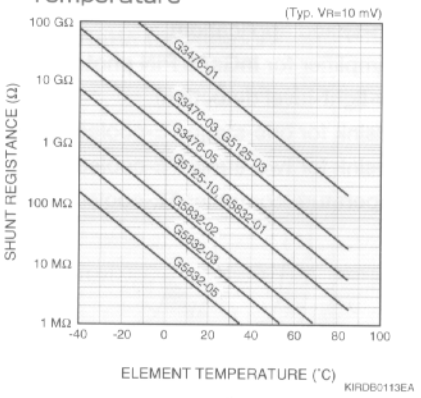
■Temperature Characteristic for Responsivity



■Linearity



■Shunt Resistance vs. Temperature



(Unless otherwise noted, Typ.)

Type No.	Outline No. (P. 34)	Package	Active Area (mm)	Measurement Temperature (° C)	Photo Sensitivity S 1.3 µm (A/W)	Photo Sensitivity S 1.55 µm (λp) (A/W)	Dark Current ID VR=1 V Typ. (nA)	Dark Current ID VR=1 V Max. (nA)	Shunt Resistance Rsh VR=10 mV (MΩ)	D* λ=λp (cm • Hz$^{1/2}$/W)	NEP λ=λp (W/Hz$^{1/2}$)	Cut-off Frequency fc VR=1 V RL=50 Ω (MHz)	Terminal Capacitance Ct VR=1 V f=1 MHz (pF)	Maximum Reverse Voltage VR Max. (V)
■One-stage TE-cooled Types (0.9 to 1.67 µm)														
G5832-11	❹	TO-8	φ1.0	-10	0.9	0.95	0.07	0.35	1500	2×10^{13}	5×10^{-15}	18	150	5
G5832-12			φ2.0				0.3	1.5	300		1×10^{-14}	4	550	
G5832-13			φ3.0				1	5	100		2×10^{-14}	2	1000	
G5832-15			φ5.0				2.5	12.5	30		3×10^{-14}	0.6	3500	2
■Two-stageTE-cooled Types (0.9 to 1.65 µm)														
G5832-21	❺	TO-8	φ1.0	-20	0.9	0.95	0.03	0.15	3000	3×10^{13}	3×10^{-15}	18	150	5
G5832-22			φ2.0				0.15	0.75	600		7×10^{-15}	4	550	
G5832-23			φ3.0				0.5	2.5	200		1×10^{-14}	2	1000	
G5832-25			φ5.0				1.2	6	60		2×10^{-14}	0.6	3500	2

Precautions for Use

Refer to "Precautions for Handling InGaAs PIN Photodiodes" on page 50.