

ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

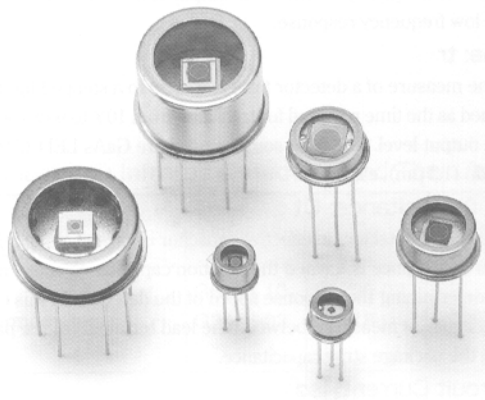
All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Newport / ILX Lightwave LTS-9300* at our website: *Click HERE*

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)

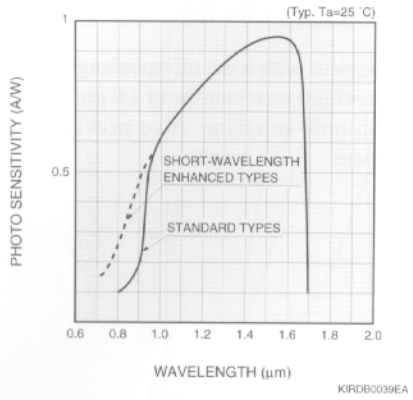
(Unless otherwise noted, Typ. Ta=25 °C)

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

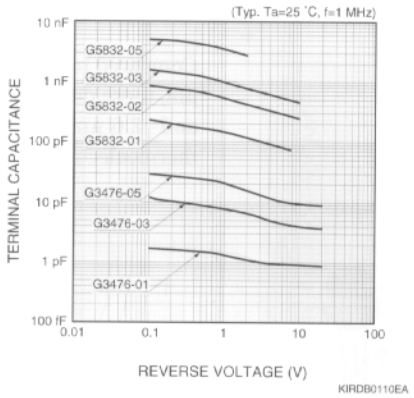
Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

■Spectral Response



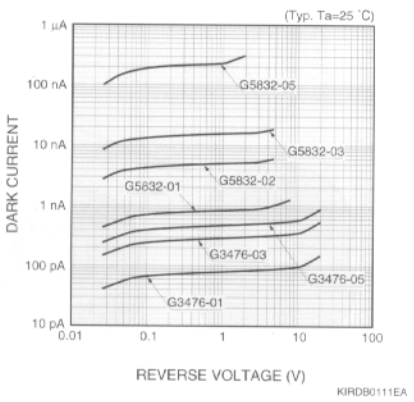
The cut-off wavelengths of the TE-cooled devices shift to shorter wavelengths as compared to the room temperature operating devices.
one-stage TE : 1.67 µm
two-stage TE : 1.65 µm

■Terminal Capacitance vs. Reverse Voltage



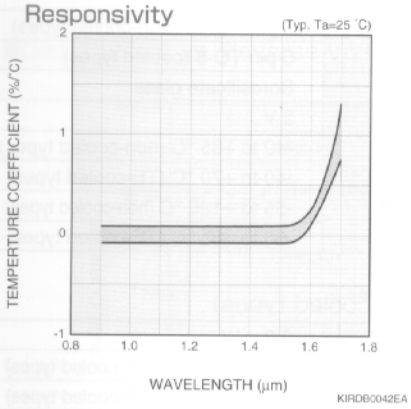
For high-speed applications, the lead length should be as short as possible to minimize the terminal capacitance.

■Dark Current vs. Reverse Voltage

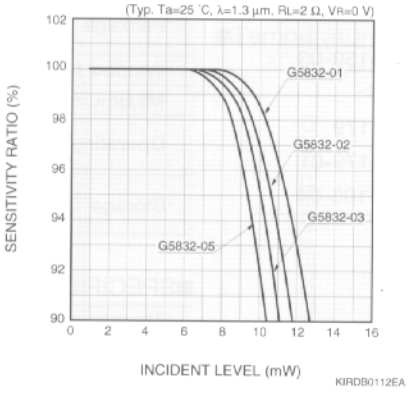


The dark current increases with the application of reverse voltage, but the frequency response and linearity are improved.

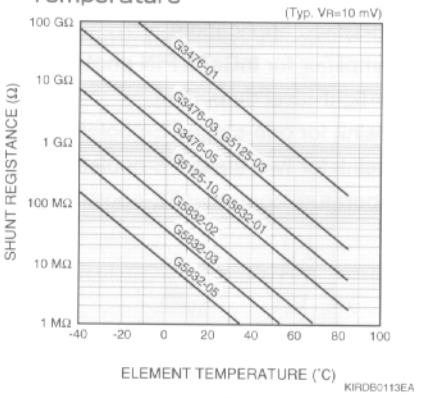
■Temperature Characteristic for Responsivity



■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.

Artisan Technology Group - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisantg.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP