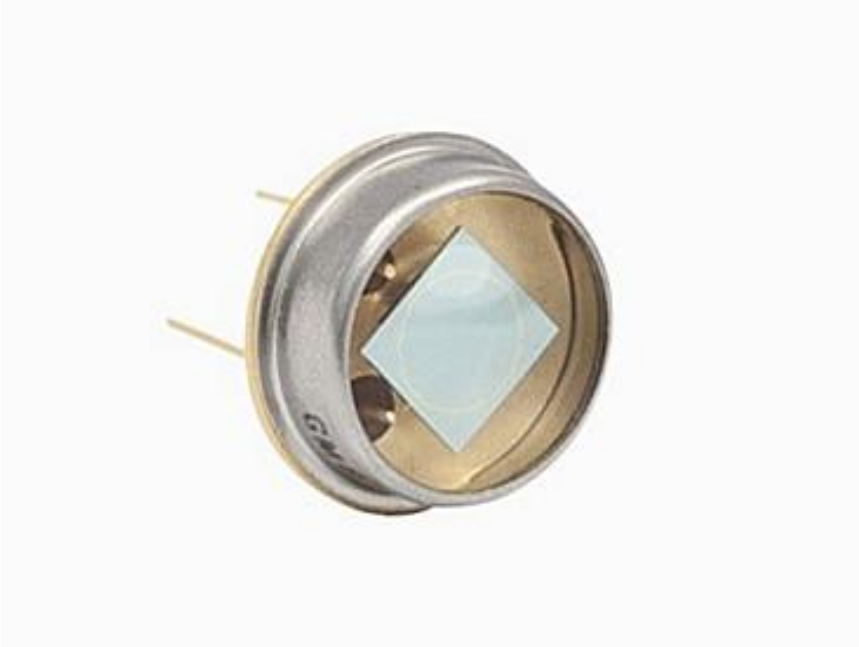
Ge Germanium Large active area PIN photodiode (800-1800nm diameter 5mm)



Product Description

Idealphotonics' stocks PIN junction diodes (PDs) with various active areas and packages, including indium gallium arsenide (InGaAs), gallium phosphide (GaP), silicon (Si), and germanium (Ge) photodiodes. We have high-speed silicon photodiodes. There are also high responsivities in the range of 900 to 2600 nm, with detection wavelengths exceeding the 1800 nm of typical indium gallium arsenide photodiodes. Dual-band photodiodes, which integrate two photodetectors close together (silicon substrate on top,

indium gallium arsenide substrate on the bottom), with a combined wavelength range from 400 to 1700 nm. In order to enrich our photodiode product line, we provide mounted photodiodes for customers to power and use. The non-uniformity of the edge of the detector's active area may cause unwanted capacitance and resistance effects, thereby distorting the time domain response of the photodiode. Therefore, we recommend that the light be incident on the center of the active area. To this end, a focusing lens or pinhole can be placed in front of the detector.

Product features

Small and large photosensor areas available (100μm to 25mm)、 800nm to 1800nm spectral response、 High linearity > 10 dBm、 Customizable lens combinations (Biconvex, Planoconvex, or Ball)、 Available packaging options (TO-46, TO-18, TO-5, TO-8, TO-9 or BNC)

Part Number

MP-CPD-B-G-8K5

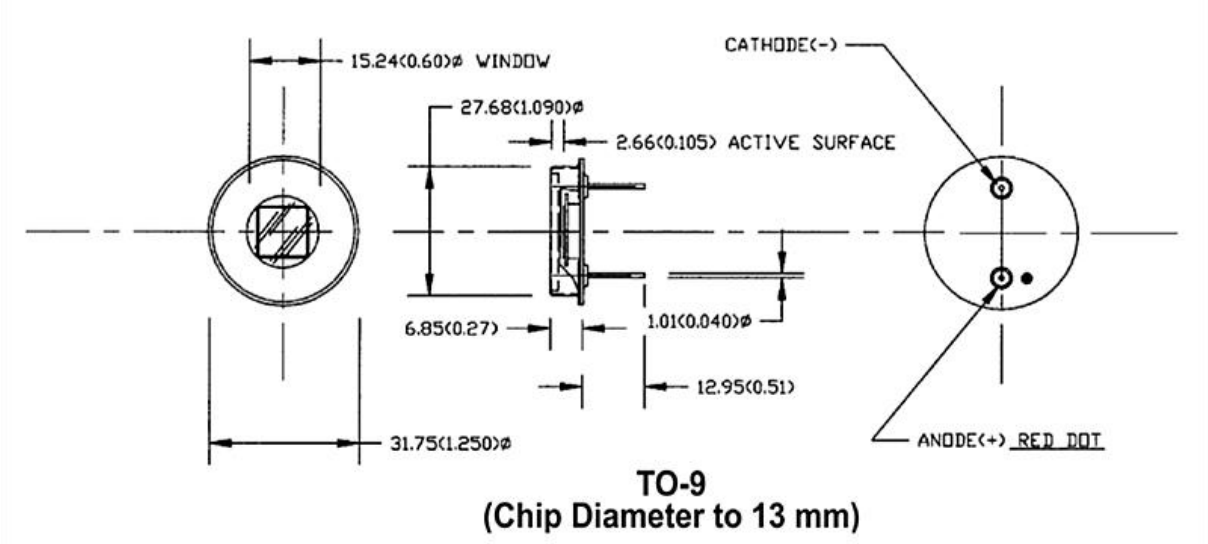
Application area

Laser power meter、 LED/ LD aging diagnostics、 Spectroscopy、 LED/ LD characteristics、 Eye-safe laser detection sensor

Core parameters

Wavelength	Responsivity	Active Area
800-1800nm	0.85A/W	5mm

Dimension Drawing



TO-9
(Chip Diameter to 13 mm)

General Parameters

Parameter

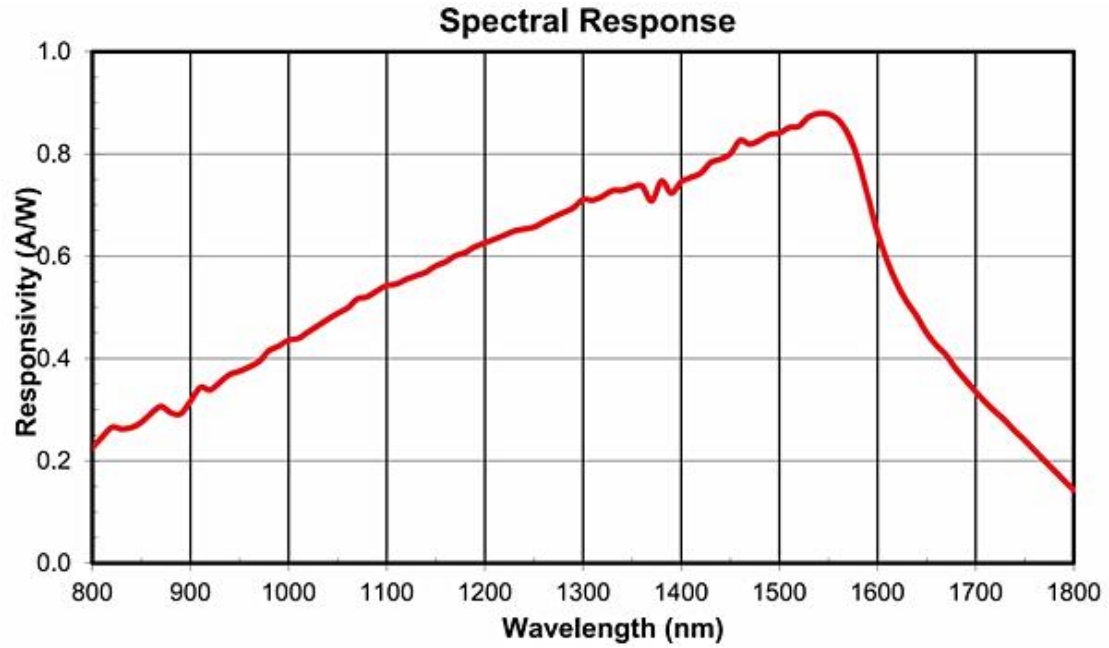
Specification	
Detection material	Ge
Response wavelength	800 - 1800 nm
Peak wavelength	1550 nm (Typ.)
Responsivity	0. 85 A/ W (Typ.)
Photosensitive surface diameter	78. 5 mm^2 (Ø10mm)
Rise/fall time (R_L = 50 Ohms, 10 V)	500 ns / 500 ns (Typ.)
NEP, Typical (1550 nm)	4. 0 x 10^{-12} W/ $Hz^{1/2}$ (Typ.)

Dark current (5 V)	60 μA (Max.)
Capacitance (10 V) Capacitance (0 V)	1800 pF (Max.)16000 pF (Max.)
Shunt resistor	4000 Ohm (Typ.)
Package type	TO-9
Package method	
Maximum breakdown pressure	10 V
Operating temperature	-55 to 60 ° C
Storage temperature	-55 to 60 ° C

Notes 1. Typical values; RL = 50 Ω, unless otherwise specified

2. NEP specifies in photovoltaic mode

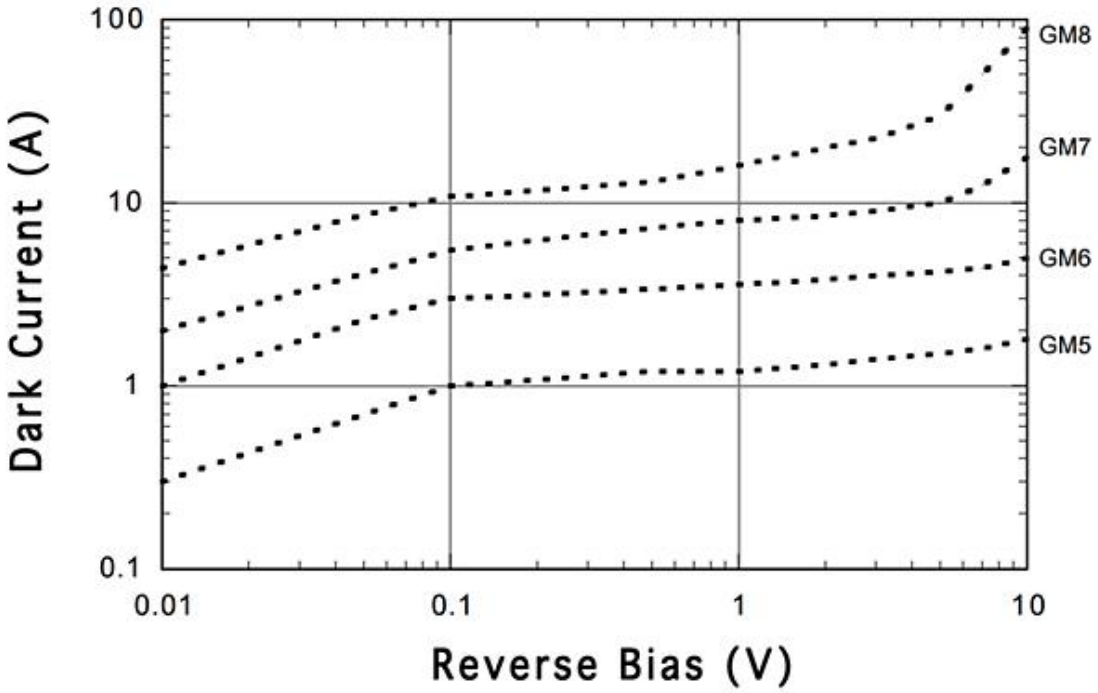
Spectral response curve



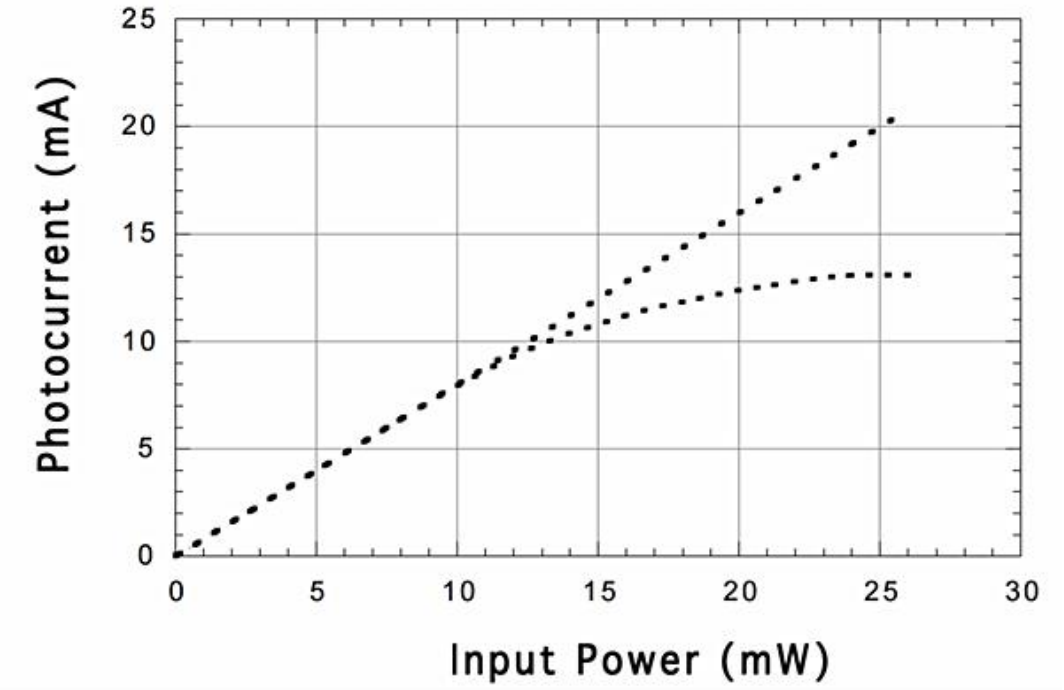
Responsivity vs. Wavelength

	WAVELENGTH					
Series	850		1300		1550	
	min.	typ.	min.	typ.	min.	typ.
IRD-GE-05	.20	.26	.60	.65	.75	.85

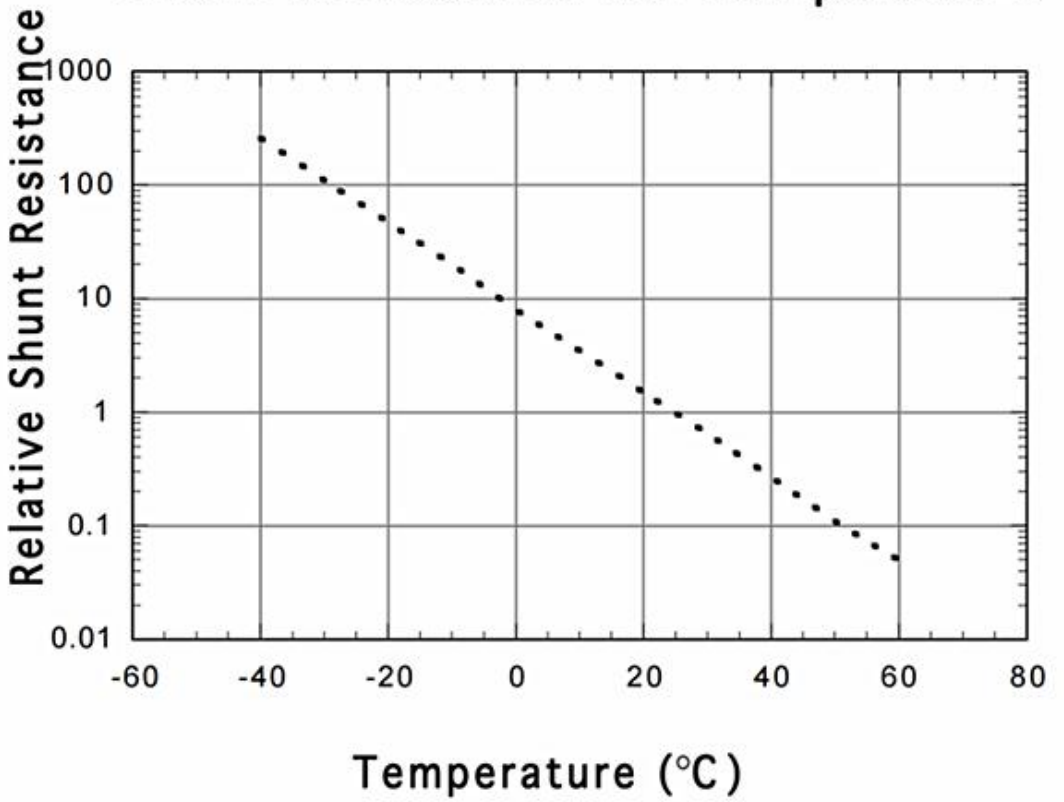
Dark Current vs. Reverse Bias

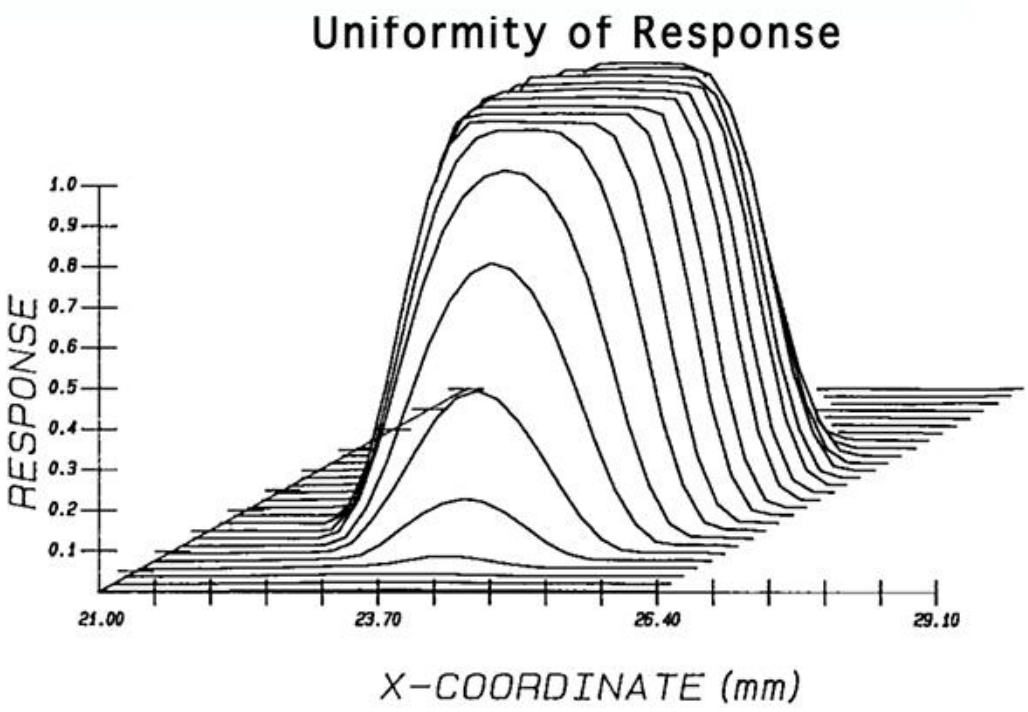


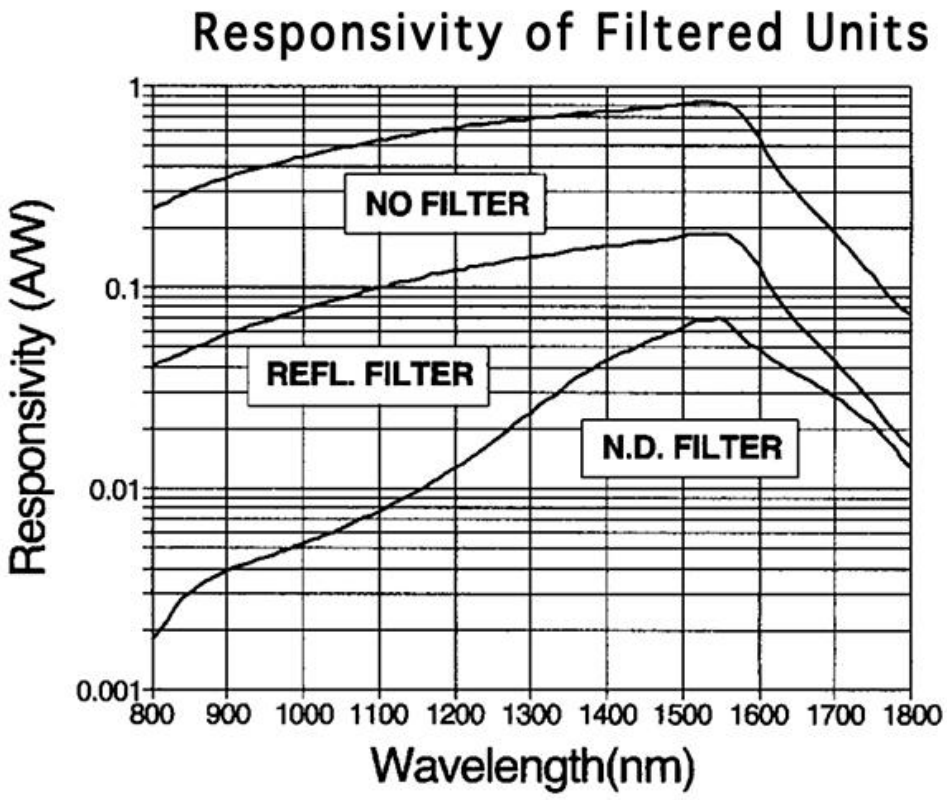
Linearity of Response



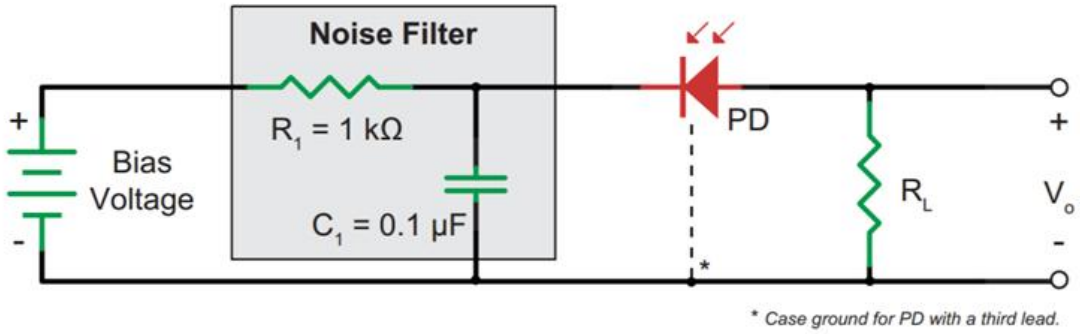
Shunt Resistance vs. Temperature




Uniformity of Response
RESPONSE
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
21.00
23.70
26.40
29.10
X-COORDINATE (mm)


Responsivity of Filtered Units
Responsivity (A/W)
1
0.1
0.01
0.001
NO FILTER
REFL. FILTER
N.D. FILTER
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
Wavelength(nm)

Recommended Circuit



* Case ground for PD with a third lead.