

High Linearity Fiber Coupled InGaAs PIN Photodiode

(900 to 1630nm)



DATASHEET

BUY NOW



Features

- Low Cost
- High Linearity
- All Fiber Type
- Compact Design

Applications

- Channel Monitoring
- Power Monitoring in Optical
- Interface Modules
- Gain Monitoring for Amplifier
- Instruments

The High Linearity Fiber Coupled InGaAs PIN Photodiode is a component that directly integrates a fiber with a high sensitivity photodiode for signal detection without TIAC. The response is analog to the input signal with high linearity. Our design minimizes component assembly costs and module footprint while increasing stability over a wide temperature and wavelength ranges.

Associated sensor electronic amplifier is also available.

Specifications

Parameter	Min	Typical	Max	Unit
Wavelength	900		1620	nm
Dark Current (23°C)		0.2	1	nA
Responsivity ^[2]	0.8	0.9		A/W
Input Power (5V bias)	-70		10	dBm
Response Frequency Bandwidth			1	GHz
PDL ^[3]		0.03	0.05	dB
Tensile load		5		N
Return Loss	45			dB
Dark Current		0.4	1.0	nA
Directivity		None or >25		dB
Capacitance		0.7	0.9	pF
Operating Voltage		-5	-15	V
Operating Temperature	-40		80	°C
Storage Temperature	-40		85	°C
Reliability		Telcordia 1209 and 1221		

Notes:

- [1]. Insertion Loss excluding connectors.
- [2]. For SM fiber only, MM has reduced responsivity. 5V bias. The net responsivity is defined as the ratio of the PD current output and optical power measured at output fiber
- [3]. Single Mode Fiber version only.

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

Warning: The device is extremely ESD-sensitive. Its dark current increases by unprotected handling. It is recommended to be handled under a certified ion fan once the package is removed.

Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

Rev 07/31/24

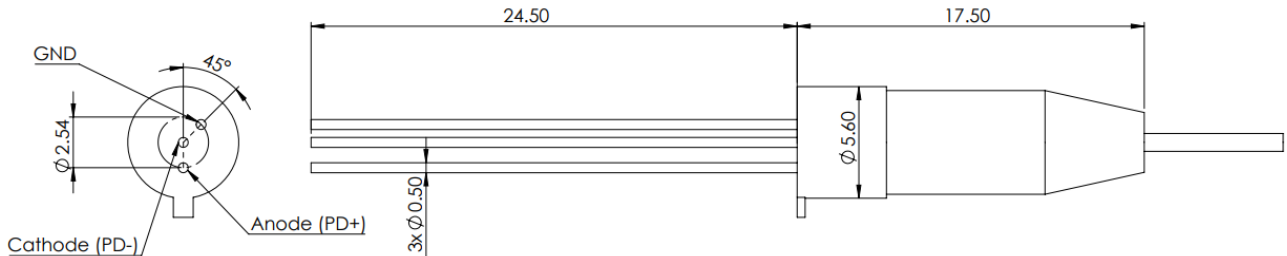
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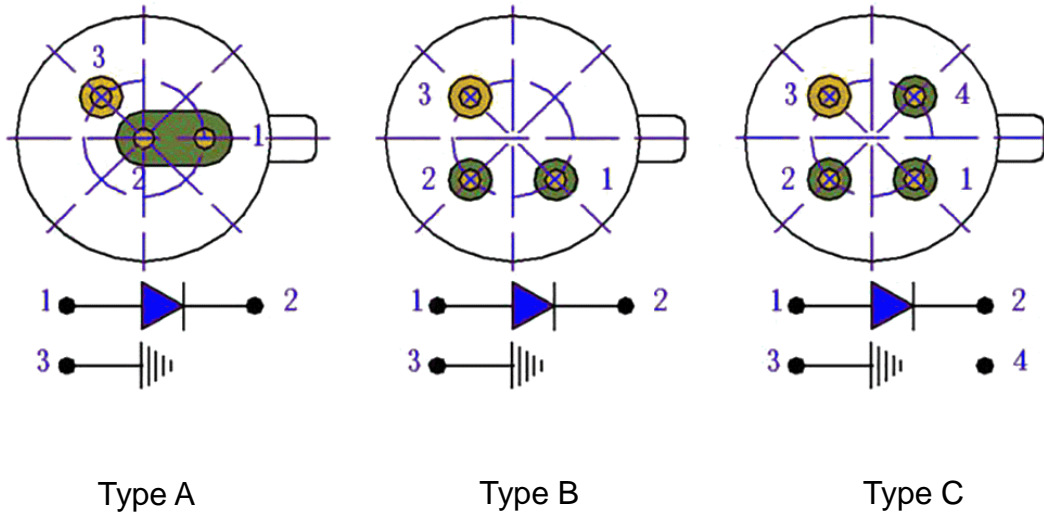
Mechanical Footprint Dimensions (mm)



Standard Package for Infrared Band. For other wavelength band, size may vary due to special detector configurations.

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

PD PIN Assignments



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Ordering Information

Prefix	Wavelength	Bandwidth	Package	Fiber Type	Fiber Cover	Fiber Length	Connector
FCPD-	900~1620 = 18 Special = 0	1GHz = 2	Linear = L Special = 0	9/125 = 1 50/125 = 2 62.5/125 = 3 PM1550 = 4 PM1310 = 5 PM1060 = 6 PM850 = 7	900um tube = 3 Bare fiber = 1 Special = 0	0.25m = 1 0.5m = 2 1.0 m = 3 1.5 m = 5 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.

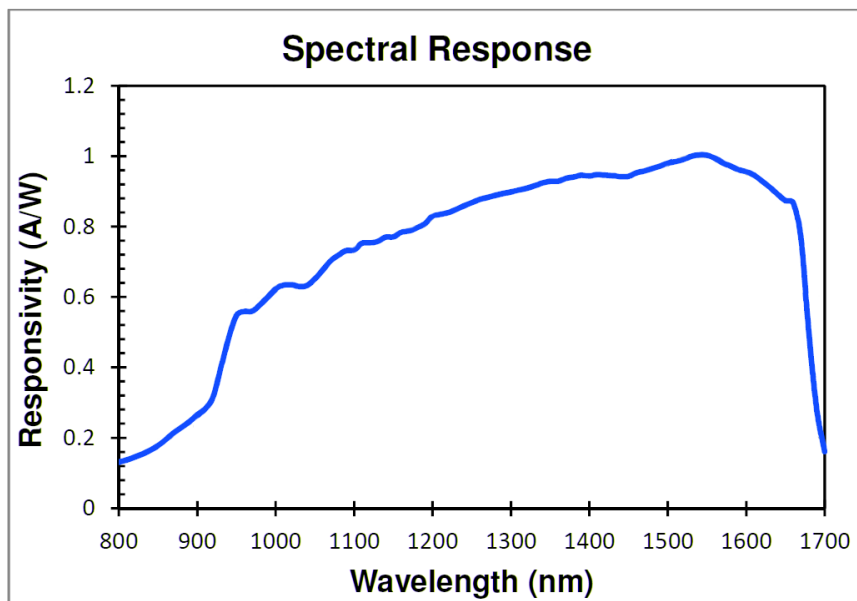
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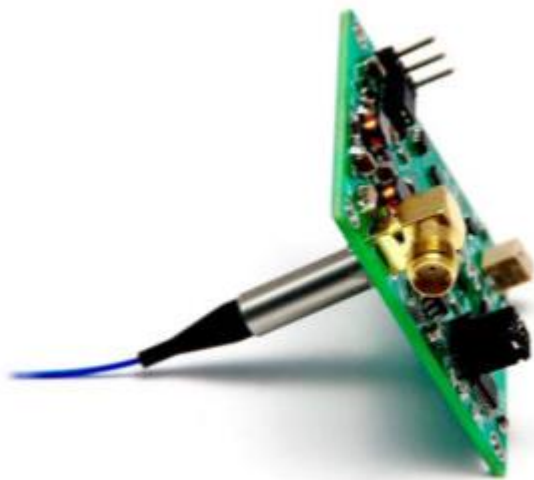


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Spectral Response



Amplifier Mounted Option



Low-Noise Optical Detector Amplifier

DETA-11A221111

\$165

<https://agiltron.com/product/precision-optical-detector-amplifier/>

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Typical Performance (5V Bias only without amplifier)

