

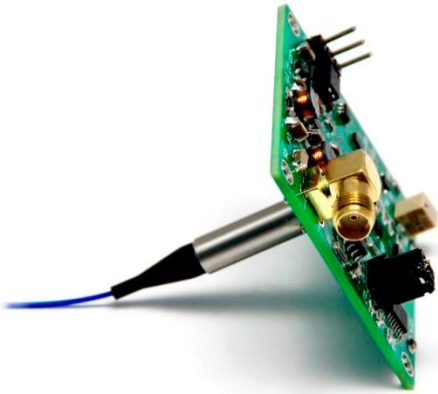
Low Noise Optical Detector Amplifier

For all types, silicon, InGaAs, Germanium, up to 100MHz, Gain Switchable



DATASHEET

BUY NOW



Features

- Wide Range -60-3dBm
- USB Digital Output
- 0-5V Analog Output
- Mountable on PCB

Applications

- Optical System
- Lab Use
- Instruments

This optical detector amplifier is designed as a generic daughterboard for integration into custom systems. It can be used as an optical power meter or mounted on a custom PCB as part of the system. The amplifier's gain can be varied by a turning pot in 10dB steps. Customers can select a cost-effective detector for performance verification.

Custom can purchase a detector from our web to be mounted onto this amplifier. We will test and supply the report.

Specifications

| Parameter | Min | Typical | Max | Unit |
|-------------------------------|-----|-----------|------|--------------|
| Measured Range | -60 | | 3 | dBm |
| Wavelength ^[1] | 200 | | 2500 | nm |
| Response Speed ^[2] | 5 | 50 | 100 | MHz |
| Resolution | 0.1 | | | % |
| Noise (rms) | | 50 | | μ V |
| Repeatability | | 0.1 | | dB |
| Output Resistance | | 50 | | Ω |
| DC Power | | ± 12 | | V |
| Analog Signal Output | 0 | | 5 | V |
| Output Connector Type | | SAM | | |
| Operating Temperature | -14 | | 60 | $^{\circ}$ C |
| Storage Temperature | -40 | | 85 | $^{\circ}$ C |
| Enclosure | | Available | | |

Notes:

- [1] The wavelength response is related to detector selection
- [2] The response speed is related to detector active area, the smaller the faster

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 05/17/24

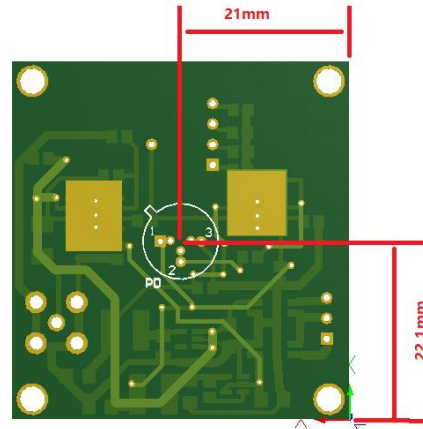
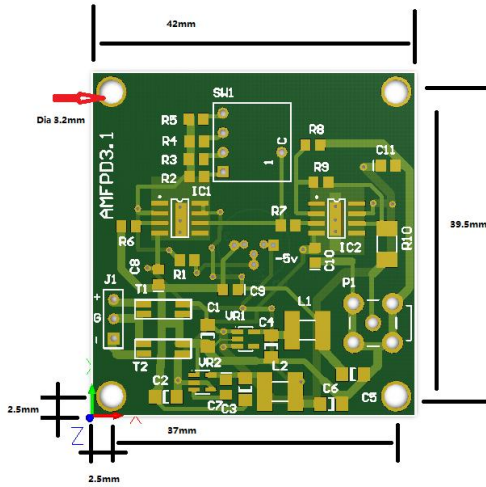
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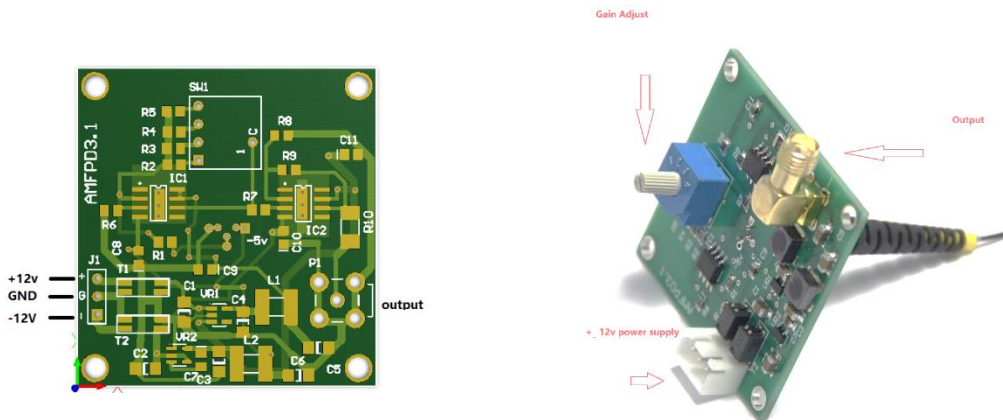


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Mechanical Dimensions (mm)



Operation Instruction



- Connect a photodetector according to the table
- Connect a $\pm 12V$ power supply to J1 using accompanied connector. When the power is on, a LED will light up. Recommended power supply: Globtek GT-51084-12N12. We offer this for purchase
- Connect output using a 50 Ω coax cable with SAM male connector
- Apply a light source to the detector and adjust gain to the desire setting from 10 to 70dB by 10dB steps

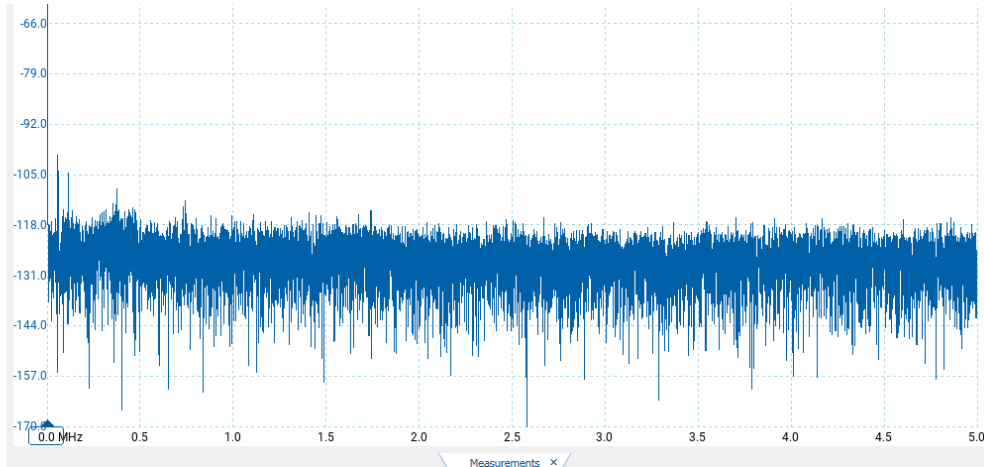
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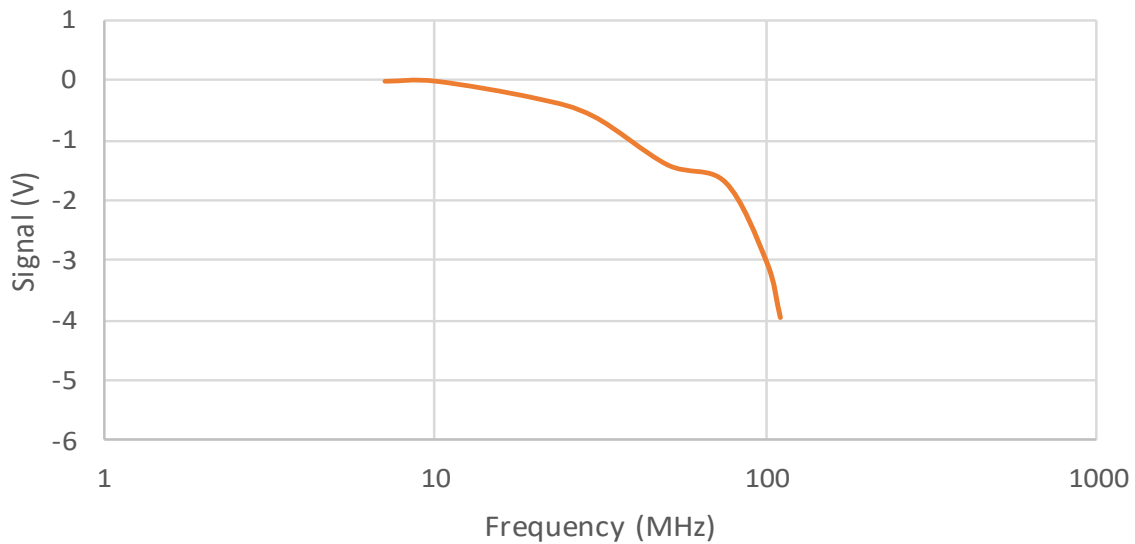


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Noise (<100dB)



Frequency Response



Ordering Information

| Prefix | Type | Detector Type | Detector Mounted | Speed | Grade | Package | Power Supply |
|--------|------|---|--|---|-------------|----------------------------|--------------------------|
| DETA- | | None = A Free Space = 1 SM Fiber Coupled = 2 MM Fiber Coupled = 3 Special = 0 | None = N 300-1100nm = 1 900-1650nm = 2 1000-1950nm = 3 1000-2400nm = 4 220-280nm = 5 Special = 0 | 10MHz = 1 50MHz = 2 100MHz = 3 200MHz = 4 250MHz = 5 600MHz = 6 Special = 0 | Regular = 1 | Regular = 1 Special = 0 | None = 1 Included = 2 |

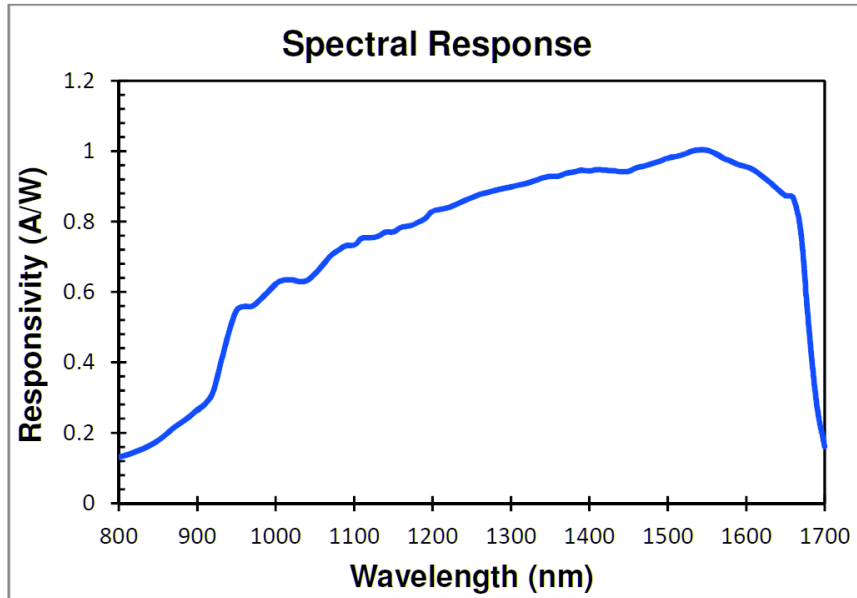
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Spectral Response



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 handling by expanding the core side at the fiber ends.