

Fiber Coupled 2 GHz High Sensitive APD Photoreceiver

SM, MM, fully integrated plug-play module, 900-1600nm



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The FRAP Photoreceiver is a turn-key, high-speed, high-sensitivity module designed for both analog and digital applications. It features a high-bandwidth APD photodiode paired with a linear, low-noise preamplifier with adjustable gain, ensuring excellent performance across a wide dynamic range. A precision optical coupling system provides stable and efficient light collection. The RF output is differential, using dual “+” and “-” SMA connectors to minimize external noise and EMI while maximizing common-mode rejection and signal integrity. Either connector may also be used in single-ended mode relative to ground if desired. The FRAP Photoreceiver includes a wall-pluggable power supply for convenient, plug-and-play operation.

Features

- High Data Rate Capability: 2.5 Gbit/s
- APD or PIN Photodetector
- 1.3 μm to 1.55 μm Wavelength Range
- Typical Sensitivity -34 dBm (APD), -25 dBm (pin)
- >25 dB Typical Dynamic Range
- High-Performance GaAs Preamplifier
- Single-Ended or Differential Outputs

Applications

- Line Terminal Equipment
- High-Speed Networks up to 2.5 Gbit/s
- SONET OC-48 and SDH STM-16 Telecom App
- Extended Reach Datacom and Telecom App
- Digital Video



Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength	1100		1600	nm
Max Optical Power			3	dBm
Gain		100		
Responsivity	0.7	0.9		A/W
Output Impedance		50		Ω
Maximum Output Voltage Swing		250		mV
S21 Bandwidth		8		GHz
Output Return Loss		8.0		dB
Sensitivity		-34	-27	dBm
DC Power		12		V
Optical Return Loss	27			dB
Storage Temperature	-40		85	$^{\circ}\text{C}$
Operating Temperature	-5		70	$^{\circ}\text{C}$

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Dimensions (mm)

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

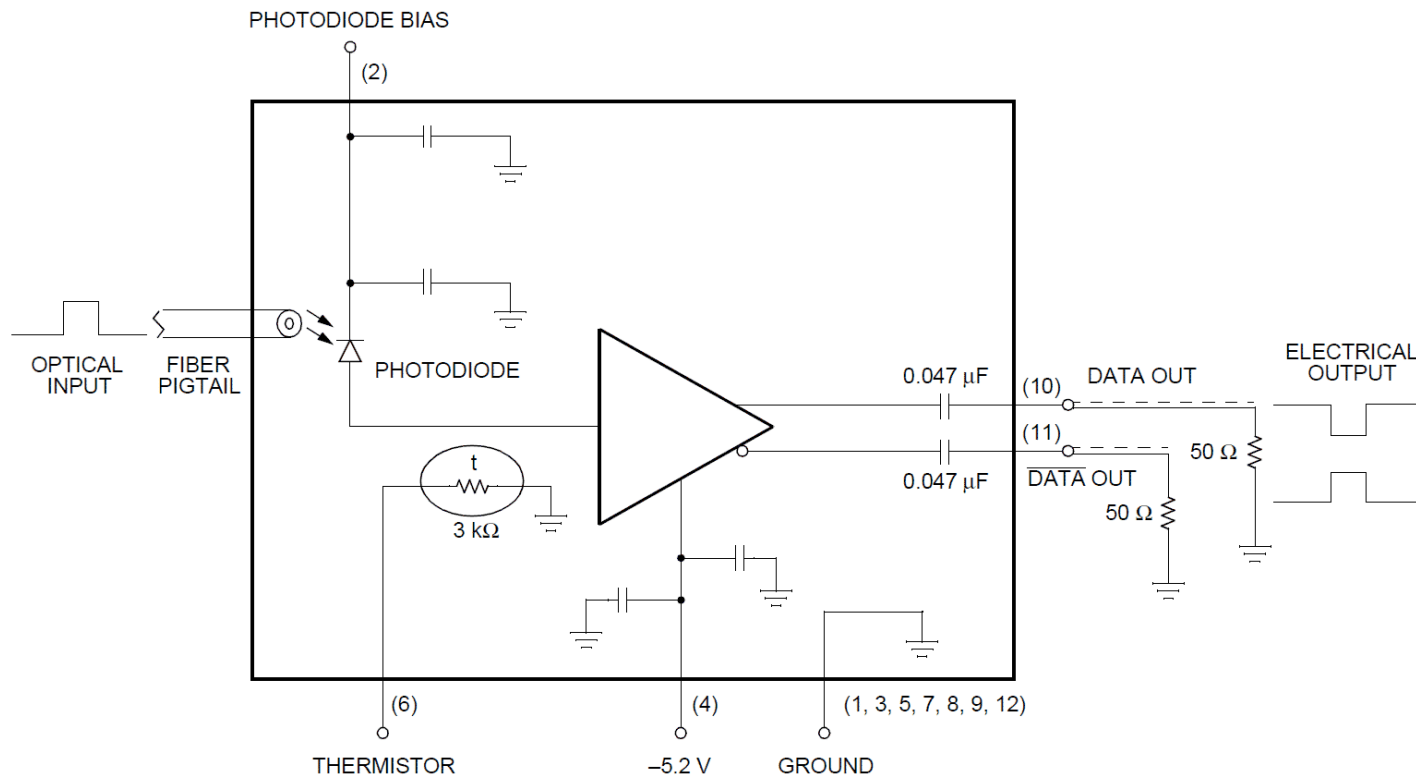
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High-Speed Lightwave Receiver Schematic



Note: The thermistor is not present on PIN version.

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Ordering Information

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Prefix	Detector Type	Wavelength Range	Bandwidth	Fiber	Power Supply	Configuration	Connector
FOAP-	APD = 2	1200-1600nm = 1	2GHz = 02 5GHz = 02 7GHz = 07 8GHz = 08 10GHz = 10	SM28 = 1 50/125 = 2 PM1550 = 5	Non = 1 Yes = 2	Standard = 11	FC/PC = 2 FC/APC = 3 Special = 0

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Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.

