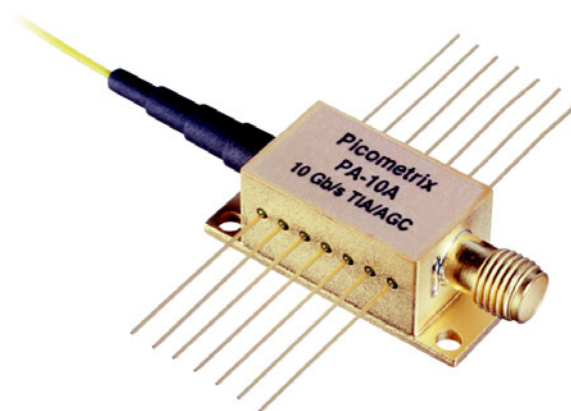


PA-10A

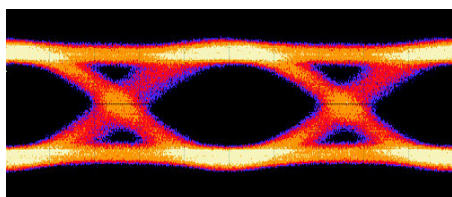
Product Bulletin (Preliminary) • February 2002

- PIN/TIA/AGC receiver
- High data rate, up to 10.7 Gb/s
- High sensitivity, -18 dBm
- 1200–1650 nm wavelength range
- 14-pin SMA or dual GPO butterfly package



The **PA-10A** is a -18 dBm sensitivity receiver module with an integrated automatic gain control amplifier for OC-192 / STM-64 transmission system receive applications up to 10.7 Gb/s. It couples a high responsivity (1 A/W), back-illuminated PIN photodiode, usable from 1200 nm to 1650 nm, with an internal 500 V/A transimpedance gain stage and a >20 dB automatic gain control amplifier. This combination produces a receiver with an 9 GHz bandwidth and an adjustable conversion gain of up to 6000 V/W.

The single-coaxial output module is available with an SMA output connector and the differential output module is available with dual GPO output connectors, in a compact, 14-pin butterfly package with single-mode fiber input. The receiver meets Telcordia GR-468 qualification standards.



Eye pattern taken at 10 Gb/s data rate with -10 dBm optical input power.

Specifications

	Minimum	Typical	Maximum	Units
Wavelength range	1200		1650	nm
Bandwidth (-3dB electrical)	8	9		GHz
Low frequency cutoff ¹	30			kHz
Sensitivity ²		-18	-17	dBm
Overload	0	+1		dBm
Responsivity @ 1550 nm	0.9	1.0		A/W
Conversion gain (single ended)	5000	6000		V/W
Output Return Loss (< 8 GHz)			-10	dB
Optical Return Loss			-30	dB
Power dissipation			4	W

DC Electrical

Photodiode voltage	+8	+10	+15	V
TIA voltage	+7.6	+8	+8.5	V
AGC voltage	-8.4	-8	-7.6	V

Mechanical

Package type	14-pin butterfly with SMA			
Operating temperature	0		+70	°C
Storage temperature	-40		+85	°C

¹ Output is DC coupled

² 10⁻¹⁰ BER, PRBS 2²³-1

Product Specifications

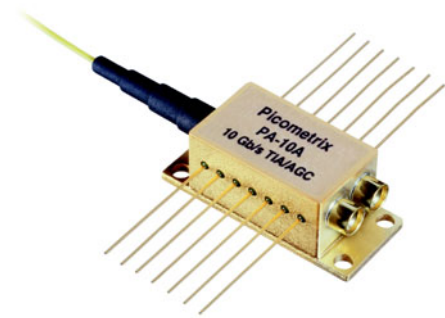
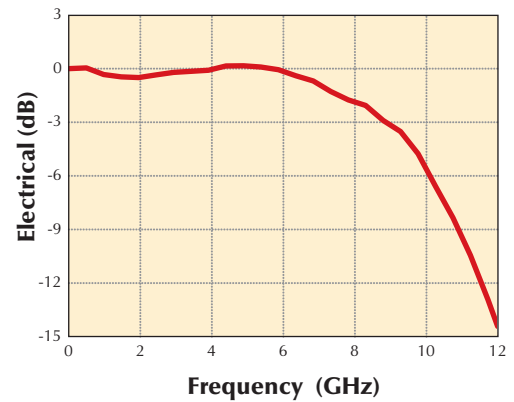
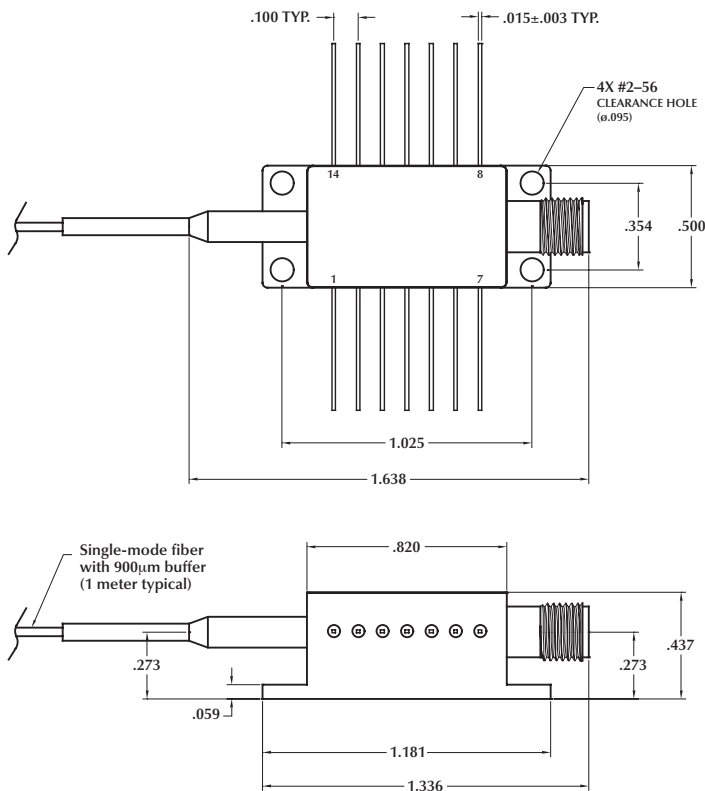


Photo: Dual GPO output connector module [14DGPO]

Pin	Description	Pin	Description
1	NC	8	NC
2	GND	9	Peak Det. Ref.
3	V _{TIA}	10	V _{EE}
4	AGC	11	NAGC
5	V _{EE}	12	V _{PD}
6	Peak Det.	13	GND
7	NC	14	NC

PA-10A Ordering Information

Base model	PA-10A
Option format	/Package/Fiber connector
Package options	14DGPO or 14SMA
Fiber connector options	FC or SC

Application Notes

Electrostatic discharge (ESD) will cause permanent damage to the product. Please avoid any ESD to the input pins or output connector. Use standard ESD protective equipment when handling this product.

Temperature and fiber restrictions are as follows:

Lead soldering: 250°C for no more than 10 seconds

Fiber feed-through tube: 120°C

Fiber pull force: 10 N

Fiber bending radius: 1 inch or less

Exceeding these conditions can cause permanent damage to the device.

Quality Vision

As a leader in ultrafast optical receivers, Picometrix is committed to providing the highest quality ultrafast products on the market. This quality vision commits us to continually improving our product designs and manufacturing processes, in order to ensure the highest level of customer satisfaction. The company maintains a stringent quality control program to ensure that all products meet or surpass customer requirements.



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