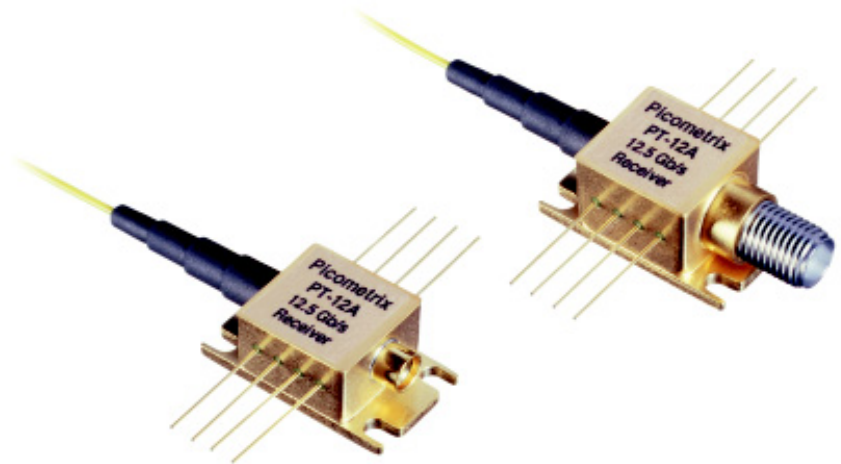


# PT-12A



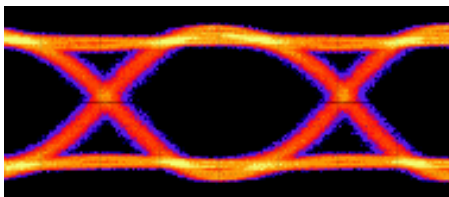
Product Bulletin (Preliminary) • January 2005

- PIN/TIA receiver
- High data rate, up to 12.5 Gb/s
- High sensitivity, -20 dBm
- 1200–1650 nm wavelength range
- Compact 8-pin butterfly package
- SMA or GPO output connector



The **PT-12A** is a -18 dBm sensitivity, single-output receiver module for OC-192/STM-64 with FEC transmission system receive applications including NRZ with Super FEC up to 12.5 Gb/s. It couples a high responsivity (1.0 A/W), back-illuminated PIN photodiode, usable from 1200 nm to 1650 nm, with an internal transimpedance gain stage of 475 V/A. This combination produces a receiver with a 10 GHz band-width and a conversion gain of 475 V/W.

The single-coaxial output module is available with either an SMA or GPO output connector in a compact, 8-pin butterfly package with single-mode fiber input. The receiver meets Telcordia GR-468 qualification standards.



Eye pattern taken at 12.5 Gb/s data rate with -10 dBm optical input power.

## Specifications

	Minimum	Typical	Maximum	Units
Wavelength range	1200		1650	nm
Bandwidth (-3dB electrical)	9	10		GHz
Low frequency cutoff <sup>1</sup>	DC			kHz
Sensitivity <sup>2</sup>		-20	-18	dBm
Overload		0		dBm
Group Delay (1 to 10 GHz)		25	40	ps
Responsivity @ 1550 nm	0.8	1.0		A/W
Conversion gain	400	475		V/W
Output Return Loss (0.1 to 8 GHz)		-10		dB
Optical Return Loss			-30	dB
Power dissipation			.22	W

## DC Electrical

Photodiode voltage	+5	+8	+12	V
Amplifier voltage (V <sub>POS</sub> )	+3.2	+3.3	+3.4	V
Amplifier voltage (V <sub>NEG</sub> )	-2.1	-2.0	-1.9	V

## Mechanical

Package type	8-pin butterfly with SMA or GPO			
Operating temperature	0		+70	°C
Storage temperature	-40		+85	°C

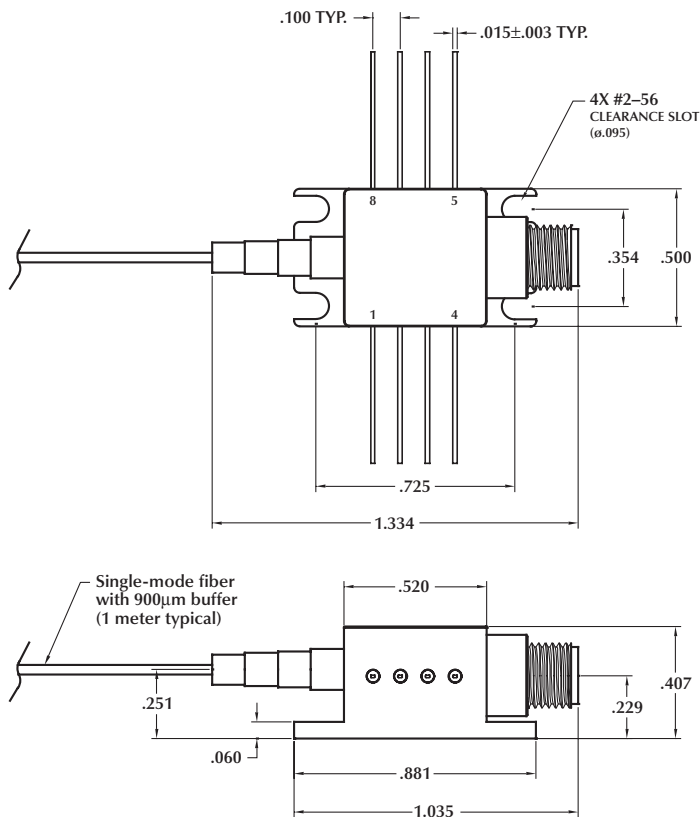
<sup>1</sup> Output is DC coupled

<sup>2</sup> 10<sup>-10</sup> BER, PRBS 2<sup>23</sup>-1

## True DC Output Option

The **PT-12A** is available with optional dual power supplies, which enables adjustment and/or stabilization of the DC output to enable accurate extinction ratio measurements.

# Product Specifications



Pin	Description	Pin	Description
1	NC (or DC Mon <sup>1</sup> )	5	GND
2	V <sub>PD</sub>	6	V <sub>POS</sub>
3	V <sub>NEG</sub>	7	NC
4	GND (or OffsetVoltage Input <sup>1</sup> )	8	NC

<sup>1</sup> If ordered with true DC output option

## PT-12A Ordering Information

Base model	PT-12A
Option format	Option/Package/Fiber connector
Option	Blank or TDC
Package options	8SMA or 8GPO
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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