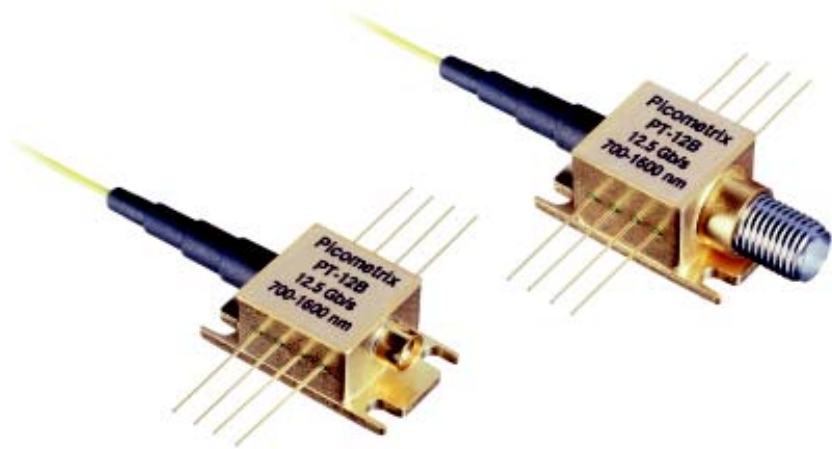


# PT-12B

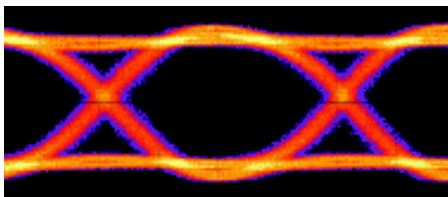
Product Bulletin (Preliminary) • April 2004

- PIN/TIA receiver
- High data rate, up to 12.5 Gb/s
- Broad wavelength range, 750–1650 nm
- 62.5  $\mu\text{m}$  multimode fiber input with SC or FC
- High sensitivity, -15 dBm @ 850 nm
- SMA or GPO output connector



The **PT-12B** is a single-output receiver module for 12.5 Gb/s short wavelength applications. It couples a high responsivity (0.95 A/W), front-illuminated PIN photodiode, usable from 750 nm to 1650 nm, with an internal transimpedance gain stage of 475 V/A. This combination produces a receiver with a 9.5 GHz bandwidth and a conversion gain of 450 V/W at 1310 nm.

The single-coaxial output module is available with either an SMA or GPO output connector in a compact, 8-pin butterfly package with multimode fiber input.



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

## Specifications

	Minimum	Typical	Maximum	Units
Wavelength range	750		1650	nm
Bandwidth (-3dB electrical)	9.0	9.5		GHz
Low frequency cutoff <sup>1</sup>	DC			kHz
Sensitivity @ 850 nm <sup>2</sup>		-15		dBm
Sensitivity @ 1310 nm <sup>2</sup>		-19	-18	dBm
Overload		+2		dBm
Responsivity @ 850 nm	0.5	0.55		A/W
Responsivity @ 1310 nm	0.9	0.95		A/W
Conversion gain @ 1310 nm	400	450		V/W
Electrical Return Loss (< 8 GHz)			-15	dB
Optical Return Loss			-30	dB
Power dissipation			0.22	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

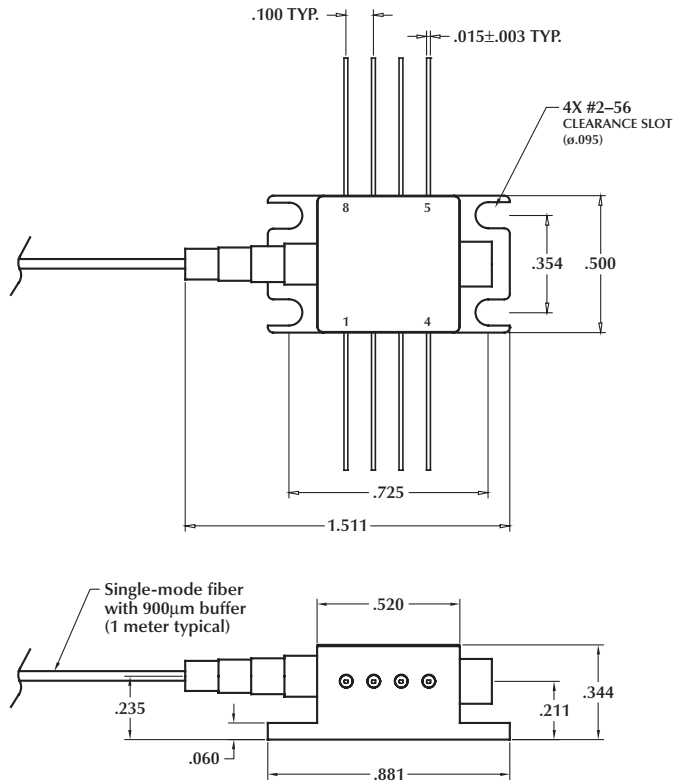
<sup>1</sup> Output is DC coupled

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

## True DC Output Option

The **PT-12B** 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 Offset Voltage Input <sup>1</sup> )	8	NC

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

## PT-12B Ordering Information

Base model	PT-12B
Option format	Option/Package/Fiber diameter/Fiber connector
Option	Blank or TDC
Package option	8GPO or 8SMA
Fiber diameter options (µm)	62.5
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.



Picometrix, Inc. • PO Box 130243  
Ann Arbor, MI • 48113-0243  
734-998-4501 • 734-998-3474 fax  
www.picometrix.com

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