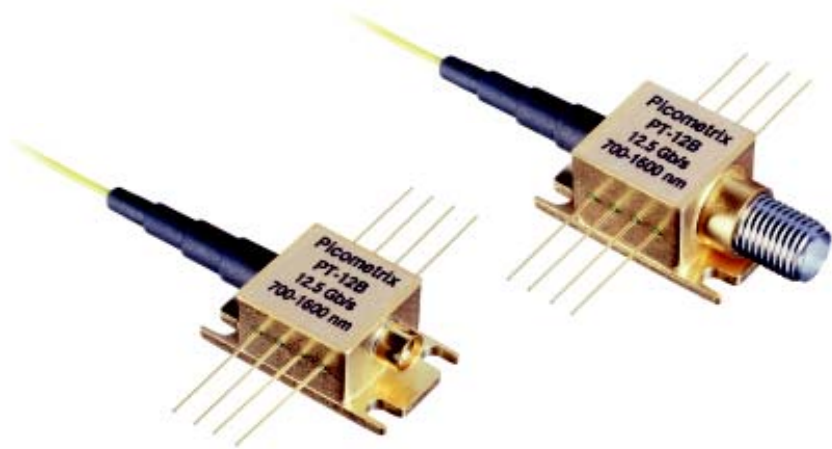


PT-12B



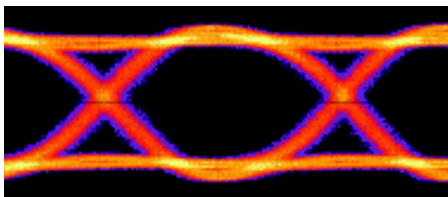
Product Bulletin (Preliminary) • April 2004

- PIN/TIA receiver
- High data rate, up to 12.5 Gb/s
- Broad wavelength range, 750–1650 nm
- 62.5 μm 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 ¹ | DC | | | kHz |
| Sensitivity @ 850 nm ² | | -15 | | dBm |
| Sensitivity @ 1310 nm ² | | -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 _{POS}) | +3.2 | +3.3 | +3.4 | V |
| Amplifier voltage (V _{NEG}) | -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 |

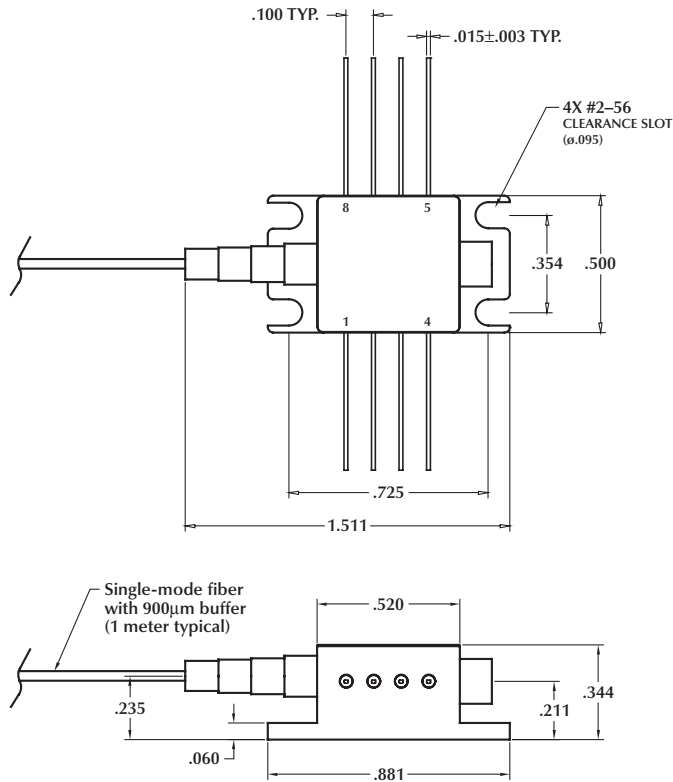
¹ Output is DC coupled

² 10⁻¹⁰ BER, PRBS 2²³-1

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 ¹) | 5 | GND |
| 2 | V _{PD} | 6 | V _{POS} |
| 3 | V _{NEG} | 7 | NC |
| 4 | GND (or Offset Voltage Input ¹) | 8 | NC |

¹ 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.



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PT-12B