

FEATURES & BENEFITS

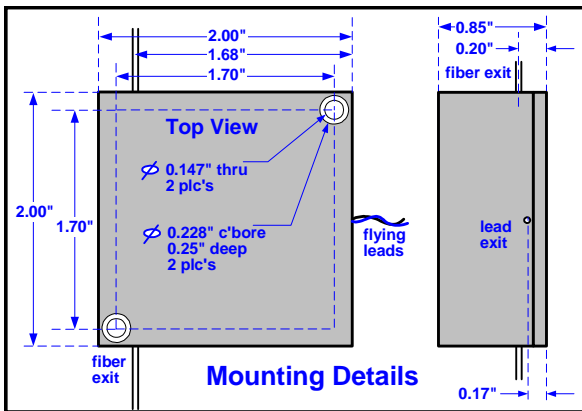
- High Performance
- Low Cost
- Compact package
- SMF-28e+ or PM [PANDA] fiber
- Multiple termination choices
- Unique multi-layer winding
- Custom configurations available
- Can be driven with general purpose electronics

The *OPTIPHASE® PZ1 Low-profile Fiber Stretcher* is a cost-effective fiber wound piezo-electric element for use as an optical phase modulator in a wide range of interferometric measurement, sensing systems and applications. Typical applications include open loop demodulation, sensor simulation and general purpose modulation of interferometric phase.

Available with either SMF-28e+ or PM [PANDA] fiber, the PZ1 delivers a high performance to cost ratio, exceeding all other known competitive devices. The compact and low-profile form factor makes the PZ1 easily configurable into small spaces. Several termination options are available, making set-up and use quick and easy.

Optiphase's expertise in the design, manufacture and use of all-fiber interferometers has produced a unique multi-layer winding approach resulting in an enhanced modulation function, while maintaining a high operational frequency [see charts].

Optiphase's design services are also available for custom applications requiring special packaging, fiber types, terminations and extended frequency ranges.



The PZ1's low profile and small footprint makes it easy to integrate into virtually any system device.

Made in U.S.A.



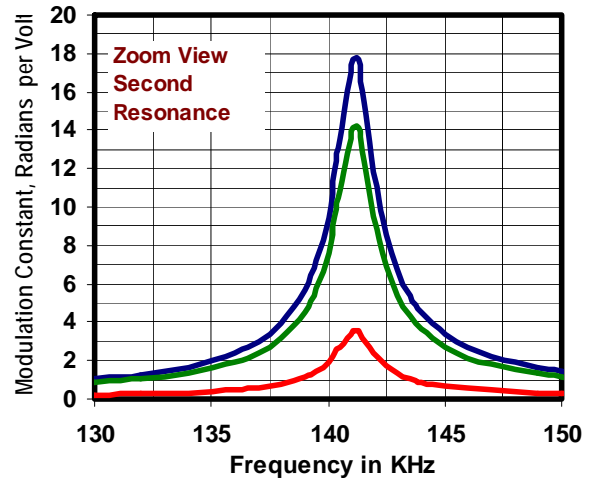
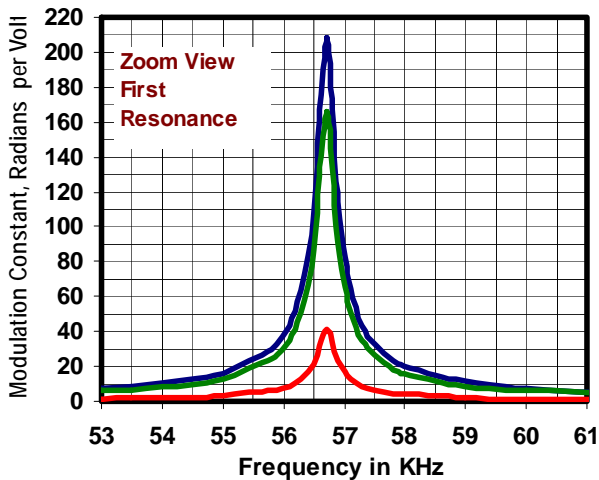
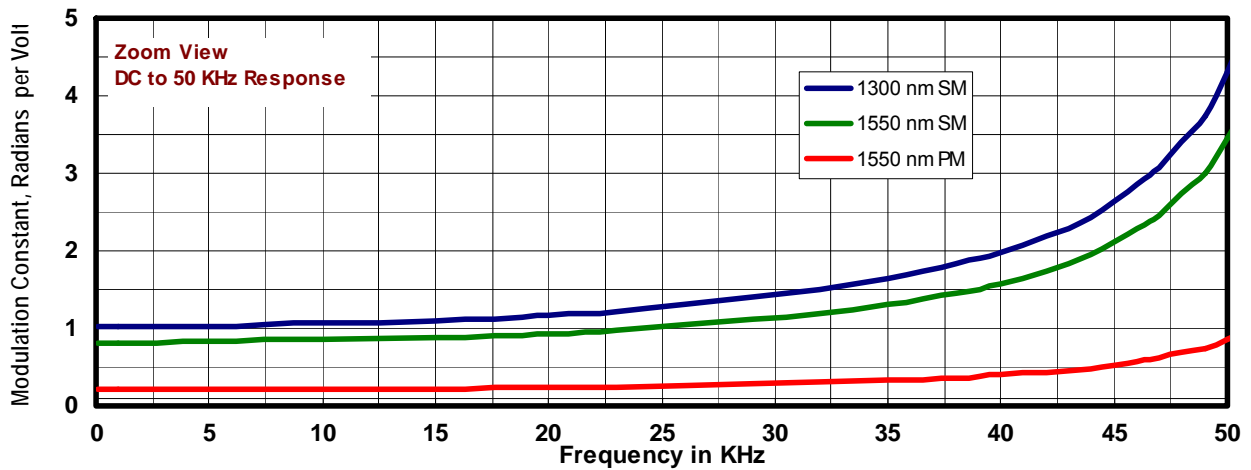
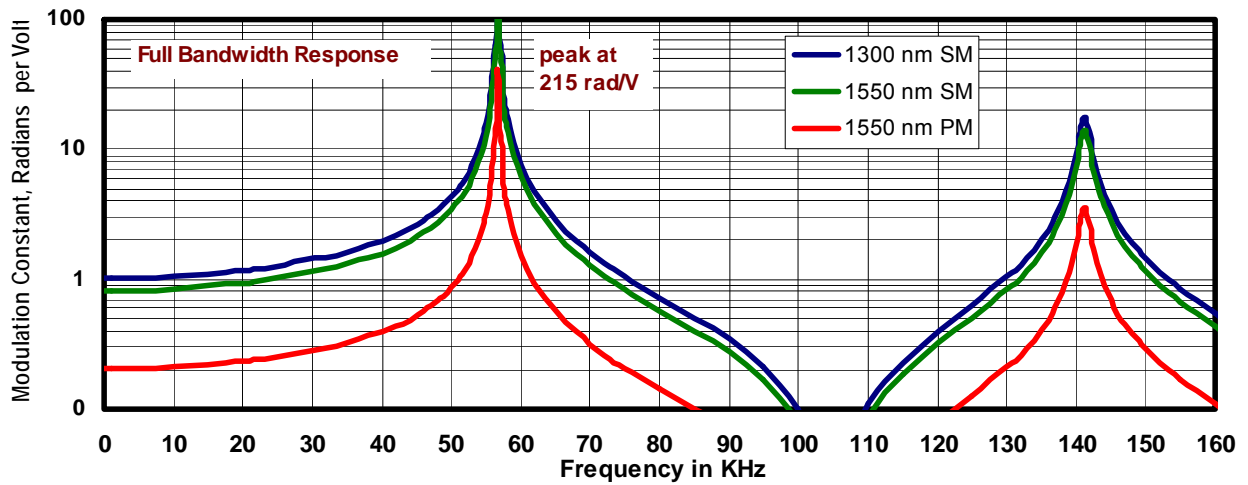
| MODEL | DESCRIPTION |
|-------------------|--|
| PZ1-STD | Low-profile SMF Fiber Stretcher with bare fiber leads |
| PZ1-STD-FC/PC | Low-profile SMF Fiber Stretcher with FC/PC connectors |
| PZ1-STD-FC/APC | Low-profile SMF Fiber Stretcher with FC/APC connectors |
| PZ1-PM-1.5 | Low-profile PM Fiber Stretcher with bare fiber leads |
| PZ1-PM-1.5-FC/PC | Low-profile PM Fiber Stretcher with FC/PC connectors |
| PZ1-PM-1.5-FC/APC | Low-profile PM Fiber Stretcher with FC/APC connectors |

Other wavelengths and PM fiber types available upon request.

SPECIFICATIONS

| | SMF FIBER | PM FIBER |
|------------------------------------|--|---|
| Operational Wavelengths | 1260 to 1625 nm | 1550 nm [C band] |
| Modulation Constant [< 15 KHz] | 1 radian/V @ 1300 nm [see charts] | 0.2 rad/V @ 1550 nm [See charts] |
| Fiber Stretch Optical Path Delay | 0.14 $\mu\text{m}/\text{V}$ 0.2 $\mu\text{m}/\text{V}$ | 0.035 $\mu\text{m}/\text{V}$ 0.05 $\mu\text{m}/\text{V}$ |
| Delay | 0.0007 ps/V | 0.00017 ps/V |
| Frequency Range | dc to 80 KHz, 120 to 160 KHz, see charts | dc to 80 KHz, 120 to 160 KHz, see charts |
| Optical Loss | ≤ 0.5 dB, typical 0.2 dB [excluding connectors] | ≤ 0.5 dB, typical 0.2 dB [excluding connectors] |
| Extinction Ratio | n/a | ≥ 24 dB bare leads; ≥ 22 dB with fiber connectors |
| Maximum Voltage Range | $\pm 500\text{V}$ [off resonance, 1000V P-P] | $\pm 500\text{V}$ [off resonance, 1000V P-P] |
| Impedance [off resonance] | Capacitance 2 nF, floating | Capacitance 2 nF, floating |
| Electrical Interface | 18 inches, flying leads, #30 | 18 inches, flying leads, #30 |
| Operational Temperature Range | 0° to 70° C | 0° to 70° C |
| Fiber Type | SMF-28e+ | Corning PM 15-U25A |
| Fiber Length | 12.3 meters [includes 1 m leads] | Approximately 4.6 meters plus end to end |
| Fiber Wind | 4-layer wind | The 1-layer design preserves a high polarization extinction ratio reducing the modulation constant. |
| Fiber Leads | 900 μm loose tube | 900 μm loose tube |
| Size | 2.0" W x 2.0" D x 0.85" H | 2.0" W x 2.0" D x 0.85" H |
| Weight | 5.7 ounces / 162 grams | 5.7 ounces / 162 grams |
| Connector Options | Bare fiber, FC/PC or FC/APC | Bare fiber, FC/PC or FC/APC |

PZ1 Modulation Constant Over Frequency



SMF-28e and SMF-28e+ are registered trademarks of Corning Incorporated.