

# Fiber Phase Shifter – Piezoelectric

Up to  $50\pi$ , 400nm to 2600nm

DATASHEET

BUY NOW



The Piezoelectric Fiber Phase Shifter (PIPS) utilizes a piezoelectric fiber squeezing plates to induce fiber birefringence phase retardation. It features ultra-low insertion loss, all fiber type accommodation, high power handling, and a large phase change capability. We further offer driver with a coinvent 0-5V control inputs. The device is designed for customers to incorporate it into their systems. We offer two versions: straight and coil. The straight version provides a phase shift of up to  $8\pi$ , while the coil can generate a large phase shift of up to  $50\pi$ . The PIPS is engineered to meet the operational requirements of fast response and continuous operation, providing an ultimate solution for large fiber phase shifting applications.

## Features

- Large Phase Shift
- High Reliability
- Low Insertion Loss
- Compact Size
- High Optical Power Handling

## Applications

- Fiber Sensor
- Fiber Interferometer
- Fiber Laser
- Instrumentation

## Specifications

| Parameter                            | Min | Typical  | Max  | Unit         |
|--------------------------------------|-----|----------|------|--------------|
| Wavelength                           | 400 |          | 2650 | nm           |
| Insertion Loss <sup>[1]</sup>        | 0.1 | 0.5      | 0.8  | dB           |
| Polarization Mode Dispersion         |     |          | 0.05 | ps           |
| Return Loss                          | 65  |          |      | dB           |
| Response Time Rise/Fall              | 30  |          |      | $\mu$ s      |
| Operating Optical Power              |     | 0.5      | 1    | W            |
| Resonance Frequency                  |     | 35       |      | kHz          |
| Residual Amplitude Modulation        |     |          | 0.02 | dB           |
| Polarization Rotation <sup>[2]</sup> | 0   |          | 50   | $\pi$        |
| Control Voltage <sup>[2]</sup>       | 0   | 20       | 150  | V            |
| Capacitance of Piezo                 | 2   | 5        | 12   | nF           |
| Fiber Length (Coil Version)          |     | 500      |      | cm           |
| Operating Temperature                |     | 0 ~ 60   |      | $^{\circ}$ C |
| Storage Temperature                  |     | -40 ~ 85 |      | $^{\circ}$ C |

### Notes:

[1]. Excluding connectors. Connectors ad 0.3dB.

[2]. @1550nm

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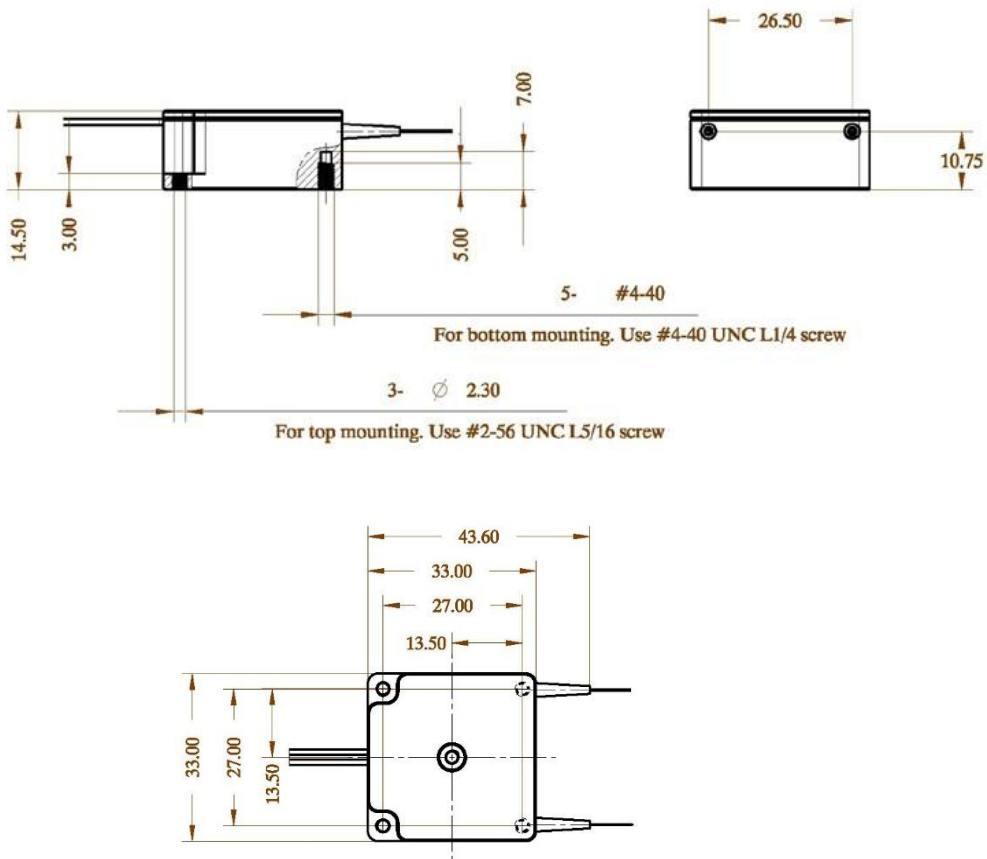
Rev 05/08/24

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### Mechanical Dimensions (mm)



\*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

### Electrical Driver Pin Definition

| Pin # | Connection |
|-------|------------|
| 1     | +          |
| 2     | -          |

### Ordering Information

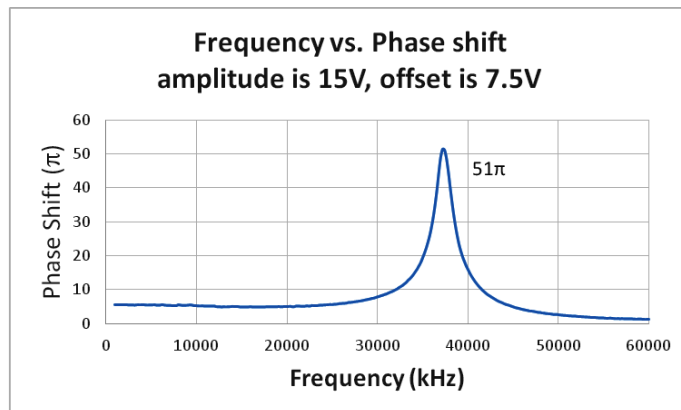
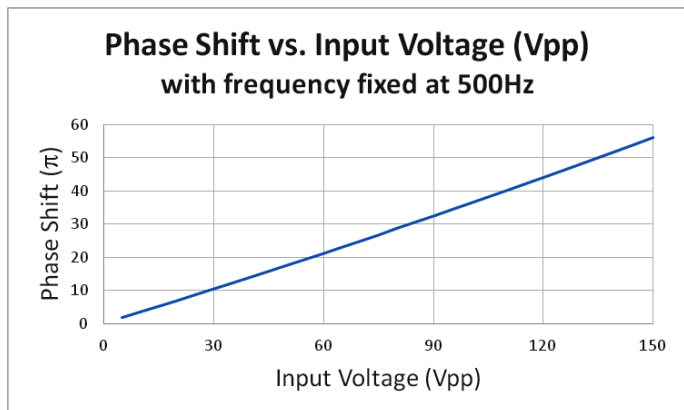
| Prefix | Type | Wavelength  | Type                        | Driver                            | Fiber Type   | Fiber Cover   | Fiber Length                                      | Connector   |
|--------|------|---|-----------------------------|-----------------------------------|--|---|---|---|
| PIPS-  |      | 1550nm = 5<br>1310nm = 3<br>1060nm = 1<br>980nm = 9<br>850nm = 8<br>Special = 0 | Standard = 1<br>Special = 0 | Non = 1<br>Yes = 2<br>Special = 0 | SMF-28 = 1<br>Hi1060 = 2<br>SM980 = 9<br>SM850 = 8<br>780HP = 3<br>Special = 0 | Bare fiber = 1<br>0.9mm loose tube = 3<br>Special = 0 | 0.25m = 1<br>0.5m = 2<br>1.0 m = 3<br>Special = 0 | None = 1<br>FC/PC = 2<br>FC/APC = 3<br>LC/PC = L<br>Special = 0 |

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## Typical Performance



## Driver PCB