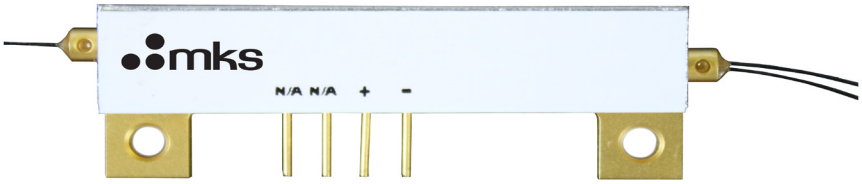
M-PY-1550

Multi-functional Integrated Optical Chip Package, 1550 nm

The Newport M-PY-1550 is the key component of Fiber Optic Gyroscope (FOG) for rotational rate sensing and inertial navigation systems. This Integrated Optic Chip (IOC) device is composed of a polarizer, a Y-junction coupler and dual electro optic phase modulators. Based on Lithium Niobate (LiNbO3), M-PY-1550 is fabricated with Proton Exchange (PE) optical waveguides. The M-PY-1550 features Polarization Extinction Ratio (PER) exceeding 60 dB that can minimize bias drift which results from polarization crosstalk induced nonreciprocity. The M-PY-1550 assures high reliability and performance over wide temperature range.



Features & Uses

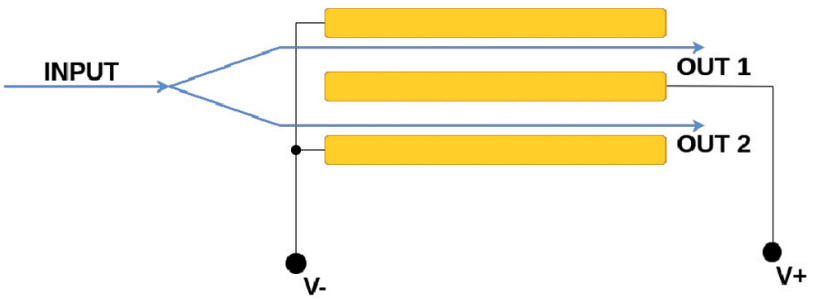
Features

- 1550 ± 20 nm operation
- PM input and output port
- Low insertion loss 3.5 dB
- Polarization extinction ratio > 60 dB
- Low Vπvoltage 4V
- Polarization crosstalk < -20 dB
- Unpackaged chip available

Benefits of Use

- Fiber Optic Gyroscope (FOG)
- Fiber Optic Current Sensor (FOCS)
- Hydrophone and other optic sensitive fields
- Research and development

Function Diagram



Specifications

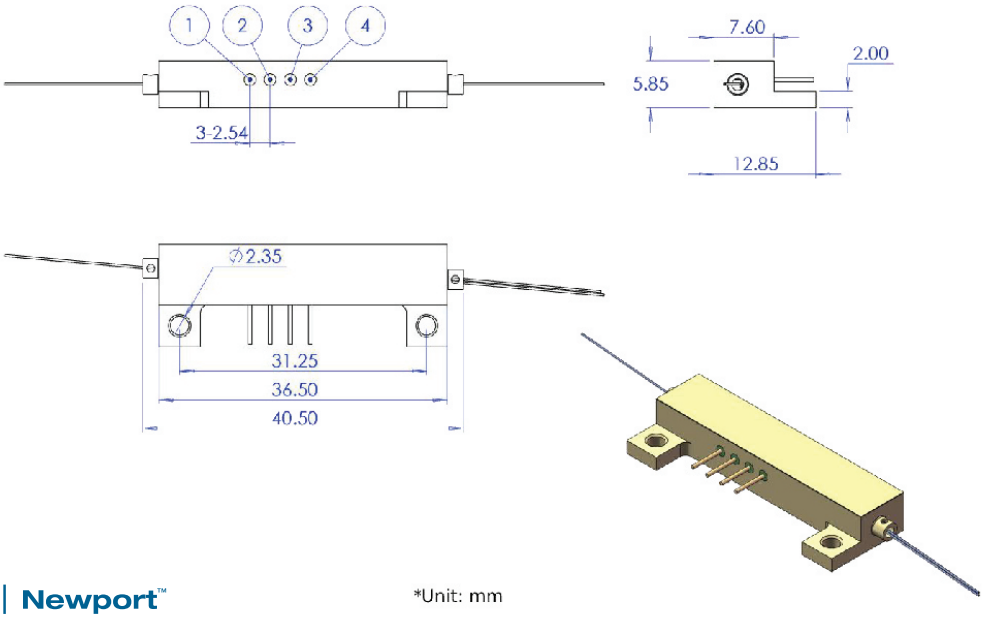
GENERAL

Operating Wavelength	1550 ± 20 nm
Pigtailed Insertion Loss	≤ 3.5 dB, 3.8 dB Max
Split Ratio	50 ± 3%
Half-wave Phase Modulation Voltage, Vπ	4 V typ., 4.5 V max
Polarization Extinction Ratio	≥ 60 dB
PM Pigtail Crosstalk	≤ -20 dB
Intensity Modulation	≤ 0.1 % typ
Electrode Type	Push-pull
Maximum Input Voltage	+/- 15 V
Operating Temperature	-45°C to + 70°C

MECHANICAL

Housing Material	Stainless Steel
Input/Output Fiber Type	Corning RCPM15 (80μm) (125μm fiber Available)
Fiber Length	1.5m (customizable)
Fiber Orientation	Slow Axis aligned to TE Mode
Substrate Material	LiNbO3
Crystal Orientation	X-cut, Y-propagation
Waveguide Process	Proton Exchange

TECHNICAL DRAWING



*Unit: mm

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