

MIOC-1550-BC



DEVICE

Multi-functional Integrated Optical Chip, 1550 nm

OVERVIEW

MIOC-1550-BC 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), MIOC-1550 is fabricated with Proton Exchange (PE) optical waveguides. The MIOC-1550-BC features Polarization Extinction Ratio (PER) exceeding 60 dB that can minimize bias drift which results from polarization crosstalk induced non-reciprocity. The MIOC-1550-BC assures high reliability and performance over wide temperature range.

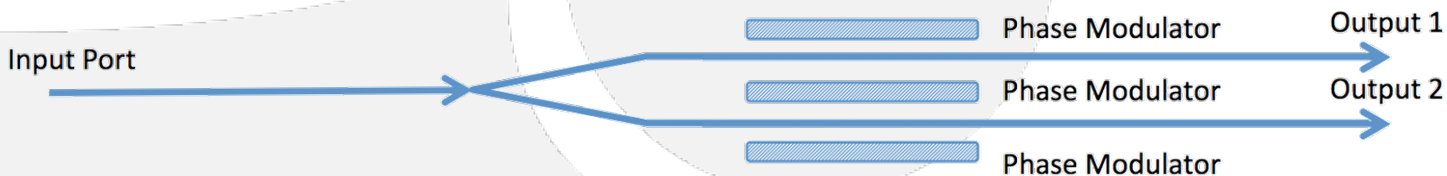
FEATURES

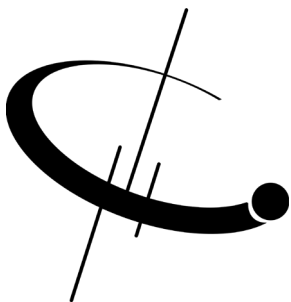
- 1550 ± 20 nm operation
- PM input and output port
- Low insertion loss 3.5 dB
- Polarization extinction ratio > 60 dB
- Low V_π voltage 4V
- Polarization crosstalk < -20 dB
- Unpackaged chip available

USE IN

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

FUNCTIONAL DIAGRAM





MIOC-1550-BC

SPECIFICATIONS

| | |
|---|----------------------------|
| Operating Wavelength | 1550 ± 20 nm |
| Pigtailing Insertion Loss | ≤ 3.5 dB; 3.0 dB available |
| Split Ratio | 50 ± 5% |
| Half-wave Phase Modulation Voltage, V_{π} | 4 V |
| Polarization Extinction Ratio | ≥ 60 dB |
| Intensity Modulation | ≤ 0.1% |
| Electrode Type | Push-pull |
| Pigtailing Compatibility | 80 μm Clad |
| Operating Temperature | -45 °C to +70 °C |

GENERAL

| | |
|--------------------------|-------------------------|
| Dimensions | 1 mm x 1.8 mm x 22.5 mm |
| Electrode | Gold Plated |
| Substrate Material | LiNbO3 |
| Crystal Orientation | X-cut, Y-propagation |
| Waveguide Process | Proton Exchange |
| Output Waveguide Spacing | 400 μm |

MECHANICAL

