

MIOC-1550-SP



DEVICE

Multi-functional Integrated Optical Chip Submount, 1550 nm, w/ PM Fiber Pigtails

OVERVIEW

The Optilab MIOC-1550-SP 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-SP is fabricated with Proton Exchange (PE) optical waveguides. The MIOC-1550-SP features Polarization Extinction Ratio (PER) exceeding 60 dB that can minimize bias drift which results from polarization crosstalk induced non-reciprocity. The MIOC-1550-SP assures high reliability and performance over wide temperature range and is fiber pigtailed (input/output) with 80um PM fiber. Contact Optilab for more information.

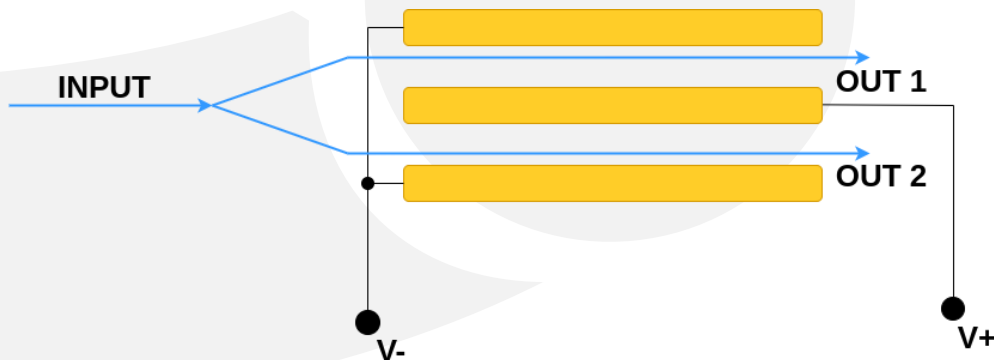
FEATURES

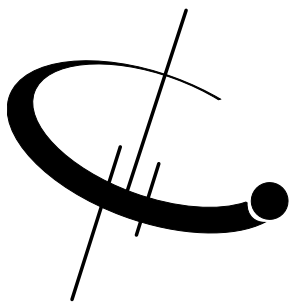
- 1550 ± 20 nm operation
- PM input and output port
- Low insertion loss 3.5 dB
- Polarization extinction ratio > 60 dB
- Designed for integration into FOG
- Low V π voltage 4V
- Polarization crosstalk < -20 dB
- Unpigtailed chip available
- PM 80um fiber pigtails

USE IN

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

FUNCTIONAL DIAGRAM





MIOC-1550-SP

SPECIFICATIONS

Operating Wavelength	1550 ± 20 nm
Pigtailed Insertion Loss	≤ 3.5 dB typ., 3.8 dB max.
Split Ratio	50 ± 5%
Half-wave Phase Modulation Voltage, V_{π}	4 V
Polarization Extinction Ratio	≥ 60 dB
PM Pigtail Crosstalk	≤ -20 dB
Intensity Modulation	≤ 0.1%
Electrode Type	Push-pull
Operating Temperature	-45 °C to +70 °C

GENERAL

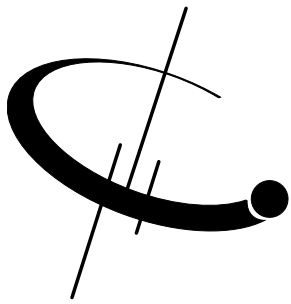
Input/Output Fiber Type	80um (customizable)
Fiber Length	1.5m (customizable)
Substrate Material	LiNbO3
Crystal Orientation	X-cut, Y-propagation
Waveguide Process	Proton Exchange

MECHANICAL

Sample Test Data

	Input Port	Output Port 1	Output Port 2
Extinction Ratio -5°C (dB)	31.3	24.3	28
Extinction Ratio -25°C (dB)	33.1	26.2	30.8
Extinction Ratio -25°C (dB)	31.0	24.5	27.8
Coupling Ratio (%)	N/A	50.0	50.0
V_{π} (V)	< 4.5 V		
Insertion Loss	3.7		





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MECHANICAL DRAWING

