

MIOC-1550-BC



Multi-functional Integrated Optical Chip, 1550 nm

The Optilab 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 High Temperature Proton Exchange (HTPE) 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, contact Optilab for more information.

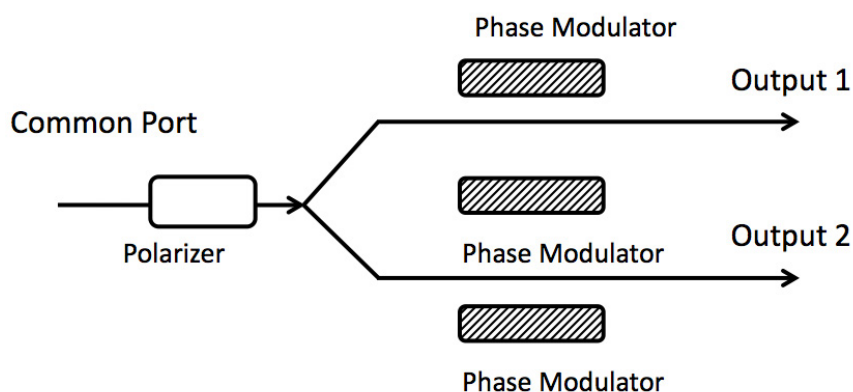
Features

- 1550 ± 20 nm operation
- PM input and output port
- Polarization extinction ratio > 60 dB
- V_{π} voltage < 5 V
- Fiber/chip crosstalk < -20 dB
- Low fiber-to-fiber insertion loss
- Push-pull electrode design

Applications

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

Functional Diagram



Multi-functional Integrated Optical Chip, 1550 nm

OPTIONS

MIOC-1550-BC

- XX:
- SD
 - Standard
 - HP
 - High Performance
 - LC
 - Low Cost

TECHNICAL INFO

For technical info and support:

sales@optilab.com

www.optilab.com

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Optical Specifications	
Operating Wavelength	1550 ± 20 nm
Pigtailed insertion loss	STD: 4,0 dB HP: 3.5 dB LC: 4.5 dB
Split ratio	50 ± 5 %
Half-wave phase modulation voltage, $V\pi$	STD: 5V HP: 5.5V LC: 5.5V
Polarization extinction ratio, chip	≥ 60 dB
Intensity modulation	≤ 0.1 %
Electrode type	Push-pull
Pigtail Compatibility	PM PANDA 125 μm, 80 μm
Operating Temperature	-45 °C to + 70 °C

Mechanical Specifications	
Dimensions	1 x 1.8 x 22.5 mm
Electrode	Gold plated
Substrate Material	LiNbO3
Crystal Orientation	X-cut, Y-propagation
Waveguide Process	HTPE
Connector	Bare fiber standard, FC/APC avail.

Optilab Advantage

- Innovation
- Performance
- Quality
- Customization
- Warranty

	ER(dB)			Coupling ratio (%)	$V\pi$ (V)	IL(dB)
	-5°C	25 °C	85 °C			
COM.	31.3	33.1	31.0	n.a.	<4.5V	3.7
OUTPUT 1	24.3	26.2	24.5	50.0		
OUTPUT 2	28	30.8	27.8	50.0		

Fiber length: 8m

MIOC-1550-PG Mechanical Drawing

