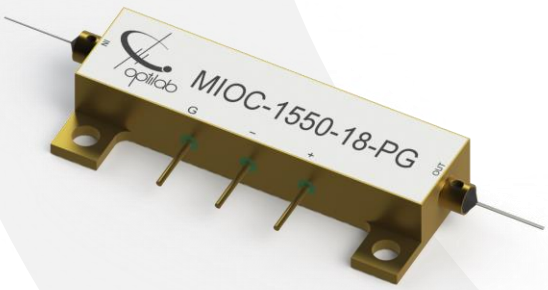
MIOC-1550-18-PG



DEVICE

Multi-functional Integrated Optical Chip, Packaged, 1550 nm, 18 mm Chip Length, w/ PM Fiber Pigtails

OVERVIEW

The Optilab MIOC-1550-18-PG 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-1550-18-PG is fabricated with Annealed Proton Exchange (APE) optical waveguides. The MIOC-1550-18-PG features Polarization Extinction Ratio (PER) exceeding 60 dB that can minimize bias drift which results from polarization crosstalk induced non-reciprocity. The MIOC-1550-18-PG assures high reliability and performance over wide temperature range and is fiber pigtailed (input/output) with a variety of PM fiber configurations. Contact Optilab for more information.

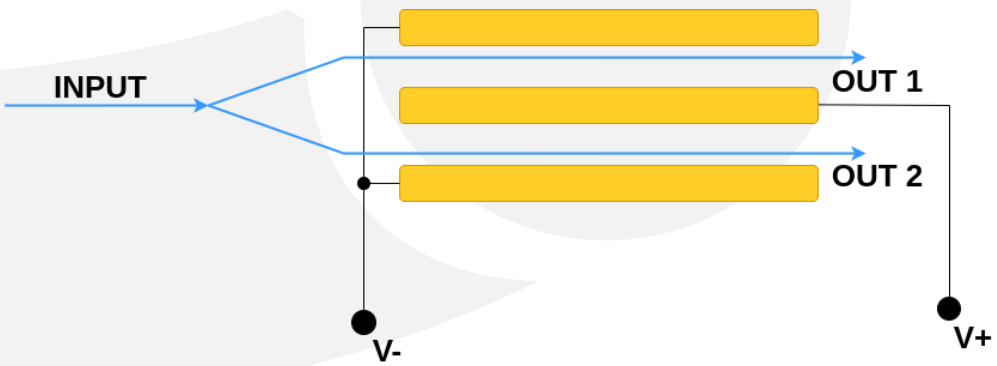
FEATURES

- 1550 ± 20 nm operation
- Low insertion loss
- Polarization extinction ratio > 60 dB
- Low Vπ voltage
- Low Polarization crosstalk
- PM 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-1550-18-PG

ABSOLUTE MAXIMUM RATING (Tc = 25 °C unless otherwise specified)

Parameter	Symbol	Conditions	Min	Max	Unit
Optical Input Power	OP_{in}	CW		100	mW
Drive Voltage	V_{in}	CW or Pulse	-25	+25	V
Operation Case Temperature	T_c		-45	75	°C
Storage Temperature	T_{st}		-45	85	°C
Soldering Time	T_{sld}	≤ 260 °C		10	sec

GENERAL SPECIFICATIONS at Room Temperature (Tc = 25 °C)

Parameter	Symbol	Unit	P Grade	A Grade	B Grade
Operating Wavelength	λ	nm	1520 ~ 1570		
Insertion Loss	IL	dB	≤ 3.1	≤ 3.6	≤ 4.1
Splitting Ratio	SR	%	50 ± 2	50 ± 3	50 ± 5
Half Wave Voltage	Vpi	V	≤ 4.0	≤ 4.0	≤ 4.3
Pigtail Polarization Crosstalk	XT	dB	≤ -30	≤ -27	≤ -25
Chip Polarization Extinction Ratio	PER	dB	≥ 60		
Residual Intensity Modulator	RIM	%	≤ 0.1	≤ 0.1	≤ 0.2
Optical Back Reflection Loss	OBRL	dB	≥ 50	≥ 47	≥ 45
Fiber Length	L	m	≥ 0.9		

Performance Over Full Temperature Range (-45 °C ~ + 75 °C)

Parameter	Unit	P Grade	A Grade	B Grade
Insertion Loss Variation	dB	≤ 0.3	≤ 0.5	≤ 0.7
Splitting Ratio	%	50 ± 3	50 ± 5	50 ± 5
Pigtail Polarization Crosstalk	dB	≤ -27	≤ -25	≤ -20

MIOC-1550-18-PG

Ordering Option:

MIOC-1550-LL-FF-G-XX-YY-ZZ

LL: Chip Length
-18: 18 mm
-22: 22 mm

FF: Form Factor
-BC: Bare chip
-SB: Bare chip on submount
-SP: Fiber pigtailed w/ submount
-PG: Packaged

G: Grade
-P: Premium grade
-A: A grade
-B: B grade

XX: Input Fiber
YY: Output Fiber #1
ZZ: Output Fiber #2
For each fiber:
First digit: Fiber Type
Second digit: Alignment direction

Fiber Type Option:
-0: No fiber pigtail
-1: Corning RCPM15, 80/165 µm
-2: Corning PM15-U25D, 125/250 µm

Fiber Alignment Direction Option:
-0: Not applicable
-1: Slow axis aligned to TE mode
-2: Fast axis aligned to TE mode
-3: 45˚ alignment

MECHANICAL DRAWING

Unit: mm