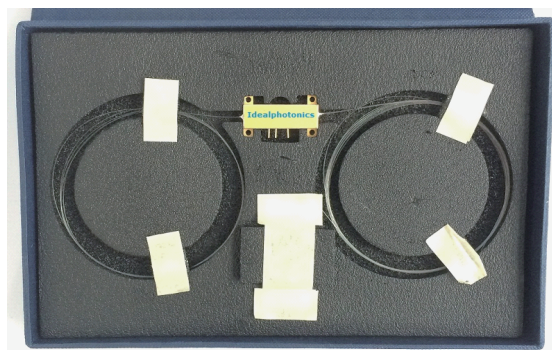


Multi-function Integrated Optic Chip for Gyroscope (Y waveguide modulators)



Model: MIOC-15-09-XX-N-Grade

Description

Idealphotonics' LiNbO₃ multi-function integrated optical chip (MIOC) is manufactured by micro-electronics technology. There are several cells integrated on the same chip, include polarizer, splitter /combiner, phase modulator, etc.

Feature

X-Cut, y-propagating LiNbO₃

Very low insertion loss.

APE process for waveguide, works in single polarization

High extinction ratio

Fiber is sloping coupled with waveguide, which deduce optical return far and away

Push-pull electrode design may deduce half wave Voltage

Small packaging and lightweight

Excellent long-term stability

Application

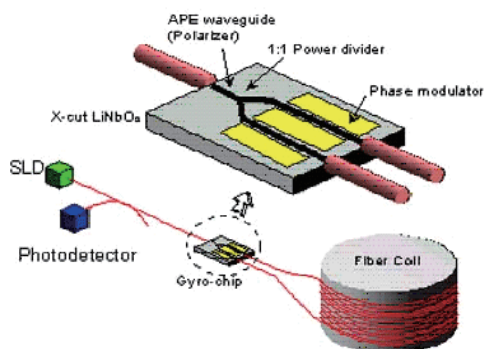
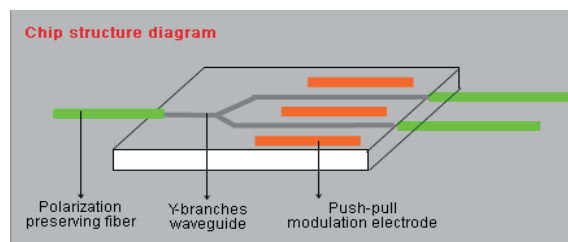
Fiber optic gyroscopes (FOG).

Fiber optic current sensor(FOCS)

Hydrophone and other optic sensitive fields

It is for attitude control of movements such as aircrafts, ships, guided missiles, automobiles etc in the fiber gyroscope system, Hydrophone and other optic sensitive fields. Faraday Effect was used to measure current through fiber circuit in the current sensing system.

Chip structure:



Specification

Parameters with Room remperature(15℃-35℃)

Parameter	Unit	Values
Wavelength	nm	1550
Insertion	dB	≤4.0
Half wave Voltage(@100KHZ)	V	≤4.5
Splitting Beam Ratio	-	48/52—52/48
Optical Return	dB	≥50
Polarization extinction ,chip	dB	≥55
Additional Intensity Modulating	-	≤0.2%
PM Pigtail Crosstalk	dB	≤-30
Electrode type	-	Push-pull modulating
Bandwidth	MHz	≥300
Pigtail type	-	PM
Wave slope	-	≤1/250
Electrode voltage	V	≤15
Maxium input power	mw	≤200
Work temperature	℃	-45~+70
Packaging dimensions	mm	30X8X5 or 35X10X5

Parameters with full temperature

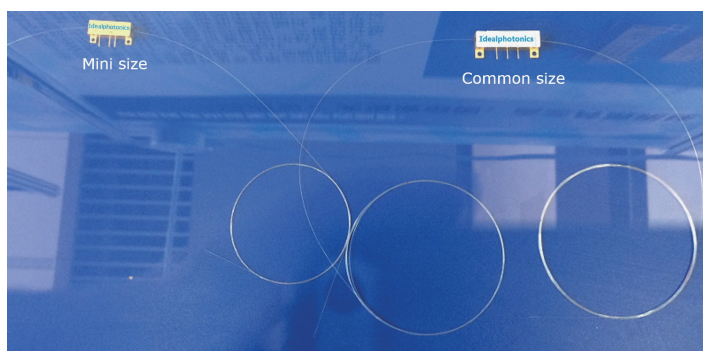
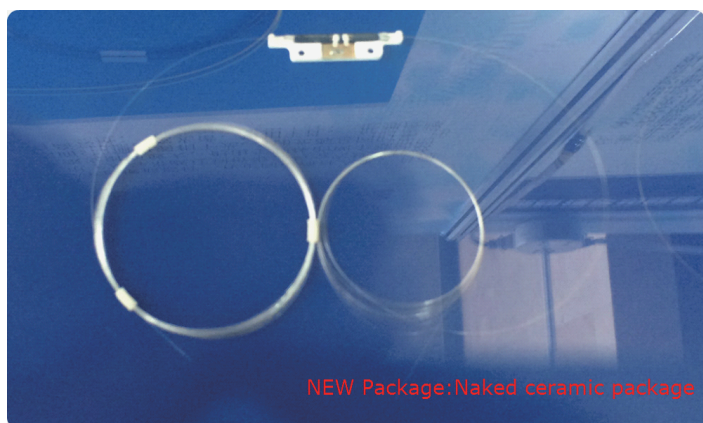
Parameter	Unit	Typ Values
△Insertion	dB	≤0.5
PM Pigtail Crosstalk	dB	≤-25
△Splitting Beam Ratio	%	≤3

Different grades Parameters Comparison

Items	Parameters	Unit	Typ Value	
			A Grade	C grade
1	PM Pigtail Crosstalk	dB	≤-27	≤-23
2	Operating temperature	℃	-50~+75	-45~+70
3	△Splitting Beam Ratio	%	≤3	≤5
4	△Insertion	dB	≤0.5	≤0.5
5	△Half wave Voltage	%	≤5.0	≤7.0

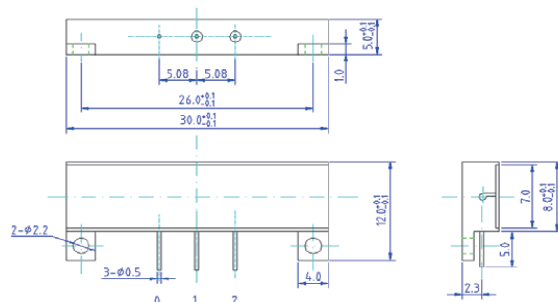
Different packages

New package of Naked ceramic package



Package Size

Package Outline: (PMD0800-X)



Pin	1、2	0
Junction type	Signal	grounding

Ordering information

Type	Description	Grade	
MIOC-15-09-09-N	1550nm integrated optical chips (Y waveguide) input/output: 125/250um PM fiber, 1m fiber length, without connector	C Stands for commercial grade	A stands for aerospace grade
MIOC-15-09-80-N	1550nm integrated optical chips (Y waveguide) input: 125/250um PM fiber, output with 80/165um PM fiber, 1m fiber length, without connector	C Stands for commercial grade	A stands for aerospace grade

Aerospace grade's MIOC with full temperature testing and all conditions's testing.

We can provide different pigtail and package by customer requirement.

For more information on this or other products and their availability, please contact us: info@idealphotonics.com

Operation Instructions

- a). If the devices work under the single state of polarization, the polarization state of input light must conform to devices.
- b). Avoid the Electrical damage of the devices; the electrode voltage of modulators should be lower 30V.
- c). Applying too much force to fiber may cause it breaking easily. Avoid drawing, twisting. Bending radius must not be less than 30nm.
- d) Avoid too much force between metal tube and fibers. Put up the tube and the fibers together when using it. Avoid bending at the joint of the tube and the fibers.
- e) Storage environment humidity must be less than 50%, and not contain the materials which damages devices.
- f) Avoid the devices suffering from intense thermal shock and inhomogeneous by heated
- g) Avoid stressing to the joint of the fiber connection circuits.