

Dual Phase Modulator Y-Branch

PM, 1550 nm, DC to 1GHz, for gyro and current sensor



The DPMY is a three-port polarization-maintaining (PM) fiber device specifically designed for fiber-loop-based sensing applications, such as fiber optic gyroscopes and optical current sensors. It integrates a polarizer, a Y-junction coupler, and dual electro-optic phase modulators into a compact structure. Built on Lithium Niobate (LiNbO₃) waveguide technology, the DPMY delivers a high polarization extinction ratio (PER) exceeding 60 dB. This significantly reduces bias drift caused by polarization crosstalk-induced non-reciprocity, ensuring stable and accurate performance. The device is engineered for high reliability and consistent operation across a wide temperature range.

Features

- 1550 ± 20 nm Operation
- PM Input and Output Port
- Polarization Extinction Ratio > 60 dB
- Low V_π Voltage 4.2 V
- Polarization Crosstalk < -20 dB
- Unpackaged Chip Available

Applications

- Fiber Optic Interferometers
- Fiber Optic Current Sensor (FOCS)
- Differential Phase Shifter
- Hydrophone and other optic sensitive fields
- Research and development

Specifications

Parameter	Min	Typical	Max	Unit
Operating Wavelength	1530	1550	1570	nm
Insertion Loss		4.2	4.5	dB
Split Ratio		50 ± 5		%
Half-wave Phase Modulation Voltage, V _π		4	4.5	V
Bandwidth 3 dB drop EO		175	1000	MHz
Polarization Extinction Ratio		≥ 60		dB
PM Pigtail Crosstalk		≤ -20		dB
Optical Input Power			0.1	W
Intensity Modulation		≤ 0.1		%
Electrode Type		Push-Pull		
Maximum Input Voltage		± 15		V
Operating Temperature	-15		+65	°C
Housing Material	Stainless Steel			
Input/Output Fiber Type	Corning RCPM15 (80μm)			
Fiber Length	1.5m (customizable)			
Fiber Orientation	Slow Axis aligned to TE Mode			
Substrate Material	LiNbO ₃			
Crystal Orientation	X-cut, Y-propagation			
Waveguide Process	Annealed Proton Exchange			



Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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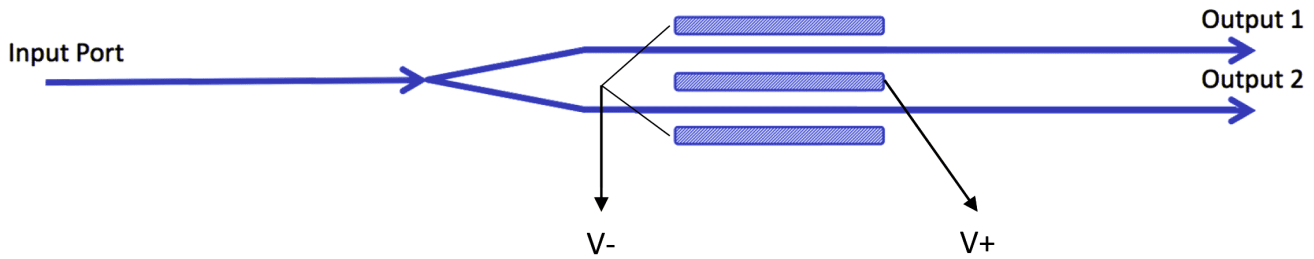
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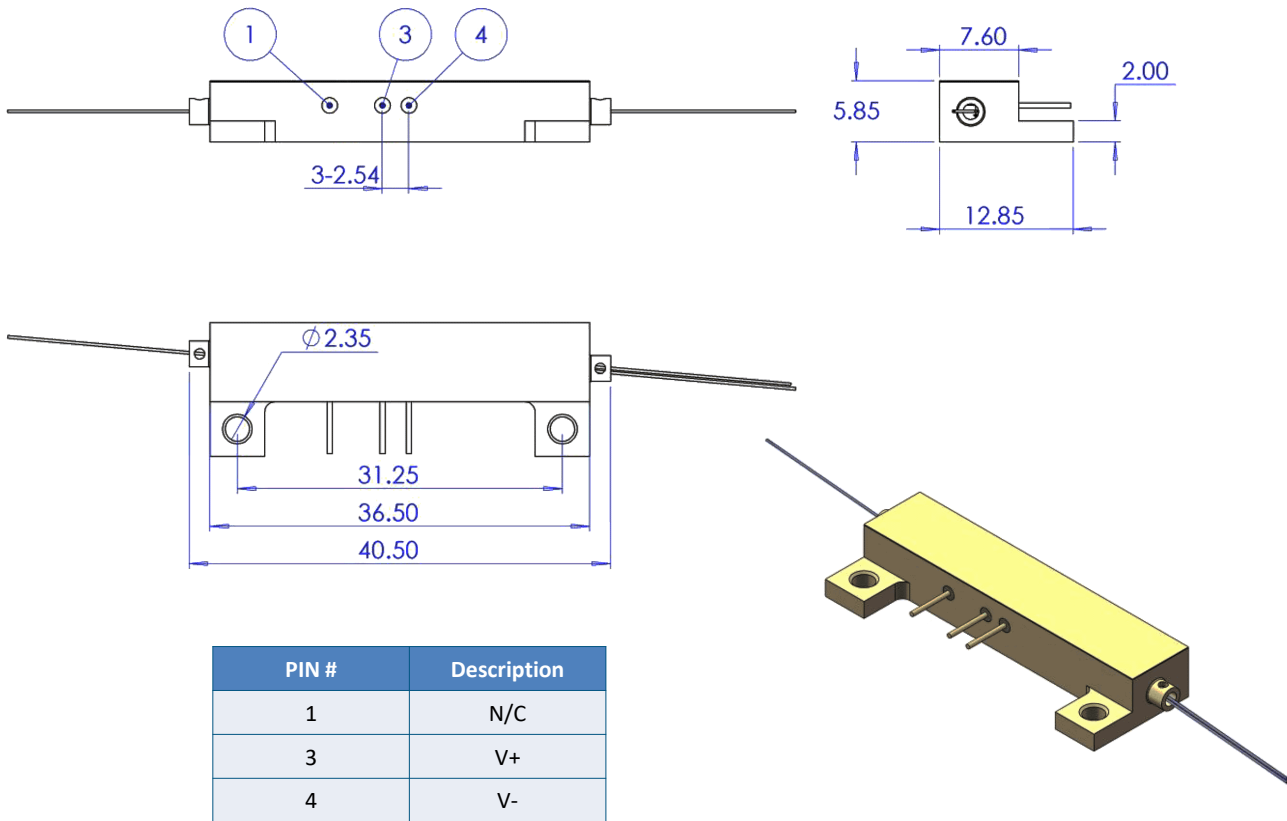


DATASHEET

Functional Diagram



Mechanical Dimensions (mm)



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Ordering Information (Part Number)

Prefix	Package	Fiber Type	Fiber Length	Fiber Cover	Connector	Configuration	Driver
DPMY-	Standard = 1 Special = 0	RCPM15 = 80	0.5m = 5 Special = 0	None = 1	Non = 1	Standard = 1 Special = 0	None = 11 Yes = 22 Special = 00