10GHz 1064nm Optical Phase Modulator
PM-1064-10G series

Overview

PM-1064-10G chip is used for optical signal phase modulation and spectral broadening. This device is composed of a high polarization extinction ratio polarizer and an electro-optic phase modulator suitable for use in high-power laser systems. Based on Lithium Niobate ($LiNbO_3$) material, PM-1064-10G is fabricated with optical waveguides using High Temperature Proton Exchange (HTPE), and group-velocity matched electrodes in the high-frequency region. The PM-1064-10G provides highly reliable performance over wide temperature range and with extended life time in comparison with other competing technologies such as InP and silicon photonics

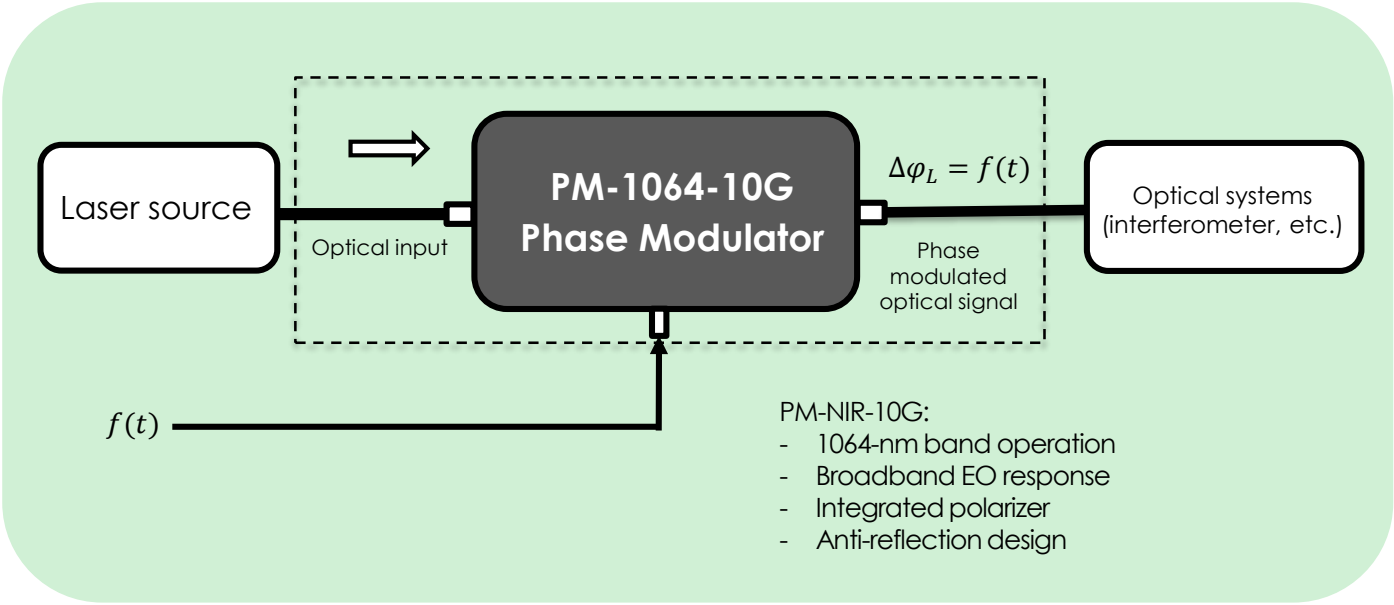
Key Features

- 1064 ± 30 nm operation
- EO bandwidth (-3dB)
  > 10 GHz, Max. to 20GHz
- Insertion loss < 4.5 dB
- Vπ (RF port, at 100 kHz) < 4 V
- Polarizer-integrated
- High Polarization Extinction Ratio > 60dB

Applications

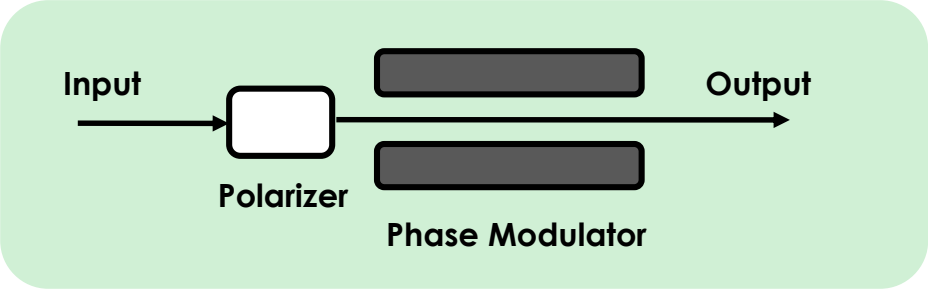
- High-power laser
- Phase modulation
- Frequency stabilization
- Pound-Drever-Hall laser
- Spectral broadening
- Interferometric Sensor
- Free-space optical communication (FSOC)

Application Diagram



Specifications			
Model	PM-1064-10G-P	PM-1064-10G-A	PM-1064-10G-S
Substrate	X-cut, Y-propagation Lithium Niobate		
Operation wavelength	1060 ± 30 nm		
Input optical power	70 mW (typ.), 100 mW (max.)		
Chip insertion loss	≤ 3.5 dB	≤ 4.0 dB	≤ 4.5 dB
Vπ (RF port, 100kHz)	≤ 3.0 V	≤ 3.5 V	≤ 4.0 V
EO bandwidth (RF Port)	≥ 10 GHz, Max. to 20 GHz		
Polarization extinction ratio	≥ 60 dB		
Optical return loss	≤ -45 dB		
Return loss (RF Port)	≤ -10 dB (DC to 10 GHz)		
RF input power	26 dBm max.		
Impedance (RF Port)	50 ± 5 Ω		
Chip polished angle	6 ± 0.5 degree		
Chip dimension	43.2 mm (L) x 2 mm (W) x 1 mm (H), +/- 10 %		
Operating temperature	- 30 °C ~ + 70 °C		
Storage temperature	- 50 °C ~ + 80 °C		

Mechanical Drawing



Custom Design

- Custom design for PER higher than 75dB.
- Custom phase modulator design for different wavelengths.
- ODM/OEM for other $LiNbO_3$ devices, including polarizer, phase modulator, intensity modulator, Y splitter/combiner and anti-reflection I/O.