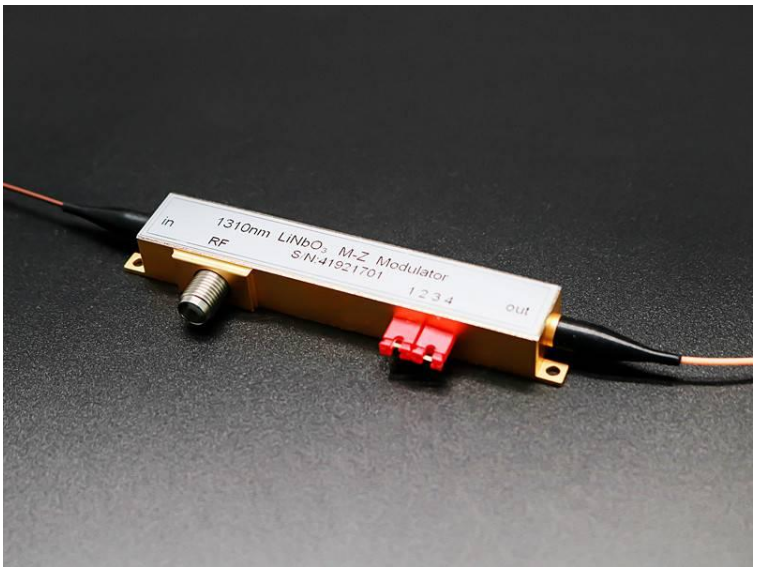
# 1550nm Lithium Niobate High-Frequency Phase Modulator (40GHz Electro-Optic Bandwidth)




## Product Description

The 1310/1550nm lithium niobate (LiNbO3) high-frequency phase modulator uses titanium diffusion or proton exchange processes to create optical waveguides. The input and output optical fibers are precisely obliquely coupled with the waveguides, utilizing the electro-optic effect of the lithium niobate material to achieve phase modulation of optical signals.

The titanium diffusion (Ti-indiffusion) or proton exchange (APE) waveguide process can respectively achieve birefringence or single polarization phase modulation

## Product features

Low Insertion Loss、 Low Drive Voltage、 Titanium Diffusion or Proton Exchange Waveguide、 Excellent Long-Term Stability

## Part Number

MP-PMD-1550-40G-PM-FA

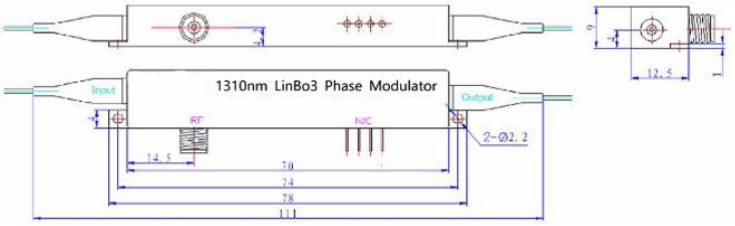
## Application area

Fiber Optic Communication 、 Microwave Photonics 、 Quantum Communication、 Optical Sensing、 Optical Chirp

## Core parameters

| Wavelength | Bandwidth | Connector |
|---|---|---|
| 1550nm | 40GHz | FC/APC |

## Dimension Drawing




## General Parameters

**Parameter**

| Parameter | Unit | Min | Typical | Max |
|---|---|---|---|---|
| Half-wave voltage (DC electrode) | V | | 3.5 | 5.0 |
| Bandwidth S21@-3dB | GHz | 10 | | 40 |
| RF half-wave voltage (DC) | V | | 3.5 | 5.0 |
| Bias half-wave voltage | V | | | 5.0 |
| Jitter | dB | | 0.5 | 1 |
| Electrical return loss S11-20GHz | dB | | -12 | -10 |
| RF connector input impedance | Ω | | 40 | |
| Input impedance DC connector | Ω | | >1M | |
| Crystal: Lithium Niobate (LiNbO3) | . | X-cut Y-propagation | | |
| Waveguide process | | APE Process | | |
| Insertion loss | dB | | 3.0 | 4.0 |
| Optical return loss | dB | | <-45 | |
| Wavelength-dependent loss (1480-1600nm) | dB | | 0.5 | 1.0 |
| DC extinction ratio | dB | 20 | 22 | |

| Parameter | Unit | Min | Typical | Max |
|---|---|---|---|---|
| Input optical fiber | | Panda PM fiber, 1.5m length, 900μm | | |
| Output optical fiber | | SSMF-28 SM fiber, 1.5m length, 900μm (PMF optional) | | |
| Input RF connector | | SMA | | |
| DC connector | | Pin feed-through, diameter: 1.0mm | | |
| Package size | mm | 110 x12.5 x9.0 | | |
| Operating temperature | ℃ | 0~+70 | | |
| Storage temperature | ℃ | -40~+85 | | |
| Max DC input voltage | V | ±20 | | |
| Max RF input power | dBm | +28 | | |
| Max input optical power | mW | 200（APE Process） | | |

**Ordering Info:**

**MP-PMD-W-BW-Y-Z-AB-CD**

**PM:Phase Modulator**

**W Wavelength:**

**0850: 850nm**

**1064: 1064nm**

**1310:1310nm**

1550: 1550nm

**BW: Bandwith**

0.3G represents >300MHz

10G represents >10GHz

40G represents >40GHz

Y: Input optical fiber

P: Polarization-maintaining fiber (PMF)

S: Single-mode fiber (SMF)

Z: Output optical fiber

P: Polarization-maintaining fiber (PMF)

S: Single-mode fiber (SMF)

AB: Input optical fiber connector

00: Bare fiber

FA: FC/APC

FC: FC/SPC

**CD: Output optical fiber connector**

**00: Bare fiber**

**FA: FC/APC**

**FC: FC/SPC**