

0802 Electro-Optic Bias-Free Modulator

IM-BF1001



Compact Bias-Free, Single Polarization Intensity Modulator, 3 GHz Bandwidth

The 3 GHz bias-free intensity modulator is housed in a compact package. The bias point of the Mach Zehnder Interferometer (MZI) is set to operate at the half-intensity point (quadrature). Due to this unique design, a complicated bias control circuit is not required. The modulator provides superior signal quality over a wide range of wavelength in the C and L-bands. This modulator can be used to modulate unpolarized light source such as: tunable lasers and ASE sources. These devices have a bandwidth of >3 GHz that can be used for both analog modulation, optical pulse generation, and digital data modulation. This device is built with proton exchange waveguide, so it contains a built in polarizer.

FEATURES

- Bias-free Operation for Fast Transmitter Development and Manufacturing
- Built-in 20 dB Variable Optical Attenuator
- Single Package for Less Splicing, Lower Overall Insertion Loss and More Usable Board Space
- 1535 nm to 1565 nm Operation, L-band Versions Available
- Low Drive Voltage, Compatible with Commercial Drivers
- Low Chirp for max. Transmission Distance (1000 km min.)
- Voltage-controlled Lithium Niobate Attenuator Provides Proven High Reliability

USE IN

- Medium and Long-haul DWDM Transmission Requiring Dynamic Optical Power Leveling
- Transmitters with Limited Component Space

Order notes to our customers: The default parameters are as follows. For special needs, please contact sales.
1) Connector FC/APC, 900 um, 1 m by default for all devices except for high power devices.
2) Slow axis working, fast axis blocked, connector key is aligned to slow axis by default for PM devices.

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|---------------------------------|---|-----------------------------------|
| Waveguide Process | Proton Exchange (PE) + Titanium Indiffused (TI) | |
| Integrated Photodiode | No | |
| Operating Wavelength Range | 1530 nm to 1610 nm | |
| Insertion Loss | 4 dB typ.; 6.5 dB max. | |
| On/Off Extinction Ratio | 27 dB typ. | |
| Optical Return Loss | 45 dB min. | |
| Drive Voltage V _{pi} | 3.2 V typ. | |
| Electro-optic-bandwidth (-3 dB) | 3.0 GHz typ. | |
| RF Return Loss | RF Port | 10 dB min. from 0.03 GHz to 3 GHz |
| RF Input Power | 24 dBm | |
| RF Impedance | 50 Ohm | |
| Drive Voltage V _{pi} | Bias Port | NA, Bias Free |
| Input Impedance | | NA |
| Input Fiber | PANDA-900 micron Loose Tube | |
| Output Fiber | SMF-28-900 micron Loose Tube | |
| Input Connector | FC/UPC (PM) | |
| Output Connector | FC/UPC | |
| RF Connector | Pins (3) | |
| Bias Connector | NA | |
| Dimension | 42x10x5.5 mm | |
| Operating Temperature Range | 0°C to +70°C | |
| Storage Temperature Range | -40°C to +80°C | |

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