IMP-1550-40-PM

DEVICE

1550 nm, 40 GHz Intensity Modulator w/PM Output

OVERVIEW

The Optilab IMP-1550-40-PM is a Mach-Zehnder interferometer-based intensity modulator designed for C band optical wavelength. The optical waveguide is fabricated with Annealed Proton Exchange(APE) process on X-cut single crystal lithium niobate material. It features a zero-chirp design and polarized input / output with PM fiber pigtails. Applications include digital transmission up to 40 Gb/s, analog RFoF transmission to 40 GHz, optical pulse generation, mode-locked fiber laser and microwave optical link. Thanks to our proprietary APE technology, IMP-1550-40-PM can handle input power beyond 100mW and is a bias-stabilized modulator. Contact Optilab for more information.

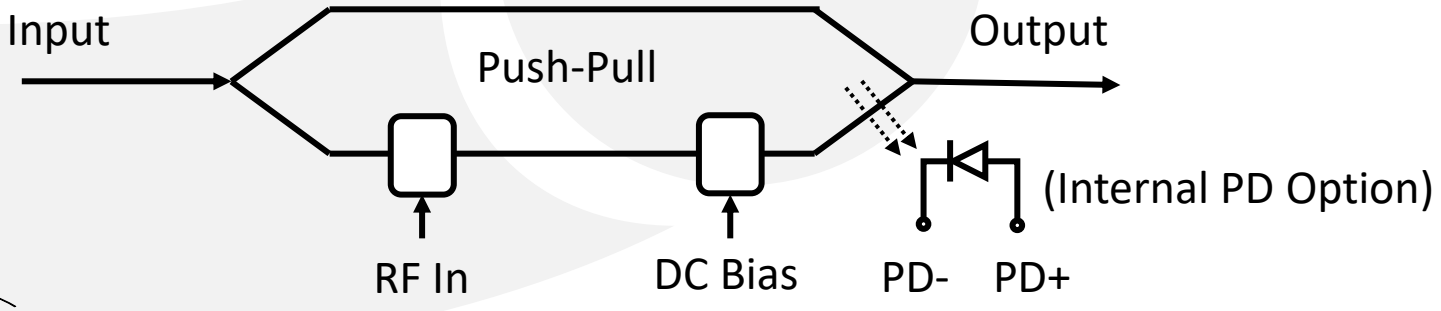
FEATURES

- PM fiber output
- High Optical Input
- Zero chirp design
- 1525-1575nm operating wavelength
- High Extinction Ratio (HER) Available
- Temperature range of -5°C to 70°C

USE IN

- RF over fiber
- Pulse generation
- MOPA
- Analog modulation up to 40 GHz
- Active mode locked laser
- Microwave Photonics Link

FUNCTIONAL DIAGRAM



IMP-1550-40-PM

SPECIFICATIONS

GENERAL

Operating Wavelength	1525 nm to 1575 nm
Insertion Loss	4.2 dB typical, 5.0 dB max.,
Static Extinction Ratio	≥ 20 dB, ≥ 30 dB for HER version
Chirp Value	± 0.1 max.
Optical Return Loss	≤ -40 dB, -50 dB typical
E to O S21 3dB Bandwidth (ref to 2GHz)	≥ 26 GHz, 30 GHz typ.
E to O S21 6dB Bandwidth (ref to 2GHz)	≥ 40 GHz
Electrical S11 Return Loss	≤ -7 dB up to 30 GHz
RF Port Vπ @ 1GHz	≤ 7.2 V, 6.5 V typical
Bias Port Vπ @ 1kHz	≤ 8 V, 7 V typical
RF Port Impedance	50 Ω
Bias Port Impedance	≥ 1 MΩ
Internal PD Responsivity	> 10 mA/W

Mechanical

Input/Output Fiber Type	Corning PM15-U40D, Panda
Fiber Length	1 m typical, 0.7 m min.
Input Connector	PM FC/APC, slow axis aligned to narrow Key
Output Connector	PM FC/APC, slow axis aligned to narrow Key
RF Port Connectors	Anritsu V female (1.85 mm)
Cabling	900 um loose tubing
Dimensions	87 mm x 14.5 mm x 10 mm

Absolute Maximum Ratings

Operating Temperature	-5 °C to +70 °C
Storage Temperature	-40 °C to +85 °C
Operating Humidity	0% to 85% Relative Humidity, Non-Condensing
Maximum RF Input Power	+25 dBm
Maximum DC Bias Voltage	+/- 25 V
Maximum Optical Input Power	100 mW

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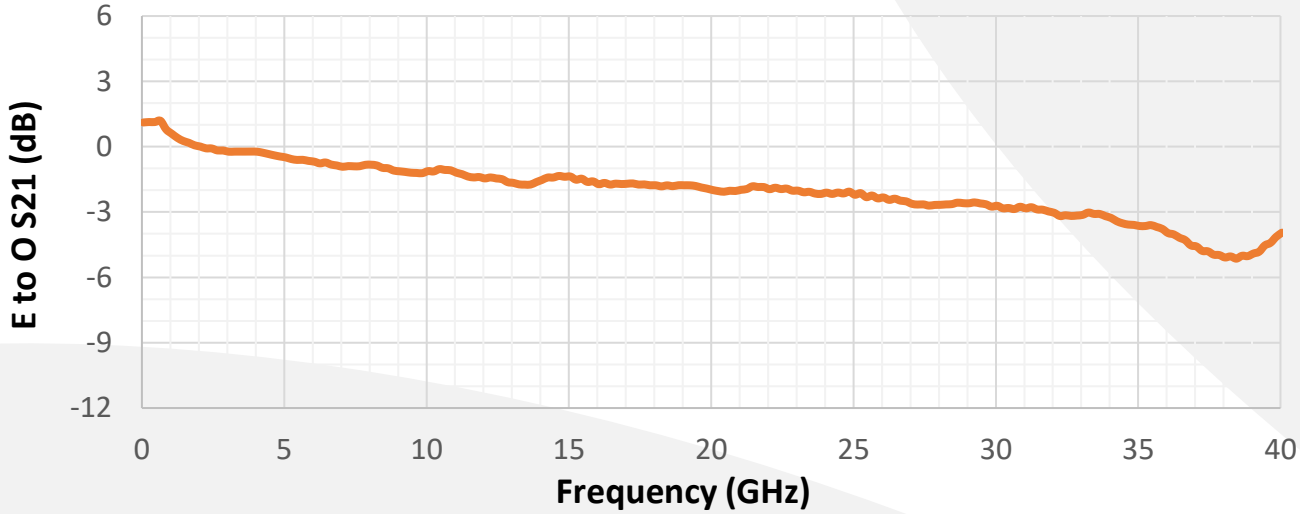
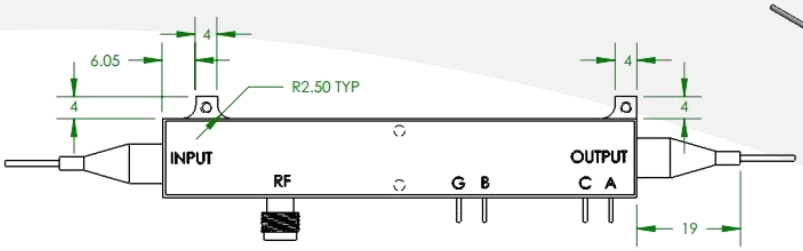
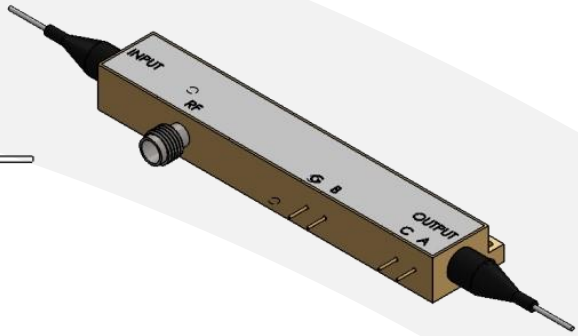
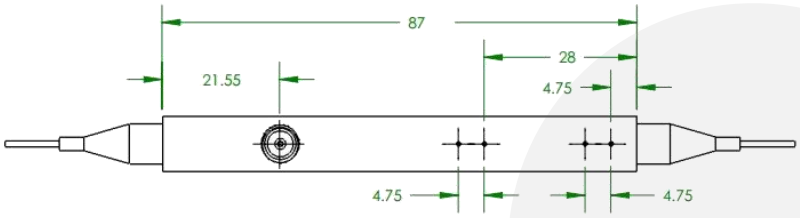
Typical S21 Response

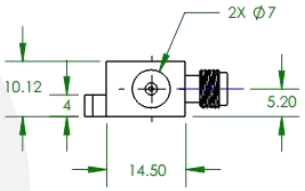


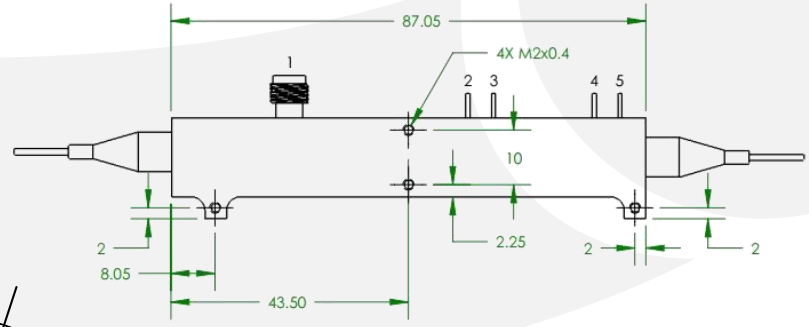
MECHANICAL DRAWING











PIN #	Description
1	RF Input
2	Case Ground
3	DC Bias
4*	PD Cathode
5*	PD Anode

* For Internal PD Option

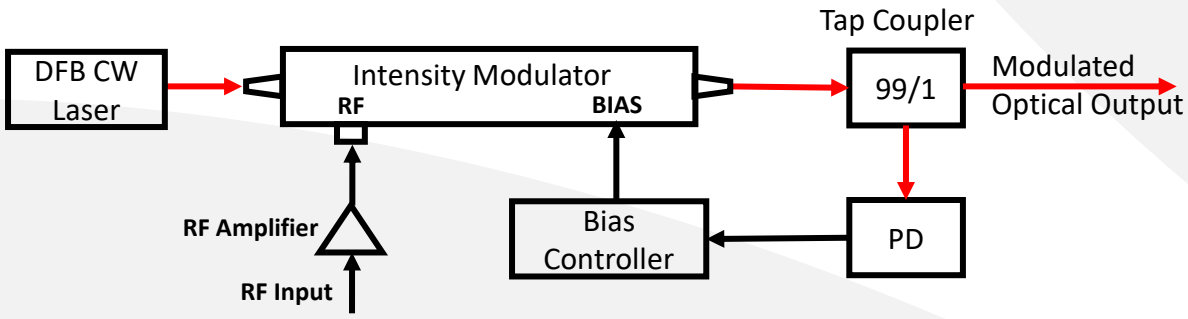
IMP-1550-40-PM

ORDERING OPTIONS

IMP-1550-40-PM-XX

XX PD: Integrated Internal Power Monitor PD
HER: High Extinction Ratio, ≥ 30 dB
LIL: Low Insertion Loss, ≤ 3.5 dB

Application Diagram

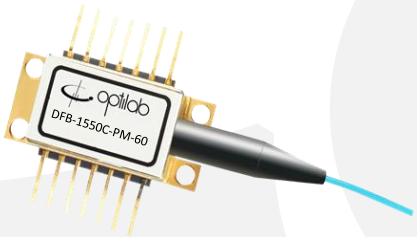


Related Product

- **BCB-4: Automatic Bias Controller**

The Optilab BCB-4 is a compact automatic bias control board fully compatible with IMP-1550-40-PM modulator. It supports bias mode in Q+, Q-, MIN, MAX and Manual operation.

- **DFB Laser: CW Seed Laser**



The Optilab DFB-1550C-PM laser is a 1550 nm CW DFB laser diode with polarization maintaining optical output up to 60 mW. It is often used as the seed laser for IMP-1550-40-PM modulator input.

- **1% Tap Coupler, Polarization Maintained**

C2200-P