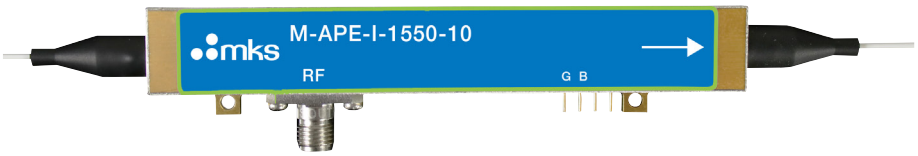
M-APE-I-1550-10

1550 nm, 10 GHz Intensity Modulator w/PM Output

The M-APE-I-1550-10 is a 10 GHz Intensity Modulator that is manufactured with Annealed Proton Exchange(APE) process, it features a zero-chirp design and Polarization Maintaining(PM) fiber output. M-APE-I-1550-10 features 10 GHz E/O bandwidth, a highly linear transfer function and excellent extinction ratio. Applications include digital transmission up to 12.5 Gb/s, analog RFoF transmission to 10 GHz, optical pulse generation, modelocked fiber laser and microwave optical link. The M-APE-I-1550-10 is compatible with a wide variety of modulator drivers, and a separate bias port allows the modulator to operate at specific points of the transfer function.

The M-APE-I-1550-10 Modulator is designed for external modulation of 1550 nm laser up to 10 GHz or 12.5 Gb/s. It is also applicable for pulse generation for Master Oscillator Power Amplifier(MOPA) configuration. Due to proprietary APE technology, M-APE-I-1550-10 can handle up to 100mW input optical power. It has a wide operating temperature tolerance ranging from -30°C to +70°C. Contact MKS for more information.



Features & Uses

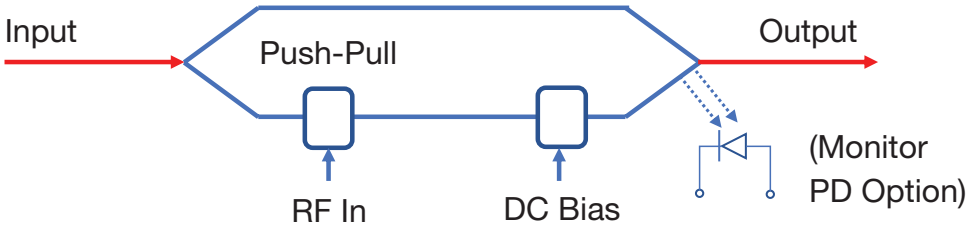
Features

- PM fiber output
- High input power
- Zero chirp design
- Internal PD option
- 1520 -1580 nm operating wavelength
- High Extinction Ratio (HER) Available
- Temperature range of -30°C to 70°C

Benefits of Use

- RF over fiber
- Pulse generation
- MOPA
- Analog modulation up to 10 GHz
- Active mode locked laser
- Satellite Link

Functional Diagram



Specifications

GENERAL

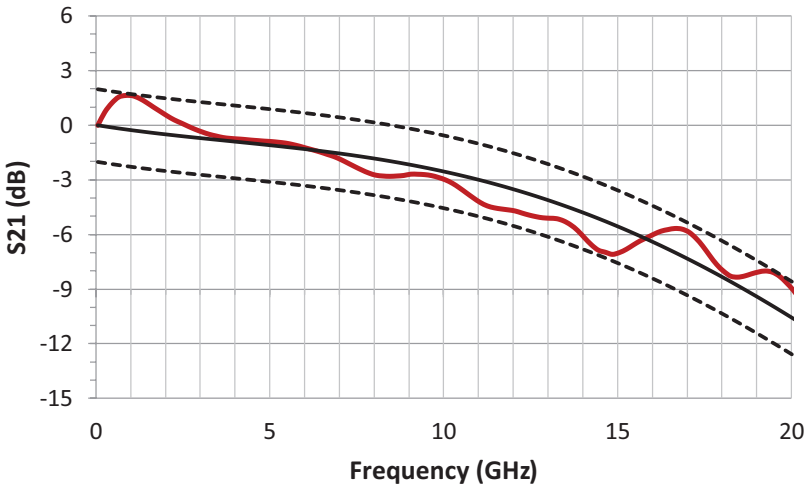
Maximum Input Power	100 mW
Operating Wavelength	1550 ± 30 nm
Chirp Value	≤ 0.2
Insertion Loss	4.5 dB typ., 5.0 dB max.
Extinction Ratio	≥ 20 dB standard. ≥ 30 dB HER version
Optical Return Loss	≤ -45 dB
S21 3 dB Bandwidth	7 GHz min., 10 GHz typ.
Polarization Extinction Ratio	17 dB min., 20 dB typ.
S11 Return Loss	≤ -7 dB up to 10 GHz
RF Vπ (@ 1 GHz)	6 V typ. , 7 V max.
RF Input Power	26 dBm max
Impedance (RF Port)	50 Ω typ.
Bias Vπ (@ 1 kHz)	6.8V typ., 7.5V max.
Impedance (Bias Port)	1 MΩ min
Internal PD Responsivity	> 10 mA/W

MECHANICAL

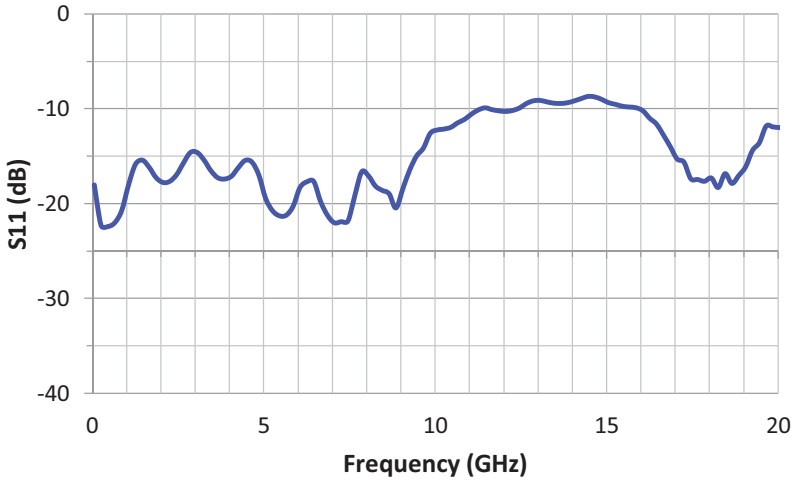
Operating Temperature	-30 °C to +70 °C
Storage Temperature	-50 °C to +80 °C
Operating Humidity	0% to 90% Relative Humidity
Input/Output Fiber Type	Panda PM15-U40D, 400um buffer
Input Connector	PM FC/APC, slow axis aligned to Key
Output Connector	PM FC/APC, slow axis aligned to Key
Crystal Orientation	X-cut, Y-propagating
Waveguide Process	Annealed Proton Exchange (APE)
RF Port Connectors	2.92 mm Female (K Compatible)
Cabling	900 um loose tubing
Dimensions	96 mm x 14 mm x 8.5 mm

SAMPLE S21 AND S11 BANDWIDTH

S21

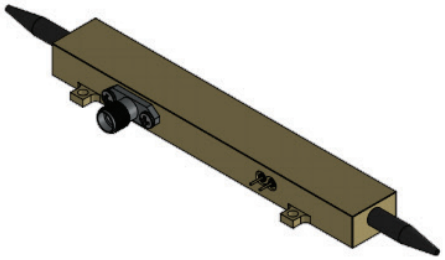


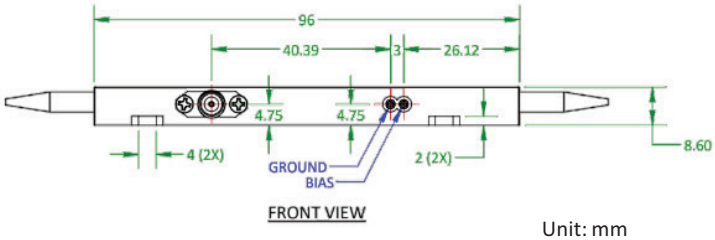
S11



Mechanical Drawing

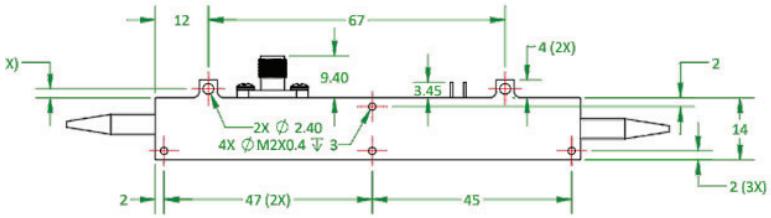
IMP-1550-10-PM Housing, No Monitor PD





FRONT VIEW

Unit: mm

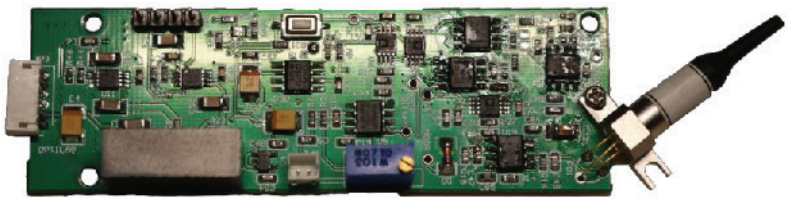


BOTTOM VIEW

PIN #	Symbol
G	GND
B	BIAS

Available Automatic Bias Controller

BCB-4



The BCB-4 is a compact bias control board designed for M-APE-I-1550-20 modulator

DS-062307 M-APE-I-1550-10 Datasheet_07/23

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