QPSK-OM-12

DEVICE

Optical IQ Modulator, 10 GHz Bandwidth

OVERVIEW

The Optilab QPSK-OM-12 is a 10 GHz IQ modulator. It consists of a dual parallel Mach-Zehnder (MZ) interferometer modulators embedded in a main MZ super-structure, also known as a nested MZI modulator. This IQ modulator features an analog bandwidth up to 10 GHz and low drive voltage to support 2Vpi drive requirement. The use of X-cut Lithium niobate and symmetrical design ensure very low chirp and skew between I and Q channels. Contact Optilab for more information.

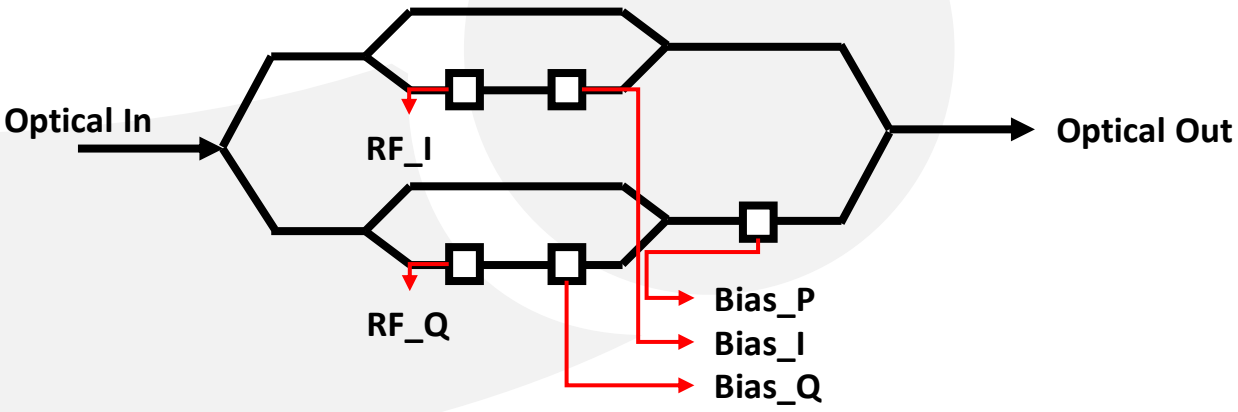
FEATURES

- 10 GHz Analog Bandwidth
- Up to 24 Gb/s Data Rate
- Low Drive 7.5Vpp
- Dual MZI parallel with two RF input
- High Extinction Ratio
- Low Chirp

USE IN

- QPSK / DQPSK Transmission
- SSB Suppressed Carrier Modulation
- QAM / OFDM
- Free Space Communication
- Research and Development
- Coherent Transmission / Sensing

FUNCTIONAL DIAGRAM



QPSK-OM-12

SPECIFICATIONS

OPTICAL & ELECTRICAL

Operating Wavelength	1528 to 1568 nm
Insertion Loss	≤ 7.5 dB
Extinction Ratio (I, Q and Phase)	≥ 20 dB
Optical Return Loss	≤ -40 dB
S213dB Bandwidth	≥ 7 GHz, 10 GHz typical
S11 Return Loss	≤ -10 dB up to 10 GHz
RF Vπ @ 1 GHz	≤ 3.8 V
Bias Vπ, I, Q and Phase	≤ 10 V
RF Skew (I-Q)	+/- 30 ps
Chirp	+/- 0.2 max

MECHANICAL

RF Input connectors	SMA Female
Input Fiber	Panda PMF, PM15-U25D, with 0.9mm loose tube
Input Fiber Connector	PM FC/APC, key aligned to slow axis
Output Fiber	Panda PMF, PM15-U25D, with 0.9mm loose tube
Output Fiber Connector	PM FC/APC, key aligned to slow axis
Fiber Length	1 m typical, 0.7m minimum
Dimensions	120mm x 12mm x 8.5mm

ABSOLUTE MAXIMUM

Optical Input Power	50 mW
RF Input Power	22 dBm
Bias Voltage, single ended	+/- 20V
Operating Temperature (standard)	-5 °C to +70 °C
Storage Temperature	-30 °C to +80 °C
Operating Humidity	5% to 85% Relative Humidity

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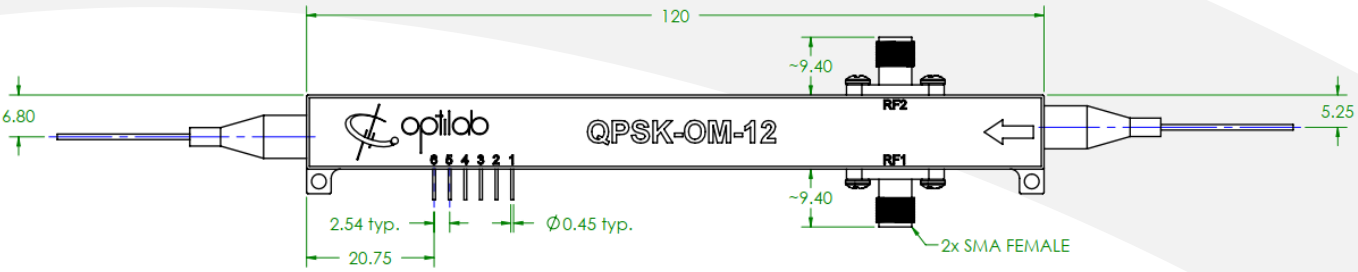
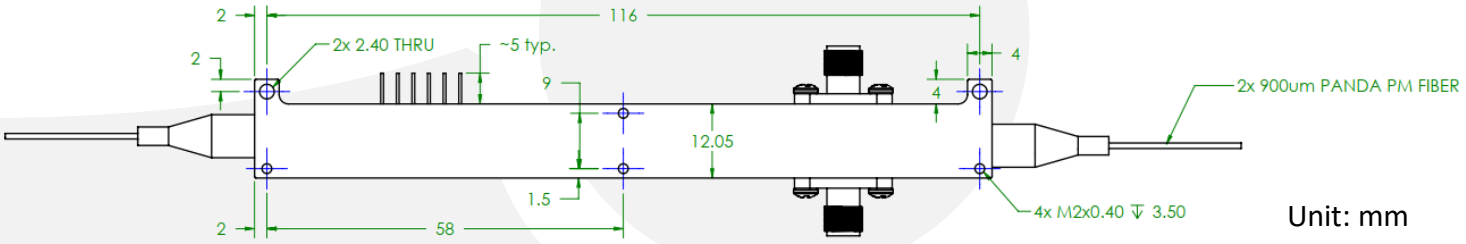
MECHANICAL DRAWING

Pin #	Description
RF1	MZI 1 RF Input
RF2	MZI 2 RF Input
1	MZI 1 Bias -
2	MZI 1 Bias +
3	MZI 2 Bias -
4	MZI 2 Bias +
5	Phase Bias +
6	Phase Bias -





Unit: mm