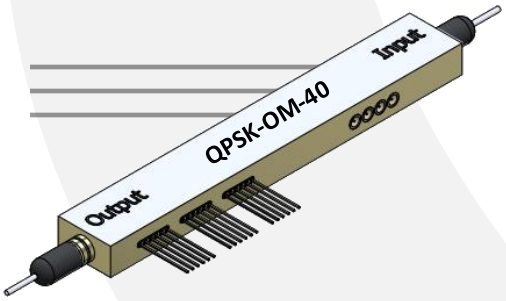
QPSK-OM-40



DEVICE

Optical IQ Modulator, 40 GHz Bandwidth

OVERVIEW

The Optilab QPSK-OM-40 is a 40 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 high bandwidth up to 40 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.

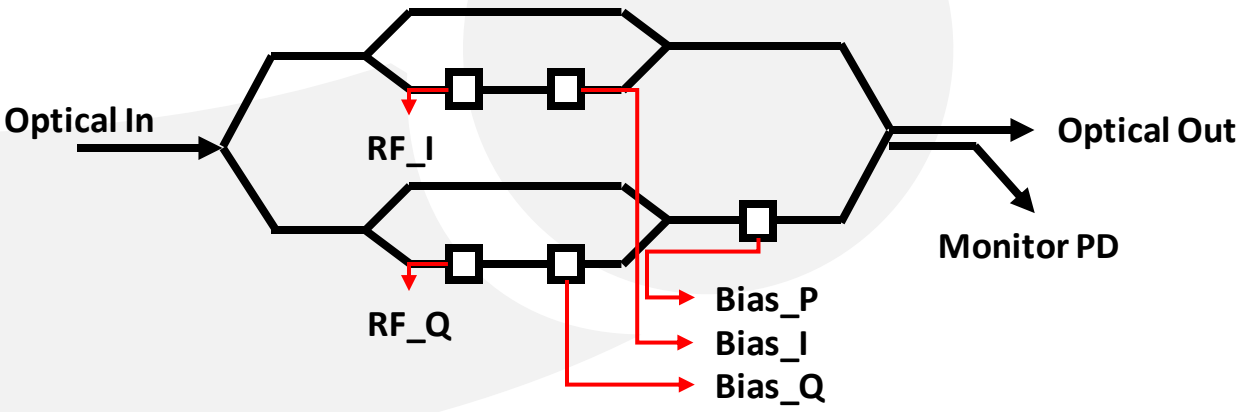
FEATURES

- 40 GHz Analog Bandwidth
- Up to 60 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-40

SPECIFICATIONS

OPTICAL & ELECTRICAL

Operating Wavelength	1528 to 1568 nm
Insertion Loss	8 dB typ., 9dB max
Extinction Ratio (I, Q and Phase)	≥ 22 dB
Optical Return Loss	≥ 35 dB
S213dB Bandwidth	≥ 35 GHz, 40 GHz typical
S11 Return Loss	≤ -10 dB up to 30 GHz
RF Vπ @ 32 Gb/s	≤ 3.8 V
Bias Vπ, I, Q and Phase	≤ 15 V, 10V typical
RF Skew (I-Q)	+/- 30 ps
Chirp	+/- 0.2 max
Monitor PD Responsivity	≥ 50 mA/W

MECHANICAL

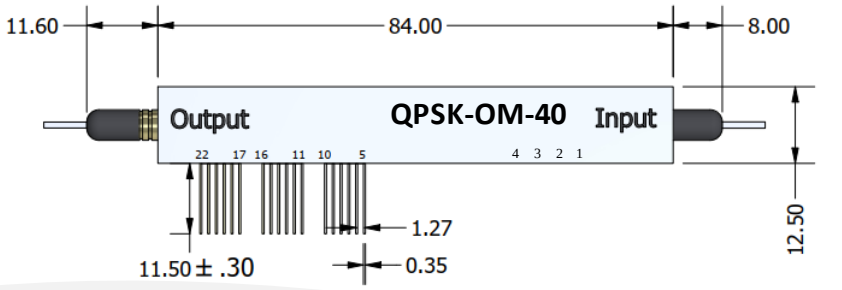
Input Fiber	Panda PMF, PM15-U25D, with 0.9mm loose tube
Input Fiber Connector	PM FC/APC, key aligned to slow axis
Output Fiber	SMF, ITU G652D Complied, with 0.9mm loose tube
Output Fiber Connector	FC/APC
RF Input connectors	G3PO Male, single ended
Fiber Length	1 m typical, 0.7m minimum
Dimensions	84mm x 12.5mm x 6.5mm

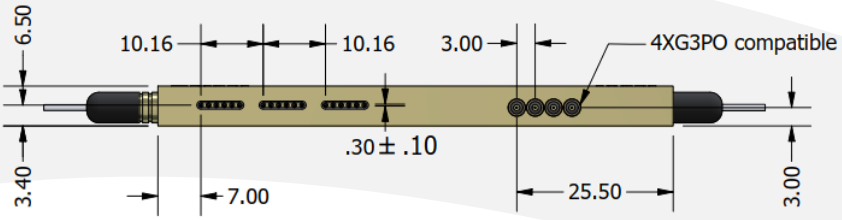
ABSOLUTE MAXIMUM

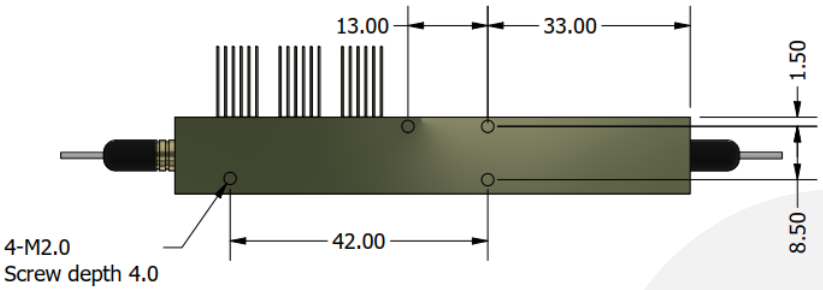
Optical Input Power	50 mW
RF Input Power	22 dBm
Bias Voltage, single ended	+/- 22V
Monitor PD Reverse Bias Voltage	15V
Monitor PD Forward Current	10 mA
Operating Temperature (standard)	-5 °C to +70 °C
Storage Temperature	-30 °C to +80 °C
Operating Humidity	5% to 85% Relative Humidity

QPSK-OM-40

MECHANICAL DRAWING







Pin #	Description	Pin #	Description
1	NC	12	NC
2	NC	13	Bias Phase +
3	RF IN (I)	14	Bias Phase -
4	RF IN (Q)	15	NC
5	Bias Q+	16	NC
6	Bias Q-	17	NC
7	Bias I+	18	PD Anode
8	Bias I-	19	PD Cathode
9	NC	20	GND
10	NC	21	NC
11	NC	22	NC