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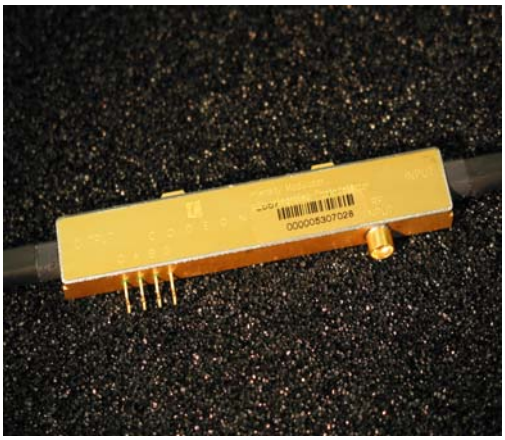
Mach-10™ 053/065: 10G Phase Modulator

7.1.2.SP.0053 Rev C

Description

COVEGA's Phase Modulator was designed for customers seeking low optical loss, low drive voltage and a small form-factor. The increased bandwidth allows for chirp control in high-speed data communications; supporting data rates from 9.953 Gb/s to 12.5 Gb/s. The modulator is also ideal for applications in coherent communications, sensing, all-optical frequency-shifting, and data encryption.

The Phase Modulator is based on Titanium-indiffused z-cut Lithium Niobate. For ease of system integration it is offered with internal termination and optional polarization-maintaining output fiber. This device is available with, or without, an internal optical polarizer positioned at the device output.



Applications

- ✓ Chirp control for high-speed data communications
- ✓ Coherent communications
- ✓ Optical sensors
- ✓ All-optical frequency shifting

Features

- → Superior Frequency Performance
- → Small Size
- → Low Drive Voltage
- → Low Loss
- → C & L Band Operation
- → Internal Termination and Optional Polarizer

Ordering Information

Mach-10 053/065-10-X-X-X-XXX

Part #	Bandwidth	Output Fiber Type	Input Connector	Output Connector	Pin Leads
065 = with optical polarizer	10 = 10 GHz	S = SMF*	S = SC/PC*	S = SC/PC*	BNL = Bent*
053 = without optical polarizer		P = PMF	B = Bare Fiber	B = Bare Fiber	STL = Straight
			F = FC/uPC	F = FC/uPC	
			L = LC/PC	L = LC/PC	
			A = FC/aPC	A = FC/aPC	
			M = Mu	M = Mu	

* Default options unless otherwise specified

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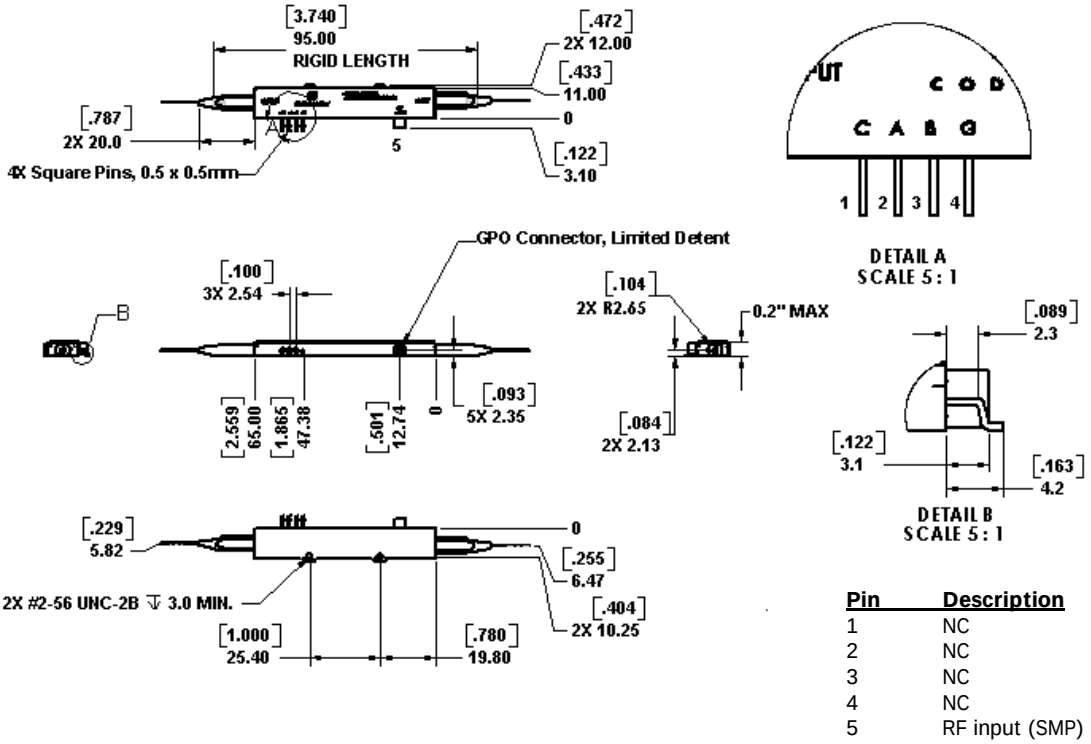
Specifications

Parameter		Min	Typ	Max	
Operating Case Temperature	T_{CASE}	0		70	C
Operating Wavelength	λ	1525		1605	nm
Optical Insertion Loss (Connectorized)	I.L.		3.5	4.5	dB
Insertion Loss Variation (EOL)	ΔI.L.	-0.5		0.5	dB
Optical Return Loss		40			dB
Bit Rate Frequency	f_{BR}	9.953		12.5	Gb/s
E/O Bandwidth (-3 dB with Linear Fit)	$f_{c\text{-}3dB}$	10.0/12.0			GHz
S_{11} (dc to 10 GHz)			-12	-10	dB
RF Drive Voltage (PRBS)	V_{PRBS}		4.5	5	V
Vπ (@ DC)			3.5	4	V
SPECIFICATIONS SUBJECTED TO CHANGE WITHOUT NOTICE					

Packaging



Pin	Description
1	NC
2	NC
3	NC
4	NC
5	RF input (SMP)

Dimensions in mm unless otherwise specified; Tolerances are ± 0.05 (decimals) ± 1 (angles)