

Mach-40™ 085: 40 Gb/s Fixed Chirp Intensity Modulator with DC Bias and integrated PD

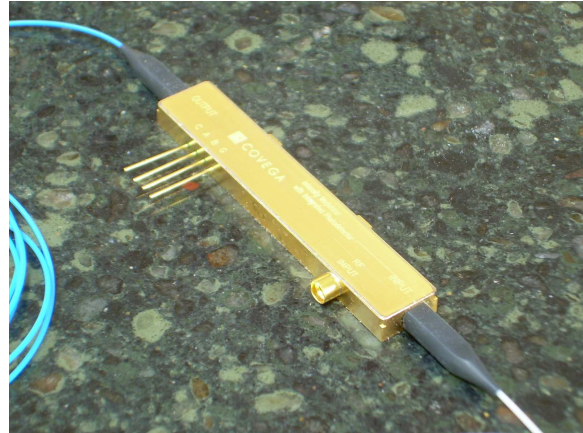
7.1.2.SP.0085 Rev A

Limited Availability

Description

The 40 Gb/s Intensity Modulator with External DC Bias is a revolutionary, high performance External Optical Modulator designed for customers developing next generation 40G transmission systems. The 40 Gb/s Intensity Modulator with External DC Bias is based on Titanium-indiffused z-cut Lithium Niobate and uses a Mach-Zehnder interferometric architecture. The 40 Gb/s Intensity Modulator has sufficient bandwidth for customers requiring greater bandwidth to implement today's most demanding FEC schemes.

The 40 Gb/s Intensity Modulator with External DC Bias is ideal for both NRZ and RZ data format solutions. The 40 Gb/s Intensity Modulator with External DC Bias and an Integrated Photodetector is a single-ended drive configuration.



Applications

- ✓ High-Speed Data Communications
 - SONET OC-768 Interfaces
 - SDH STM-256 Interfaces
 - WDM transmission at 40 Gb/s
- ✓ Undersea communications
- ✓ Internet router interfaces
- ✓ High-speed test equipment

Features

- Superior Frequency Performance
- Industry Leading Low Drive Voltage
- Long-Term Bias Stability
- Zero Chirp
- Hermetic Packaging - High Reliability
- C & L Band Operation
- GPP0 Connector

Ordering Information

Mach-40 085-40-X-X-X-NS

Part #	Bandwidth	Output Fiber Type	Input Connector	Output Connector	Bias Operating Point	Pin Leads
085	40 = 30 GHz*	S = SMF*	S = SC/PC*	S = SC/PC*	NS = Negative Slope	BNL = Bent *
		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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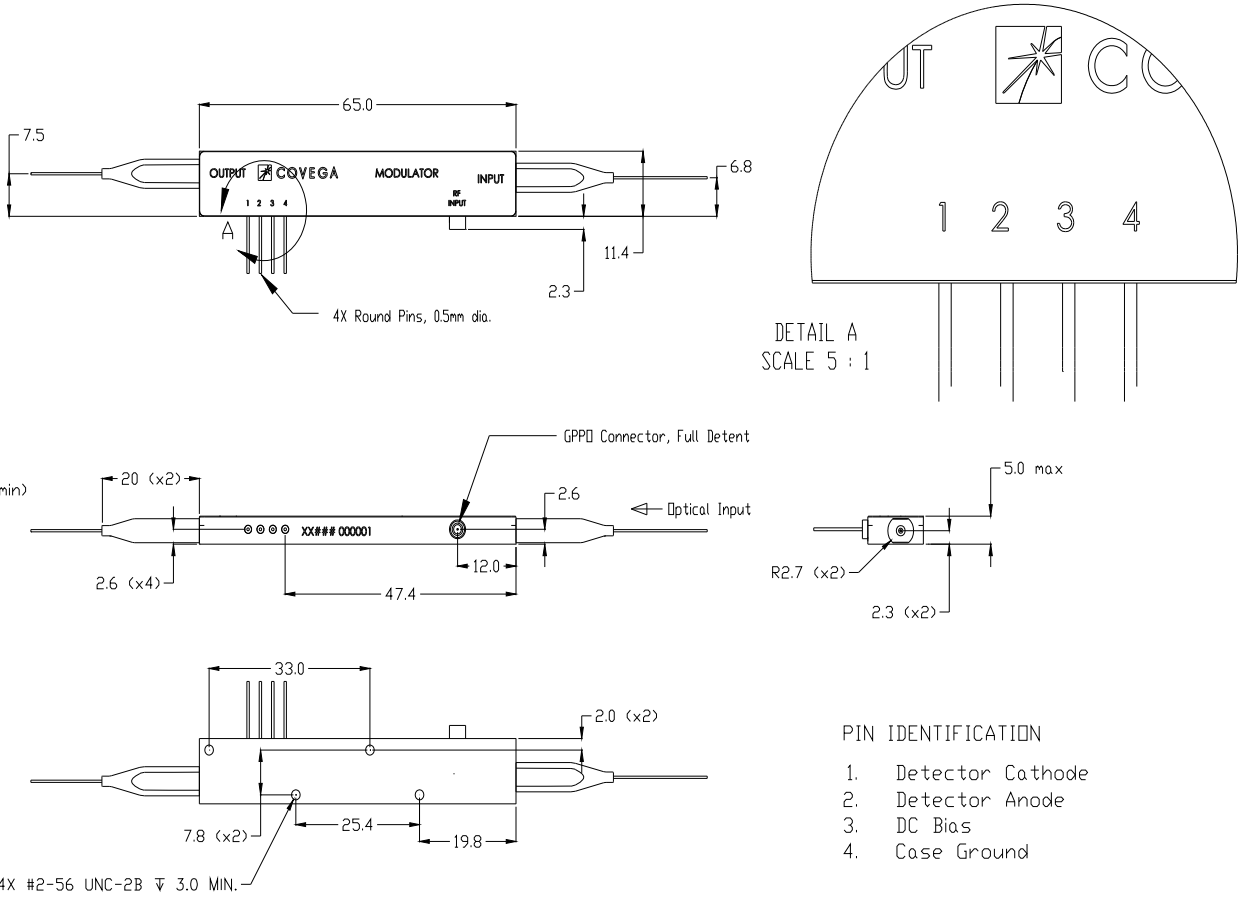
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Typical Electro-Optical Performance Data


Specifications

Parameter		Min	Typ	Max	Units
Operating Case Temperature	T_{CASE}	0		70	C
Operating Wavelength	λ	1525		1605	nm
Optical Insertion Loss (Connectorized)	I.L.		4.0	5.0	dB
Modulator Chirp Parameter	α	-0.7		+0.7	
Optical Return Loss		40			dB
Optical On/Off Extinction Ratio (@ DC)	E.R.	20			dB
Optical Extinction Ratio (PRBS)	E.R.	12.5	13		dB
Bit Rate Frequency	f_{BR}		40		Gb/s
E/O Bandwidth (-3 dB with Linear Fit re. 130 MHz)	f_{c-3dB}	30	35		GHz
S11 (dc to 30 GHz)			-12	-10	dB
S11 (30 to 40 GHz)			-10	-8	dB
RF Drive Voltage (PRBS)	V_{PRBS}		6.5		V
Vpi RF Port (@ 1GHz)	V_{RF}			5.5	V
Vpi Bias Port (@ DC)				10.0	V
DC Bias Voltage Range (EOL)	V_{BIAS}	-8		8	V
PD Responsivity (ref. to output power)		0.1		0.5	mA/mW
Output Optical Power Monitoring Range		-5		10	dBm
Output Monitor Variation		-0.5		0.5	dB
Monitor Photodiode Reverse Bias Voltage		-5.5		-3.0	V
RF Connector	GPPO - Connector				

Packaging


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