

# Finisar®

## GaAs 100G DP-IQ Modulator PCMO1332

### PRODUCT BRIEF

#### KEY FEATURES

- ▶ Long Haul transmission performance
- ▶ Designed for operation up to 32 Gbaud
- ▶ Bandwidth: > 25 GHz
- ▶ Low insertion loss: < 10 dB (both polarization channels)
- ▶ Low drive voltage: < 7 Vpp at 32 Gbaud
- ▶ Extremely low bias drifts
- ▶ Compliant with the OIF implementation agreement for "type 1" modulators

#### APPLICATIONS

- ▶ Polarization multiplexed BPSK, QPSK and QAM formats
- ▶ 100G, 400G transponders and linecards
- ▶ DWDM, Metro to Long Haul
- ▶ 200G 16-QAM transmitter for dual channel 400G

#### OVERVIEW

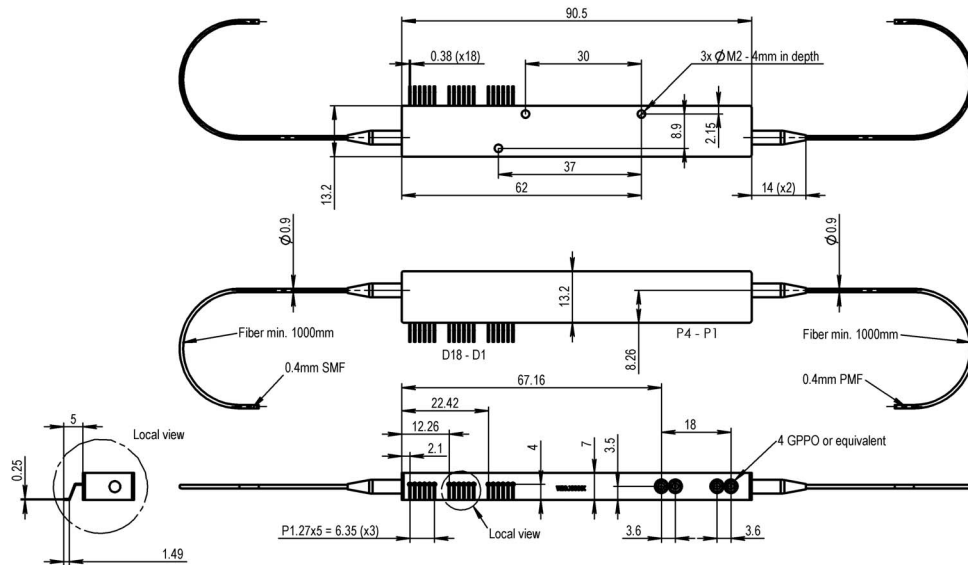
Finisar's PCMO1332 is a fully integrated polarization multiplexed QPSK optical modulator, based on gallium arsenide and designed for dual polarization optical phase shift keying up to 32 Gbaud per channel (128 Gb/s data rate). It is also the ideal solution for polarization multiplexed QAM (e.g. for 400 Gb/s transmission rate).

The die is fabricated using well proven and exercised high volume gallium arsenide processes used in the telecommunications industry. It offers market leading performance optimized for optical applications. Form, fit and function of the PCMO1332 is compliant with the OIF transmitter implementation agreement for "type 1" modulators.



# GaAs 100G DP-IQ Modulator

## MECHANICAL DIMENSIONS



## OPERATING CONDITIONS

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Case Temperature	$T_{case}$		-5		+75	°C
Relative Humidity	RH	non condensing	5		85	%
Wavelength Range	$\lambda$		1520		1580	nm
Substrate Bias Voltage	$V_{sub}$			12		V
Child MZI Control Bias Voltage Range (Differential)	$V_{ctrl1-4}$		-12		+12	V
Parent MZI Quadrature Control Bias Voltage Range (Differential)	$V_{ctrl5,6}$		-12		+12	V

## OPTICAL AND ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Optical Insertion Loss, X + L Polarization	IL	EOL, all operating conditions			10	dB
RF Half Wave Drive Voltage	$V_{amp}$	at 32 Gbaud PRBS		3.0	3.5	V
$V_{\pi}$ , Child RF Electrodes	$V_{\pi, RF}$	DC		3.0		V
$V_{\pi}$ , Child Bias Electrodes	$V_{ctrl1-4}$	DC		10.5		V
$V_{\pi}$ , Parent (Phase) Electrodes	$V_{ctrl5,6}$	DC		10.5		V
Electro Optical Response	E/O S21	3 dB point, 3 <sup>rd</sup> order polynomial fit	25	27		GHz
Electrical Return Loss	S11	0.15 GHz - 20 GHz	10	12		dB
Extinction Ratio, Child MZM	ER	low frequency	22	25		dB
Extinction Ratio, Parent MZM	ER	low frequency	22	25		dB

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