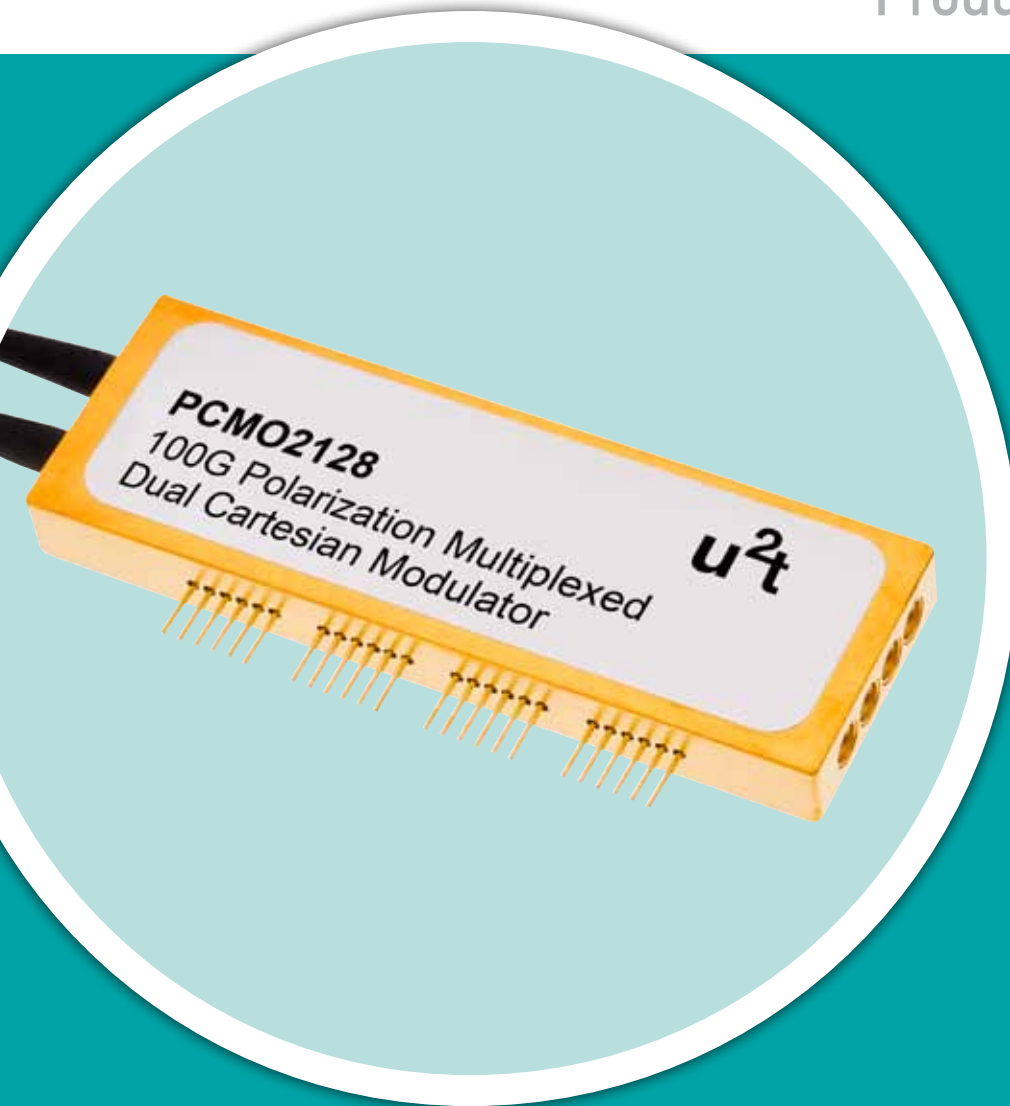


GaAs Broadband Polarization Multiplexed QPSK Optical Modulator

Product code: PCM02128



Features

- Polarization multiplexed Dual Cartesian electro-optic modulator
- Incorporates four Mach-Zehnder modulators in parallel
- Enables complete control of the optical intensity, phase and polarization
- Flat frequency response over 25 GHz
- Low drive voltage $V_{\pi} = 3.2V$

Applications

- Broadband digital communications (100 Gbits/s)
- Dual polarization QPSK and DQPSK transmission
- Suitable for Dual Polarization 8-PSK and QAM transmission

The PCM02128 is a low loss, high integrity polarization multiplexed dual Cartesian optical modulator (each Cartesian modulator can control the optical intensity and phase to reach any point in the complex plane) based on gallium arsenide designed for dual polarization optical phase shift keying over the frequency range DC to 25 GHz. The die is fabricated using well proven and exercised high volume gallium arsenide processes used in the telecommunications industry that offers market leading performance optimized for optical applications.

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GaAs Broadband Polarization Multiplexed QPSK Optical Modulator

Operation Conditions

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Operating case temperature range	T_{case}		0		70	°C
Relative humidity range	RH	Non condensing	5		85	%
Operating wavelength range	λ		1520		1580	nm
Substrate bias voltage	V_{sub}		12	15	18	V
Child MZI Quadrature Control Bias Voltage 1-4	$V_{ctrl1-4}$		-6		6	V
Parent MZI Quadrature Control Bias Voltage 5	V_{ctrl5}		-11		11	V
Polarization Converter Bias	V_{cvt}		-11		11	V
Polarization Converter Bias	V_{com}		-3		3	V

Optical and Electrical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Optical insertion loss	IL	Room temperature		10	11.5	dB
Half wave drive voltage	V_{π}	to 20 Gbit/s		3.2	3.4	V
Electrical to optical response	E/O S_{21}	S_{21} , 3 dB point	22	25		GHz
Extinction ratio	ER	Low frequency	18	20		dB

Mechanical Dimensions

