

GaAs Broadband Optical Modulator

Product code: MZM02120



Features

- Low drive voltage $V_{\pi} = 3$ V, optimized for both telecom and RF over fiber applications
- Velocity matched wave design
- Flat frequency response over 25 GHz
- Impedance matched to 50 Ω
- Negligible bias voltage drift

Applications

- Broadband digital communications
- RF over fiber
- Defense Systems

The MZM02120 is a low loss, high integrity Mach-Zehnder optical modulator based on gallium arsenide designed for general-purpose applications over the frequency range DC-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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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	1550	1580	nm
Substrate bias voltage	V_{sub}		5	10	12	V
Quadrature control bias voltage	V_Q		-5	± 1.5	5	V
RF input power	P_{in}				30	dBm
Optical input power (CW)	P_{opt}				23	dBm

Optical and Electrical Specifications

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Optical insertion loss	IL	Room temperature		5.8	7.0	dB
Drive voltage	V_{π}	to 10 Gbit/s		3.0	3.2	V
Electrical to optical response	E/O S_{21}	S_{21} , 3 dB point	20	25		GHz
Extinction ratio	ER	Low frequency	18	20		dB

Typical Performance and Mechanical Dimensions

