

GaAs Broadband Optical Modulator

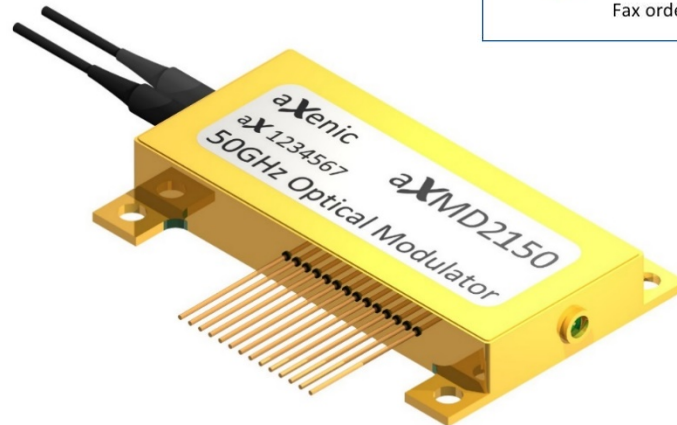
Product Code: aXMD2150-XX-XXX

Ordering Information:



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Product Description

The aXMD2150 is a compact, high-performance electro-optic modulator based on gallium arsenide (GaAs) guided-wave technology. It is ideal for broadband digital and analogue applications from DC to 60GHz where space and weight are at a premium. This linear Mach Zehnder device combines market leading performance in bandwidth and drive-power with a compact folded-optics configuration, which segregates RF and optical interfacing to opposing ends and helps preserve integrity of the RF feed. The GaAs chip at the heart of the unit is fabricated using industry-standard high-volume foundry processes, and features (in common with other GaAs devices) a high degree of environmental stability, eliminating the need for temperature control.

Features

- Low size weight and power
- Compact folded optical configuration
- Flat frequency response to 50 GHz
- Linear electro-optic response
- RF drive voltage ($V\pi$) less than 5V (DC)
- SMPM RF connector (opposite end to fibre I/O)
- Output monitor photodiode
- Environmentally stable and radiation tolerant
- Negligible long-term bias-point drift
- Temperature control not required

Applications

- Broadband digital communications (BPSK)
- RF over fibre
- Phased-array antenna remoting
- Aerospace and defense systems
- Satellite communications
- Free space optical links
- High throughput satellites

Last change: 10/10/18 RW	reviewed: 11/10/18 NC	approved: 11/10/18 SJC	file: DS_aXMD2150_SF_V2.docx
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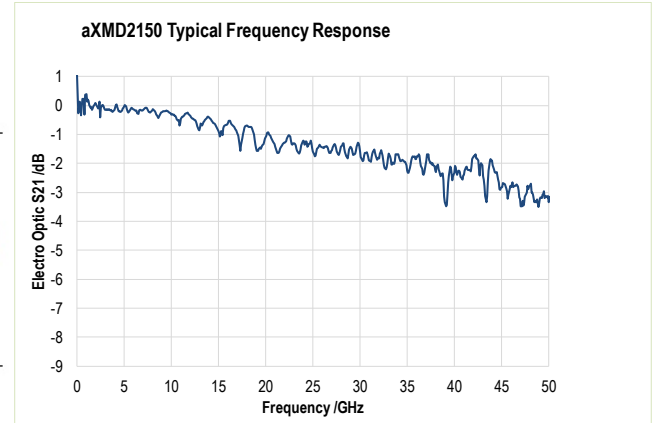
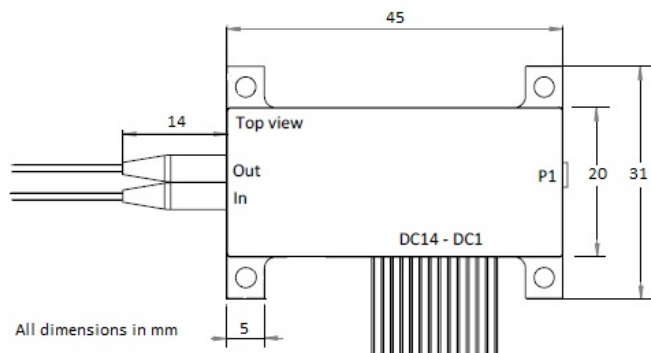
Optical and Electrical Specifications ¹⁾

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Optical Insertion Loss	IL			6	7	dB
RF Electrode V _{pi}	V _π	DC		4.6	5.5	V
Electrical to Optical Response	E/O S ₂₁	S ₂₁ , 3dB Point	40	45		GHz
Electrical Return Loss	E/E S ₁₁	S ₁₁ , DC-60GHz	8			dB
Optical Return Loss	RL		30			dB
Electrical to Optical Flatness ²⁾	E/O S ₂₁	0.15 – 30GHz			±0.8	dB
Extinction Ratio	ER	Low Frequency	20	23		dB
Bias Electrode V _{pi}	V _{pi}			7.5	10	V
Quadrature Control Point	V _{ctrl}		0	2	4	V

Notes:

- λ = 1550 nm, T = 25°C
- EO Flatness (ripple) is the deviation in measured S₂₁ from a smooth 3rd order polynomial fit.

Mechanical Dimensions, Frequency Response



Notes

- Any trademarks used in this document are properties of their respective owners.
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