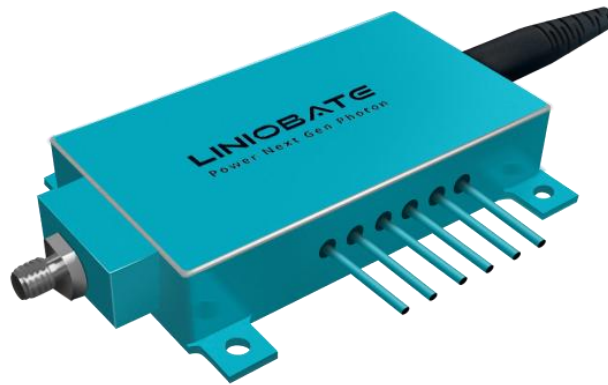


20GHz Thin Film Lithium Niobate Fiber Optical Intensity Modulator-Low Vp (Straight Type)



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Power Next Gen Photon

Overview

The Thin Film Lithium Niobate Fiberoptic Modulators (TLNM) series offers a low driving voltage of no exceed 1.5V and broadband operation up to 110 GHz, delivering exceptional efficiency and performance over traditional Lithium Niobate modulators. Leveraging thin-film LiNbO₃ technology, its reduce size waveguides optimize RF-to-optical conversion, making it ideal for ultra-high-frequency electrical-to-optical applications. A built-in bias control section with a micro-heater and photodetector ensures stable optical biasing via advanced feedback circuitry. High-speed modulation is facilitated through an SMA connector, with bias control applied via pins, while an optional automatic bias controller provides enhanced stability. Custom designs are available to meet specific application needs.

Features

- X-Cut Thin-Film LiNbO₃ Waveguides
- Operating Wavelength at 1530 - 1610 nm
- Bandwidth in Excess of 20 GHz
- Low Drive Voltage
- Single-End Drive(Optional)

Product Specifications

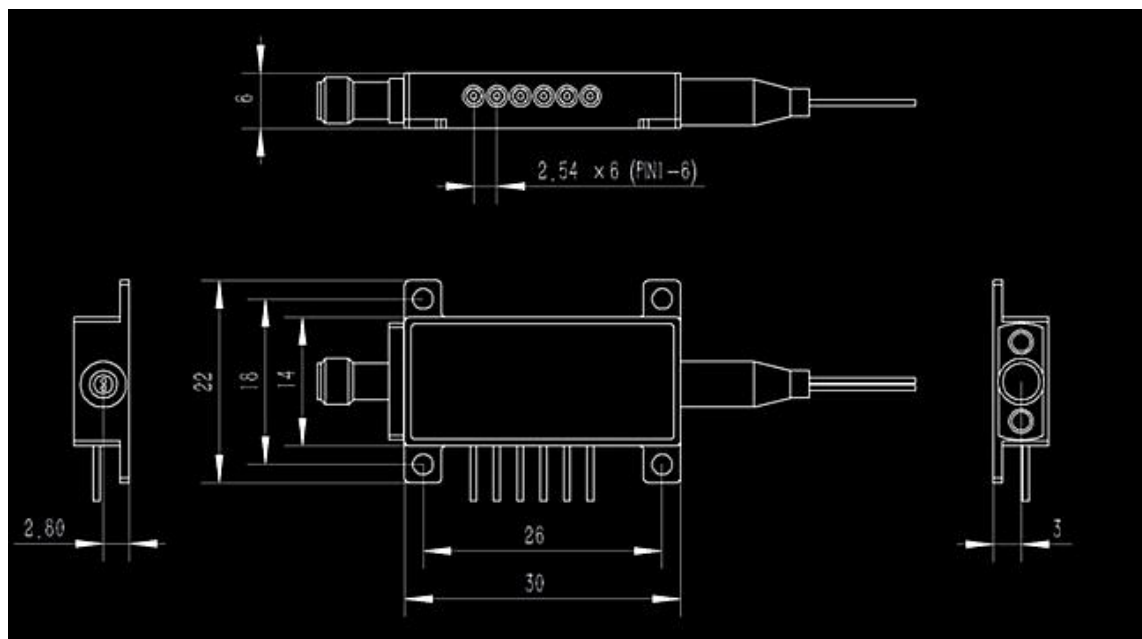
(Unless otherwise specified, all tests are conducted at 25°C)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Bandwidth	S21	Starting from 2 GHz		20		GHz
Return Loss	S11			-10		dB
Operating Wavelength	λ			1550		nm
Insertion Loss	IL	1550 nm CW, 0 dBm	4	4.5	5	dB
Extinction Ratio	ER			20		dB
Half-Wave Voltage	V π	1550 nm CW, f = 50 kHz		1.3	1.5	V

Maximum Absolute Ratings

Parameter Name	Symbol	Rated Value	Unit
Input Optical Power	Ps,o	23	dBm
Input Optical Return Loss	Ps,rf	23	dBm
Thermoelectric Cooler Voltage	VH	±8	V
Operating Temperature	TW	-40 ~ +85	°C
Storage Temperature	TS	-40 ~ +85	°C

Dimensions (unit mm)



Pin definitions

Pin	Symbol	Note
RF Port	RFIN	2.92 mm connector
Optical Fiber Input	OPIN	FC/APC, PMF
Optical Fiber Output	OPOUT	FC/APC, SMF
DC Bias Line 1	PIN1	TEC Positive
DC Bias Line 2	PIN2	TEC Negative
DC Bias Line 3	PIN3	Output MPD Positive
DC Bias Line 4	PIN4	Output MPD Negative
DC Bias Line 5	PIN5	Output MPD Positive
DC Bias Line 6	PIN6	Output MPD Negative