

R-TFLN-110G Ultra-high bandwidth strength modulator

Description

The thin-film lithium niobate ultra-high bandwidth intensity modulator is a high-performance electro-optical conversion device independently developed and owned by our company

Independent intellectual property rights. This product is packaged through high-precision coupling process technology, achieving a maximum electro-optical bandwidth of 3dB

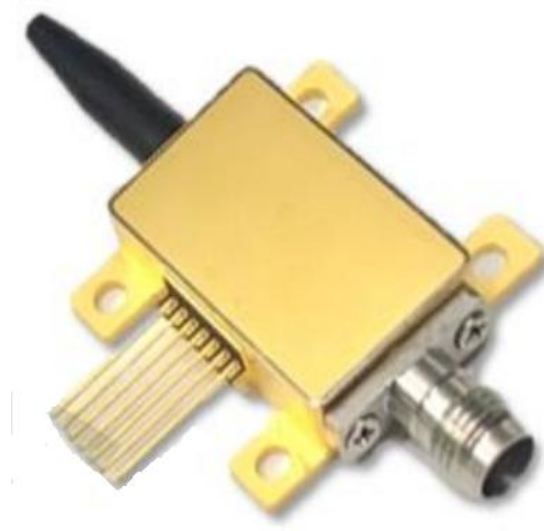
110GHz electro-optical modulation rate. Compared with traditional lithium niobate crystal modulators, this product features a low half-wave voltage and high stability.

The characteristics of small device size and thermo-optical bias control can be widely applied in digital optical communication, microwave photonics, and backbone communication networks

And fields such as communication-related scientific research projects.

Feature

- The radio frequency bandwidth can reach up to 110 GHz at most
- Low half-wave voltage
- Insertion loss is as low as 5 dB
- Small device size



Product parameters: C-band

Category	Parameter	Symbol	Unit	Indicator
Optical performance (@ 25 ° C)	Working wavelength (*)	λ	nm	~1550
	Optical Extinction Ratio (@ DC) (**)	ER	dB	≥ 20
	Optical return loss	ORL	dB	≤ -27
	Optical Insertion Loss	IL	dB	Maximum value: 6 Typical value: 5
Electrical performance (@ 25 ° C)	3 dB electro-optical bandwidth(Starting at 2 GHz)	S_{21}	GHz	Maximum value: 100 Typical value: 105
	Radio frequency half-wave voltage(@ 50 kHz)	V_{π}	V	≤ 4
	Heat-modulated bias half-wave power	P_{π}	mW	≤ 50
	Radio frequency return loss	S_{11}	dB	≤ -10
working conditions	Operating temperature (*)	T_0	°C	-20~70

* Customizable.

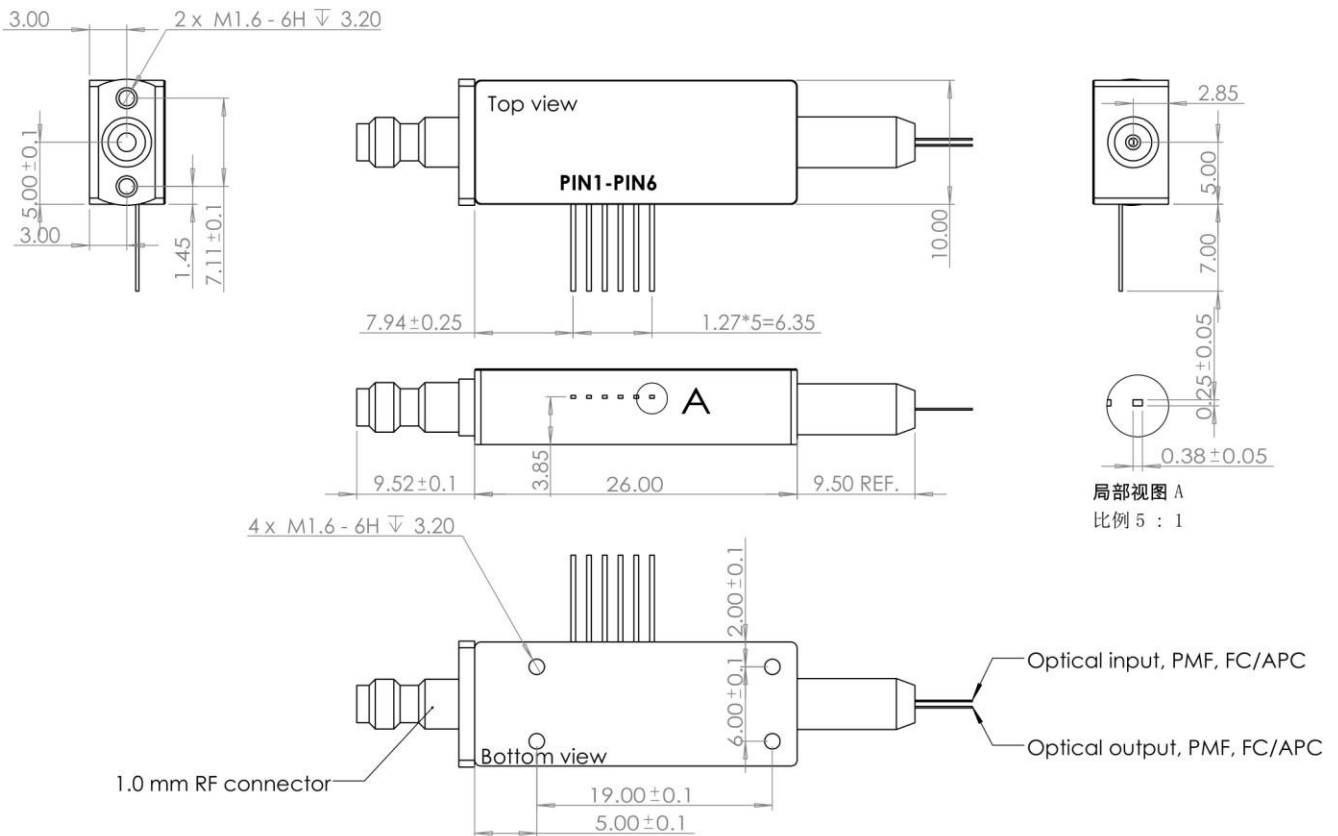
**High extinction ratio (>25 dB) can be customized.

Damage threshold

If the device operates beyond the maximum damage threshold, it will cause irreversible damage to the device, which is not within the scope of maintenance services

Parameter	Symbol	Min	Max	Unit
RF input power	S_{in}	-	18	dBm
RF input swing voltage	V_{pp}	-2.5	+2.5	V
Root Mean Square Voltage of RF Input	V_{rms}	-	1.78	V
Optical input power	P_{in}	-	20	dBm
Thermal bias voltage	U_{heater}	-	4.5	V
Thermal bias current	I_{heater}	-	50	mA
storage temperature	T_s	-40	85	°C
Relative humidity (no condensation)	RH	5	90	%

Package dimensions and pin definitions (unit: millimeters)



Note:

1. Unless otherwise specified tolerance: ± 0.15 mm;
2. The REF. dimension will not be measured in batch.

Note: unmarked size ± 0.15 mm;

The data marked with REF. is only a reference value.

N	Symbol	Description
1	-	undefined
2	-	undefined
3	Heater	Thermostatic bias electrode
4	Heater	Thermostatic bias electrode
5	MPD0+	Modulator output light monitoring PD anode
6	MPD0-	Modulator output light monitoring PD cathode
RF	RF connector	1.0 mm K connector
In	Incoming fiber optic	FC/APC, PMF
Out	Outgoing optical fiber	FC/APC, PMF

S21 test sample image (typical value at 110 GHz)

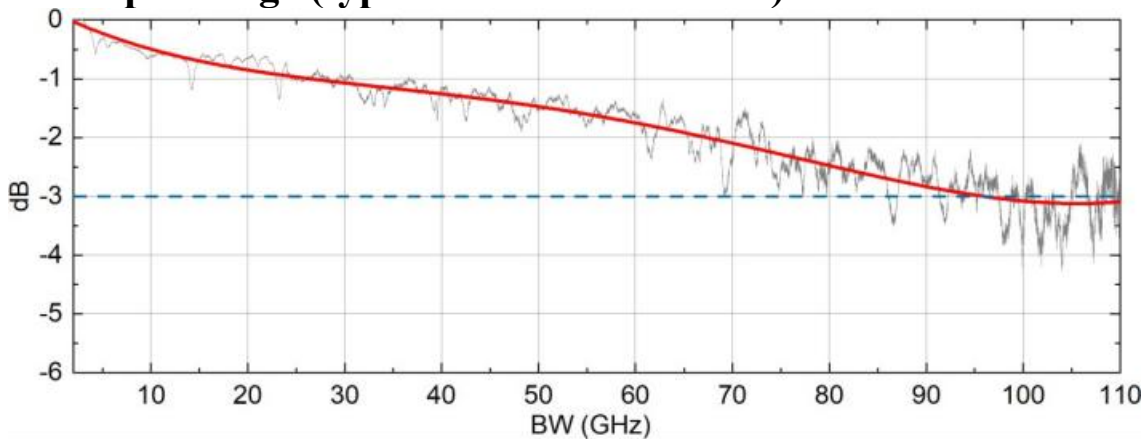


FIG 1: S21

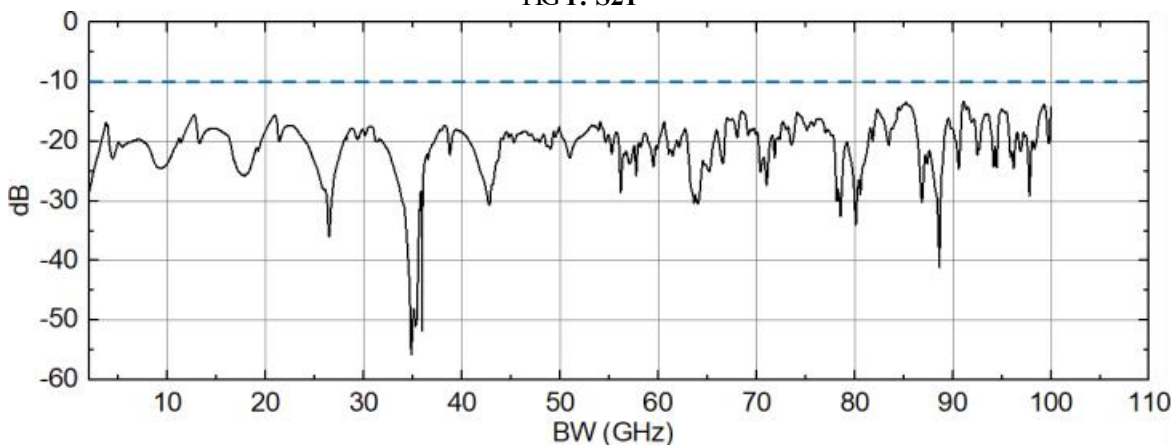


FIG 2: S11

Electrostatic Discharge (ESD) Protection

This product contains ESD sensitive components (MPD), and necessary ESD protection measures must be taken during use.





Order Information

P/N: R-TFLN-110G-XX-XX-XX

Product Description: 110 GHz C-band Thin Film Lithium Niobate Intensity Modulator.

Disclaimers

Our company reserves the right to make changes to products and data without prior notice to improve product design, reliability, and functionality. The specification information provided by our company is accurate and reliable, but our company does not assume any responsibility arising from the use of the information or products in this specification, and the information in this specification does not constitute any license for our company's patent rights or others' patent rights. Our company reserves the ownership and final interpretation rights of this specification.