R-TFLN-70GUltra-high bandwidth strength modulator

Feature

The R-TFLN-70G ultra-high bandwidth intensity modulator is a high-performance electro-optical conversion device. This product is packaged through high-precision coupling process technology, achieving an electro-optical bandwidth of 3dB and a maximum electro-optical modulation rate of up to 70GHz. Compared with traditional lithium niobate crystal modulators, this product features low half-wave voltage, high stability, small device size and thermal and optical bias control. It can be widely applied in fields such as digital optical communication, microwave photonics, backbone communication networks and communication research projects.

Application

- The radio frequency bandwidth can reach up to 70 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	S_{21}	GHz	Maximum value: 63 Typical value: 65
	(Starting at 2 GHz)	V_π	V	≤ 4
	Radio frequency half-wave voltage	P_π	mW	≤ 50
	(@ 50 kHz)	S_{11}	dB	≤ -10
working conditions	Thermally adjusted bias half-wave power	To	°C	-20~70

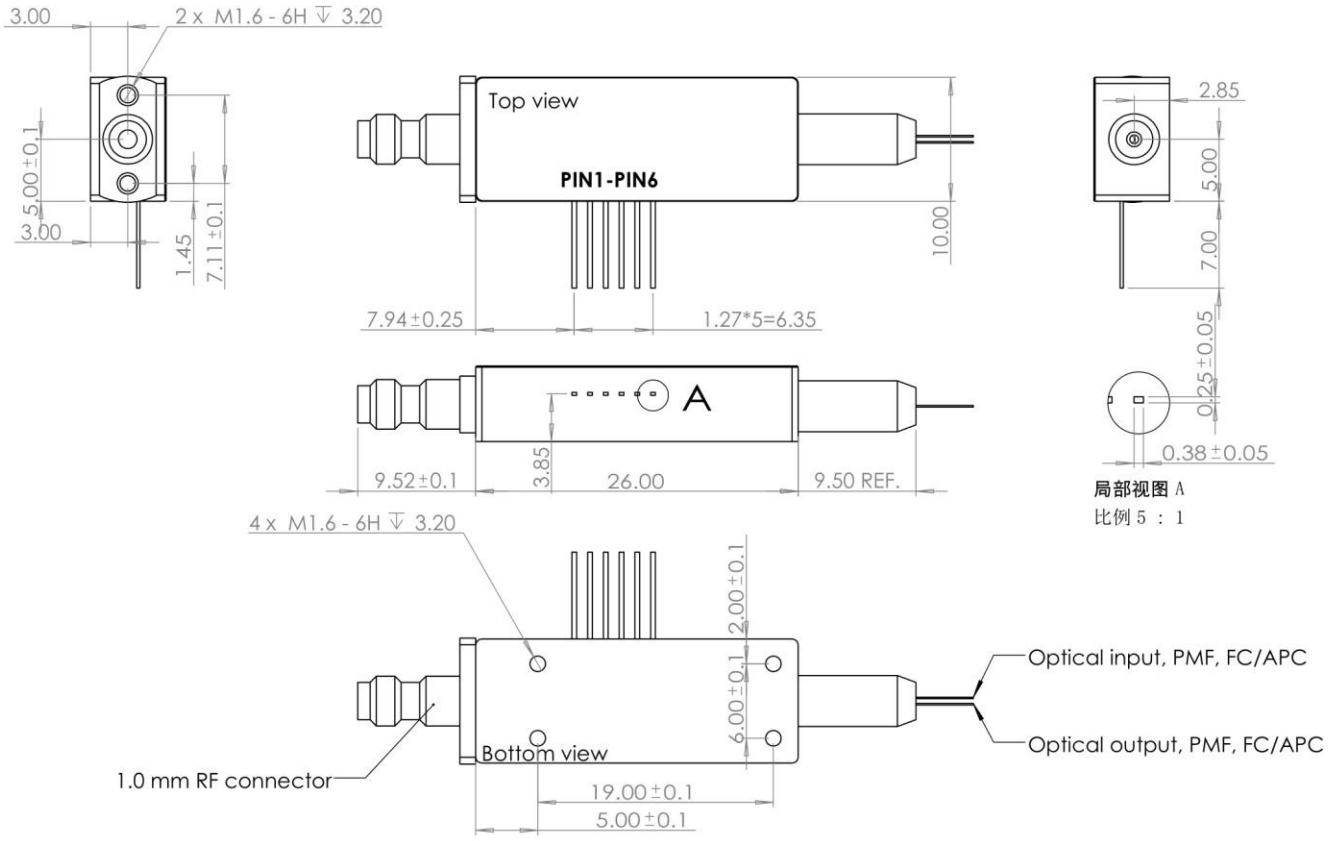
* Customizable.
**High extinction ratio (>25 dB) can be customized.

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	℃
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 70 GHz)

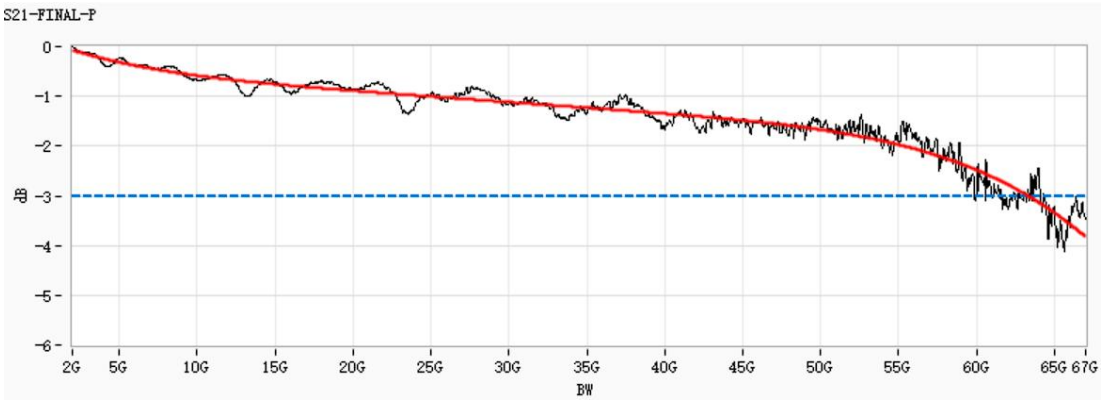


FIG 1: S21

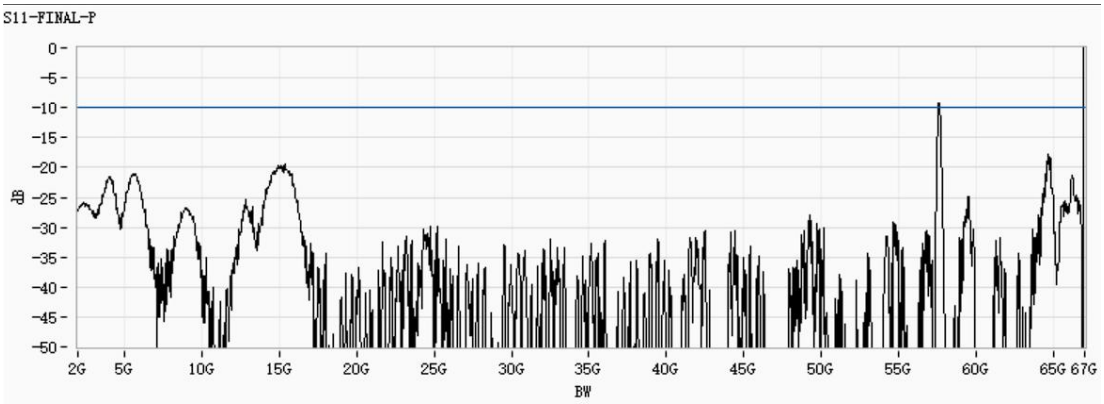


FIG 2: S11

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-70G-XX-XX-XX

Product Description: 70 GHz C-band Thin Film Lithium Niobate Intensity Modulator.

Disclaimers

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