

## Thin film lithium niobate 20 GHz/40 GHz phase modulator

### Description:

Thin film lithium niobate phase modulator is a kind of high performance electro-optical conversion device. The product is packaged by high precision coupling technology to achieve ultra-high electro-optical conversion efficiency. Compared with the traditional lithium niobate crystal modulator, this product has the characteristics of low half-wave voltage, high stability and small device size, and can be widely used in digital optical communication, microwave photonics, backbone communication networks and communication research projects.

### Feature:

- RF bandwidth up to 40 GHz
- Half wave voltage low to 3 V
- Insertion loss as low as 4.5dB
- Small device size



## Parameter

Category	Argument	Sym	Uni	Aointer	
Optical performance (@25°C)	Operating wavelength (*)	$\lambda$	nm	~1550	
	Optical return loss	ORL	dB	$\leq -27$	
	Optical insertion loss (*)	IL	dB	MAX: 5.5 Typ: 4.5	
Electrical properties (@25°C)	3 dB electro-optical bandwidth (from 2 GHz)	$S_{21}$	GHz	X <sub>1</sub> : 2	X <sub>1</sub> : 4
				MIN: 18 Typ: 20	MIN: 36 Typ: 40
	Rf half wave voltage (@50 kHz)	$V_{\pi}$	V	MAX: 3.5 Typ: 3.0	
	Rf return loss (2 GHz to 40 GHz)	$S_{11}$	dB	$\leq -10$	
Working condition	Operating temperature	$T_o$	°C	-20~70	

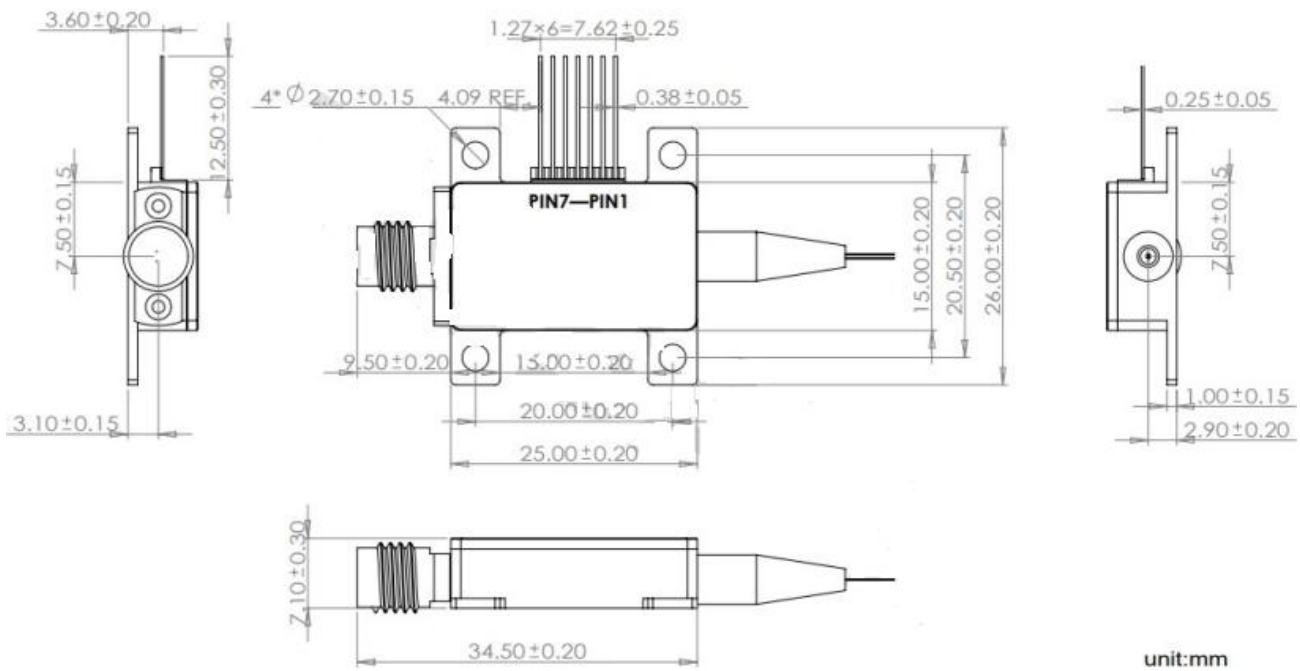
\* customizable

## Damage threshold

If the device exceeds the maximum damage threshold, it will cause irreversible damage to the device, and this type of device damage is not covered by the maintenance service.

Argument	Sym	Selectable	MIN	MAX	Uni
Rf input power	$S_{in}$	X <sub>2</sub> : 4	-	18	dBm
		X <sub>2</sub> : 5	-	29	
Rf input swing voltage	$V_{pp}$	X <sub>2</sub> : 4	-2.5	+2.5	V
		X <sub>2</sub> : 5	-8.9	+8.9	
Rf input RMS voltage	$V_{rms}$	X <sub>2</sub> : 4	-	1.78	V
		X <sub>2</sub> : 5	-	6.30	
Storage temperature	$P_{in}$	-	-	20	dBm
Optical input power	$T_s$	-	-40	85	°C
Relative humidity (no condensation)	RH	-	5	90	%

## Package dimensions and pin definition (unit: mm)



Note: Data marked with REF. Are for reference only.

	Sym	Description
<b>1</b>	-	undefined
<b>2</b>	-	undefined
<b>3</b>	-	undefined
<b>4</b>	-	undefined
<b>5</b>	-	undefined
<b>6</b>	-	undefined
<b>7</b>	-	undefined
<b>RF</b>	RF Connectors (*)	2.92 mm K connector
<b>In</b>	Incoming fiber	FC/APC, PMF
<b>Out</b>	Outgoing fiber	FC/APC, PMF

\* Customizable 1.85mm connector or J connector.

## S21 test sample (40 GHz typical value)

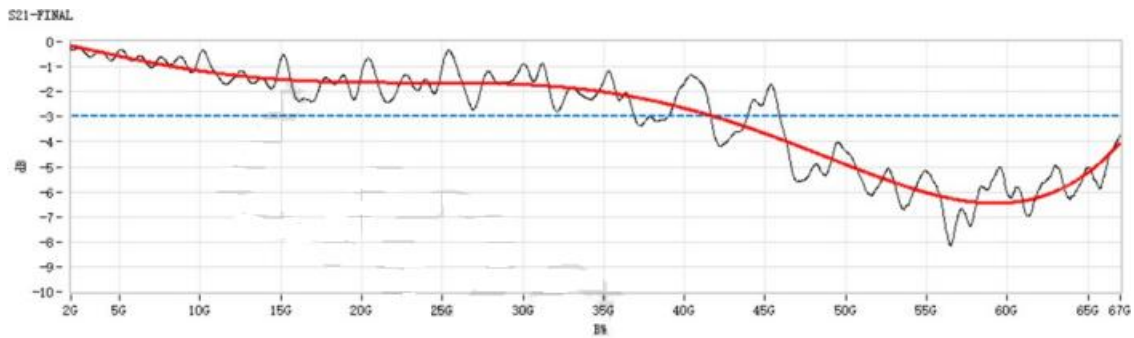


图 1: S21

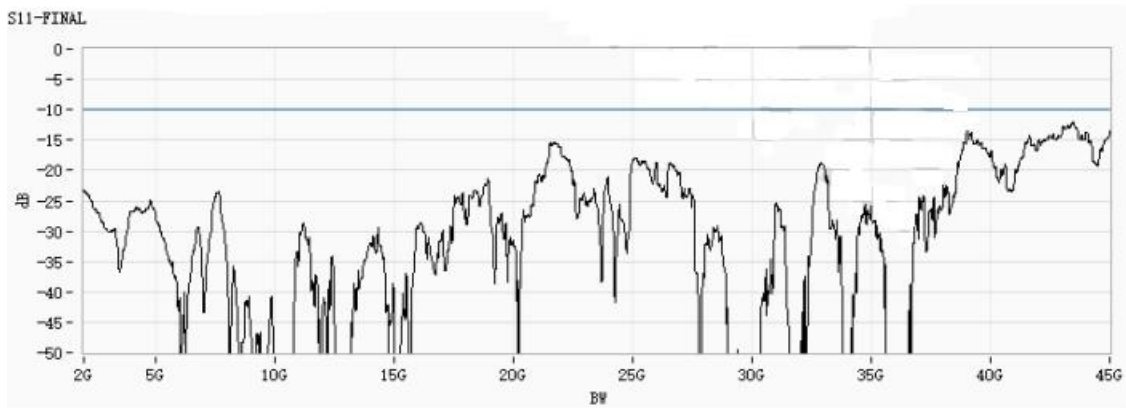


图1: S11

## Order information

Thin film lithium niobate 20 GHz/40 GHz phase modulator

selectable	Description	selectable
X <sub>1</sub>	3 dB electro-optical bandwidth	2 or 4
X <sub>2</sub>	Maximum RF input power	4 or 5

To purchase this product, inquire about lead times or specific customization options, please contact the Sales Manager or email to: [bjrofoc@rof-oc.com](mailto:bjrofoc@rof-oc.com)