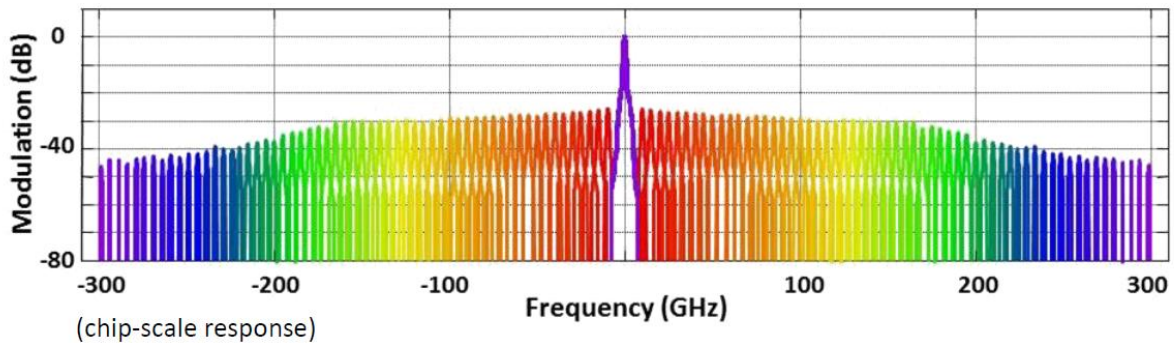


Low V_{π} Broadband Lithium Niobate Optical Phase Modulator



Normalized Modulation Spectrum



PSI offers high-speed lithium niobate phase modulator products. Our traveling wave design and advanced index-matching technologies allows optical response over full millimeter-wave spectrum (up to 300GHz). The P4 series phase modulators are designed for high speed analog and digital applications. Based on our leading technologies of high-efficiency electrodes design and low-loss optical waveguide process, P4 series phase modulators offer industry-leading modulation efficiency and optical insertion loss over the entire C band.

Key Features

- 110GHz continuous operational frequency range
- Low half-wave voltage
- Low insertion loss (<4dB)
- High optical power handling capability (>500mW)
- Compact package design

Options (specs may change)

- RF connection
1mm coax, WR10, 0.85mm coax
- Operation frequency rang
145GHz option is available
- Termination
50ohm termination with different power rating
- Extended operating temperature range
-20°C to 85°C, -40°C to 85°C, -55 °C to 100°C
- Extended input power rating
Input optical power up to 1W

Specifications

Parameter	Min	Typical	Max	Unit
General				
Material		LiNbO ₃		
Crystal orientation		z-cut		
Optical / Electrical				
Operating wavelength	1530		1565	nm
Optical insertion loss		4	5	dB
V π @ 10KHz		4.5 ¹	5.5	Volts
V π @ 40GHz		7.5 ¹	8	Volts
V π @ 100GHz		16 ¹	18	Volts
S11(10MHz – 110GHz)		-10 ²	-7	dB
Optical return loss	40			dB
Package				
Input fiber type	Polarization Maintaining			
Output fiber type	Polarization Maintaining or Signal Mode			
Fiber Core/clad	9/125			μ m
Fiber Jacket	900 μ m Hytrel® polyester loose tube			
Fiber length	Specified by customer			
Fiber connector	FC/APC or FC/UPC			
Max Rating				
Optical input power			500 ³	mW
RF input power			500 ⁴	mW
Operating temperature range	0		70	deg C
Storage temperature range	-40		80	deg C

1. Lower V π is available through customized specs.
2. S11 may vary depending on the RF interface, the max rating will not change.
3. Higher input power rating is available through customized specs.
4. Max rating may vary depending on the termination specs.