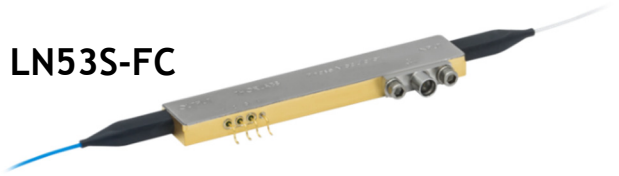
10 GHz Lithium Niobate Phase Modulator

LN53S-FC



Description

The LN53S-FC is a broadband $LiNbO_3$ phase modulator. This modulator can provide phase modulation from DC to 15 GHz with a very low V_π. The input fiber is polarization-maintaining (PM), and the output fiber is standard single mode fiber, both terminated with FC/PC connectors. The key of the input FC/PC connector is aligned to the slow axis of the PM fiber, which is in turn aligned with the extraordinary mode of the chip. The RF input connector is a field-replaceable SMP (GPO®-compatible) connector.

The LN53S-FC does not have an internal polarizer. Both ordinary and extraordinary polarization modes are supported. Optimal modulation is achieved with the extraordinary mode.

Specifications

LN53S-FC			
Optical Specifications	**Min**	**Typical**	**Max**
Operating Wavelength[a]	1525 nm	-	1605 nm
Optical Insertion Loss	-	3.0 dB	4.5 dB
Optical Return Loss	40 dB	-	-
Optical Input Power	-	-	100 mW
Electrical Specifications	**Min**	**Typical**	**Max**
S11 (DC to 10 GHz)	-	-12 dB	-10 dB
E/O Bandwidth (-3 dB)	-	10 GHz	-
Operating Frequency Range	DC to 15 GHz (Typ.)		
RF V_π (@ 10 GHz)	-	7.0 V	8.0 V
RF Port Input Power	-	-	24 dBm
Mechanical Specifications			
Crystal Orientation	Z-Cut		
RF Connection	Male SMP (GPO® Compatible), Full Detent		
Fiber Type	Input: PANDA Polarization Maintaining Output: SMF-28® Single Mode		
Fiber Lead Length	1.5 m (Typ.)		
Environmental Specifications	**Min**	**Typical**	**Max**
Operating Temperature	0 °C	-	70 °C
Storage Temperature	-40 °C	-	85 °C

a. The modulator is designed for use at the specified wavelengths. Using the modulator at other wavelengths may cause an increase in the optical loss that is not covered under warranty. In some cases, this loss can be temporary; for instance, the increase in loss caused by shorter wavelengths can usually be reversed by heating the modulator to 80 °C for an hour.

Mechanical Drawing