

## 40 GHz Lithium Niobate Phase Modulator

### LN66S-FC



### Description

The LN66S-FC is a broadband LiNbO<sub>3</sub> phase modulator. This modulator can provide phase modulation from DC to 40 GHz with a low V<sub>π</sub>. 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 V connector. The SMA port is not used.

The LN66S-FC does not have an internal polarizer. Both ordinary and extraordinary polarization modes are supported. Optimal modulation is achieved with the extraordinary mode.

### Specifications

LN66S-FC			
<b>Optical Specifications</b>	<b>Min</b>	<b>Typical</b>	<b>Max</b>
Operating Wavelength <sup>a</sup>	1525 nm	-	1605 nm
Optical Insertion Loss	-	4.0 dB	4.5 dB
Optical Return Loss	40 dB	-	-
Optical Input Power	-	-	100 mW
<b>Electrical Specifications</b>	<b>Min</b>	<b>Typical</b>	<b>Max</b>
S11 (DC to 30 GHz)	-	-12 dB	-10 dB
S11 (30 to 40 GHz)	-	-10 dB	-8 dB
E/O Bandwidth (-3 dB)	-	35 GHz	-
Operating Frequency Range	DC to 40 GHz (Typ.)		
RF V <sub>π</sub> (@ 30 GHz)	-	7.5 V	9.5 V
RF Port Input Power	-	-	24 dBm
<b>Mechanical Specifications</b>			
Crystal Orientation	Z-Cut		
RF Connection	Female 1.85 mm (V)		
Fiber Type	Input: PANDA Polarization Maintaining Output: SMF-28 <sup>®</sup> Single Mode		
Fiber Lead Length	1.5 m (Typ.)		
<b>Environmental Specifications</b>	<b>Min</b>	<b>Typical</b>	<b>Max</b>
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

