

Datasheet

LNF-TERM4_12A

4-12 GHz Cryogenic Termination



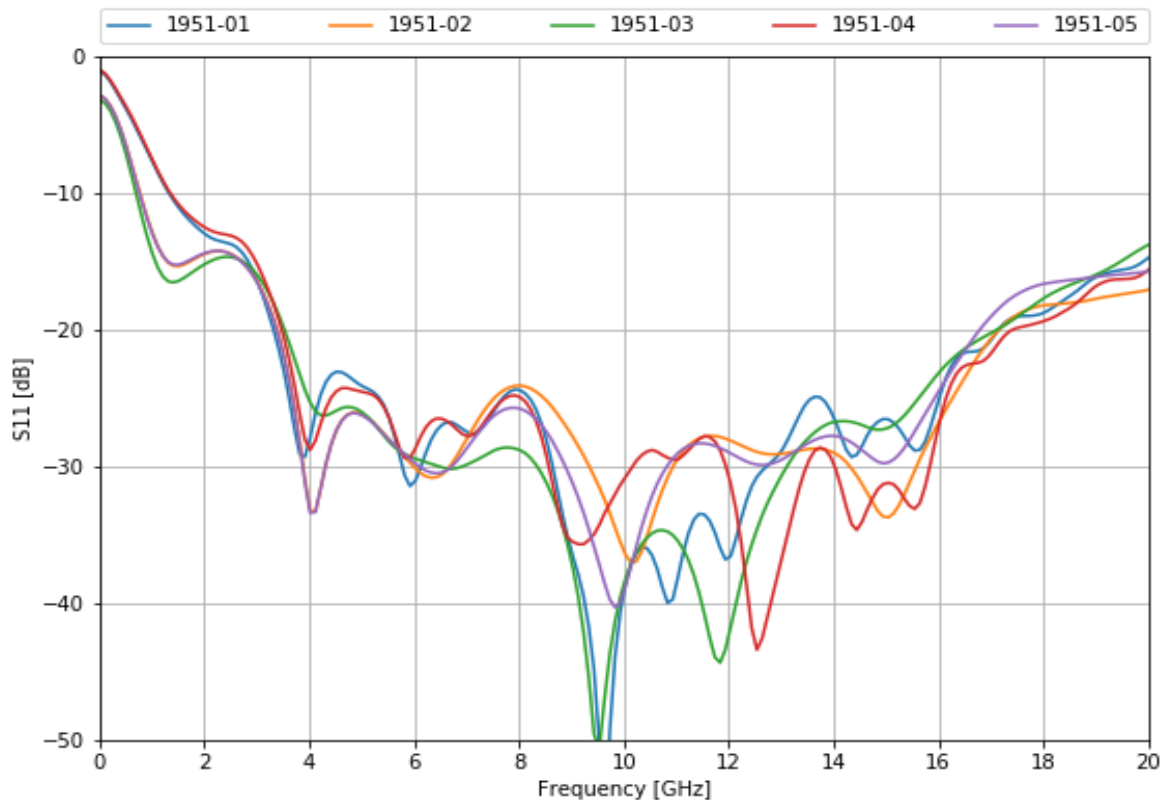
Product Features

RF Bandwidth	4-12 GHz
Return Loss	> 20 dB typical
RF Connector	SMA
DC Connector	SMC

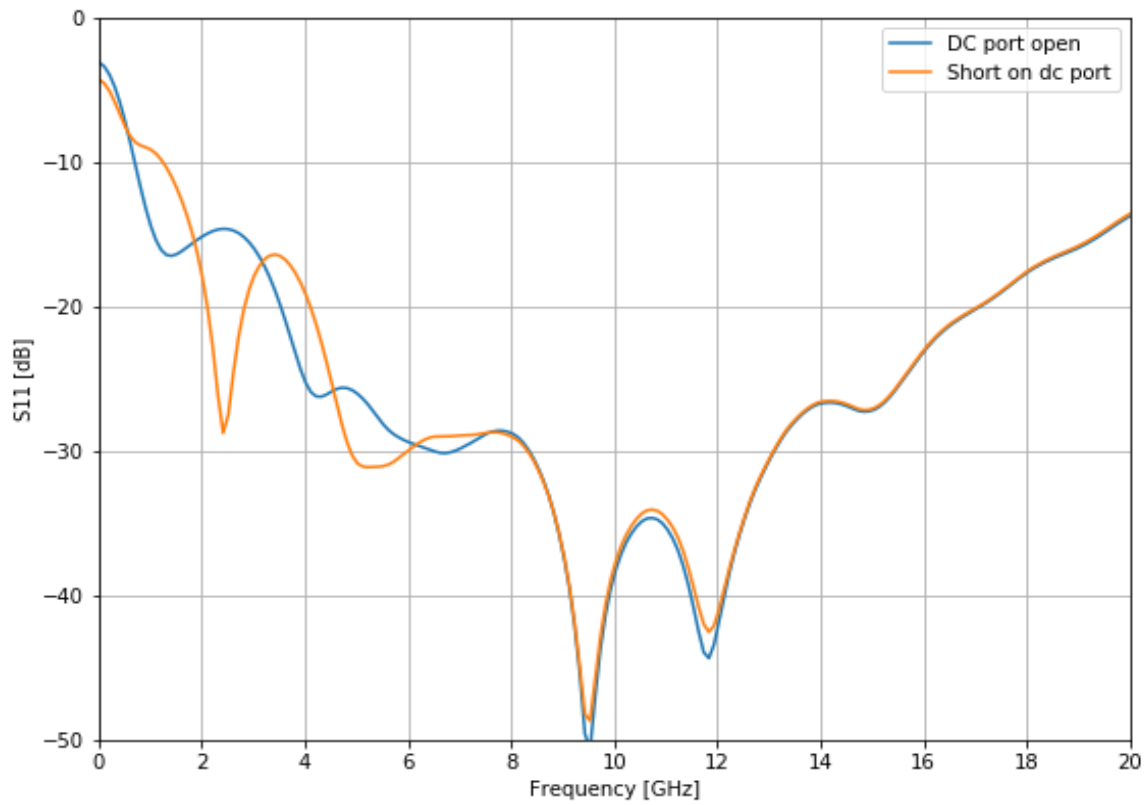
Absolute maximum ratings			Typical Characteristics at 5 K			
Parameter	Min	Max	Parameter	Condition	Value	Unit
RF Drive Level		30 dBm	Return Loss	4-12 GHz	22	dB
DC voltage on RF input and output	-50 V	50 V	DC Resistance		<	Ohm

LNF-TERM4_12A is a termination suitable for converting an LNF circulator into an isolator with a DC feed through. The DC voltage will be present at both the input and output of the isolator. They have been designed from ground up to meet the strict requirements of ultra-low temperature physics research. The gold plated OFHC copper body ensures minimum loss and that this loss reaches the lowest possible temperature to minimize thermal noise. The module measures 9.53x9.53x31.4 mm excluding the connectors.

Measured typical data, $T_{amb} = 5\text{ K}$



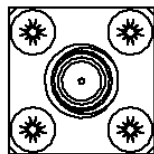
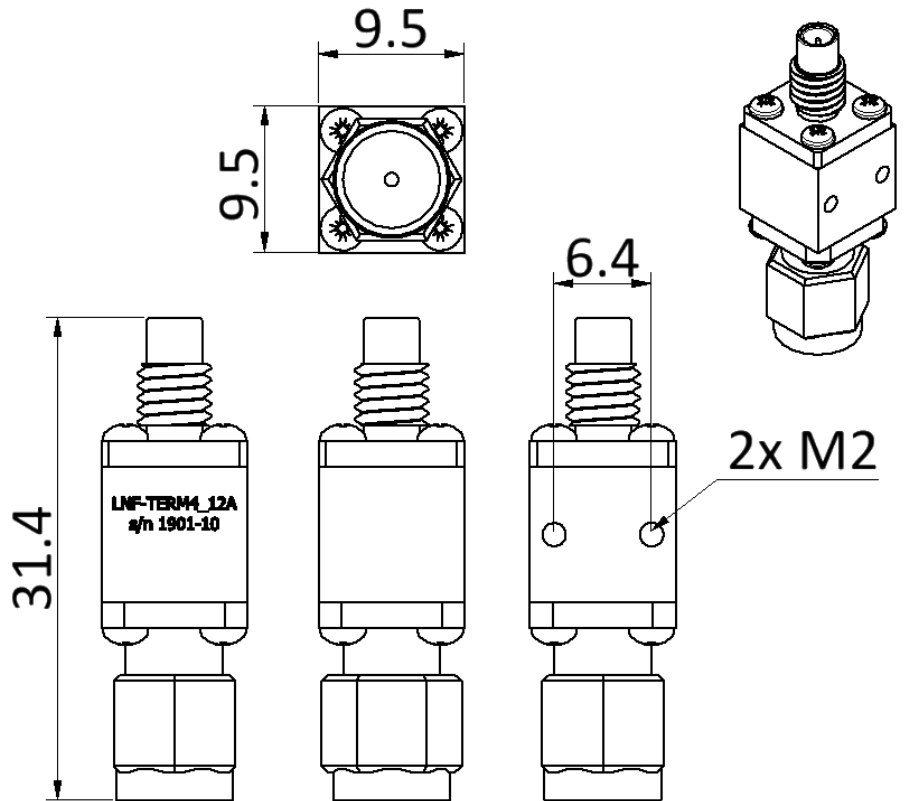
Measured reflection on port 1 (SMA port) at port of cryostat, using time domain gating to remove reflections in cabling down to the termination but including reflection of connector.



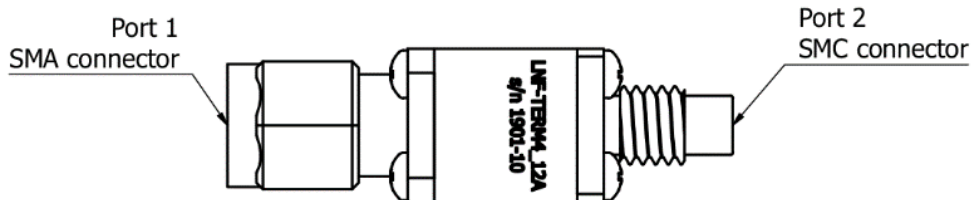
The reflection coefficient at the SMA connector (port 1) is dependent on the impedance presented to the SMC connector (port 2). This effect is small above 5 GHz. In the measurement above we have done measurements with port 2 terminated in a short or open, the measurements were taken using time domain gating to remove the reflections in the cabling down into the cryostat.

Dimensions

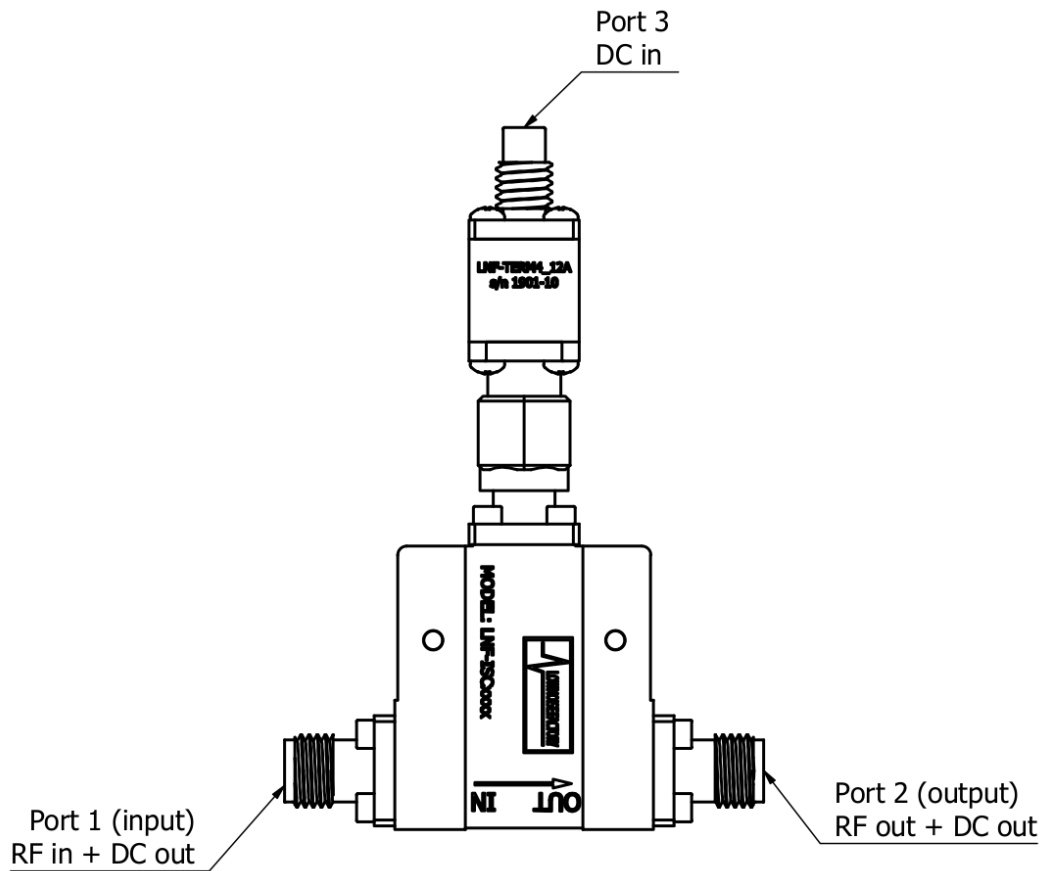
Units: mm



Connect heatsink directly to OFHC copper chasis for best cooling



Use with circulator



LNF-TERM4_12A can be used together with an LNF circulator in the 4 GHz – 12 GHz band.

CAUTION

The isolator does not contain any DC block. All ports are connected from a DC perspective. This means that any bias provided through port 3 will be present on both port 1 and 2.