

## Cryogenic Infrared Filter

### SMA Male to SMA Female

Infrared Filters protect sensitive quantum devices that operate below 1 K from high-energy photons that can cause unwanted heating or decoherence. In addition, they improve the thermalization of the center conductor in a coaxial line. A common application of IR Filters is in superconducting qubit devices where infrared radiation is suspected to generate quasi-particle excitations that reduce the coherence time of the qubit.

#### Features:

- Based on magnetically loaded dielectric absorber
- Capable of operation at 10 mK
- Housing Gold Plated OFHC Copper
- Impedance: 50  $\Omega$

#### Applications:

- Dilution refrigerators/Cryogenic devices
- Quantum Computing



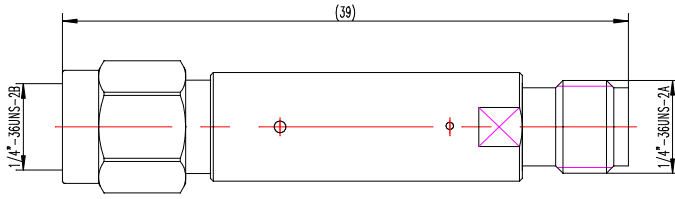
#### Electrical Characteristics:

Model	Parameter			
	Frequency	Insertion Loss (Typ)	Return Loss (Typ)	Impedance
TL-CRYOIRHF01-1001	DC-10GHz	0.6dB@6GHz 1dB@10GHz 6dB@30GHz	-20dB	50 $\Omega$
TL-CRYOIRHF01-1002	DC-10GHz	1.6dB@6GHz 3dB@10GHz 10dB@30GHz	-20dB	50 $\Omega$
TL-CRYOIRHF01-1005	DC-10GHz	6dB@10GHz 20dB@30GHz	-20dB	50 $\Omega$

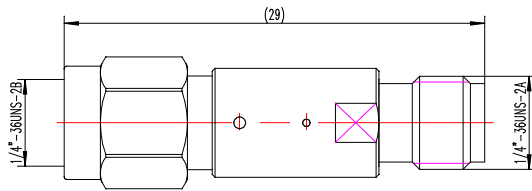
#### Environmental And Physical Characteristics:

Description	Parameter	Units
Operating Temperature	10mK To +200	$^{\circ}\text{C}$
Storage Temperature	-55 to +200	$^{\circ}\text{C}$
Packaging case	Gold Plated OFHC Copper	
Connector	SMA Male to Female	

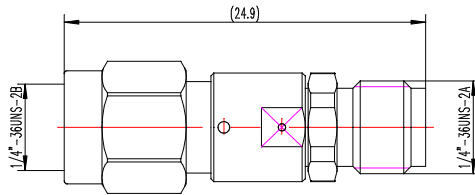
**Outline Drawing: Unit:mm**



TL-CRYOIRHF01-1005-SMA



TL-CRYOIRHF01-1002-SMA



TL-CRYOIRHF01-1001-SMA

**Ordering Information:**

Base Number	Description	Revision
TL-CRYOIRHF01-1001	SMA Cryogenic_Infrared Filter 1dB@10GHz	Rev.1.1
TL-CRYOIRHF01-1002	SMA Cryogenic_Infrared Filter 3dB@10GHz	Rev.1.1
TL-CRYOIRHF01-1005	SMA Cryogenic_Infrared Filter 6dB@10GHz	Rev.1.1