

## High-density Cryogenic Infrared Filter 12 channel /SSMP Female/ SSMP Male/

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
- Impedance: 50 Ω

### Applications:

- Dilution refrigerators/Cryogenic devices
- Quantum Computing

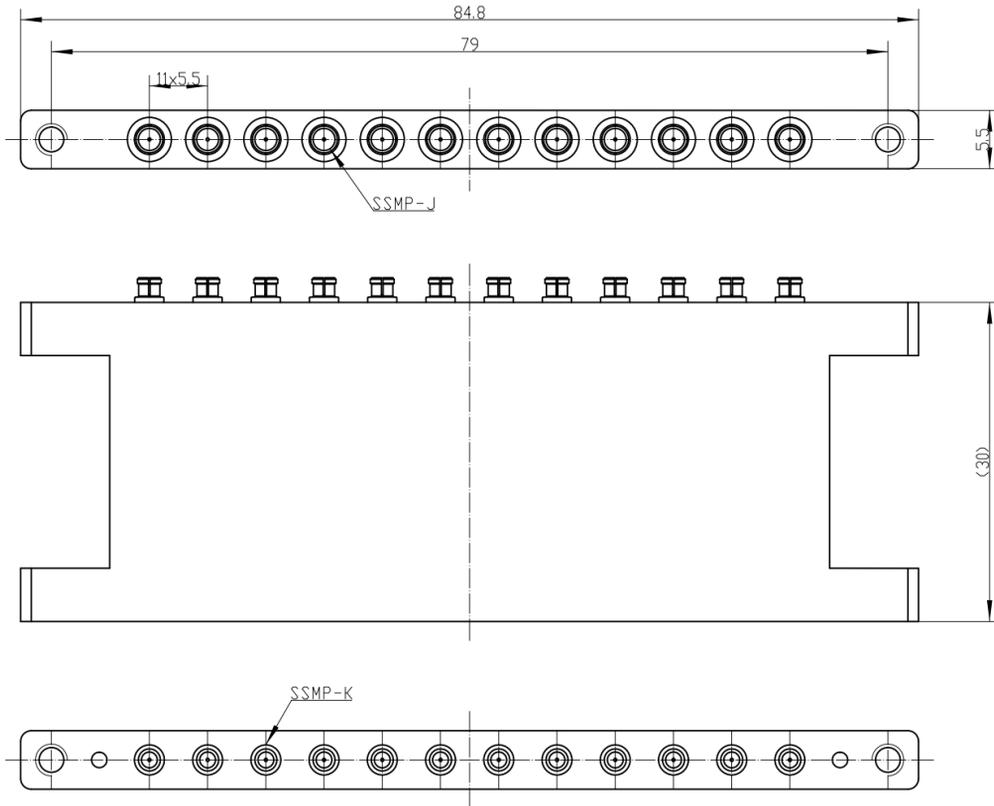
### Electrical Characteristics:

| Model              | Parameter |                         |             |           |
|--------------------|-----------|-------------------------|-------------|-----------|
|                    | Frequency | Insertion Loss          | Return Loss | Impedance |
| TL-CRYOIRHF12-1001 | DC-10GHz  | 1dB@10GHz<br>6dB@30GHz  | -20dB       | 50Ω       |
| TL-CRYOIRHF12-1002 | DC-10GHz  | 2dB@10GHz<br>10dB@30GHz | -20dB       | 50Ω       |
| TL-CRYOIRHF12-1005 | DC-10GHz  | 5dB@10GHz<br>20dB@30GHz | -20dB       | 50Ω       |

### Environmental And Physical Characteristics:

| Description           | Parameter               | Units |
|-----------------------|-------------------------|-------|
| Operating Temperature | 10mK To +200            | °C    |
| Storage Temperature   | -55 to +200             | °C    |
| Of Channels           | 12                      |       |
| Packaging case        | Gold Plated OFHC Copper |       |

**Outline Drawing:** Unit:mm



**Ordering Information:**

| Base Number        | Description  | Revision |
|--------------------|--|----------|
| TL-CRYOIRHF12-1001 | 12 channel SSMP High-density Cryogenic Infrared Filter 1dB@10GHz | Rev.1.1  |
| TL-CRYOIRHF12-1002 | 12 channel SSMP High-density Cryogenic Infrared Filter 2dB@10GHz | Rev.1.1  |
| TL-CRYOIRHF12-1005 | 12 channel SSMP High-density Cryogenic Infrared Filter 5dB@10GHz | Rev.1.1  |