

## Cryogenic Coax Attenuators

DC-18GHz/2W/SMA/Non-Magnetic

Model:TAXXA2-S-18-Cryo

TAXXA2-S-18-Cryo is working to customize and optimize fixed attenuators for use in cryogenic cooling systems to support quantum computing. Eliminating thermal noise in a quantum computing installation demands a high degree of innovation and reliability. TAXXA2-S-18-Cryo's experience delivering custom components for use in harsh environments and high reliability requirements, is the foundation supporting our work in cryogenic technology.

### Features:

- Frequency: DC to 18 GHz
- Max Power: 2W
- Capable of operation at 10 mK
- Non-Magnetic
- 50 Ohm Matched Input / Output

### Applications:

- Dilution refrigerators/Cryogenic devices
- Quantum Computing

### 电气特性 Electrical Characteristics:

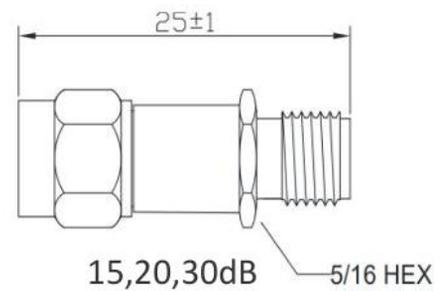
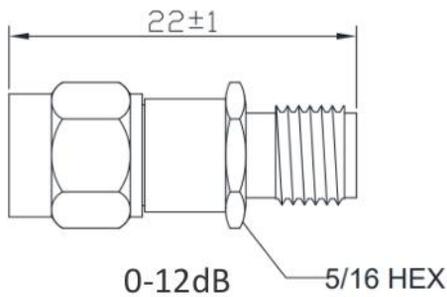
| 参数 Parameter                 | Min                     | Typ | Max  | 单位 Units |
|------------------------------|-------------------------|-----|------|----------|
| 频率范围 Frequency range         | DC-18                   |     |      | GHz      |
| 标准衰减值 Standard dB Values     | 0~10/12/15/20/30        |     |      | dB       |
| 衰减精度<br>Attenuation Accuracy | 0dB                     |     | ±0.4 | dB       |
|                              | 1-6dB                   |     | ±0.3 |          |
|                              | 10-20dB                 |     | ±0.5 |          |
|                              | 30dB                    |     | ±0.8 |          |
| 驻波<br>VSWR                   | DC-4GHz                 |     | 1.15 | :1       |
|                              | 4-12.4GHz               |     | 1.25 |          |
|                              | 12.4-18GHz              |     | 1.35 |          |
|                              | 12.4-18GHz<br>@0dB only |     | 1.45 |          |
| 输入功率 Input Power             |                         |     | 2    | W        |
| 阻抗 Impedance                 | 50                      |     |      | Ohms     |

## 机械特性 Mechanical Specifications:

| 描述 Description                  | 参数 Parameter          | 单位 Units |
|---------------------------------|-----------------------|----------|
| 输入/输出接口 Input /Output Connector | SMA Male/SMA Female   |          |
| 外壳材质 Case Material              | OFHC Copper           |          |
| 表面 Finish                       | Gold Plated           |          |
| 电阻材料 Resistor Material          | Proprietary Thin Film |          |

## 外形图 Outline Drawing:

Unit:mm



## 温度环境 Environmental Conditions:

| 参数 Parameter                       | Min   | Typ | Max  | 单位 Units |
|------------------------------------|---|-----|------|----------|
| 操作温度 Operating Temperature         | 10mK  |     | +85  | °C       |
| 存储温度 Non-operating Temperature     | -55   |     | +125 | °C       |
| 相对湿度 Relative humidity             | 100% RH at 35c, 95%RH at 40°C                       |     |      | %        |
| 海拔 Altitude                        | 50,000  |     |      | feet     |
| 震动 Shock / Vibration(MIL-STD-810F) | 25g rms (15 degree 2KHz) endurance, 1 hour per axis |     |      |          |
| 冲击 Shock(non operating)            | 20G for 11msc half sin wave,3 axis both directions  |     |      |          |

## 订货信息 Ordering Information:

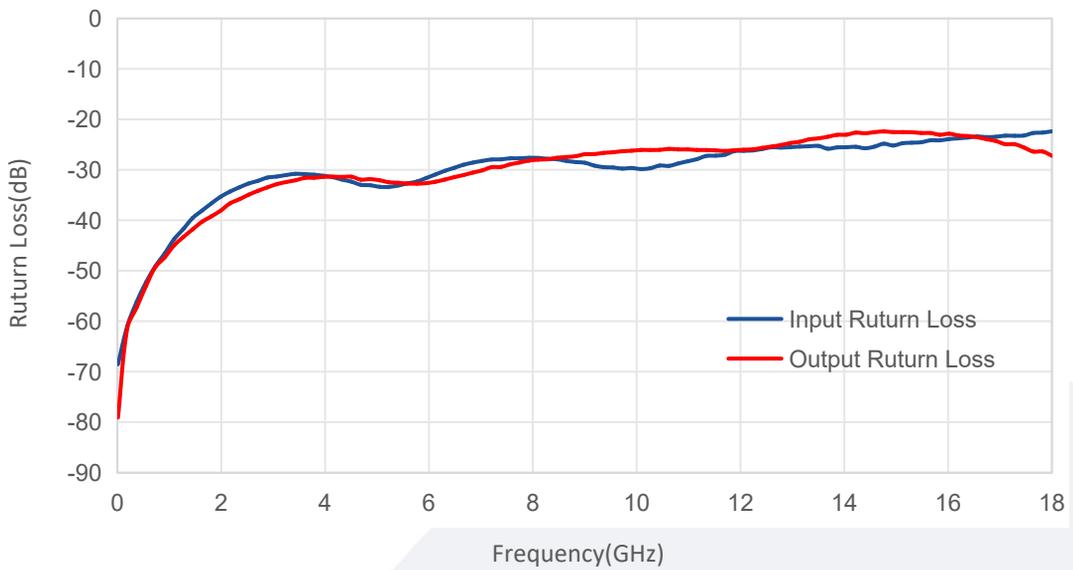
| 标准型号 Base Number | 描述 Description | 版本号 Revision |
|------------------|----------------|--------------|
| TA00A2-S-18-Cryo | 0dB            | Rev.1.1      |
| TA01A2-S-18-Cryo | 1dB            | Rev.1.1      |
| TA02A2-S-18-Cryo | 2dB            | Rev.1.1      |
| TA03A2-S-18-Cryo | 3dB            | Rev.1.1      |
| TA04A2-S-18-Cryo | 4dB            | Rev.1.1      |
| TA05A2-S-18-Cryo | 5dB            | Rev.1.1      |
| TA06A2-S-18-Cryo | 6dB            | Rev.1.1      |
| TA07A2-S-18-Cryo | 7dB            | Rev.1.1      |
| TA08A2-S-18-Cryo | 8dB            | Rev.1.1      |
| TA09A2-S-18-Cryo | 9dB            | Rev.1.1      |
| TA10A2-S-18-Cryo | 10dB           | Rev.1.1      |
| TA12A2-S-18-Cryo | 12dB           | Rev.1.1      |
| TA15A2-S-18-Cryo | 15dB           | Rev.1.1      |
| TA20A2-S-18-Cryo | 20dB           | Rev.1.1      |
| TA30A2-S-18-Cryo | 30dB           | Rev.1.1      |

**典型曲线 Typical Performance Data:**

**TA00A2-S-18-Cryo:**

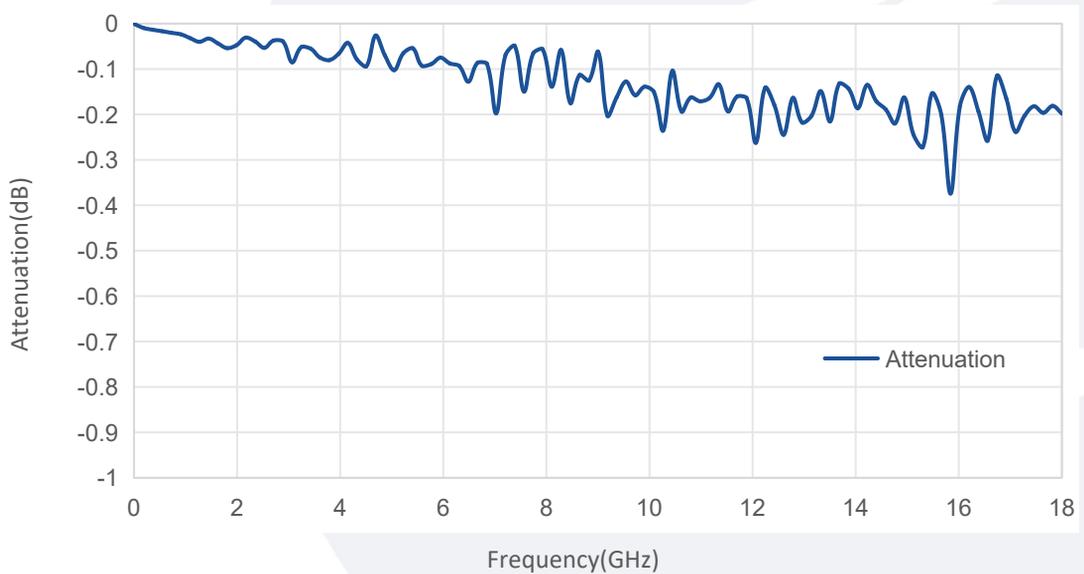
**298K:**

**Return Loss vs Frequency**



**298K:**

**Attenuation vs Frequency**



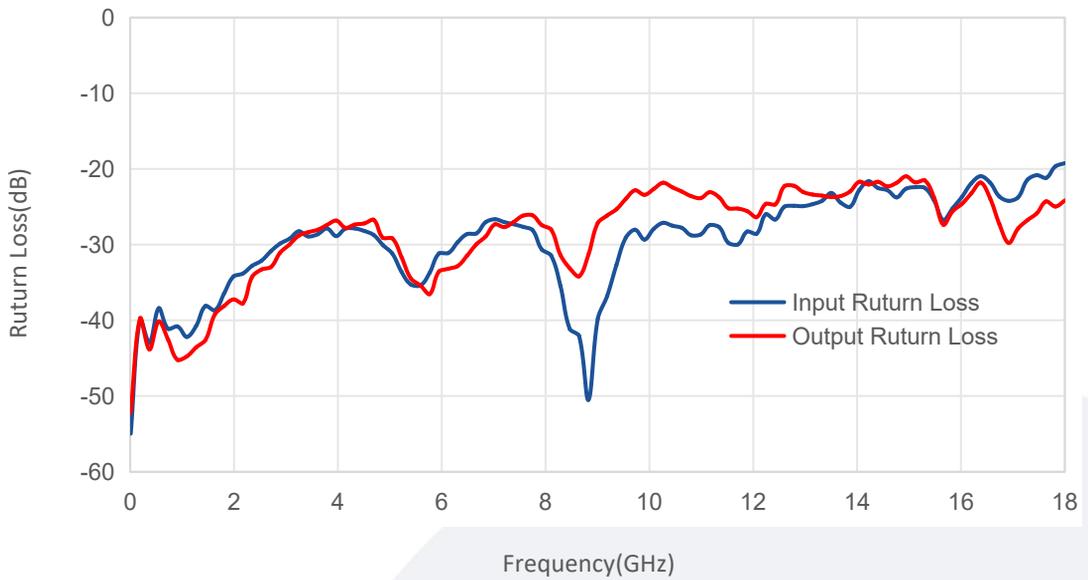
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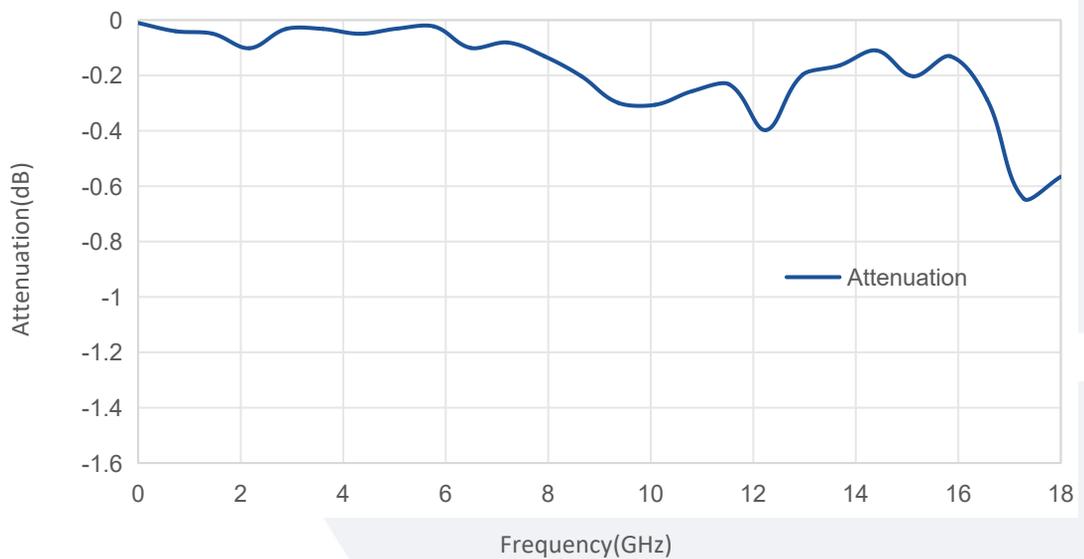
**77K:**

**Return Loss vs Frequency**



**77K:**

**Attenuation vs Frequency**



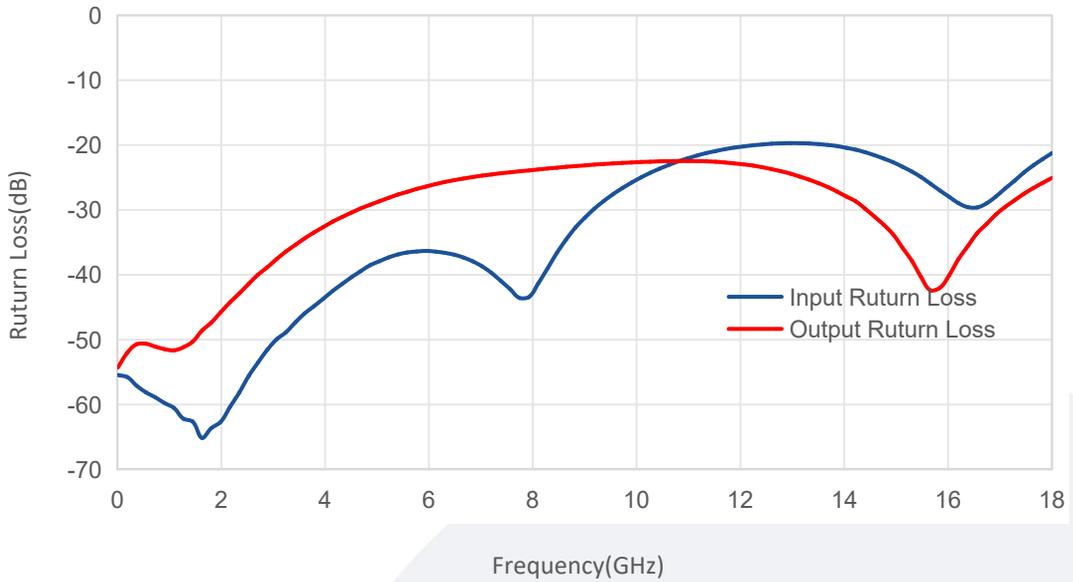
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**典型曲线 Typical Performance Data:**

**TA10A2-S-18-Cryo:**

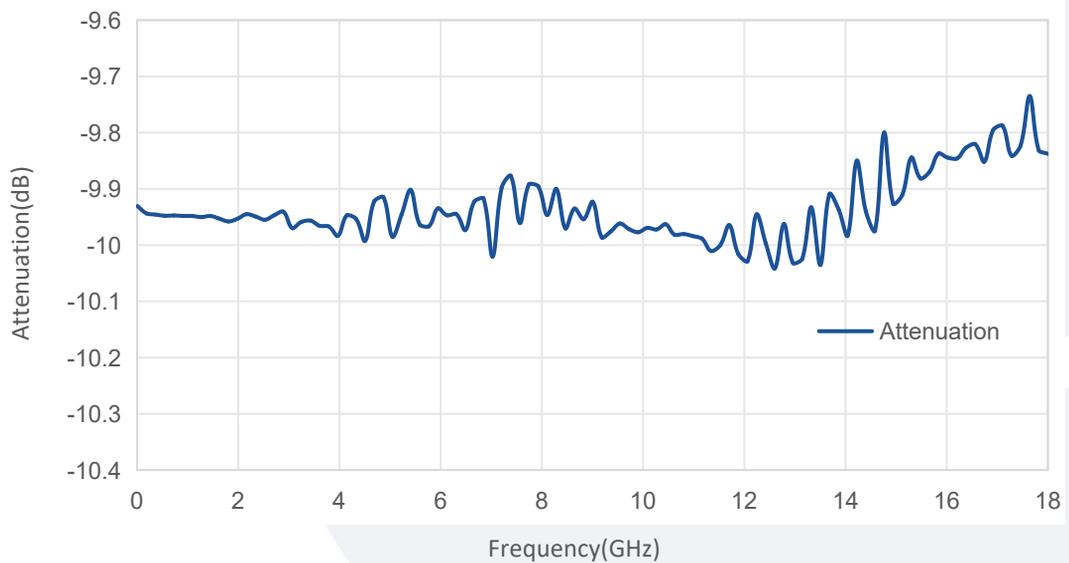
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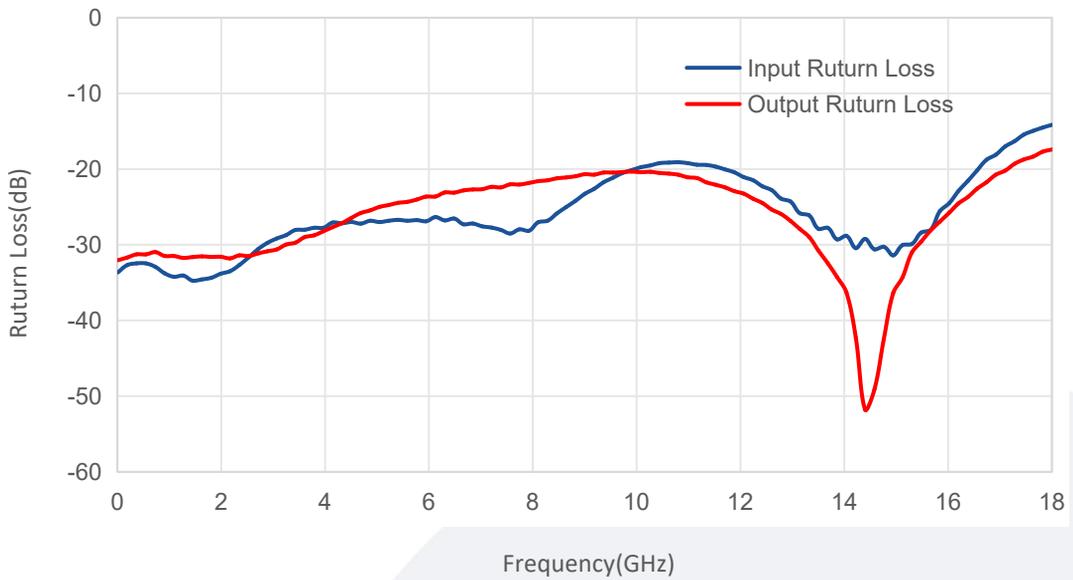
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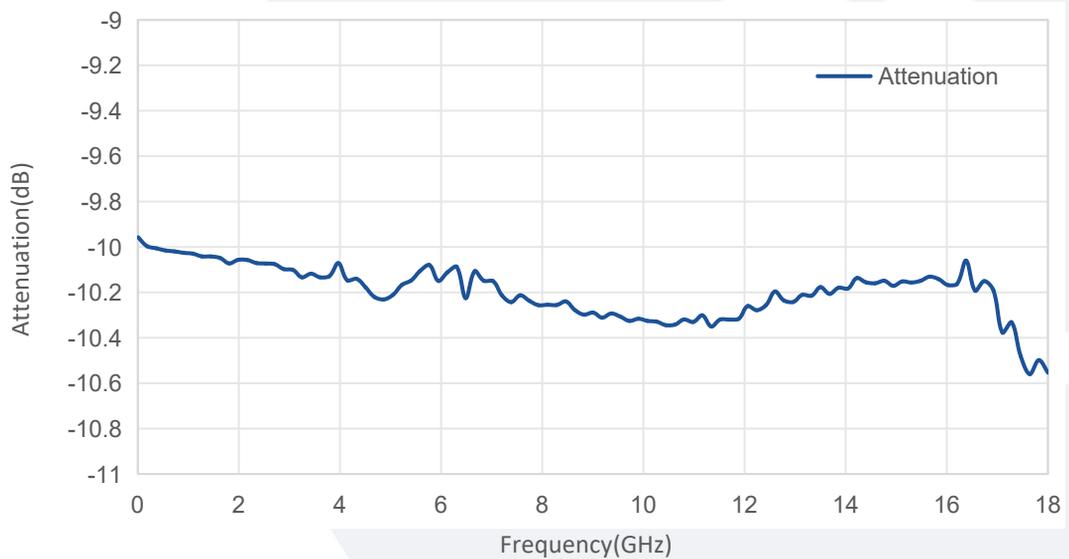
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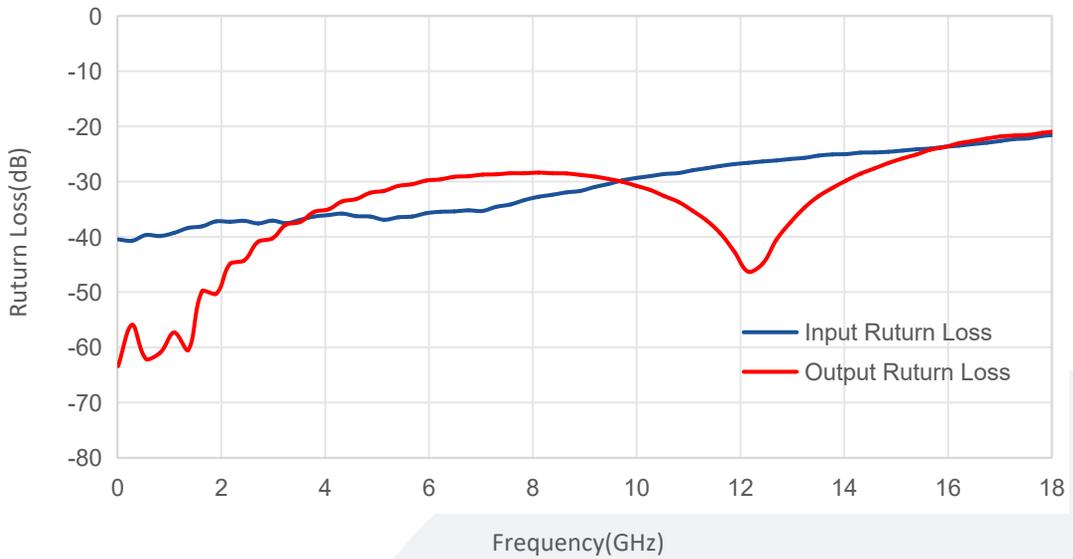
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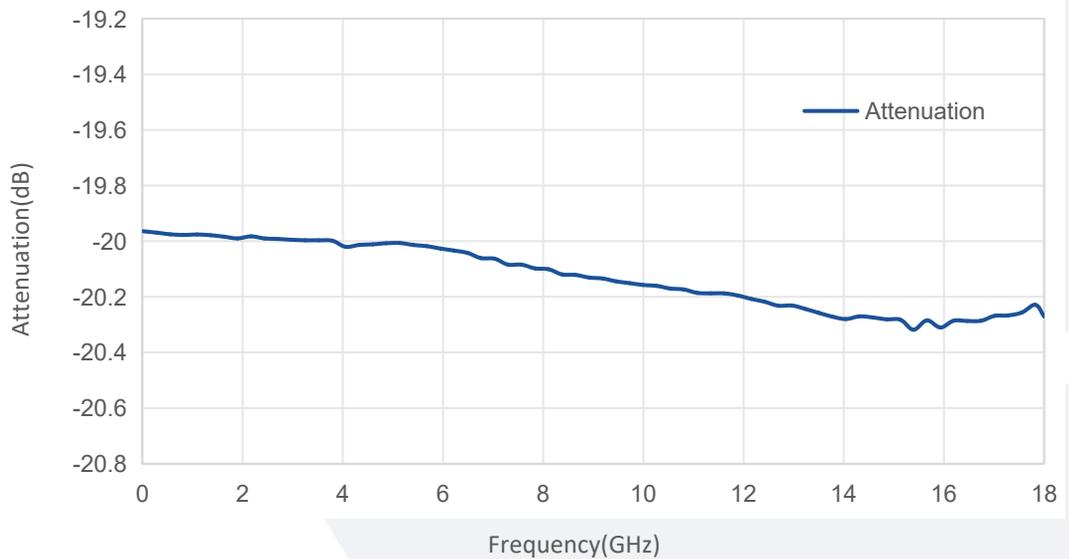
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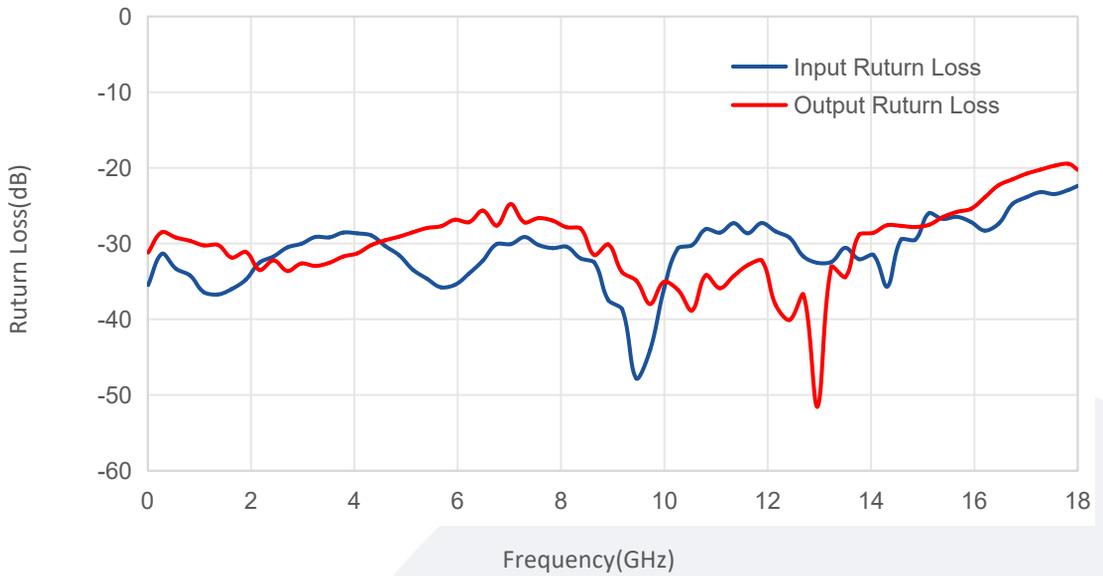
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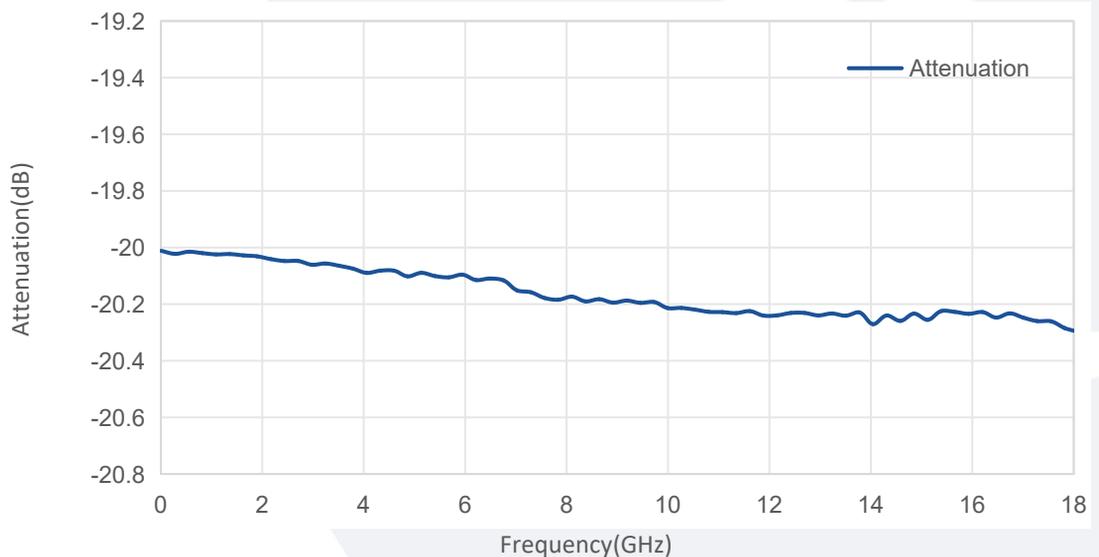
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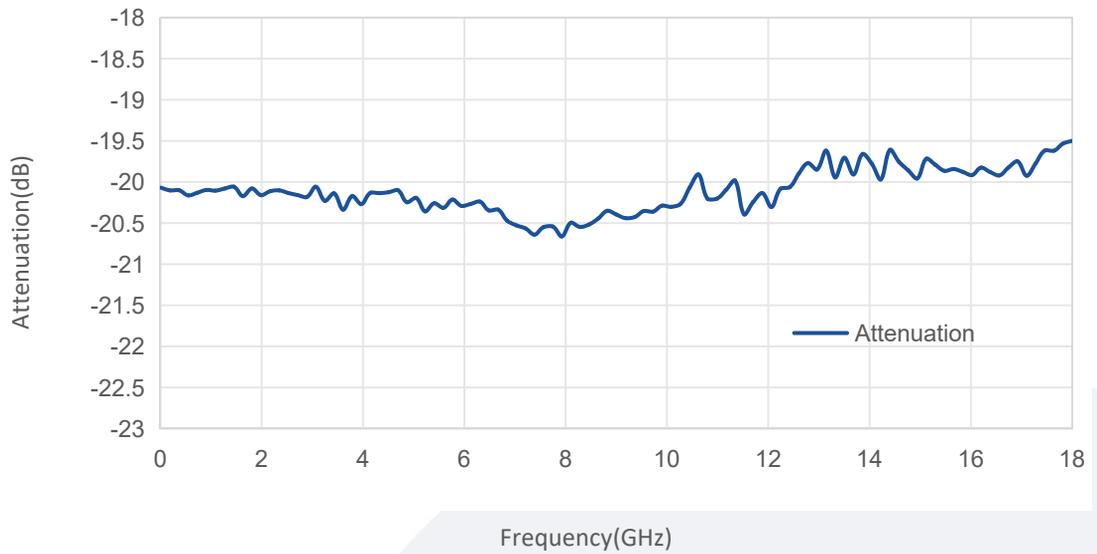
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TA20A2-S-18-Cryo:

4K:

### Attenuation vs Frequency



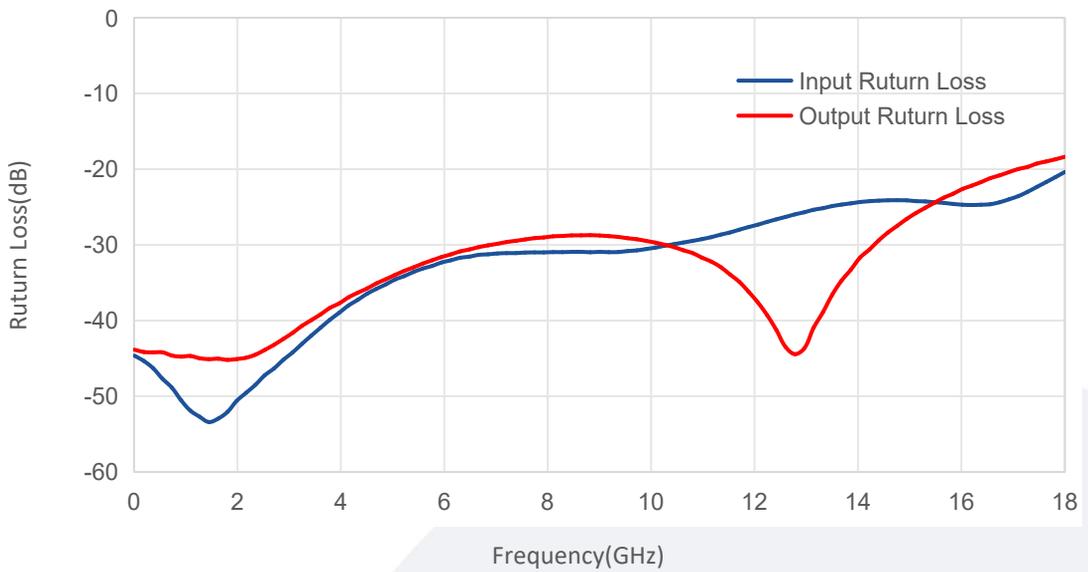
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**典型曲线 Typical Performance Data:**

**TA30A2-S-18-Cryo:**

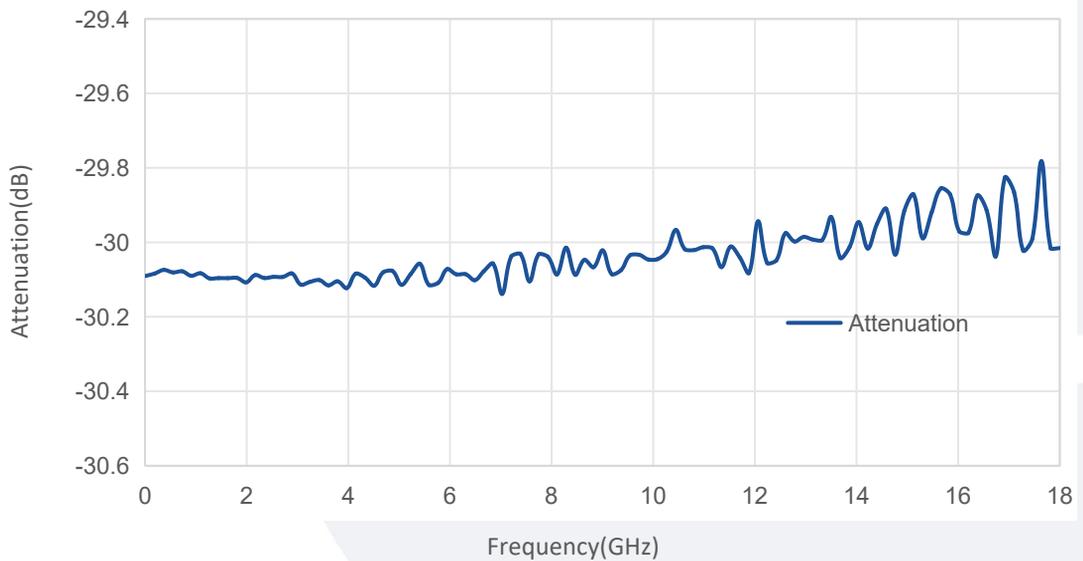
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**298K:**

**Attenuation vs Frequency**



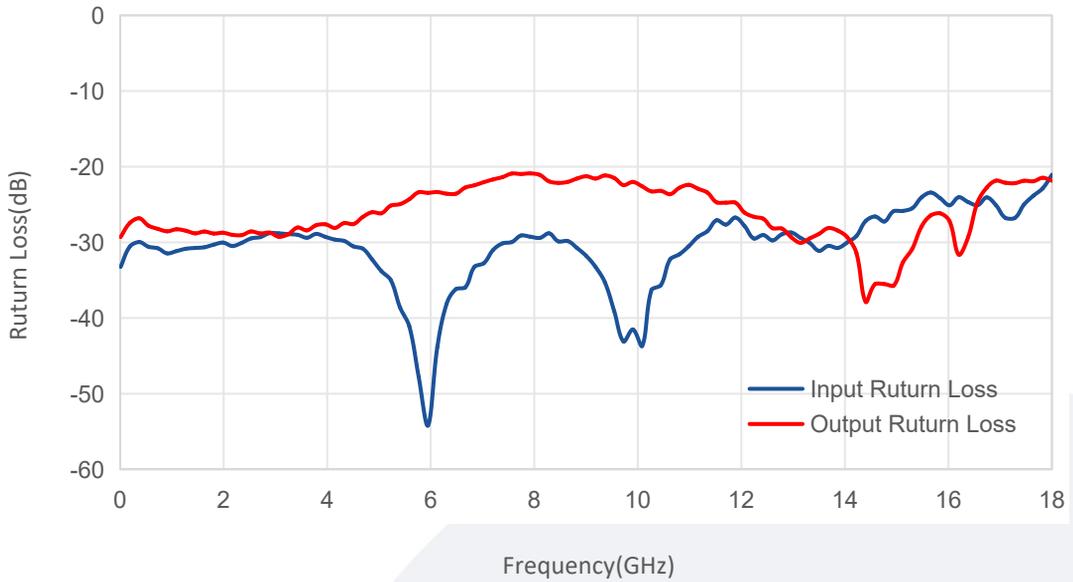
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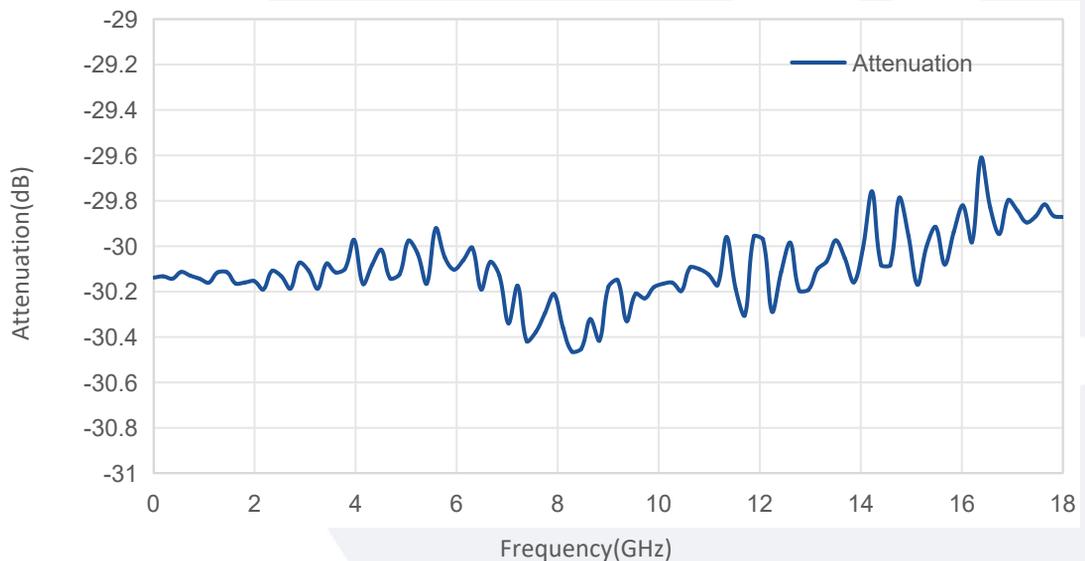
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