Suzhou Talent Microwave,Inc
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Cryogenic Coax Directional Coupler

2-18GHz/10dB Coupling/SMA

Model: TC-20180-10S-Cryo

TC-20180-10S-Cryo is a cryogenic coax directional coupler is a microwave device used to sample high-frequency signals in cryogenic environments. It is a four-port passive device that can couple a portion of the power from the main transmission line to the auxiliary line in a directional manner.

Features:

- Output Frequency: 2-18GHz
- Max Power: 2W
- Capable of operation at 10 mK
- Stackable mechanical design
- Machined OFHC block
- 50 Ohm Matched Input / Output

Applications:

- Cryogenic systems
- Quantum computer
- Dilution refrigerator

电气特性 Electrical Characteristics:

参数 Parameter	Min	Typ	Max	单位 Units
工作频率 Frequency Range	2		18	GHz
回波损耗 Ruturn Loss			-13	dB
插入损耗 Insertion Loss			1.0	dB
耦合度 Coupling		10±1		dB
方向性 Directivity	12			dB
耐功率 Power Handling			2	W
阻抗 Impedance		50		Ohms

Note: The isolation port is equipped with the Talent microwave standard low-temperature load:TT2-18-SM-Cryo.

机械特性 Mechanical Specifications:

参数 Parameter	指标 Value	单位 Units
RF接口 RF Connector	SMA Female	
外壳材质 Csae Material	OFHC Copper	
表面 Finish	Gold plated	
尺寸 Size	45*15*11	mm

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外形图 Outline Drawing:

Unit:mm

ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

温度环境 Environmental Conditions:

参数 Parameter	Min	Typ	Max	单位 Units
操作温度 Operating Temperature	10mK		+85℃	
存储温度 Non-operating Temperature	-45		+85	℃
相对湿度 Relative humidity	100% RH at 35c, 95%RH at 40℃			%
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
TC-20180-10S-Cryo	Cryogenic Coax Directional Coupler 2-18 GHz, Coulping:10dB, SMA Female	Rev.1.1

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典型曲线 Typical Performance Data(TEM=298K):

Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

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典型曲线 Typical Performance Data(TEM=77K):

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