

## Coaxial 500W 20dB Directional Coupler 0.5GHz-1GHz



### Product Description

RFDC5M1G20 is a coaxial directional coupler with a frequency range of 0.5 to 1GHz.

The power of this directional coupler is 500W. The insertion loss is 0.3dB with a typical directivity of 22dB.

The working temperature of this product is between - 40°C and + 85°C.

### Features

- High power handling up to 500W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss

### Typical Applications

- Wireless Infrastructure
- Military and Aerospace Applications
- Test Instrumentation
- Radar Systems
- 5G Wireless Communications
- Microwave Radio Systems
- TR Modules
- Research and Development
- Cellular Base Stations

### Electrical Specifications, TA = +25°C

Parameter	Min	Typ	Max	Units
Frequency Range	0.5		1	GHz
Nominal Coupling	19.2	20	20.8	dB
Frequency Sensitivity		±0.3	±0.5	dB
Directivity	20	22		dB
Insertion Loss(Excl Coupling)		0.1	0.3	dB
VSWR Primary		1.1	1.2	:1
VSWR Secondary		1.1	1.2	:1
Power Rating	Average	500		W
	Peak	3 (10% Duty Cycle, 10us Pulse Width) 1.7 (20% Duty Cycle, 20us Pulse Width)		KW
Weight		1.8 Max.		lbs
Impedance		50		Ω
Input / Output Connectors	N-Female(Input) – N-Female(Output)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

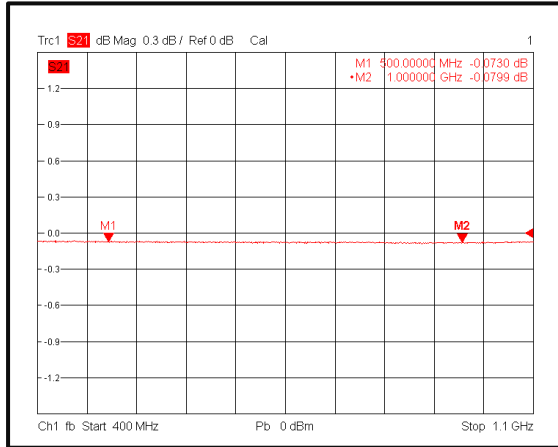
**Environmental Specifications and Test Standards**

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-50°C to +105°C
Thermal Shock	-40°C → +85°C (5 Cycles / 10 hours)
*Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)
Hermetically Sealed (Optional)	MIL-STD-883 (For Hermetically Sealed Units)

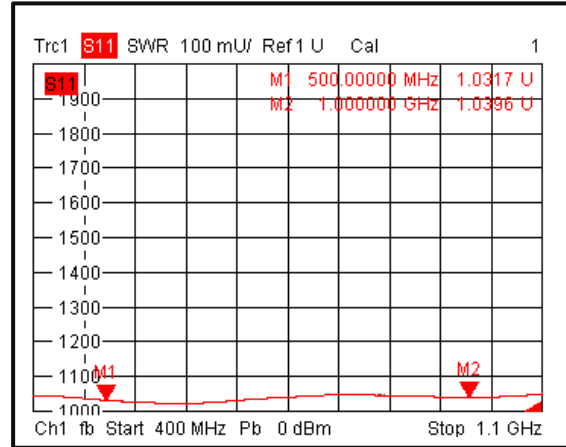
\*For vibration testing details please see additional information section.

**Typical Performance Plots**

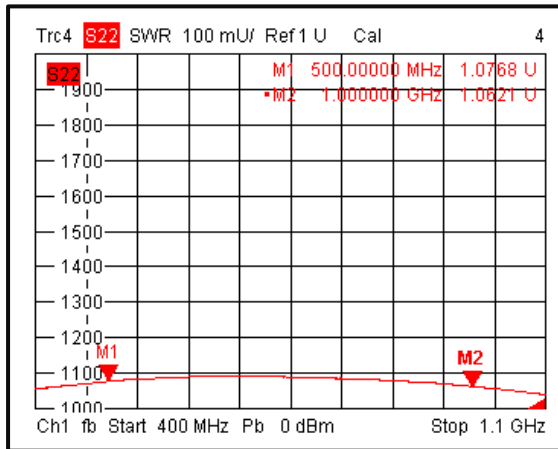
**Insertion Loss**



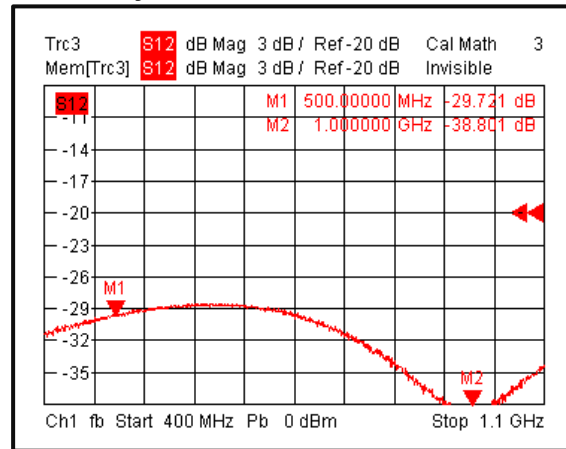
**Primary VSWR**



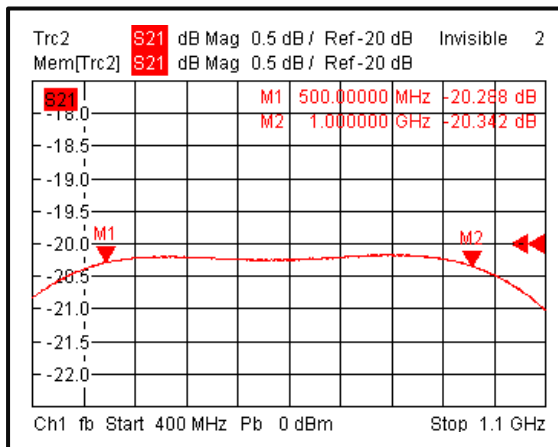
**Secondary VSWR**



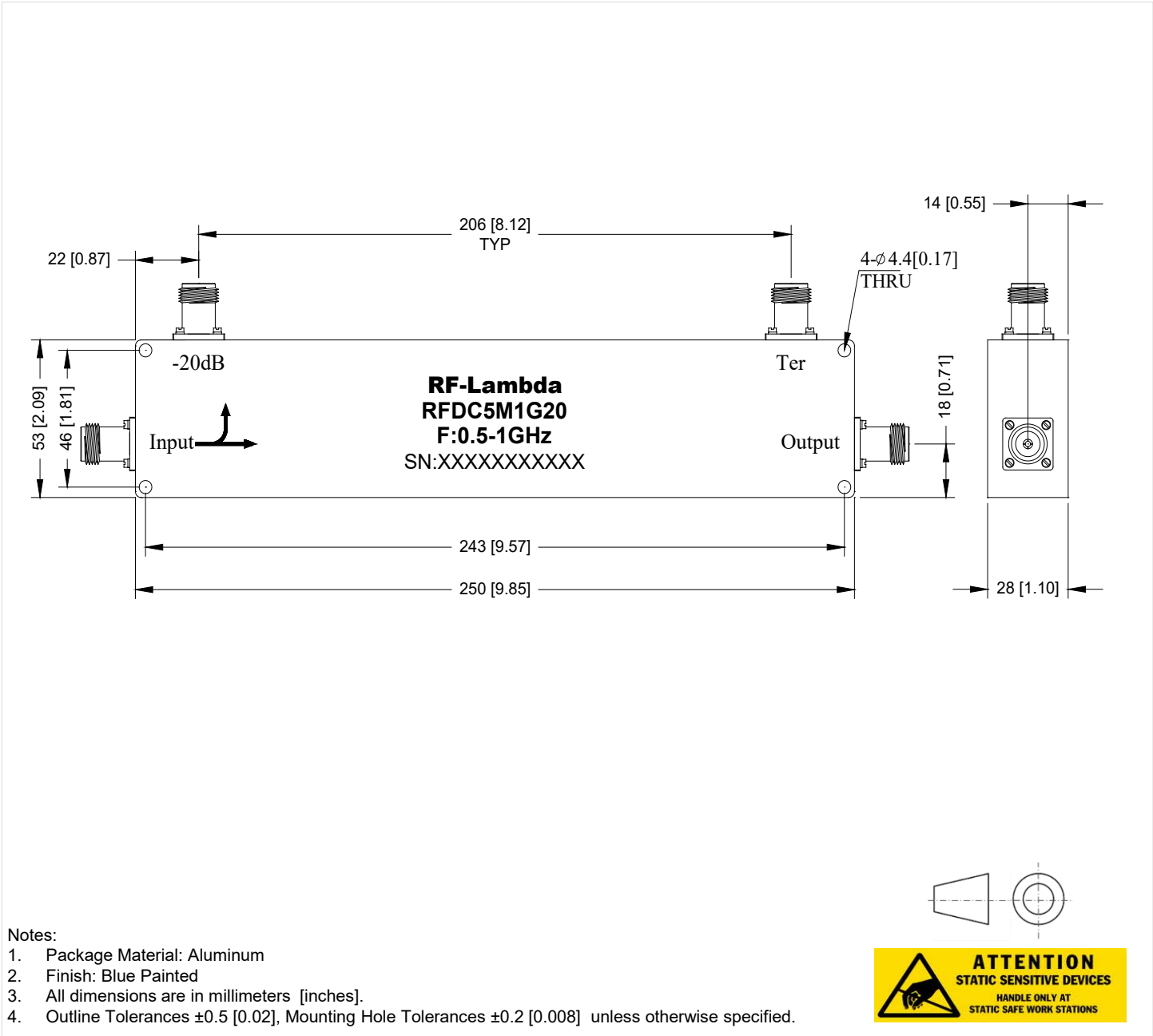
**Directivity**



**Nominal Coupling**



**Outline Drawing**



Additional Information

Documentation	Webpage
Connector Torque Specifications	<a href="https://www.rflambda.com/pdf/Torque_Specifications.pdf">https://www.rflambda.com/pdf/Torque_Specifications.pdf</a>
Random Vibration Test Standard	<a href="https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf">https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf</a>

**Ordering Information**

Part Number	Modification	Description
RFDC5M1G20	Input Connector N-Female and Output Connector N-Female	0.5-1GHz Directional Coupler

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