

Coaxial 50W 20dB Directional Coupler With Removable Termination 1GHz-4GHz



Features

- High power handling up to 50W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss

Product Description

RFDC1G4G20-RT is a coaxial directional coupler with a frequency range of 1 to 4GHz.

The power of this directional coupler is 50W. The insertion loss is 0.3dB with a typical directivity of 25dB.

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

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	Min	Typ	Max	Units
Frequency Range	1		2	2		4	GHz
Nominal Coupling	19	20	21	19	20	21	dB
Frequency Sensitivity		±0.5	±0.7		±0.5	±0.7	dB
Directivity	20	25		20	22		dB
Insertion Loss (Excl. Coupling)			0.3			0.4	dB
Insertion Loss (true)		0.2	0.3		0.3	0.4	dB
VSWR Primary		1.1	1.2		1.15	1.2	: 1
VSWR Secondary		1.1	1.2		1.15	1.2	: 1
Power Rating	Average		50				W
	Peak		500 (10% Duty Cycle, 1 us Pulse Width)				W
Weight			0.11 Max.				lbs
Impedance			50				Ω
Input / Output Connectors	SMA-Female(Input) – SMA-Female(Output)						
Package	Epoxy Sealed (Standard)						
	Hermetically Sealed (Optional)						

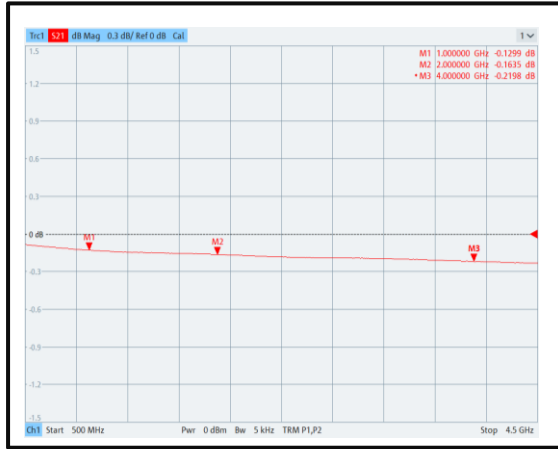
Environmental Specifications and Test Standards

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)

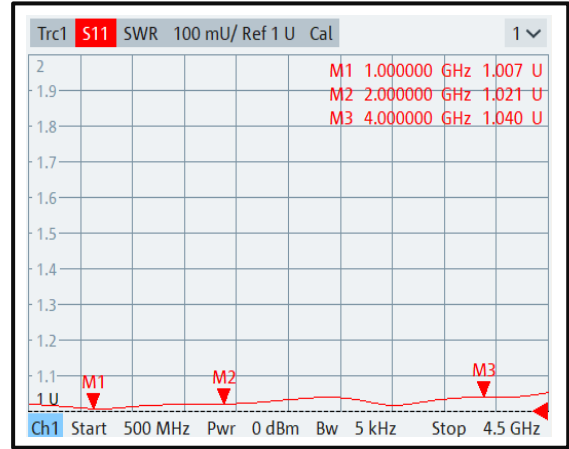
*For vibration testing details please see additional information section.

Typical Performance Plots

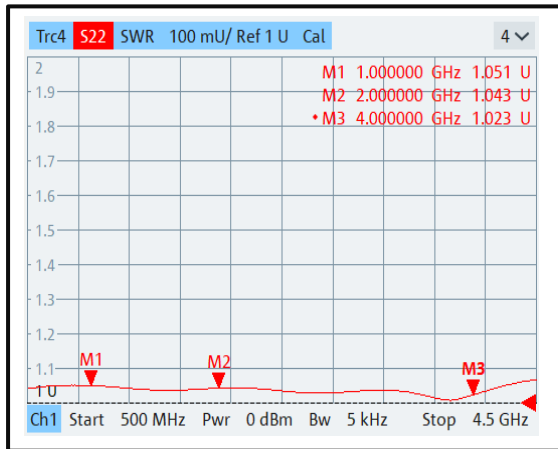
Insertion Loss



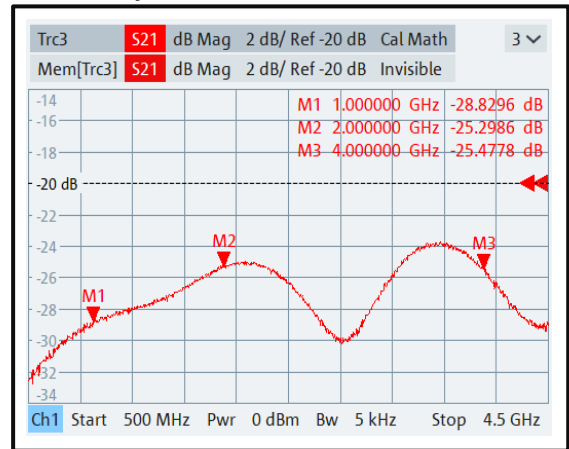
Primary VSWR



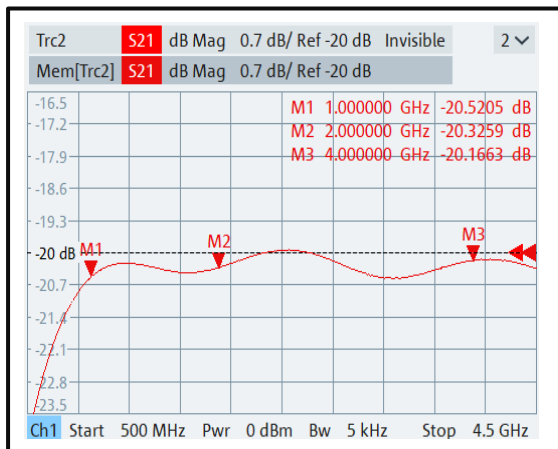
Secondary VSWR



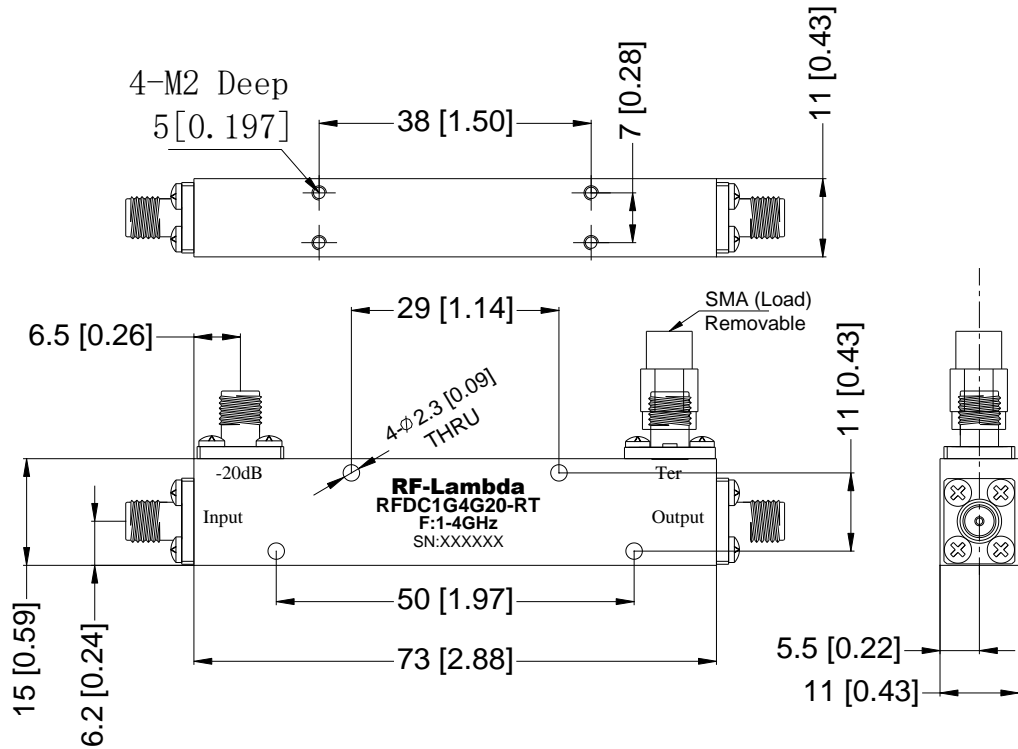
Directivity



Nominal Coupling

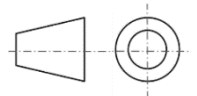


Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Blue Paint
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ± 0.5 [0.02], Mounting Hole Tolerances ± 0.2 [0.008] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



Additional Information

Documentation	Webpage
Connector Torque Specifications	https://www.rflambda.com/pdf/Torque_Specifications.pdf
Random Vibration Test Standard	https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf

Ordering Information

Part Number	Modification	Description
RFDC1G4G20-RT	Standard	1GHz-4GHz Directional Coupler

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