

Coaxial 500W 30dB Directional Coupler 1GHz-2GHz



Product Description

RFDC1G2G30 is a coaxial directional coupler with a frequency range of 1 to 2GHz.

The power of this directional coupler is 500W. The insertion loss is 0.2dB 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 | 1 | | 2 | GHz |
| Nominal Coupling | 29.2 | 30 | 30.8 | dB |
| Frequency Sensitivity | | | ±0.5 | dB |
| Directivity | 20 | 22 | | dB |
| Insertion Loss (Excl. Coupling) | | | 0.2 | dB |
| Insertion Loss (true) | | 0.1 | 0.2 | 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 | | 1.2 Max. | | lbs |
| Impedance | | 50 | | Ω |
| Input / Output Connectors | | N-Female(Input) – N-Female(Output) | | |
| Package | | Epoxy Sealed (Standard) | | |
| | | Hermetically Sealed (Optional) | | |

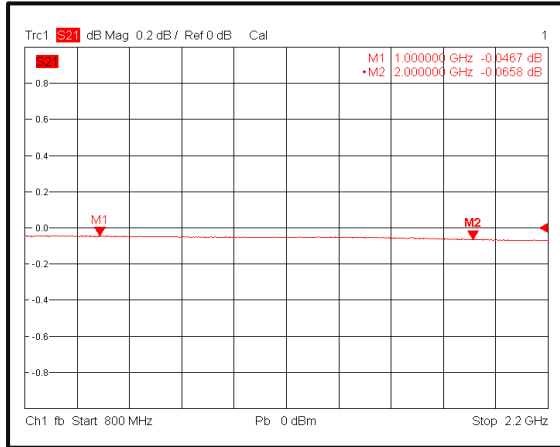
Environmental Specifications and Test Standards

| 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) |

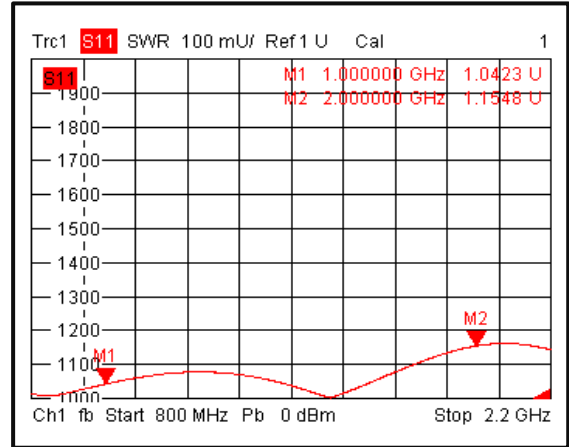
*For vibration testing details please see additional information section.

Typical Performance Plots

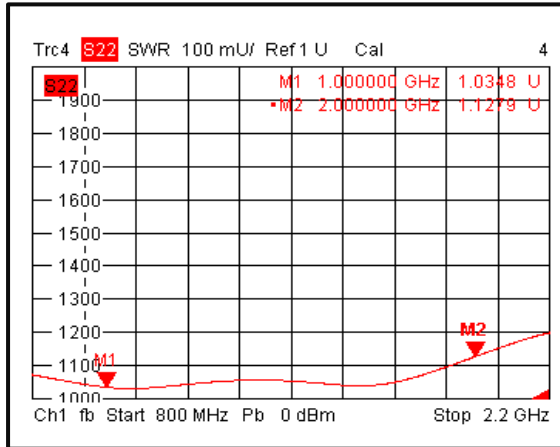
Insertion Loss



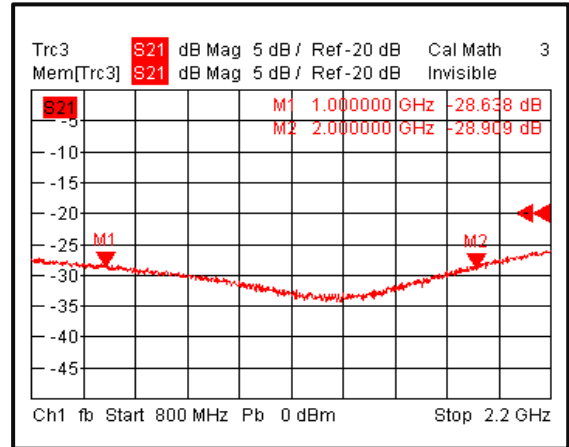
Primary VSWR



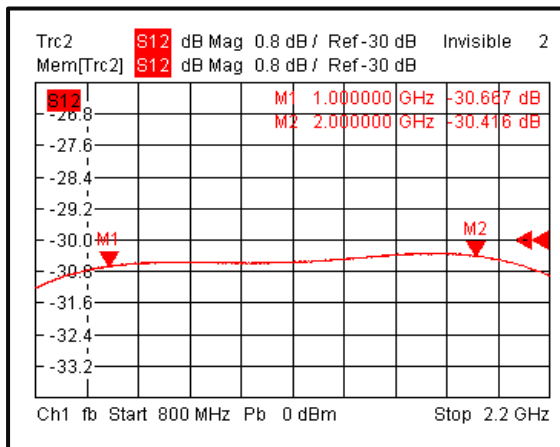
Secondary VSWR



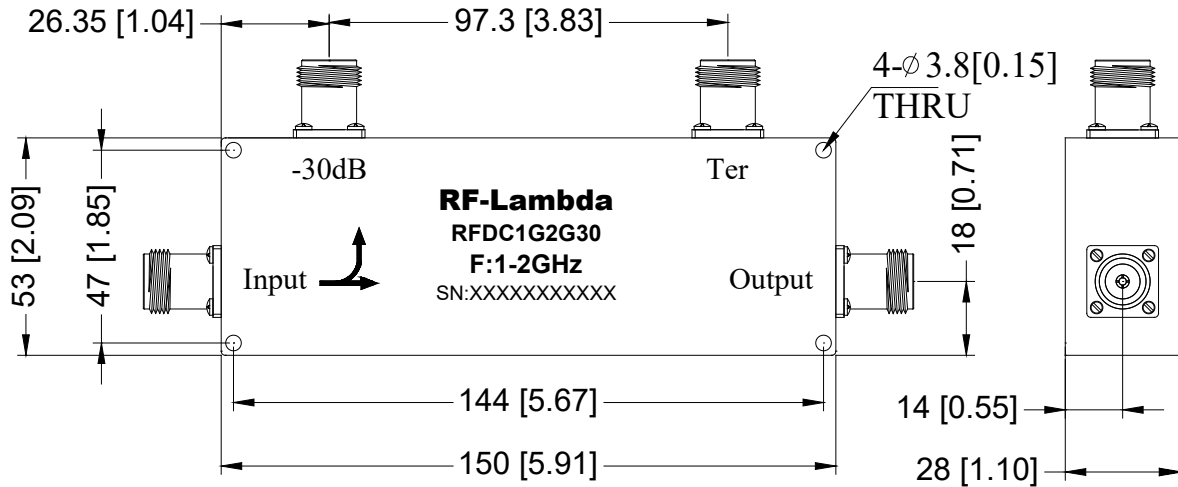
Directivity



Nominal Coupling



Outline Drawing



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.



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 |
|-------------|---|----------------------------|
| RFDC1G2G30 | Input connector N-Female and Output connector N-Female | 1-2GHz Directional Coupler |

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