

Coaxial 500W 90° Hybrid Coupler 1GHz-2GHz



Product Description

RFHB01G02GVTN is a coaxial hybrid coupler with a frequency range of 1 to 2GHz.

The power handling of this hybrid coupler is 500W. The insertion loss is 0.2dB with a typical isolation of 20dB.

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

Features

- High power handling up to 500W
- Wide band operation
- High isolation 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 | | 3 | | dB |
| Insertion Loss | | | 0.2 | dB |
| Isolation | 20 | | | dB |
| Amplitude Imbalance | | | ±0.5 | dB |
| Phase Imbalance | | | ±2 | deg |
| VSWR | | | 1.2 | : 1 |
| Power Rating | Average | 500 | | W |
| | Peak | 2 (10% Duty Cycle, 1 us Pulse Width) | | KW |
| Weight | | 0.62 Max. | | lbs |
| Impedance | | 50 | | Ω |
| Input / Output Connectors | N-Female(Input) – N-Female(Output) | | | |
| Package | Epoxy Sealed (Standard) | | | |
| | Hermetically Sealed (Optional) | | | |

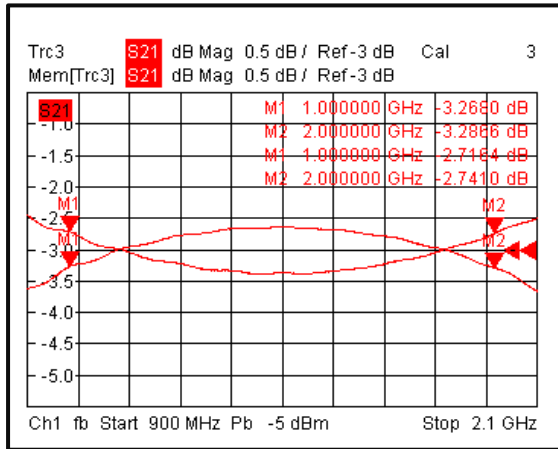
Environmental Specifications and Test Standards

| 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) |

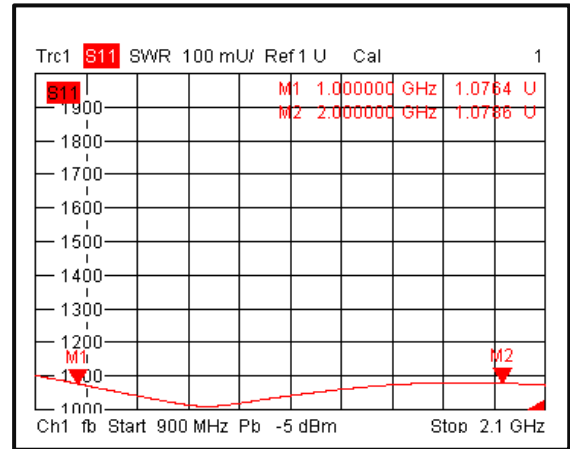
*For vibration testing details please see additional information section.

Typical Performance Plots

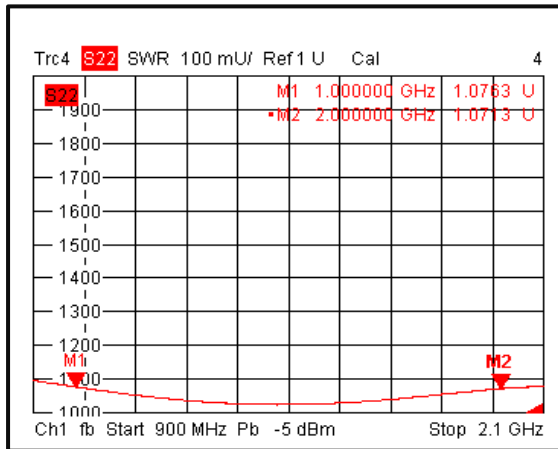
Loss & Amplitude Imbalance



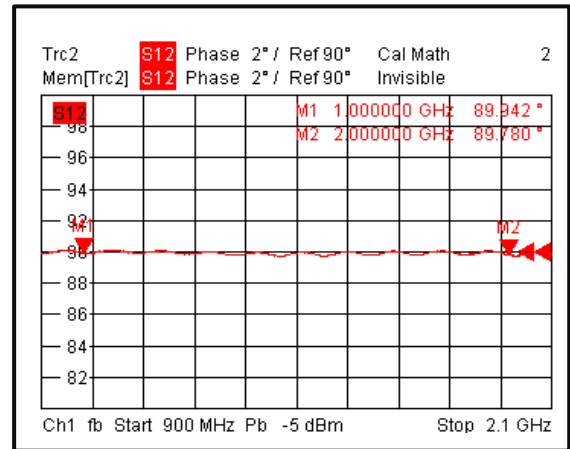
Input VSWR



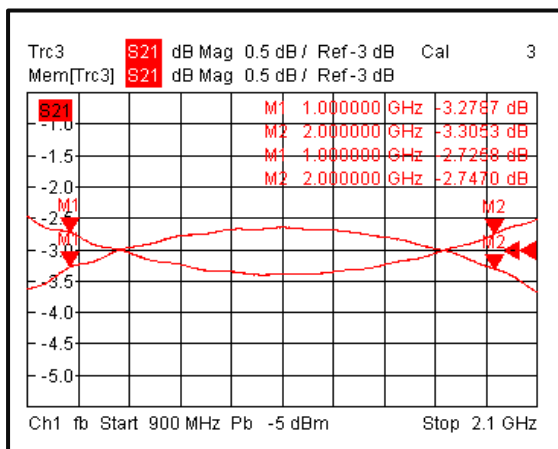
Output VSWR



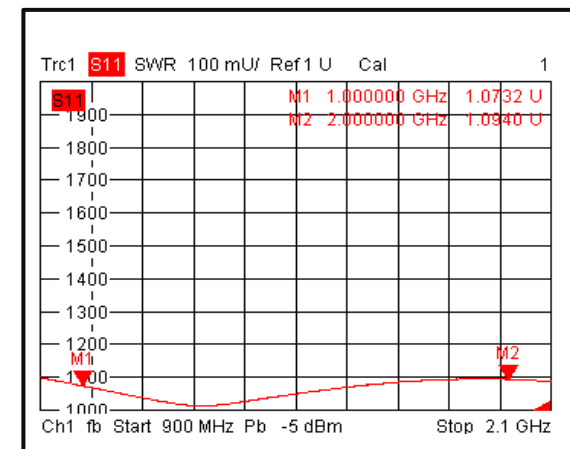
Phase Imbalance



Loss & Amplitude Imbalance

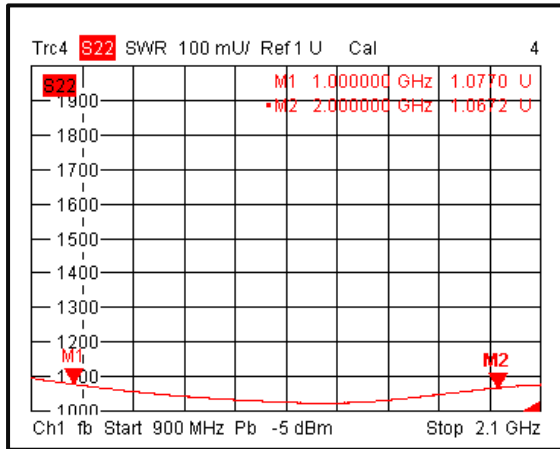


Input VSWR

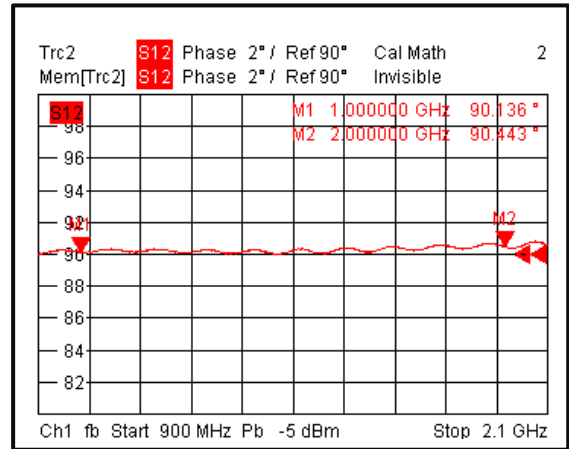


Typical Performance Plots

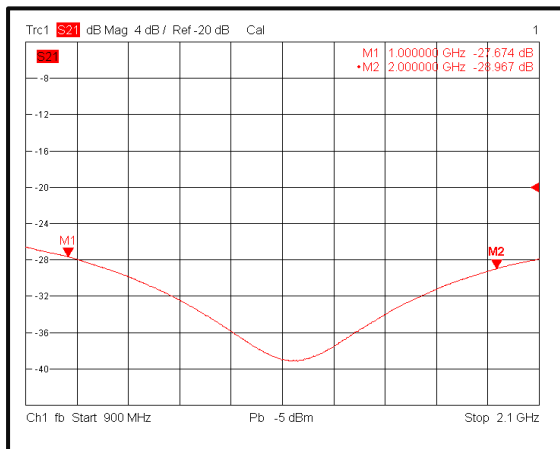
Output VSWR



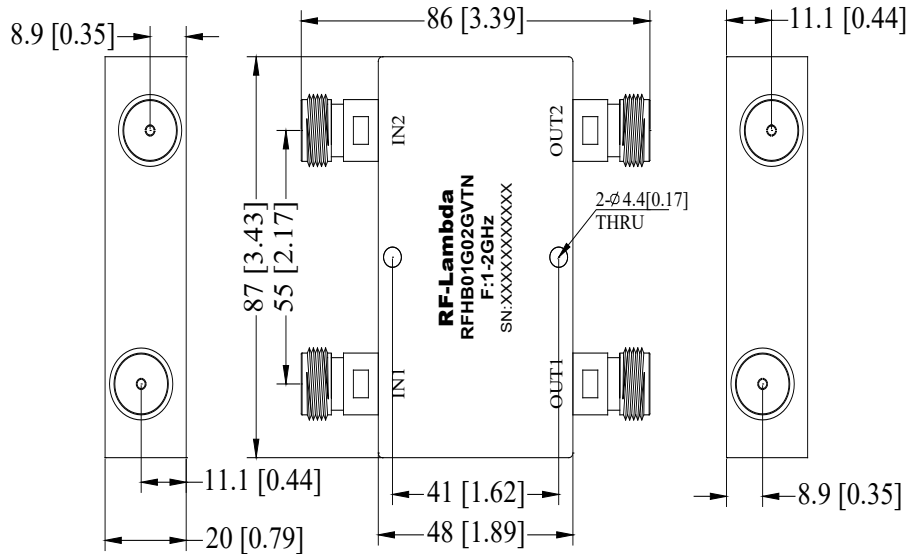
Phase Imbalance



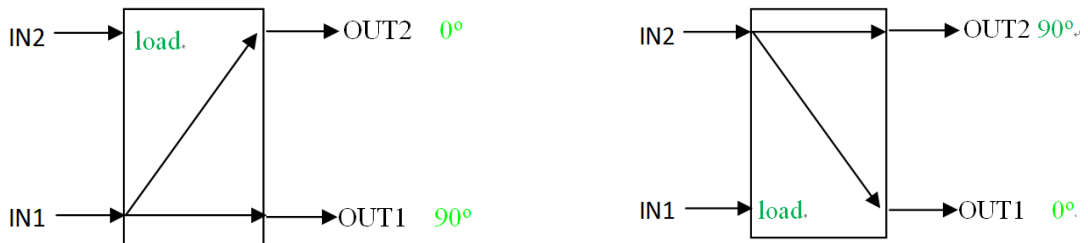
Isolation



Outline Drawing

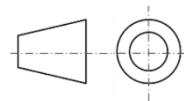


Schematic :



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 |
|---------------|---------------------|-----------------------|
| RFHB01G02GVTN | Connectors N-Female | 1-2GHz Hybrid Coupler |

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