

Coaxial 50W 90° Hybrid Coupler 0.5 - 1GHz



Features

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

Typical Applications

- Aerospace and military applications
- Wireless Infrastructure
- Test and Measurement

Electrical Specifications, $T_A=25\text{ }^\circ\text{C}$

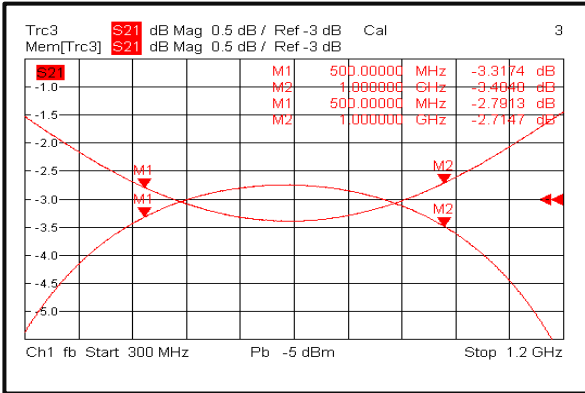
| Parameters | | Min. | Typ. | Max. | Units |
|---------------------------|---------|------------|-----------|-----------|--------|
| Frequency Range | | 0.5 | | 1 | GHz |
| Nominal Coupling | | | 3 | | dB |
| Insertion Loss | | | 0.2 | 0.3 | dB |
| Isolation | | 22 | 25 | | dB |
| Amplitude Imbalance | | | ± 0.3 | ± 0.5 | dB |
| Phase Imbalance | | | ± 1.5 | ± 2 | deg |
| VSWR | | | 1.1 | 1.2 | : 1 |
| Power Rating | Average | 50 | | | W |
| | Peak | 1 | | | KW |
| Impedance | | 50 | | | Ohms |
| Weight | | 1.5 Max. | | | Ounces |
| Input / Output Connectors | | SMA-Female | | | |
| Material | | Aluminum | | | |
| Finish | | Blue paint | | | |

Environmental Specifications and Test Standards

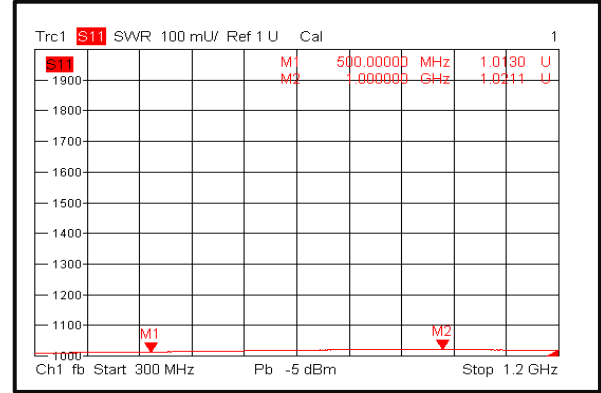
| Parameter | Description |
|--------------------------------|---|
| Operational Temperature | -40°C~+85°C (Case Temperature) |
| Storage Temperature | -50°C~+105°C |
| Thermal Shock | -40°C → +85°C (5 Cycles / 10 hours) |
| Random Vibration | MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis |
| High Temperature Burn In | Temperature +85°C for 72 Hours |
| 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) |

Typical Performance Plots

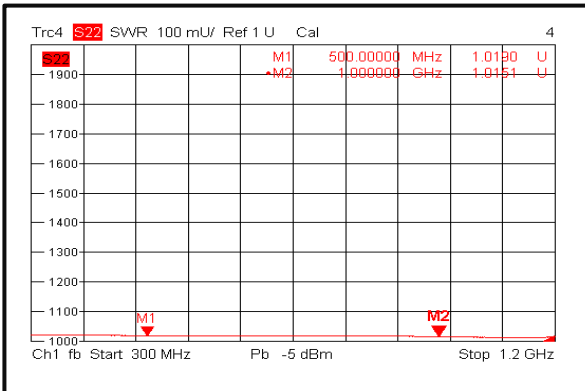
Loss & Amplitude Imbalance



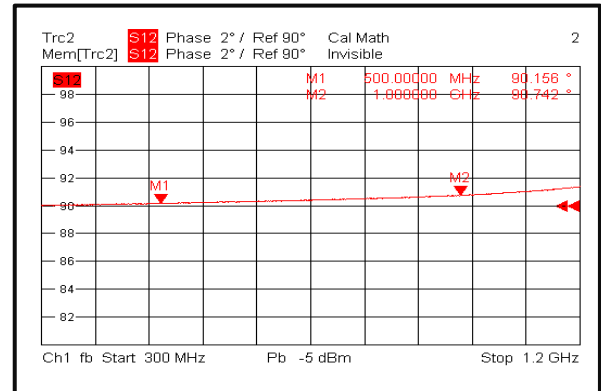
Input VSWR



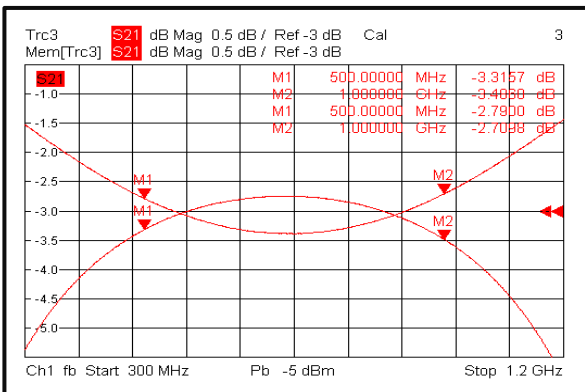
Output VSWR



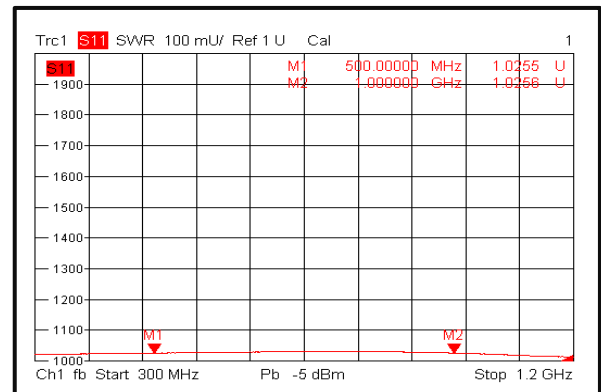
Phase Imbalance



Loss & Amplitude Imbalance

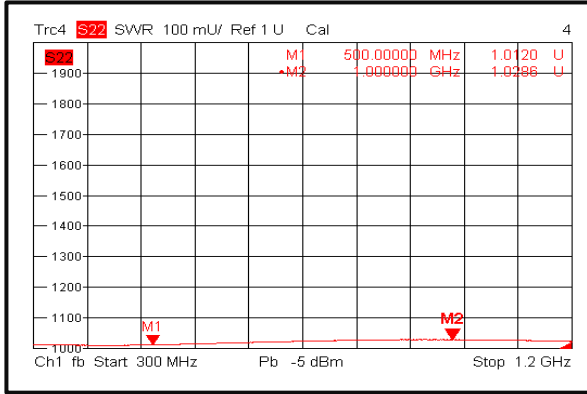


Input VSWR

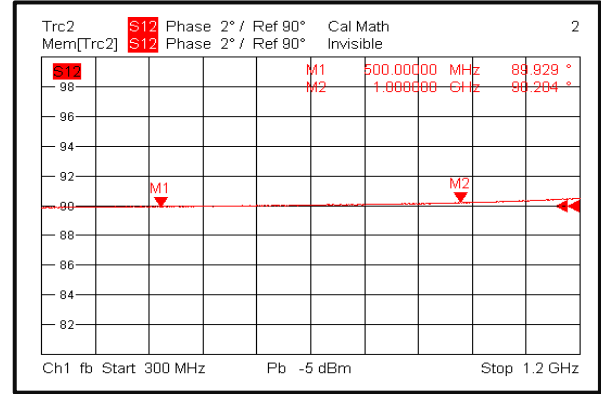


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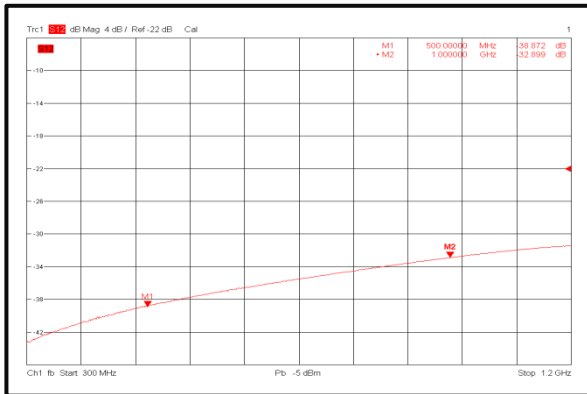
Output VSWR



Phase Imbalance



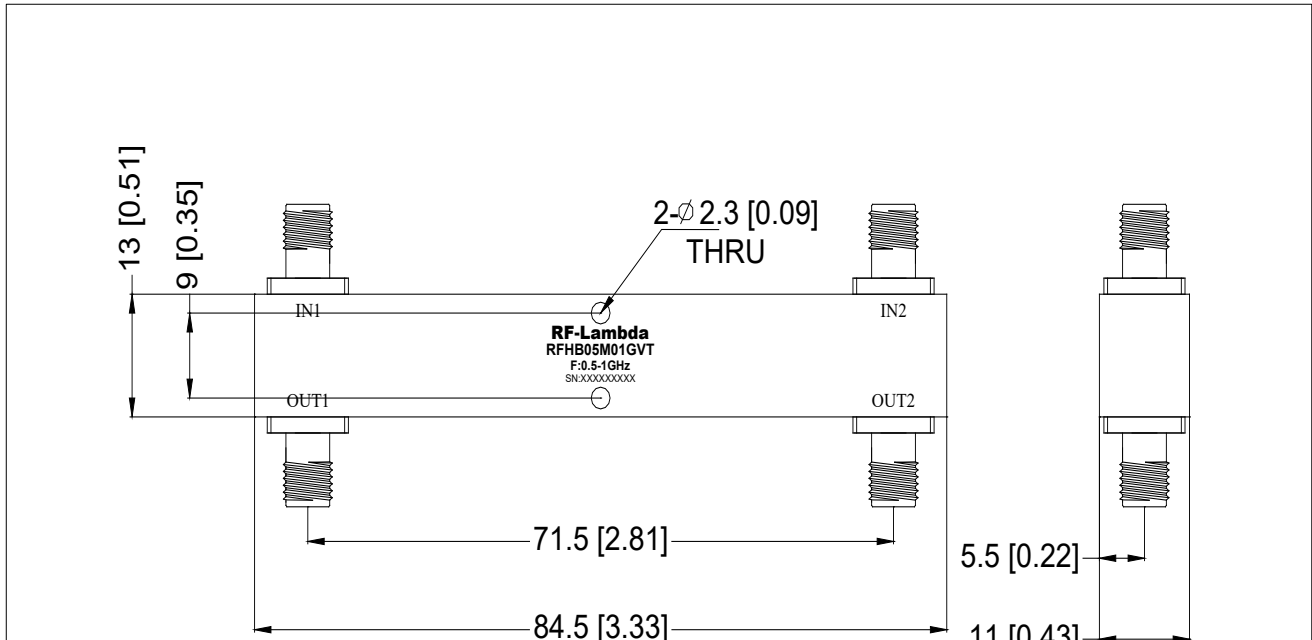
Isolation



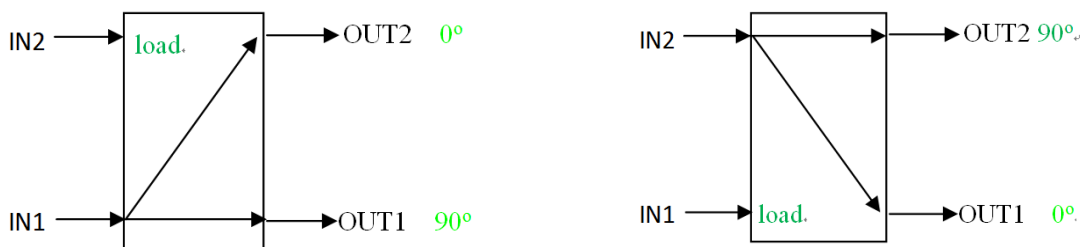
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Outline Drawing:

All Dimensions in mm [inches]
Outline Tolerances ± 0.5 [0.02]
Mounting Hole Tolerances ± 0.2 [0.008]



Schematic:



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