Coaxial 50W 180º Hybrid Coupler 0.9GHz-12.4GHz

Product Description

RFHB9M12GPI is a coaxial hybrid coupler with a frequency range of 0.9 to 12.4GHz.

The power handling of this hybrid coupler is 50W. The insertion loss is 3.0dB with a typical isolation of 22dB.

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

Features

- High power handling up to 50W
- 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

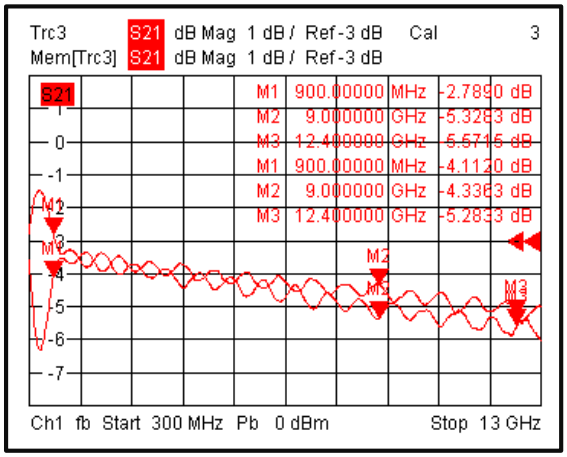
Parameter		Min	Typ	Max	Min	Typ	Max	Units
Frequency Range		0.9		9	9		12.4	GHz
Nominal Coupling			3			3		dB
Insertion Loss			2.5	3.5		3.0	3.8	dB
Isolation		20	22		18	20		dB
Amplitude Imbalance			±0.5	±0.8		±0.5		dB
Phase Imbalance			±5	±10		±6	±10	deg
VSWR			1.3	1.4		1.4	1.5	: 1
Power Rating	Average	50						W
	Peak	500 (10% Duty Cycle, 1 us Pulse Width)						W
Weight		0.4 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

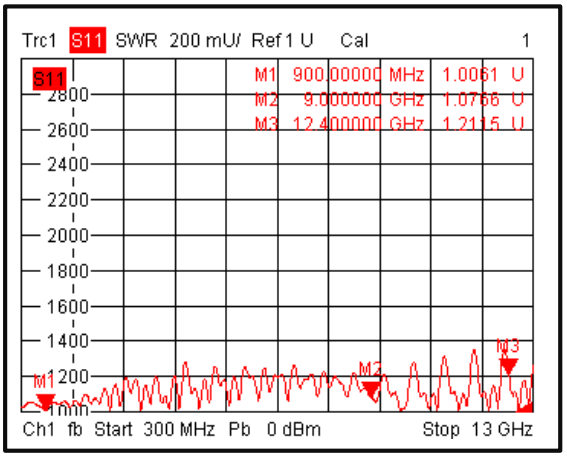
Parameter	Description
Operational Temperature	-40^{0}C to +85^{0}C (Case Temperature)
Storage Temperature	-50^{0}C to +105^{0}C
Thermal Shock	-40^{0}C → +85^{0}C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
Shock	1. Weight >20g, 50g half 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)

Typical Performance Plots

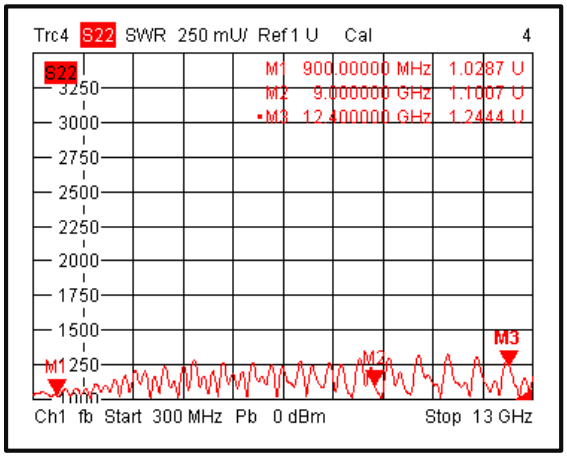
Loss & Amplitude Imbalance



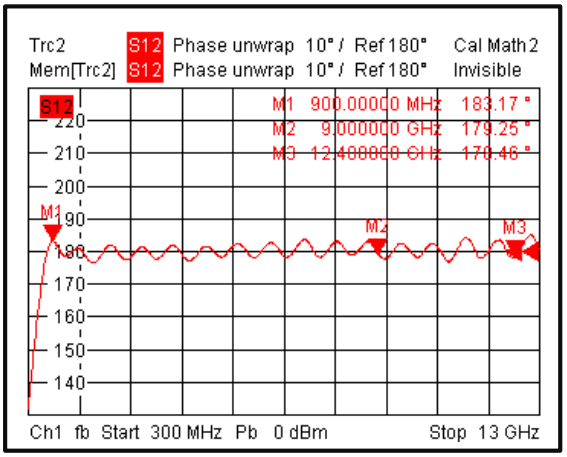
Input VSWR



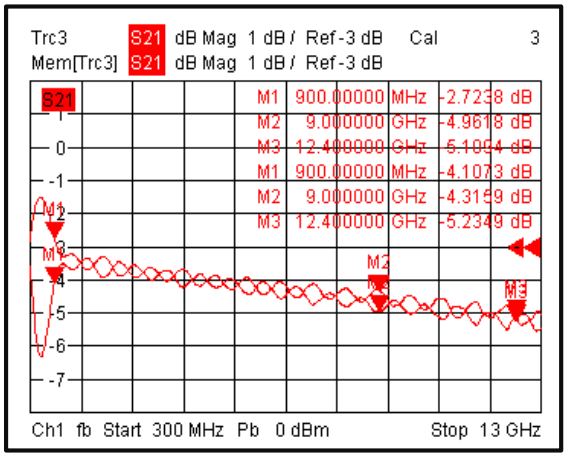
Output VSWR



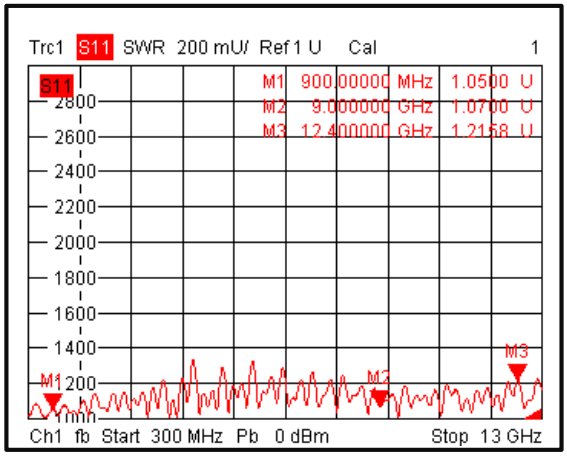
Phase Imbalance



Loss & Amplitude Imbalance

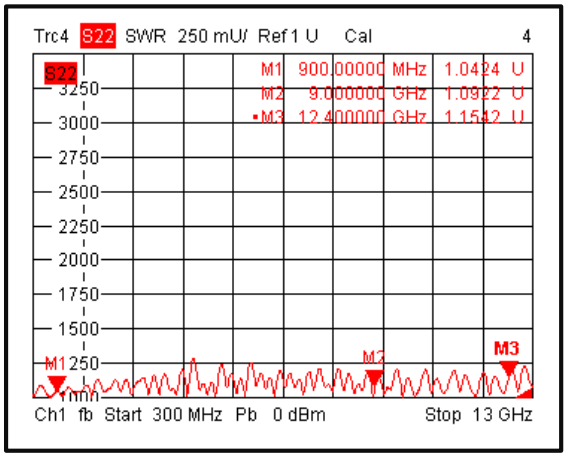


Input VSWR

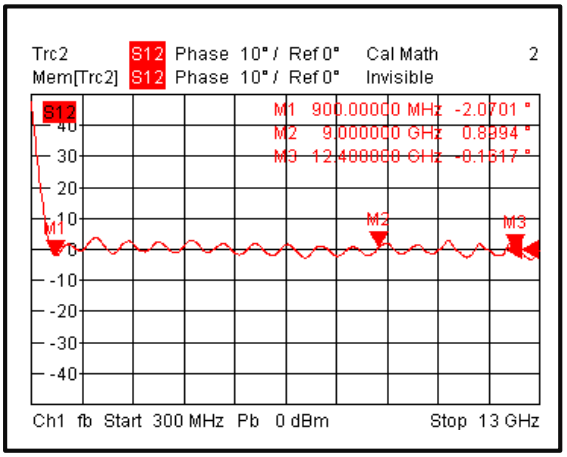


Typical Performance Plots

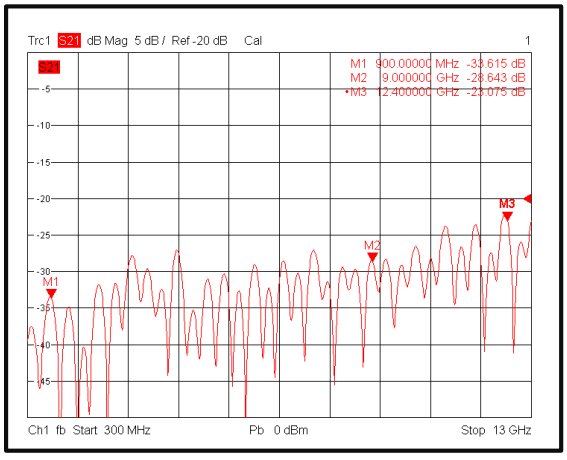
Output VSWR



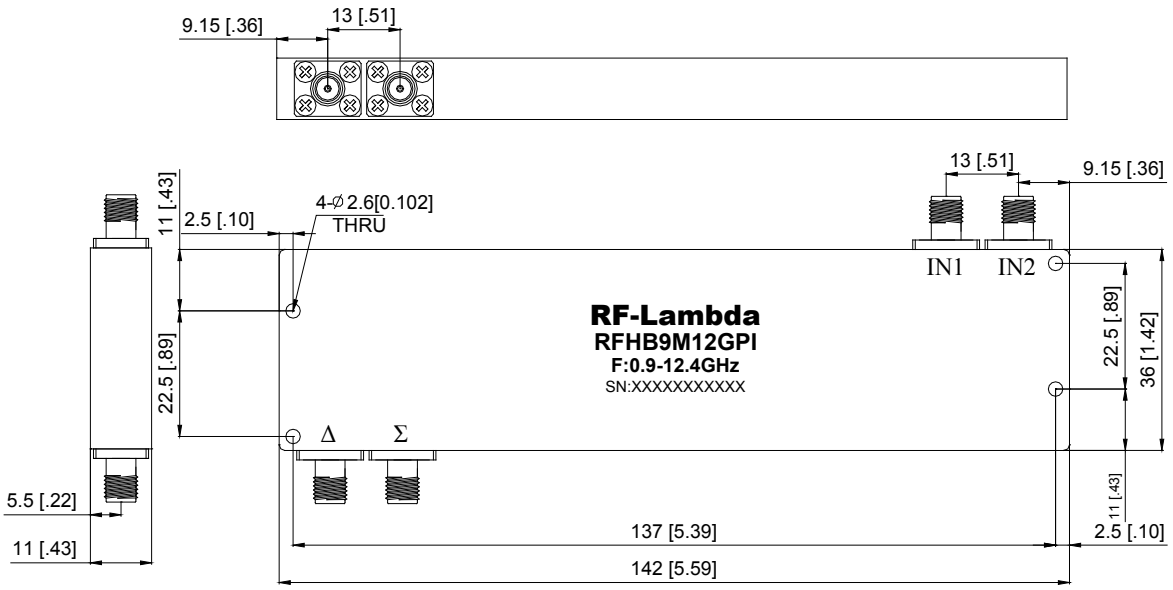
Phase Imbalance



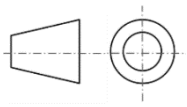
Isolation



Outline Drawing



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
RFHB9M12GPI	Standard	0.9GHz-12.4GHz Hybrid Coupler

Important Notice

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