

## Coaxial 50W 90° Hybrid Coupler 4GHz-18GHz



### Product Description

RFHB04G18GVT is a coaxial hybrid coupler with a frequency range of 4 to 18GHz.

The power of this hybrid coupler is 50W. The insertion loss is 0.8dB with a typical isolation of 18dB.

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

### 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	4		8	8		18	GHz
Nominal Coupling		3				3	dB
Insertion Loss		0.5	0.7		0.8	1.0	dB
Isolation	16	18		16	18		dB
VSWR		1.3	1.4		1.4	1.5	: 1
Amplitude Imbalance		±0.5	±0.7		±0.6	±0.7	dB
Phase Imbalance		±5	±6		±6	±8	deg
Power Rating	Forward Power		50				W
	Peak Power		300				W
			(10% Duty Cycle, 1 us Pulse Width)				
Weight			0.08Max.				lbs
Impedance			50				Ω
Input / Output Connectors			SMA-Female(Input) – SMA-Female(Output)				
Package			Epoxy Sealed (Standard)				
			Hermetically Sealed (Optional)				

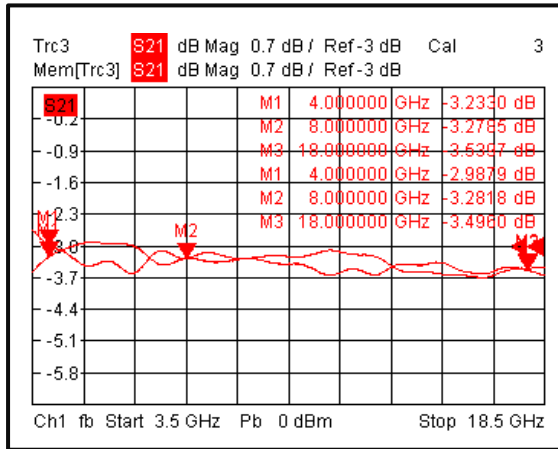
**Environmental Specifications and Test Standards**

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)

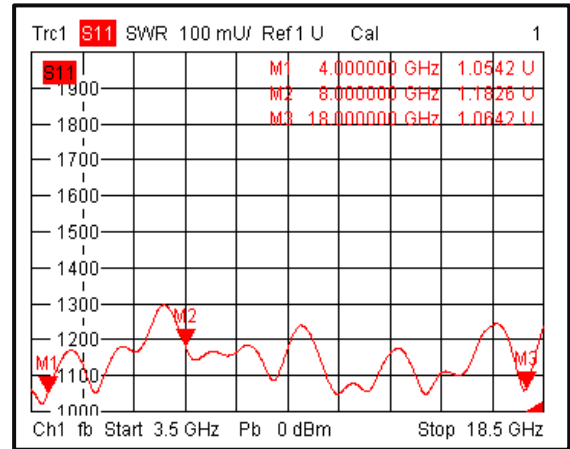
\*For vibration testing details please see additional information section.

**Typical Performance Plots**

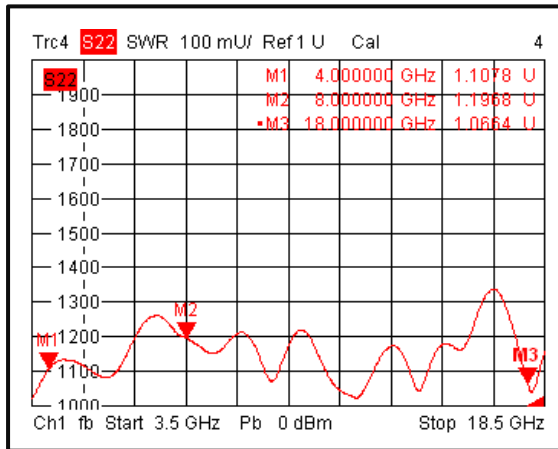
**Loss & Amplitude Imbalance**



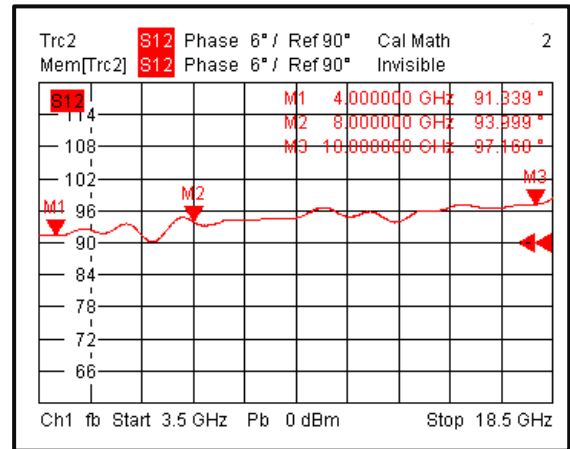
**Input VSWR**



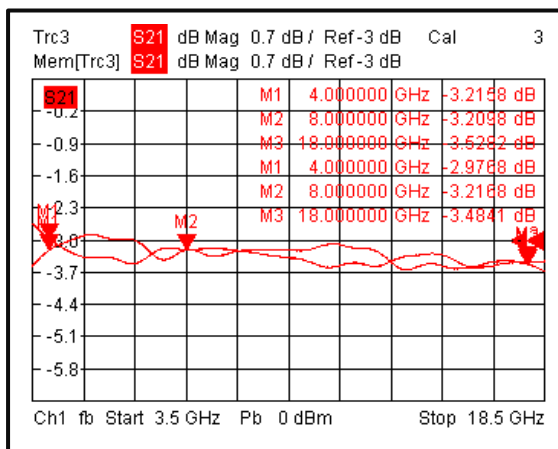
**Output VSWR**



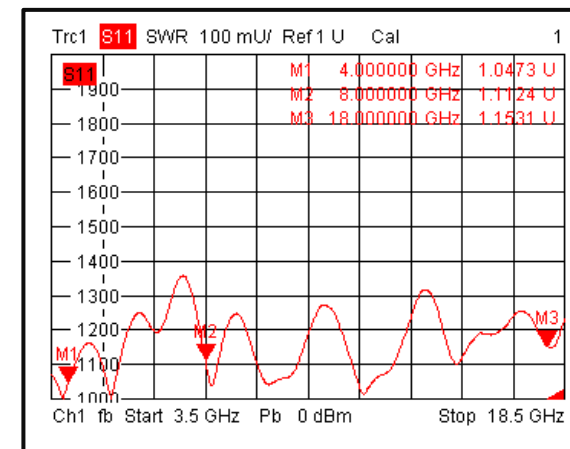
**Phase Imbalance**



**Loss & Amplitude Imbalance**

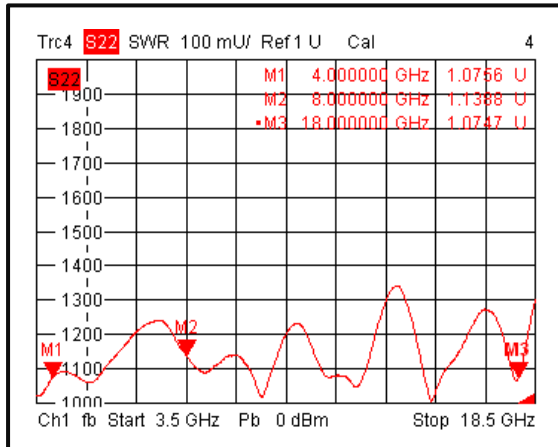


**Input VSWR**

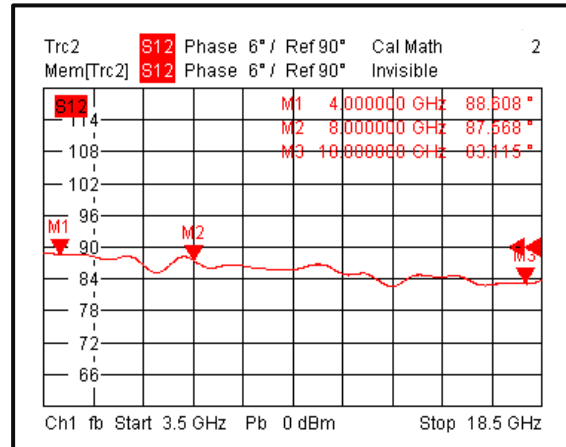


Typical Performance Plots

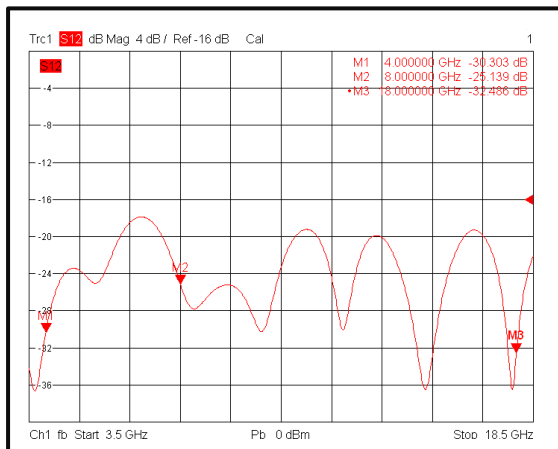
Output VSWR



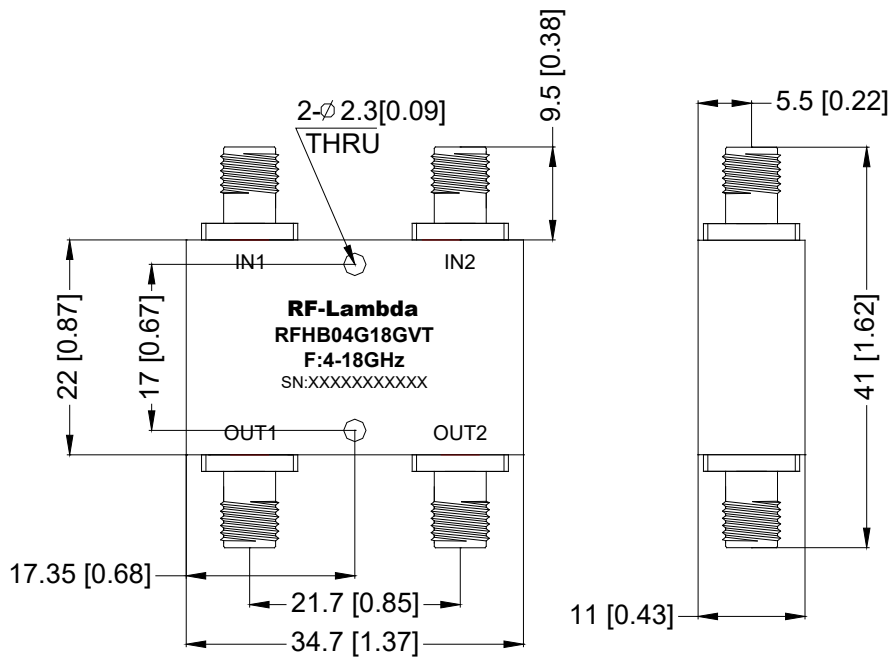
Phase Imbalance



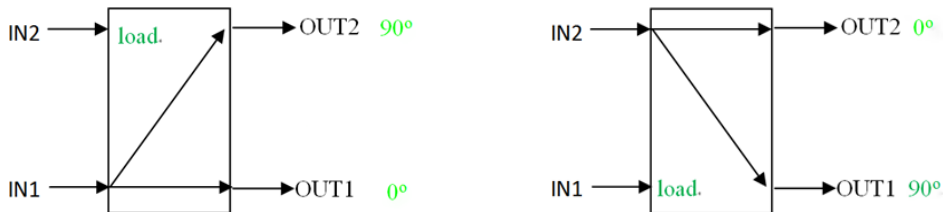
Isolation



**Outline Drawing**

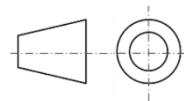


**Schematic :**



**Notes:**

1. Package Material: Aluminum
2. Finish: Blue Painted
3. All dimensions are in millimeters [inches].
4. Outline Tolerances  $\pm 0.5$  [0.02], Mounting Hole Tolerances  $\pm 0.2$  [0.008] unless otherwise specified.



**Additional Information**

Documentation	Webpage
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Connector Torque Specifications [https://www.rflambda.com/pdf/Torque\\_Specifications.pdf](https://www.rflambda.com/pdf/Torque_Specifications.pdf)

Random Vibration Test Standard [https://www.rflambda.com/pdf/rflambda\\_random\\_vibration\\_MIL-STD-202G.pdf](https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf)

**Ordering Information**

Part Number	Modification	Description
RFHB04G18GVT	Standard	4-18GHz Hybrid Coupler

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