

## Coaxial 50W 90° Hybrid Coupler 400MHz-800MHz



### Product Description

RFHB04M08MVT is a coaxial hybrid coupler with a frequency range of 400 to 800MHz.

The power handling of this hybrid coupler is 50W. The insertion loss is 0.2dB with a typical isolation of 25dB.

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
- Stable performance over temperature
- High peak to average handling capability

### 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		400		800	MHz
Nominal Coupling			3		dB
Insertion Loss			0.2	0.3	dB
Isolation		22	25		dB
Amplitude Imbalance			±0.35	±0.5	dB
Phase Imbalance			±1	±2	deg
VSWR			1.15	1.2	: 1
Power Rating	Forward Power		50		W
	Peak Power		500 (10% Duty Cycle, 1 us Pulse Width)		W
Weight			0.11 Max.		lbs
Impedance			50		Ω
Input / Output Connectors		SMA-Female(Input) – SMA-Female(Output)			
Package		Epoxy Sealed (Standard)			
		Hermetically Sealed (Optional)			

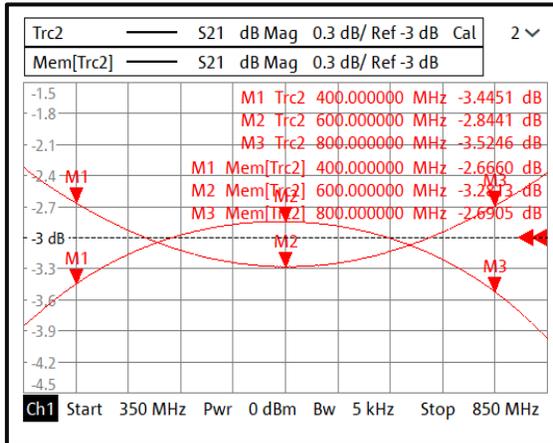
**Environmental Specifications and Test Standards**

Parameter	Description
Operational Temperature	-40°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)

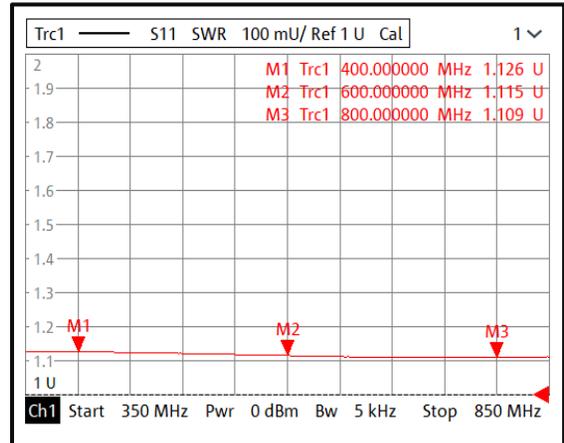
\* For vibration testing details please see additional information section.

Typical Performance Plots

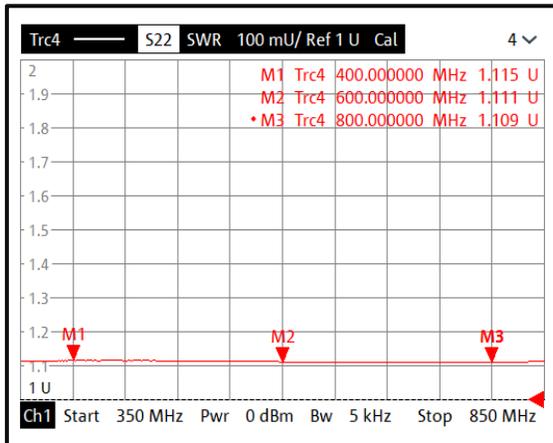
Loss & Amplitude Imbalance



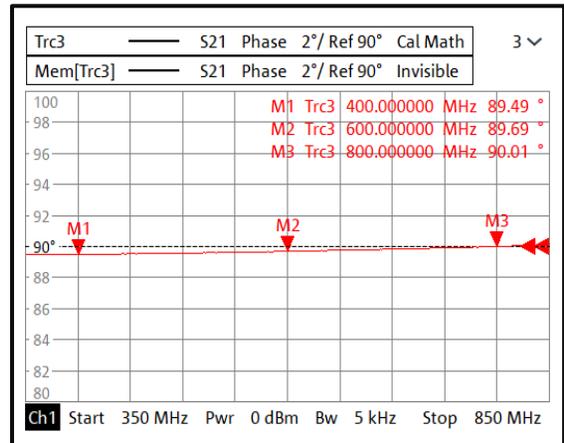
Input VSWR



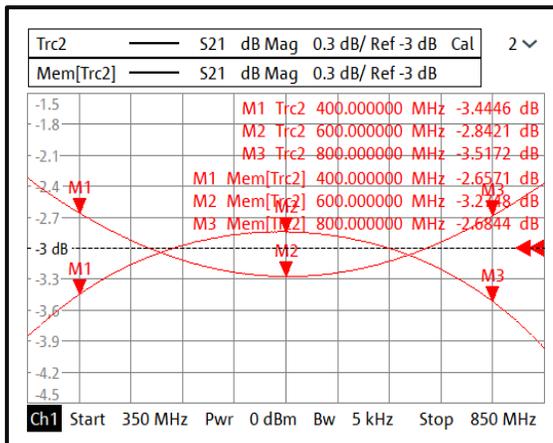
Output VSWR



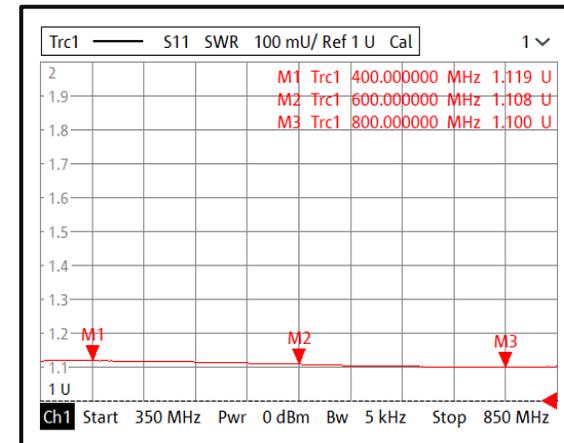
Phase Imbalance



Loss & Amplitude Imbalance

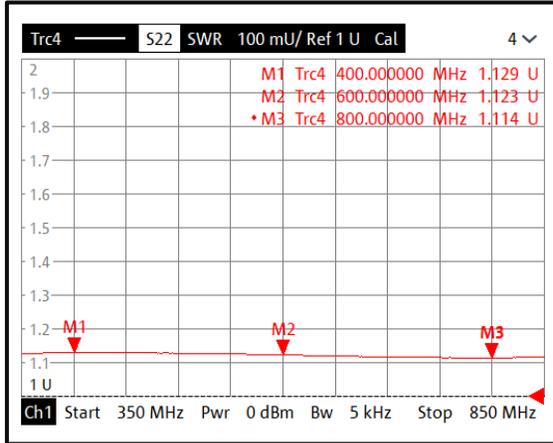


Input VSWR

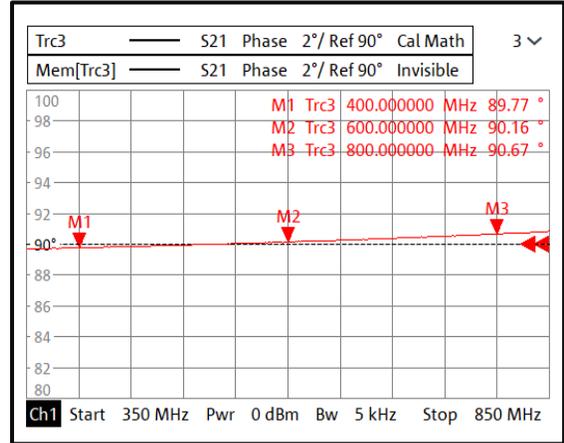


Typical Performance Plots

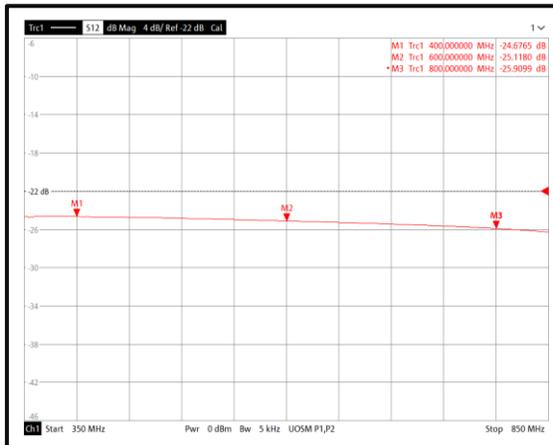
Output VSWR



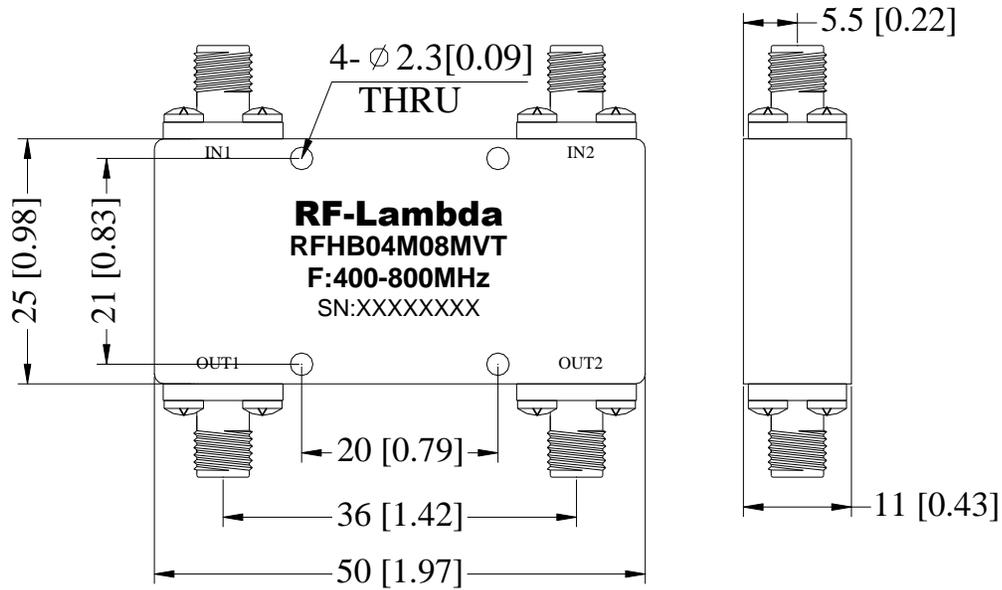
Phase Imbalance



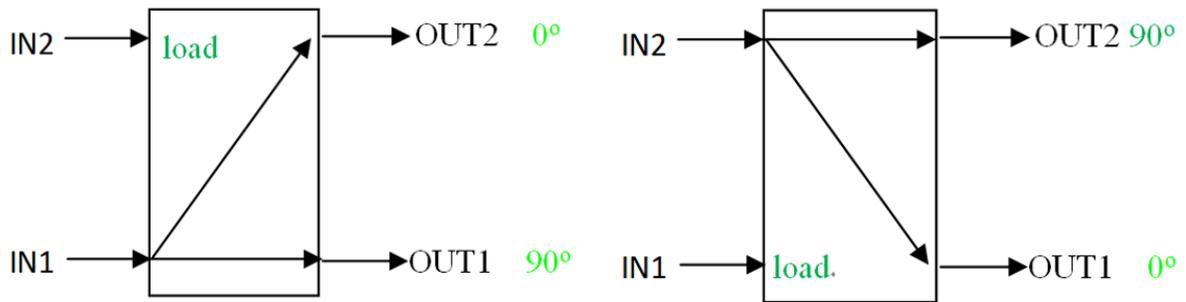
Isolation



**Outline Drawing**

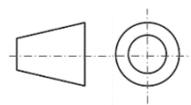


**Schematic :**



**Notes:**

1. Package Material: Aluminum
2. Finish: Blue Paint
3. All dimensions are in millimeters [inches].
4. Outline Tolerances  $\pm 0.5$  [0.02], Mounting Hole Tolerances  $\pm 0.2$  [0.008] unless otherwise specified.
5. Standard torque wrench must be used to secure RF connectors.



**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
RFHB04M08MVT	Standard	400MHz-800MHz Hybrid Coupler

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