

Coaxial 20W 90° Hybrid Coupler 20GHz-40GHz



Features

- High power handling up to 20W
- Wide band operation
- High isolation within operational band
- Low Insertion Loss

Product Description

RFHB20G40GVK is a coaxial hybrid coupler with a frequency range of 20 to 40GHz.

The power handling of this hybrid coupler is 20W. The insertion loss is 1.6dB with a typical isolation of 15dB.

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

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		20		40	GHz
Nominal Coupling			3		dB
Insertion Loss			1.6	2.0	dB
Isolation		12	15		dB
Amplitude Imbalance			±0.5	±0.7	dB
Phase Imbalance			±6	±10	deg
VSWR			1.6	1.8	:1
Power Rating	Average		20		W
	Peak		200 (10% Duty Cycle, 1 us Pulse Width)		W
Weight			0.05 Max.		lbs
Impedance			50		Ω
Input / Output Connectors		2.92mm-Female(Input) – 2.92mm-Female(Output)			
Package	Epoxy Sealed (Standard)				
	Hermetically Sealed (Optional)				

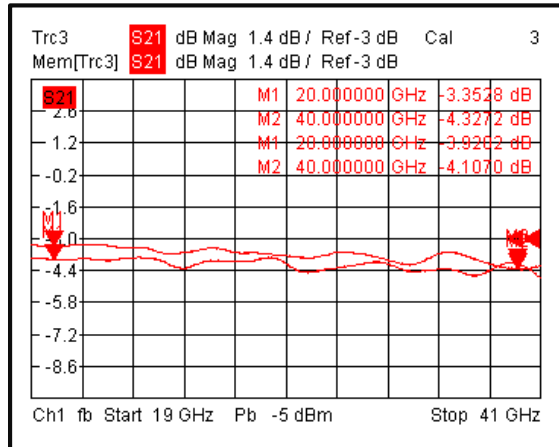
Environmental Specifications and Test Standards

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)

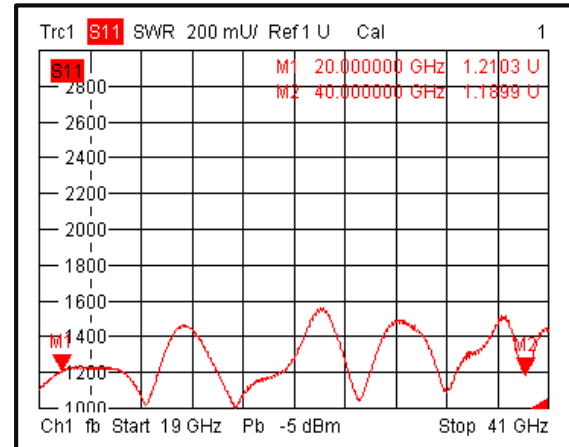
*For vibration testing details please see additional information section.

Typical Performance Plots

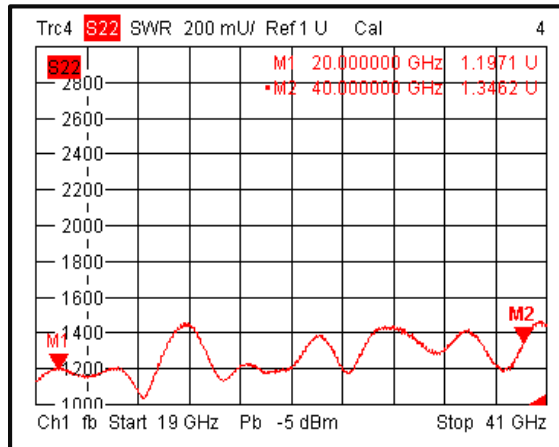
Loss & Amplitude Imbalance



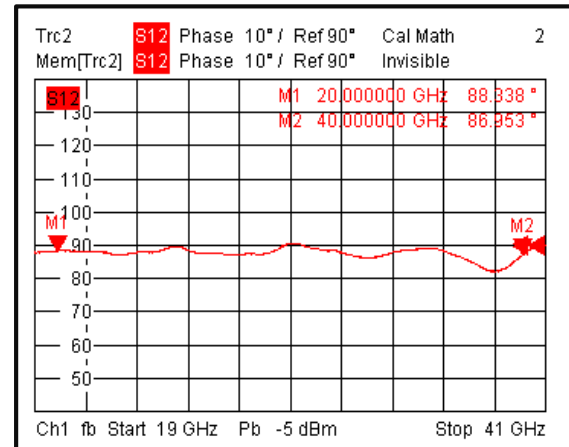
Input VSWR



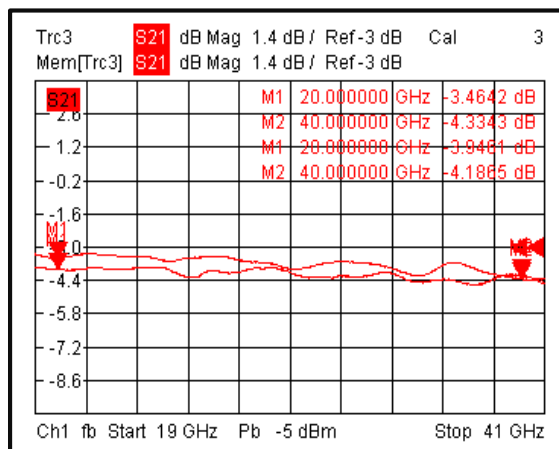
Output VSWR



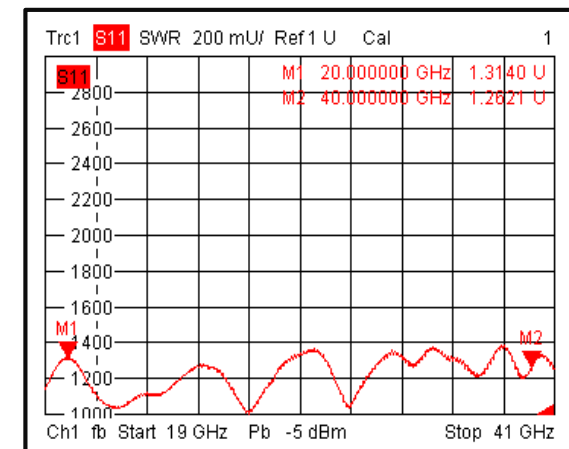
Phase Imbalance



Loss & Amplitude Imbalance

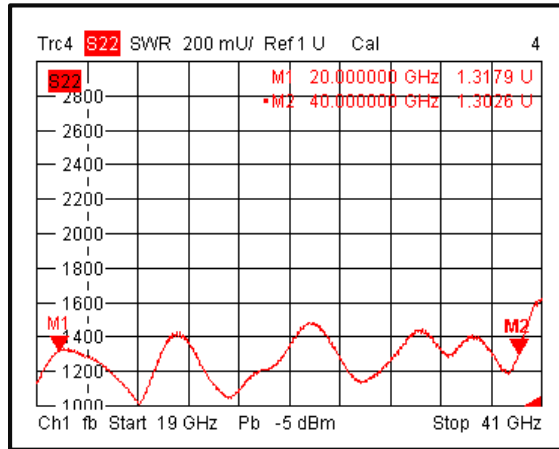


Input VSWR

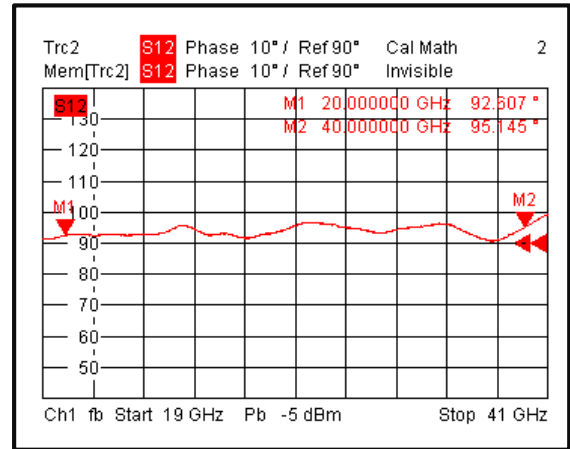


Typical Performance Plots

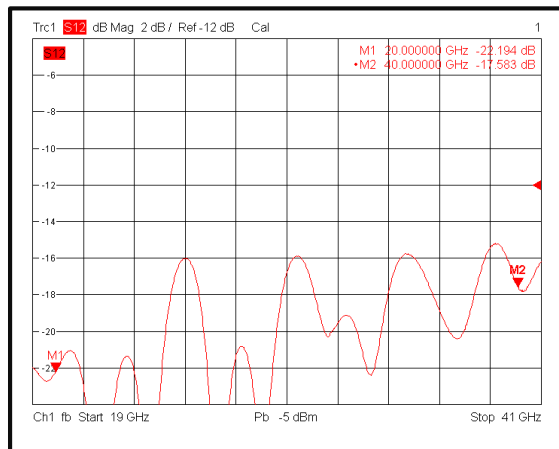
Output VSWR



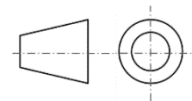
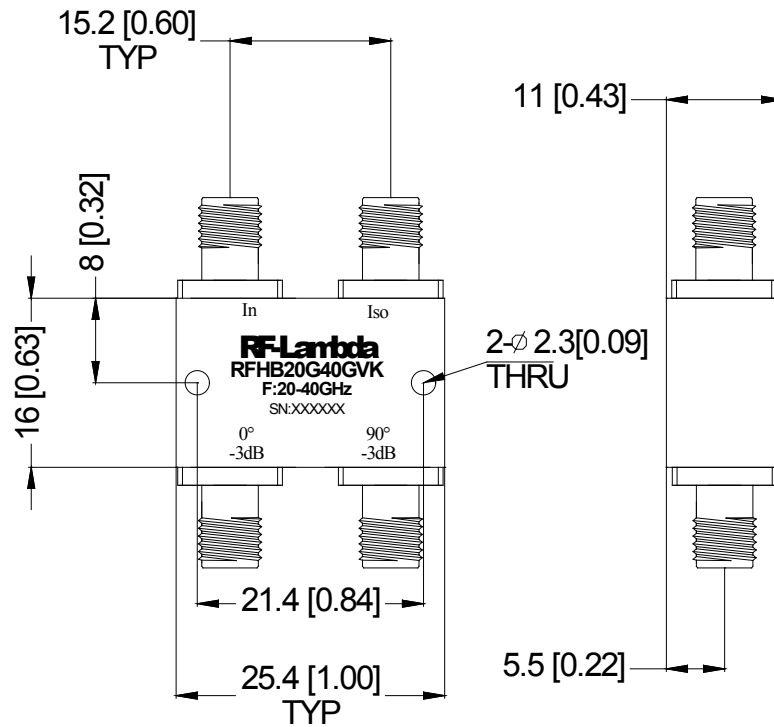
Phase Imbalance



Isolation



Outline Drawing



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

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

Webpage

Ordering Information

Part Number	Modification	Description
RFHB20G40GVK	Connectors 2.92mm-Female	20-40GHz Hybrid Coupler

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