



RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

RFHB01G18GVT

Coaxial 50W 90° Hybrid Coupler 1 - 18GHz



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

- Aerospace and military applications
- LMDS multi-carrier operation

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

Parameter		Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		1		1.2	1.2		8	8		18	GHz
Nominal Coupling			3			3			3		dB
Insertion Loss			0.3	0.5		0.7	1.0		1.2	1.5	dB
Isolation		20	25		18	20		15	18		dB
VSWR			1.15	1.2		1.25	1.3		1.4	1.6	: 1
Amplitude Imbalance			± 1.1	± 1.2		± 0.6	± 1.0		± 0.6	± 1.0	dB
Phase Imbalance			± 3	± 4		± 5	± 8		± 10	± 12	deg
Power Rating	Forward Power	50									W
	Peak Power	500									W
Impedance		50									Ohms
Weight		2.12									ounces
Input / Output Connectors		SMA-Female									
Material		Aluminum									
Finish		Blue Paint									

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Environmental Specifications and Test Standards

Parameter	Standard	Description
Operational Temperature	MIL-STD-39016	-45°C~+85°C
Storage Temperature		-55°C~+125°C
Thermal Shock		1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)
Random Vibration		Acceleration Spectral Density 6 (m/s) Total 92.6 RMS
Electrical & 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	MIL-STD-883	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)



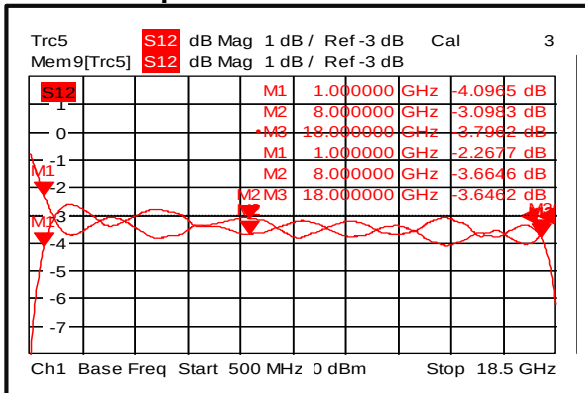
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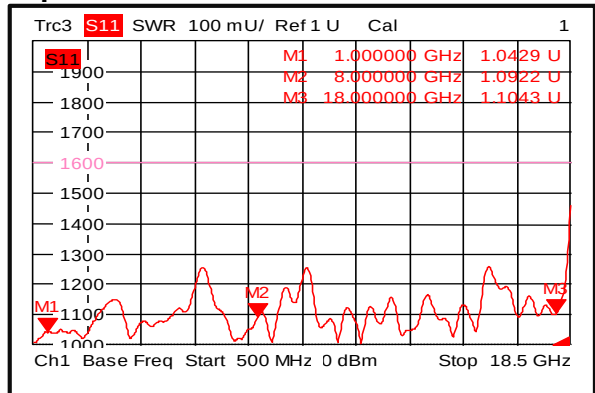
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Typical Performance Plots

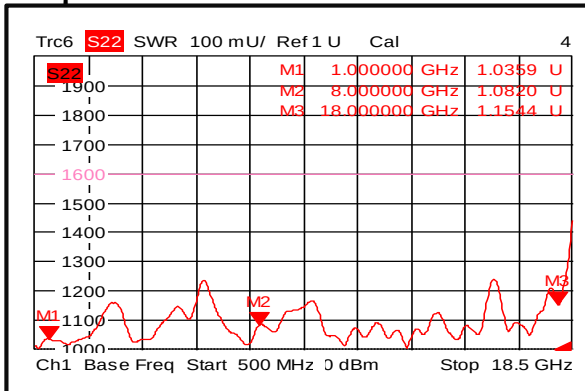
Loss & Amplitude Imbalance



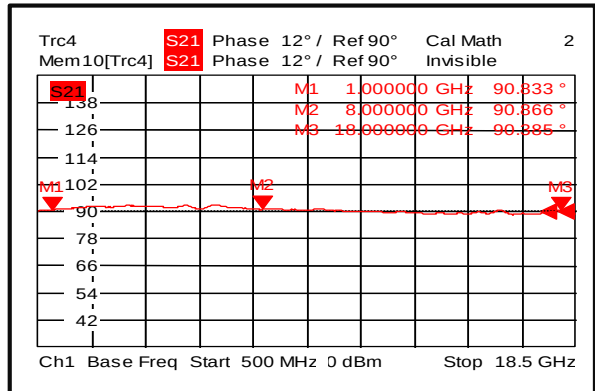
Input VSWR



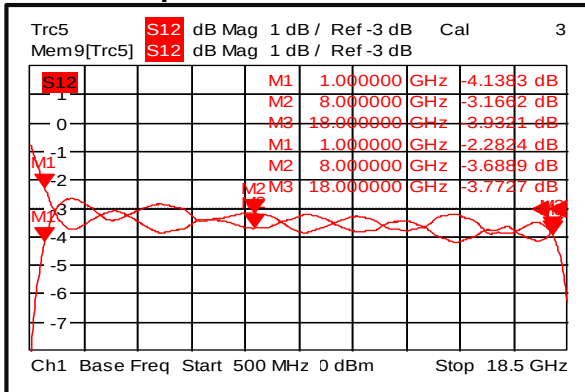
Output VSWR



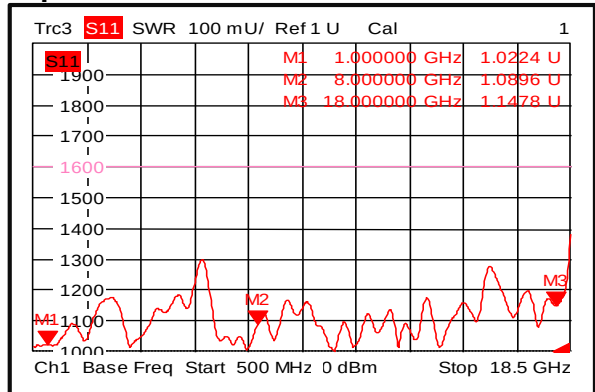
Phase Imbalance



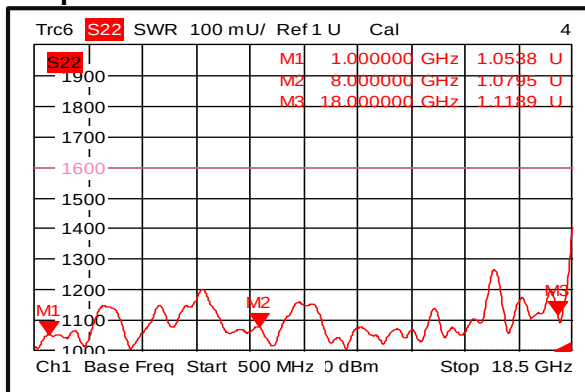
Loss & Amplitude Imbalance



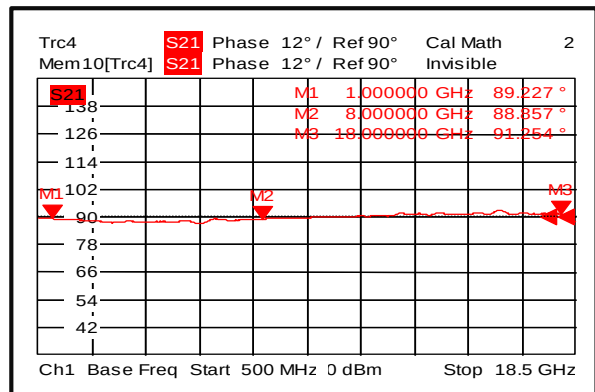
Input VSWR



Output VSWR



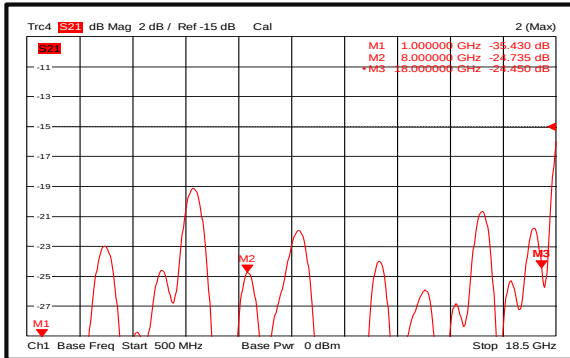
Phase Imbalance



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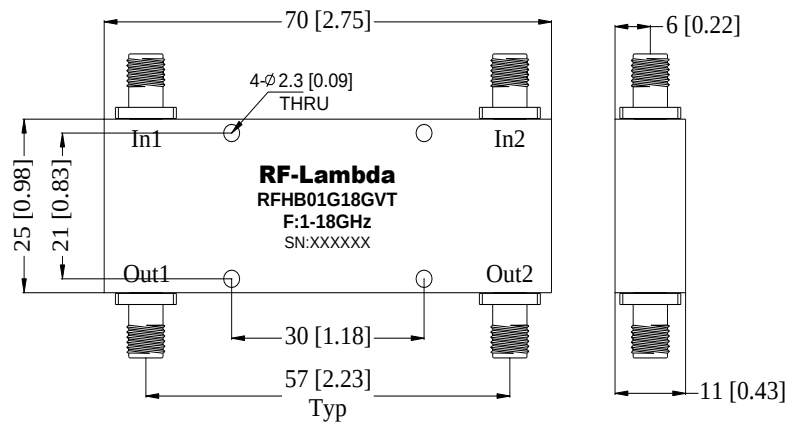
Isolation



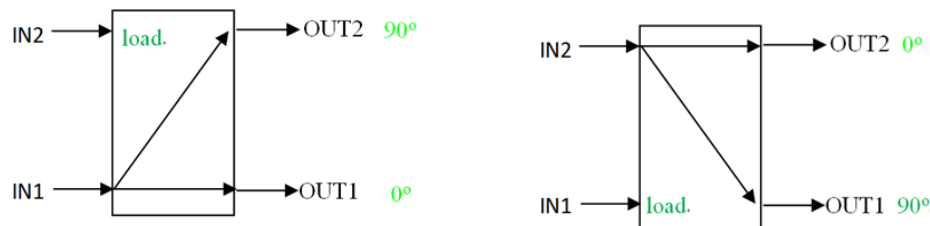
Outline Drawing:

All Dimensions in mm [inches]

Tolerance ± 0.2 [0.008]



Schematic:



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