

Coaxial 500W 30dB Directional Coupler 100MHz-800MHz



Product Description

RFDC1M8M30 is a coaxial directional coupler with a frequency range of 100 to 800MHz.

The power of this directional coupler is 500W. The insertion loss is 0.3dB with a typical directivity of 22dB.

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

Features

- High power handling up to 500W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss
- 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	Min	Typ	Max	Units
Frequency Range	100		200	200		800	MHz
Nominal Coupling	29	30	33	29	30	31	dB
Frequency Sensitivity		±1.0	±1.5		±0.7	±1.0	dB
Directivity	20	22		20	22		dB
Insertion Loss (Excl Coupling)			0.3			0.4	dB
Insertion Loss (True)		0.1	0.3		0.2	0.4	dB
VSWR Primary		1.15	1.2		1.15	1.2	: 1
VSWR Secondary		1.15	1.2		1.15	1.2	: 1
Power Rating	Average		500				W
	Peak		3 (10% Duty Cycle, 10us Pulse Width)				KW
Weight			2.09 Max.				lbs
Impedance			50				Ω
Input / Output Connectors						N-Female(All ports)	
Package						Epoxy Sealed (Standard)	
						Hermetically Sealed (Optional)	

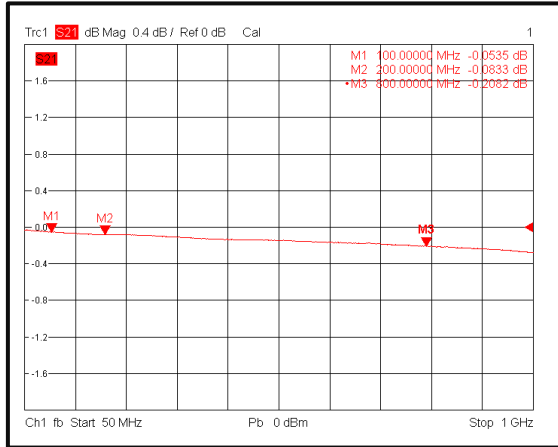
Environmental Specifications and Test Standards

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)

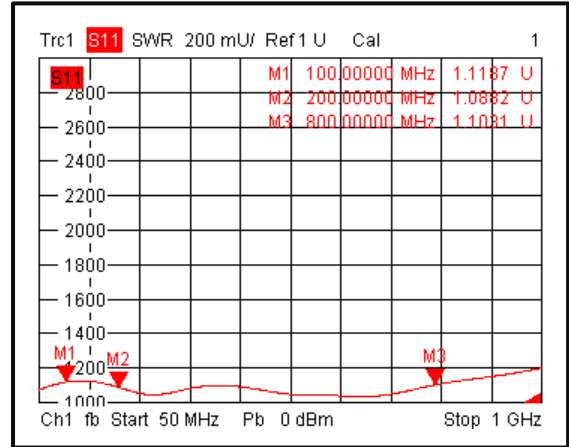
**For vibration testing details please see additional information section.

Typical Performance Plots

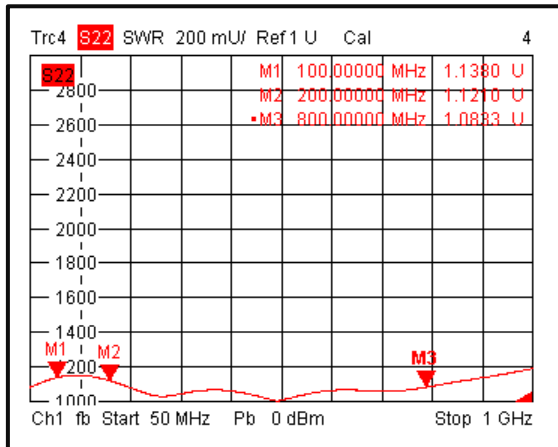
Insertion Loss



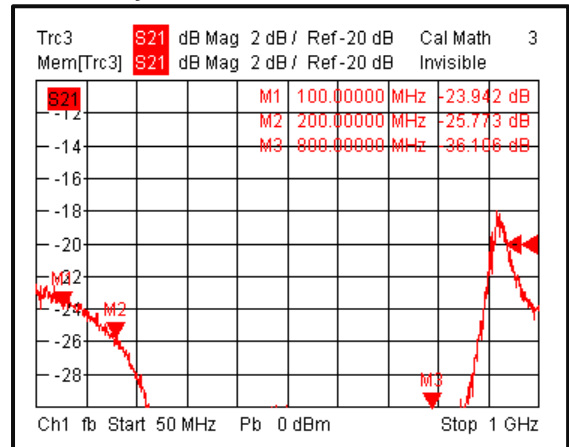
Primary VSWR



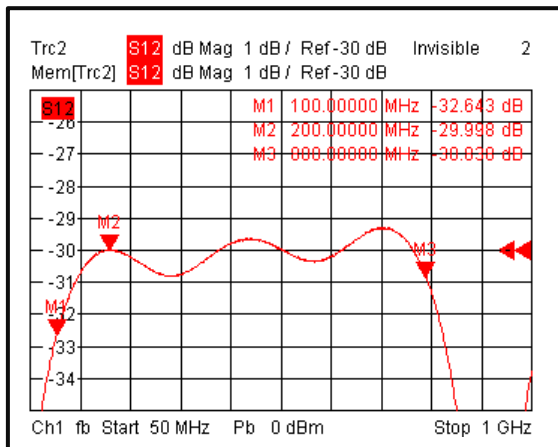
Secondary VSWR



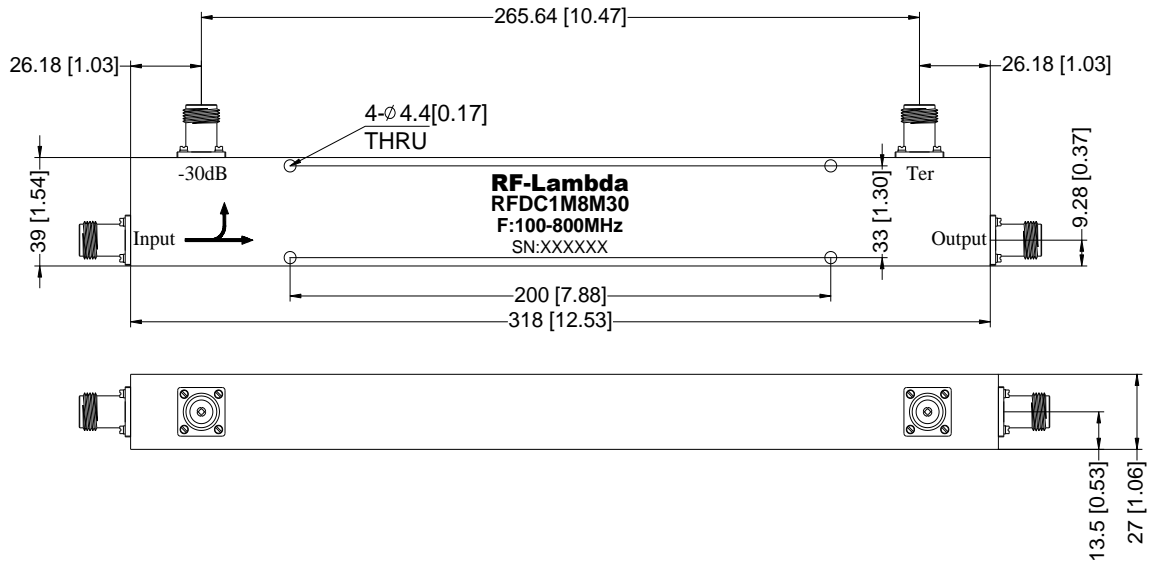
Directivity



Nominal Coupling

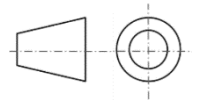


Outline Drawing



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
RFDC1M8M30	Connectors N-Female	100MHz-800MHz Directional Coupler

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