Coaxial 50W 30dB Directional Coupler 0.8GHz-2.5GHz

Note: The photo is for illustration purposes only.
Please refer to outline drawing

Product Description

The RFDC8M3G30D is a coaxial directional coupler with a frequency range of 0.8 to 2.5GHz.

The power of this directional coupler is 50W. The Insertion Loss is 0.5dB with a typical directivity of 22dB.

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

Features

- High power handling up to 50W
- Ultra Wide band operation
- High directivity 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		0.8		1.6	1.6		2.5	GHz
Nominal Coupling		29	30	31	29	30	31	dB
Frequency Sensitivity			±0.4	±0.5		±0.3	±0.5	dB
Directivity		20	22		20	22		dB
Insertion Loss (Excl Coupling)				0.4			0.5	dB
Insertion Loss (True)			0.2	0.5		0.2	0.5	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	50						W
	Peak	1 (10% Duty Cycle, 1 us Pulse Width)						KW
Weight		0.13						lbs
Impedance		50						Ω
Input / Output Connectors		SMA-Female(Input) – SMA-Female(Output)						
Package		Epoxy Sealed (Standard)						
		Hermetically Sealed (Optional)						

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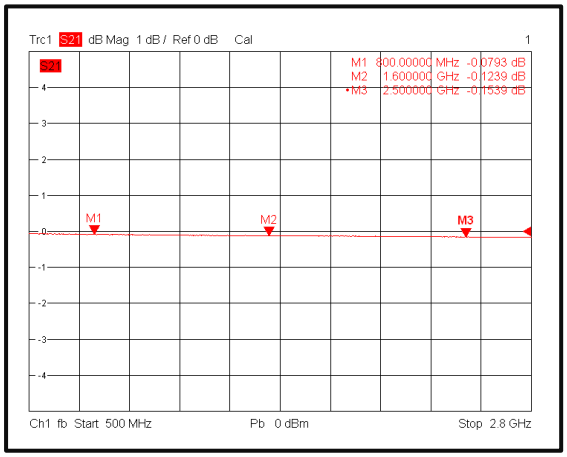
Environmental Specifications and Test Standards

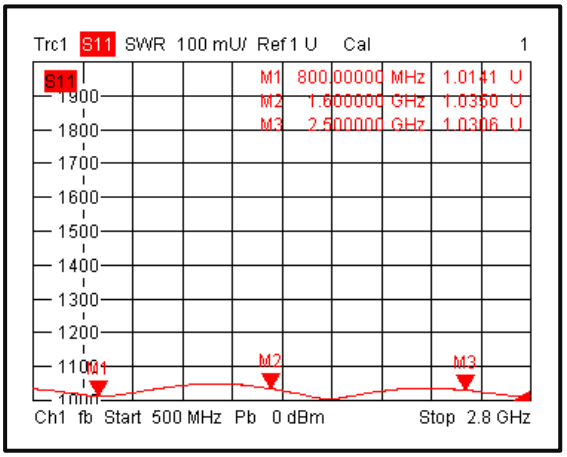
Parameter	Description
Operational Temperature	-40ºC to +85ºC (Case Temperature)
Storage Temperature	-50ºC to +105ºC
Thermal Shock	-40ºC → +85ºC (5 Cycles / 10 hours)
**Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C 1.5 Hours Per Axis
High Temperature Burn In	Temperature +85ºC for 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	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)

Typical Performance Plots

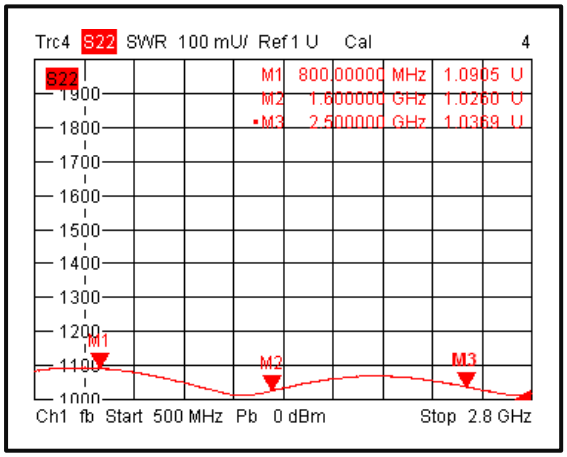
Insertion Loss



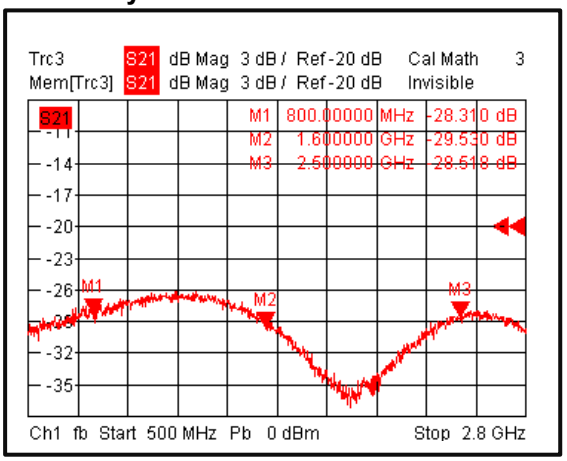
Primary Return Loss



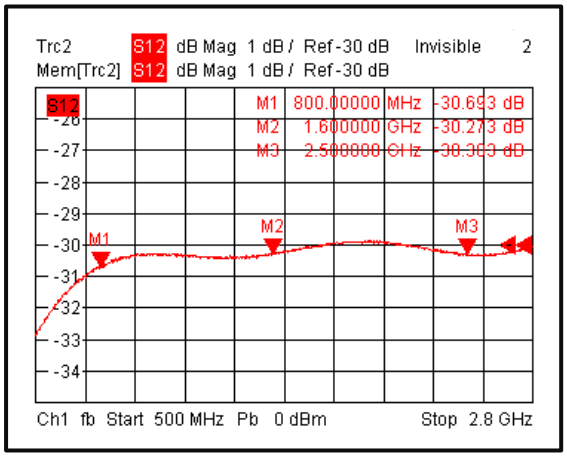
Secondary Return Loss



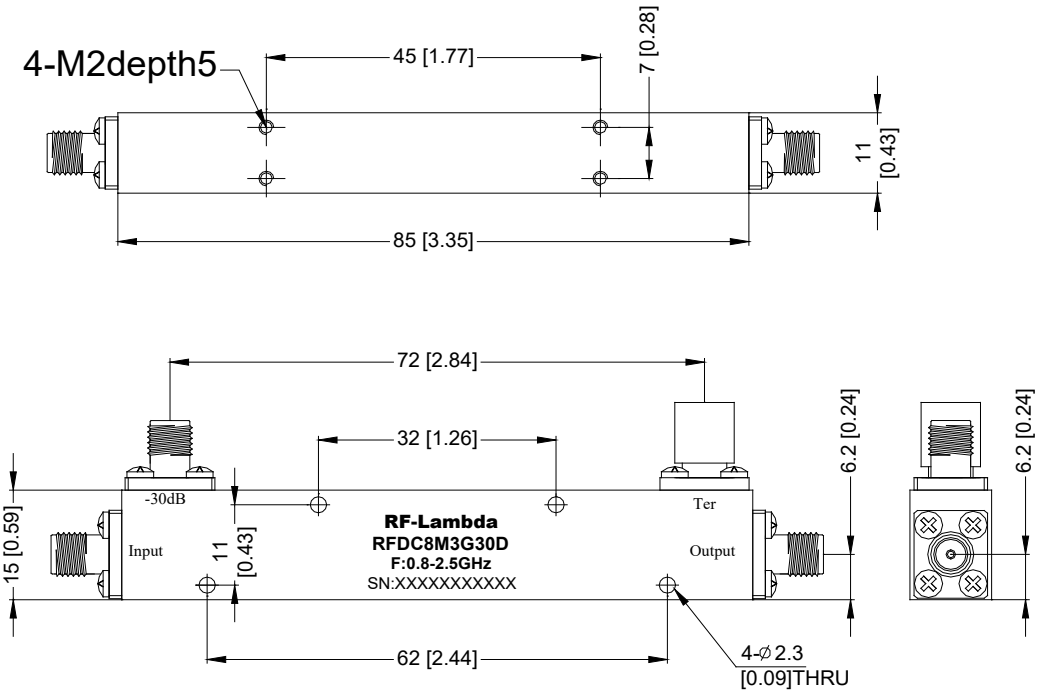
Directivity

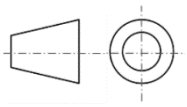


Nominal Coupling



Outline Drawing





Notes:
1. Package Material: Aluminum
2. Finish: Painted
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ±0.05 [0.02], Mounting Hole Tolerances ±0.2 [0.008] unless otherwise specified.

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
RFDC8M3G30D	Standard	0.8-2.5GHz Directional Coupler

Important Notice

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