

Coaxial 30W 12dB Directional Coupler 8GHz-40GHz



Product Description

RFDC8G40G12 is a coaxial directional coupler with a frequency range of 8 to 40GHz.

The power of this directional coupler is 30W. The insertion loss is 1.3dB with a typical directivity of 12dB.

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

Features

- High power handling up to 30W
- 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	Min	Typ	Max	Units	
Frequency Range	8		26.5	26.5		40	40		43.5	GHz	
Nominal Coupling	11	12	13	11	12	13		12		dB	
Frequency Sensitivity		±0.4	±0.7		±0.3	±0.7		±0.3		dB	
Directivity	12	15		10	12			10		dB	
Insertion Loss (Excl. Coupling)			1.0			1.0		1.2		dB	
Insertion Loss (True)		1.0	1.2		1.3	1.6		1.6		dB	
VSWR Primary		1.3	1.5		1.4	1.6		1.5		: 1	
VSWR Secondary		1.3	1.5		1.4	1.6		1.6		: 1	
Power Rating	Average					30					W
	Peak					300	(10% Duty Cycle, 1 us Pulse Width)				W
Weight					0.06 Max.					lbs	
Impedance					50					Ω	
Input / Output Connectors	2.92mm-Female(Input) – 2.92mm-Female(Output)										
Package	Epoxy Sealed (Standard)										
	Hermetically Sealed (Optional)										

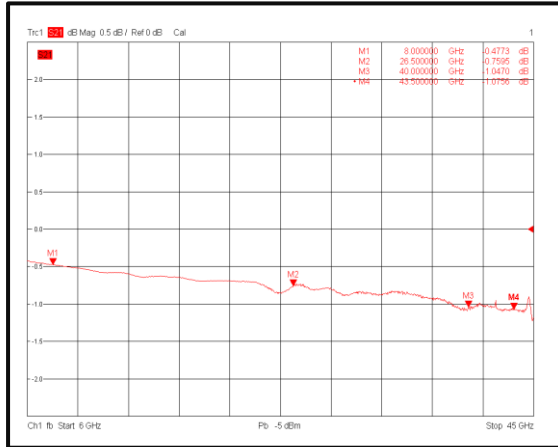
Environmental Specifications and Test Standards

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)

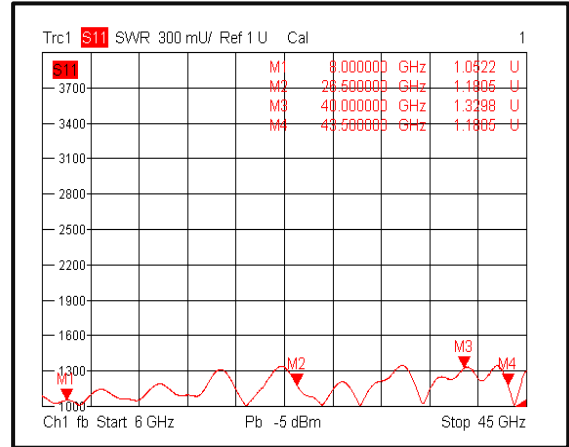
*For vibration testing details please see additional information section.

Typical Performance Plots

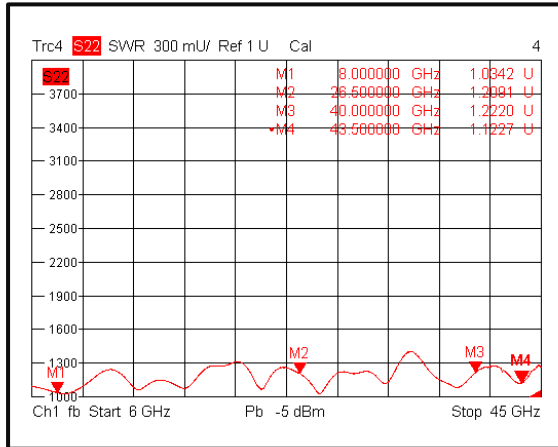
Insertion Loss



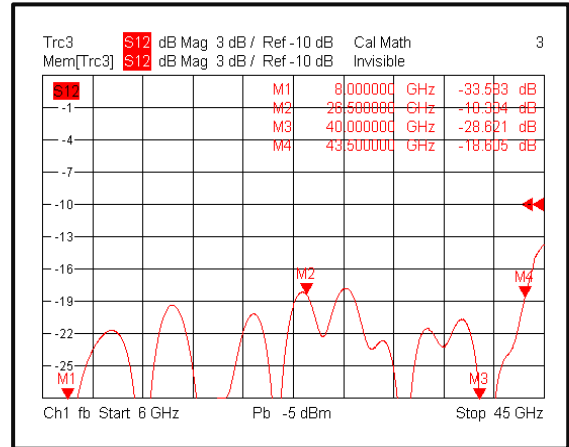
Primary VSWR



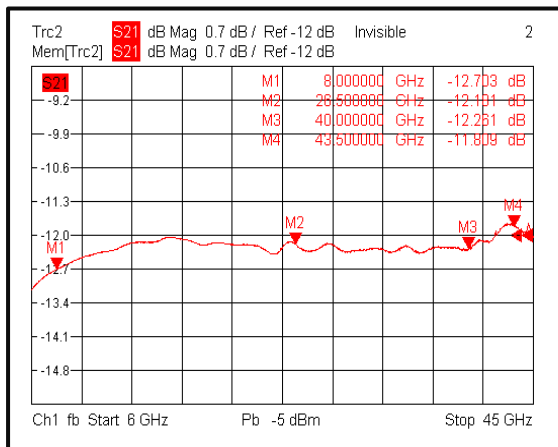
Secondary VSWR



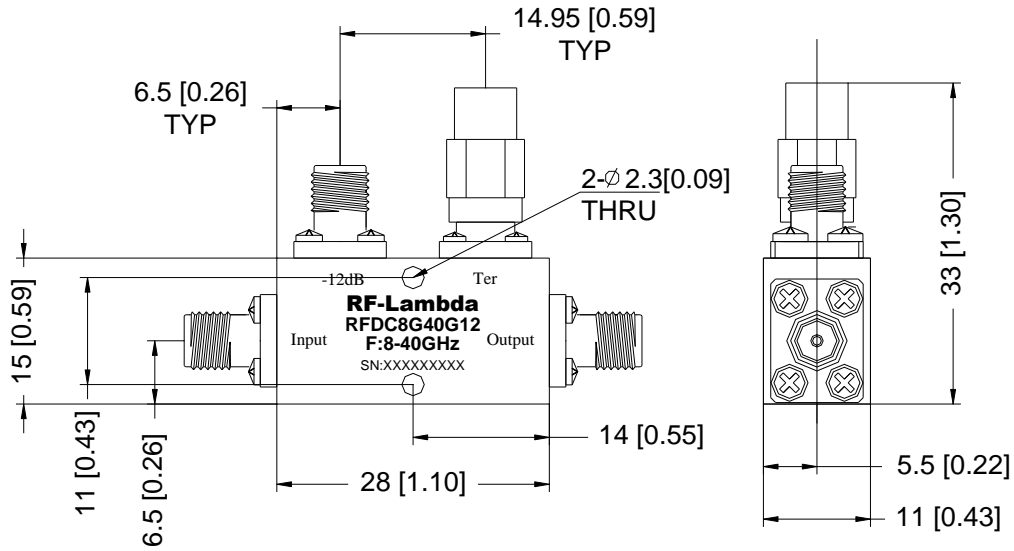
Directivity



Nominal Coupling

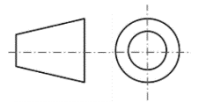


Outline Drawing



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
RFDC8G40G12	Connectors 2.92mm-Female	8GHz-40GHz Directional Coupler

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