

Coaxial 250W 20dB Directional Coupler 3GHz-12GHz



Product Description

RFDC3G11G20 is a coaxial directional coupler with a frequency range of 3 to 12GHz.

The power of this directional coupler is 250W. The insertion loss is 0.5dB with a typical directivity of 14dB.

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

Features

- High power handling up to 250W
- 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	Units
Frequency Range	3		12	GHz
Nominal Coupling	19	20	21	dB
Frequency Sensitivity		±0.7	±1.0	dB
Directivity	12	14		dB
Insertion Loss (Excl. Coupling)			0.5	dB
Insertion Loss (True)		0.3	0.5	dB
VSWR Primary		1.3	1.5	: 1
VSWR Secondary		1.4	1.5	: 1
Power Rating	Average		250	W
	Peak		2 (10% Duty Cycle, 10us Pulse Width)	KW
Weight	0.30 Max.			lbs
Impedance	50			Ω
Input / Output Connectors	N-Male(Input) – N-Female(Output) SMA-Female(Coupling Connectors)			
Package	Epoxy Sealed (Standard)			
	Hermetically Sealed (Optional)			

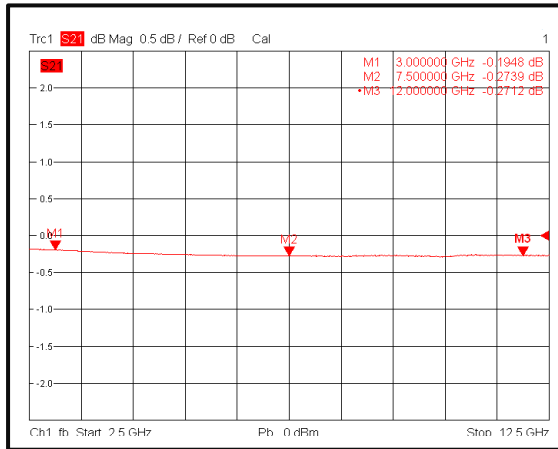
Environmental Specifications and Test Standards

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)

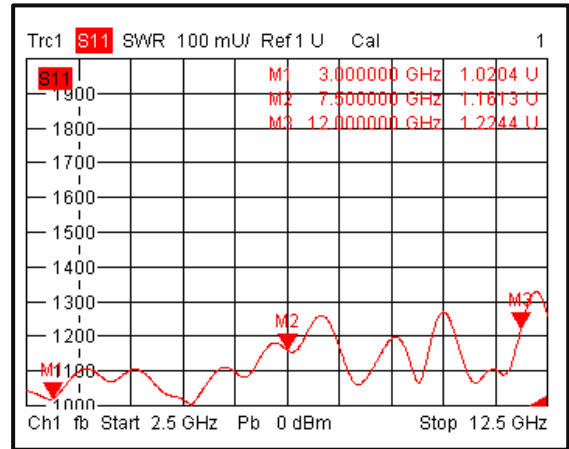
*For vibration testing details please see additional information section.

Typical Performance Plots

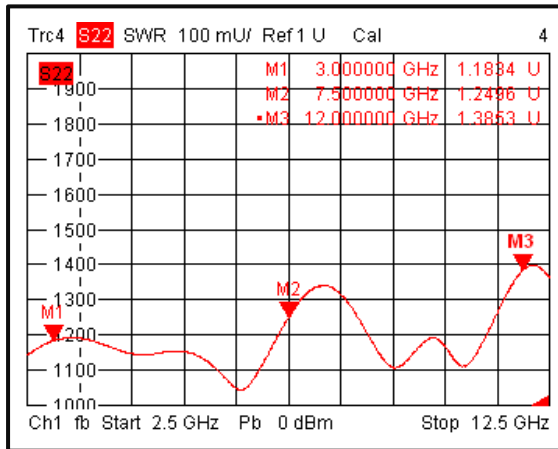
Insertion Loss



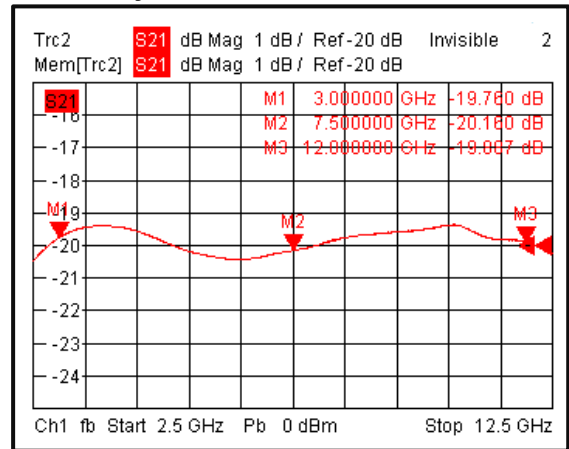
Primary VSWR



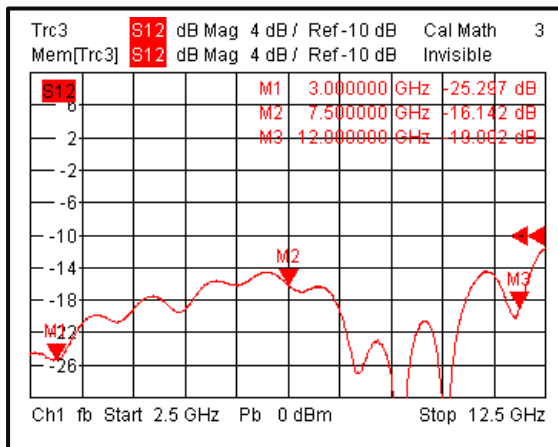
Secondary VSWR



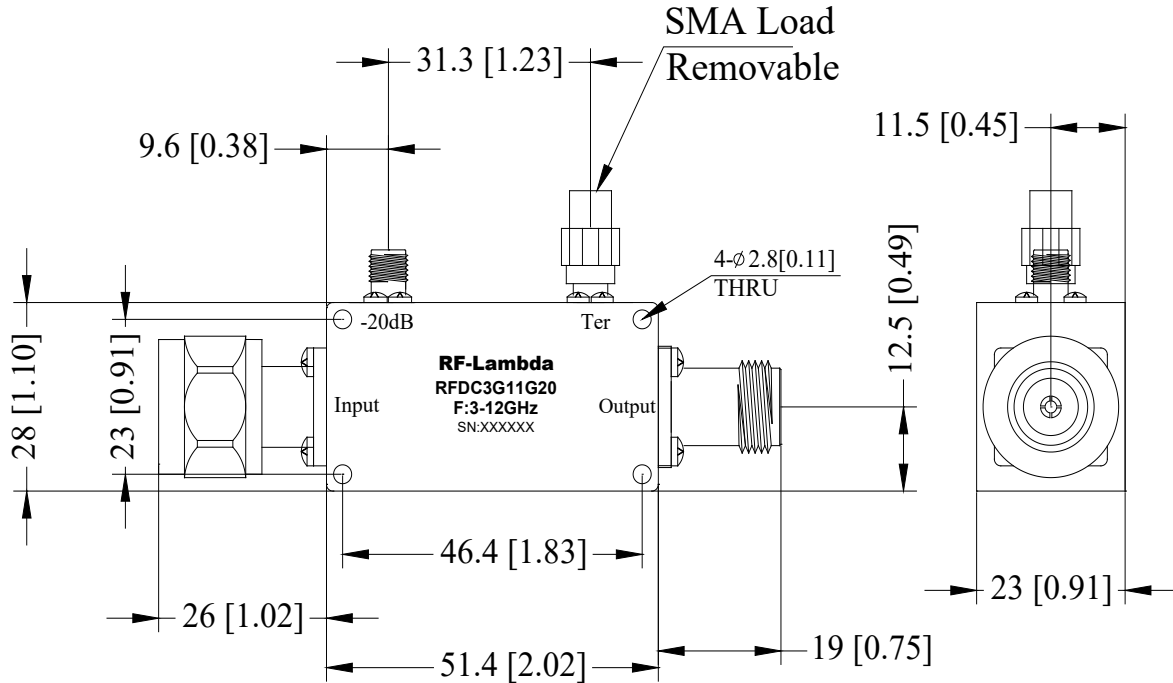
Directivity



Nominal Coupling

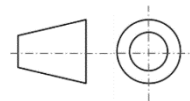


Outline Drawing



Notes:

1. Package Material: Aluminum
2. Finish: Blue Painted
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	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
RFDC3G11G20	Input Connector N-Male and Output Connector N-Female	3-12GHz Directional Coupler

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