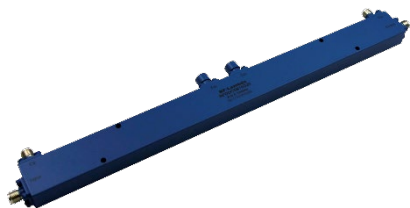


Coaxial 50W 20dB Dual Directional Coupler 0.5GHz-18GHz



Product Description

RFDDC5M18G20 is a coaxial dual directional coupler with a frequency range of 0.5 to 18GHz.

The power of this dual directional coupler is 50W. The Insertion Loss is 0.8dB with a typical directivity of 18dB.

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

Features

- 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	0.5		6	6		18	GHz	
Nominal Coupling	19	20	21.5	19	20	21.5	dB	
Frequency Sensitivity		±0.7	±1.0		±0.7	±1.0	dB	
Directivity	15	18		10	12		dB	
Insertion Loss (Excl Coupling)		0.75	1.0		1.6	2.0	dB	
Insertion Loss (True)		0.8	1.2		1.8	2.2	dB	
VSWR Primary		1.3	1.5		1.4	1.6	: 1	
VSWR Secondary		1.3	1.5		1.4	1.6	: 1	
Power Rating	Average		50				W	
	Peak		1				KW (10% Duty Cycle, 1 us Pulse Width)	
Weight			0.4 Max.				lbs	
Impedance			50				Ω	
Input / Output Connectors			SMA-Female(Input) – SMA-Female(Output)					
Package			Epoxy Sealed (Standard)					
			Hermetically Sealed (Optional)					

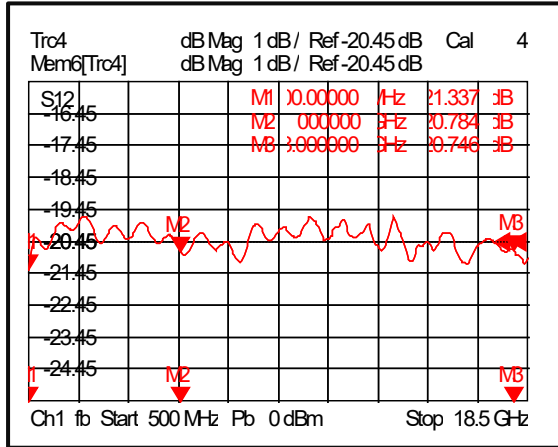
Environmental Specifications and Test Standards

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)

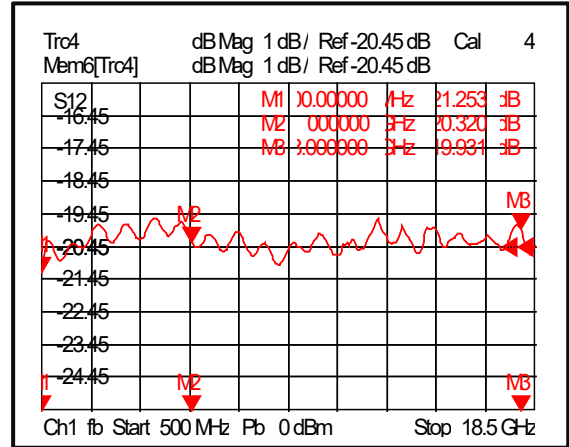
*For vibration testing details please see additional information section.

Typical Performance Plots

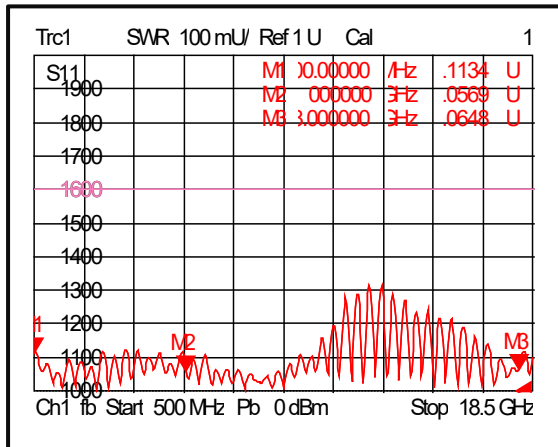
Nominal Coupling 1



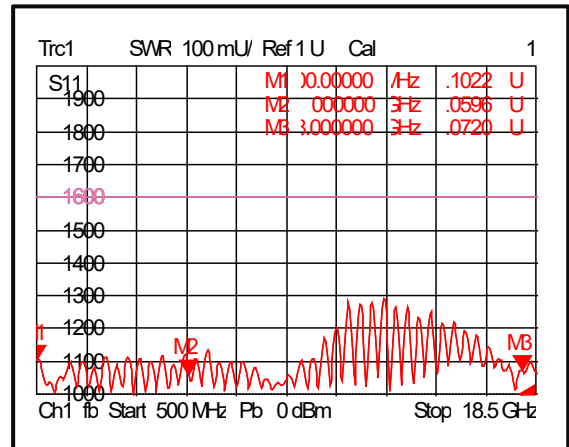
Nominal Coupling 2



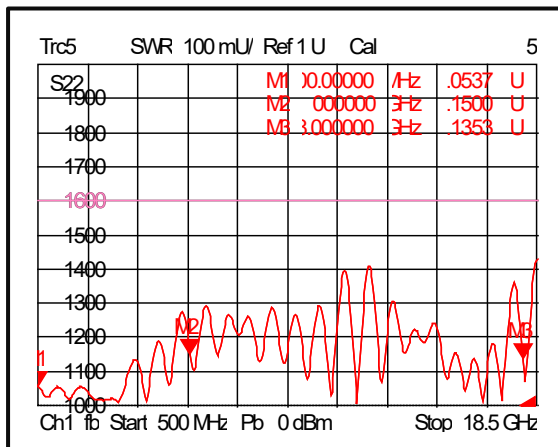
Primary VSWR 1



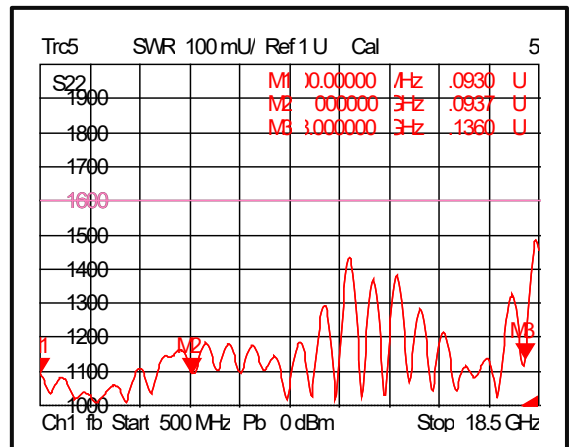
Primary VSWR 2



Secondary VSWR 1

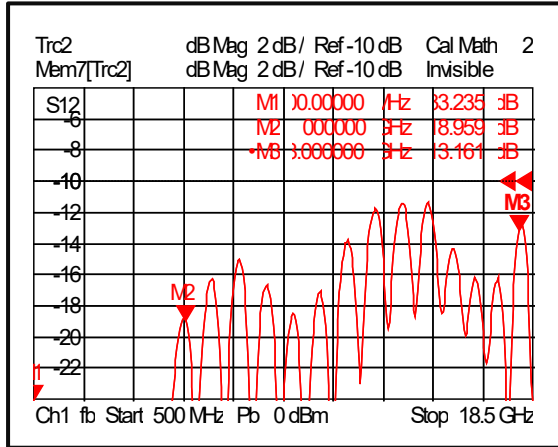


Secondary VSWR 2

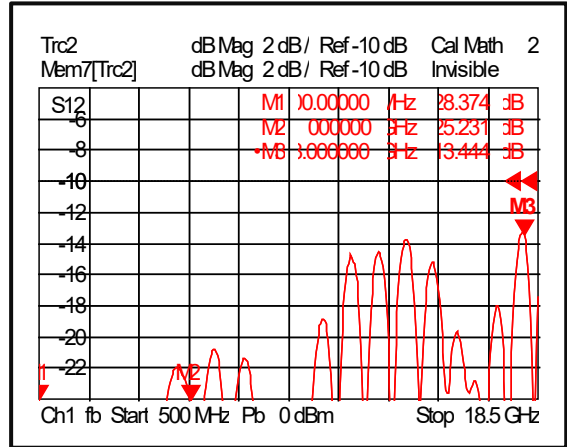


Typical Performance Plots

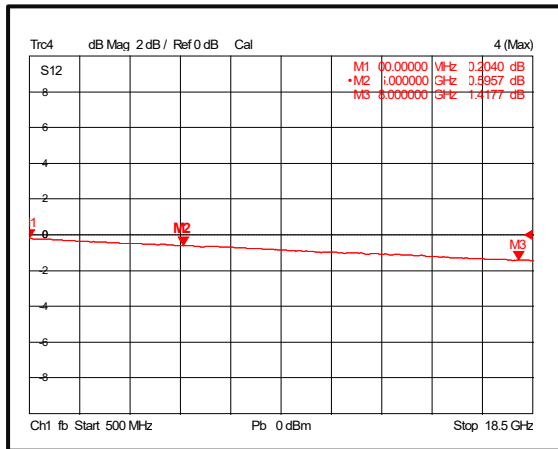
Directivity 1



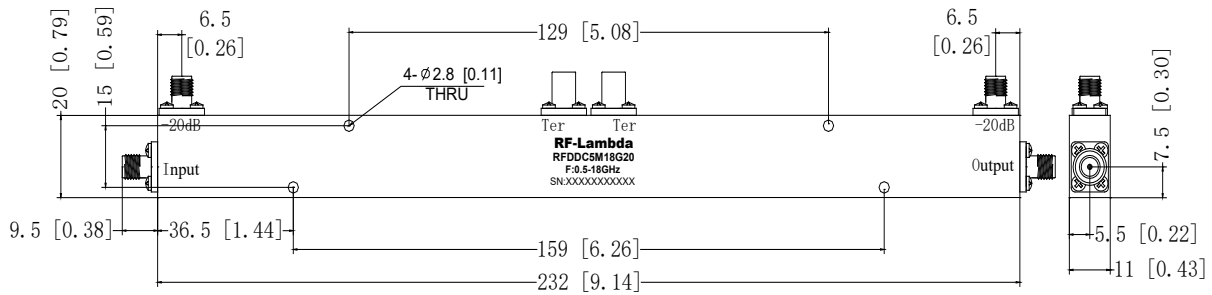
Directivity 2



Insertion Loss

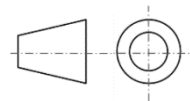


Outline Drawing



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
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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
RFDDC5M18G20	Standard	0.5-18GHz Dual Directional Coupler

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