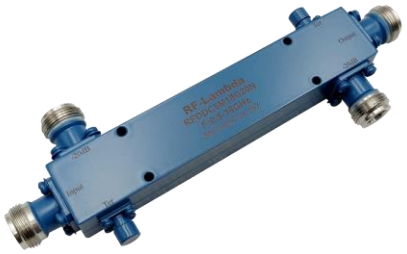
Coaxial 50W 20dB Dual Directional Coupler 0.5GHz-18GHz



Product Description

RFDDC5M18G20N is a coaxial dual directional coupler with a frequency range of 0.5 to 18GHz.

The power handling for this dual directional coupler is 50W. The insertion loss is 1.6dB with a typical directivity of 12dB.

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

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		12	14		10	12		dB
Insertion Loss (Excl Coupling)				1.0			1.9	dB
Insertion Loss (True)			0.8	1.1		1.6	2.0	dB
VSWR Primary			1.4	1.5		1.5	1.7	: 1
VSWR Secondary			1.4	1.5		1.5	1.7	: 1
Power Rating	Average	50						W
	Peak	500 (10% Duty Cycle, 1us Pulse Width)						W
Weight		0.54 Max.						lbs
Impedance		50						Ω
Input / Output Connectors		N-Female(Input) – N-Female(Output)						
Package		Epoxy Sealed (Standard)						
		Hermetically Sealed (Optional)						

RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com

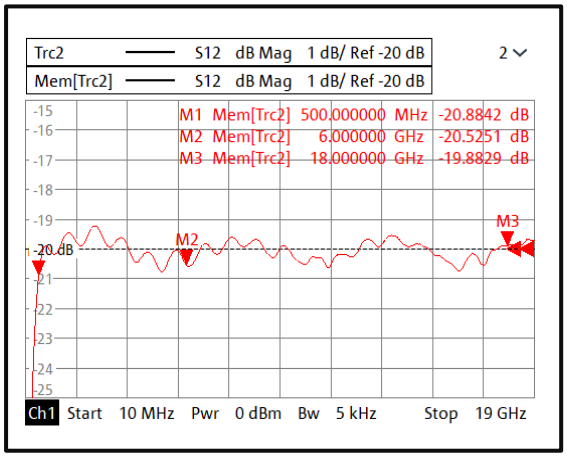
Environmental Specifications and Test Standards

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
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)

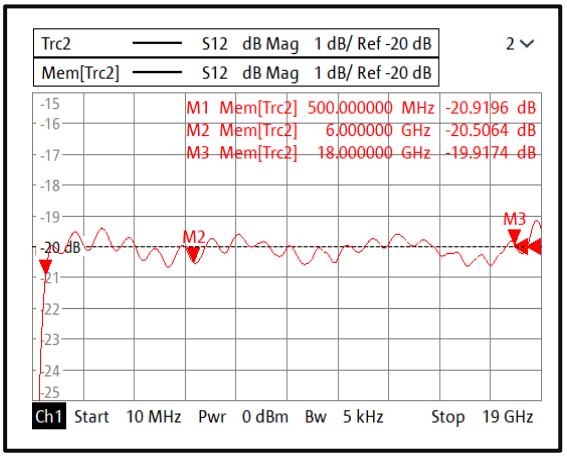
**For vibration testing details please see additional information section.

Typical Performance Plots

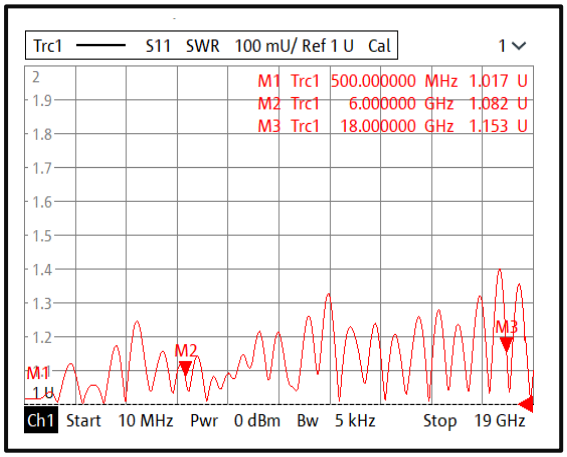
Nominal Coupling 1



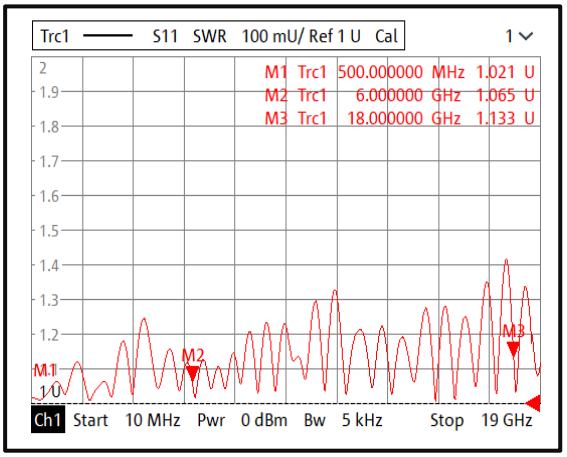
Nominal Coupling 2



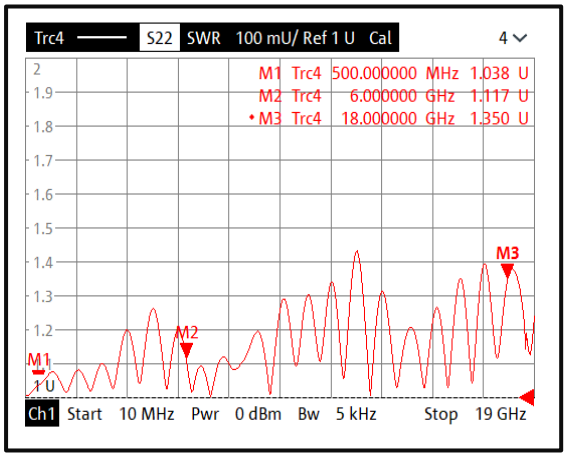
Primary VSWR 1



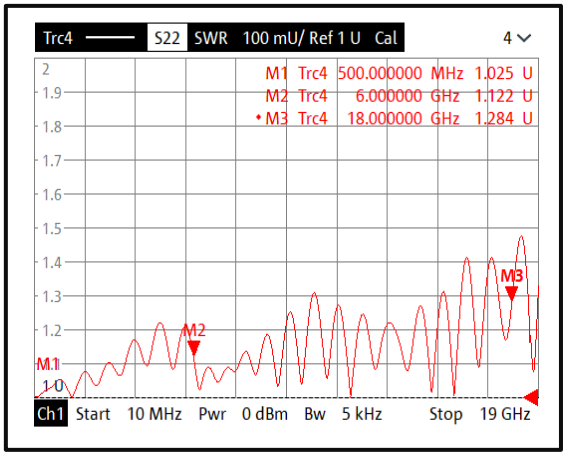
Primary VSWR 2



Secondary VSWR 1

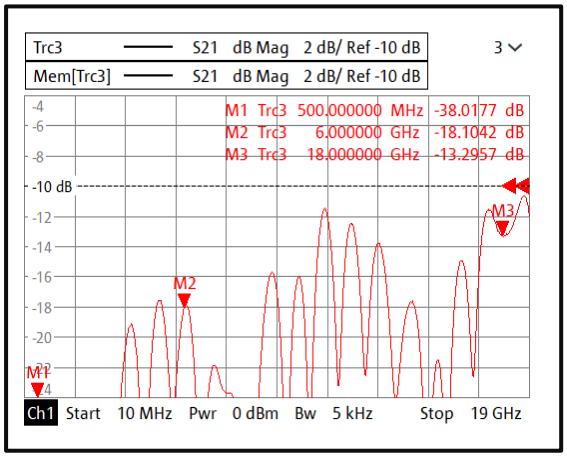


Secondary VSWR 2

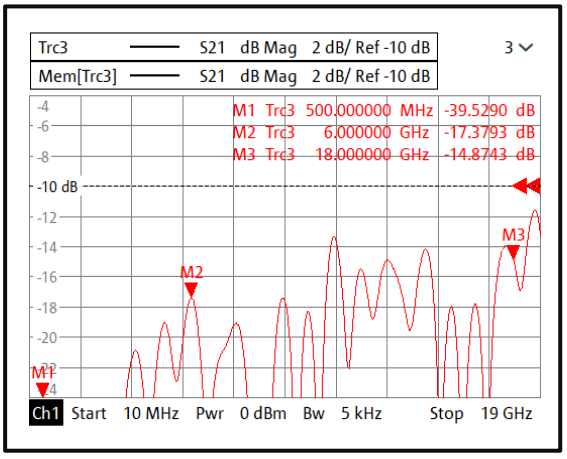


Typical Performance Plots

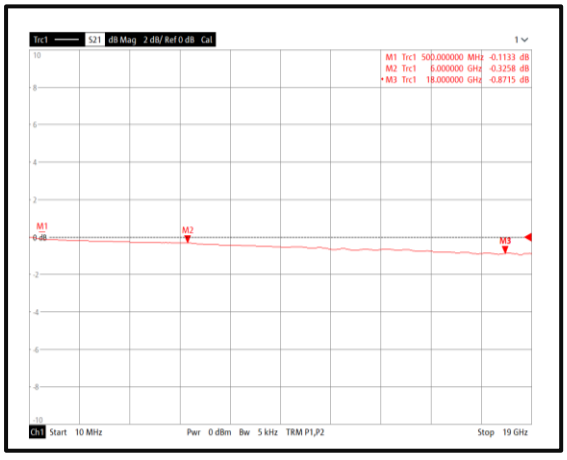
Directivity 1



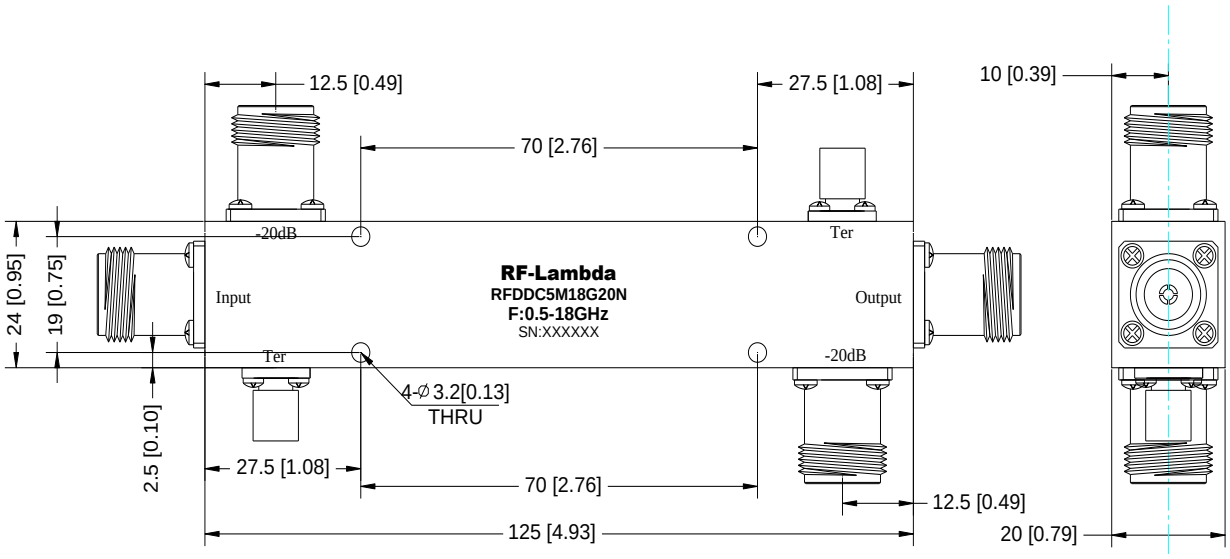
Directivity 2



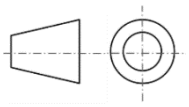
Insertion Loss



Outline Drawing



Notes:
1. Package Material: Aluminum
2. Finish: Blue 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
RFDDC5M18G20N	Connectors N-Female	0.5GHz-18GHz Dual Directional Coupler

Important Notice

RF-LAMBDA USA LLC: www.rflambda.com
Sales: sales@rflambda.com Technical: support@rflambda.com