Coaxial 50W 10dB Directional Coupler 6GHz-18GHz

Product Description

RFDC6G18G10 is a coaxial directional coupler with a frequency range of 6 to 18GHz.

The power handling of this directional coupler is 50W. The insertion loss is 0.5dB with a typical directivity of 15dB.

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	Units
Frequency Range		6		18	GHz
Nominal Coupling		9	10	11	dB
Frequency Sensitivity			±0.4	±0.7	dB
Directivity		12	15		dB
Insertion Loss (Excl Coupling)				0.5	dB
Insertion Loss (True)			0.8	0.9	dB
VSWR Primary			1.3	1.5	: 1
VSWR Secondary			1.4	1.5	: 1
Power Rating	Average		50		W
	Peak		500 (10% Duty Cycle, 1 us Pulse Width)		W
Weight			0.06Max.		lbs
Impedance			50		Ω
Input / Output Connectors			SMA-Female(Input) – SMA-Female(Output)		
Package			Epoxy Sealed (Standard)		
			Hermetically Sealed (Optional)		

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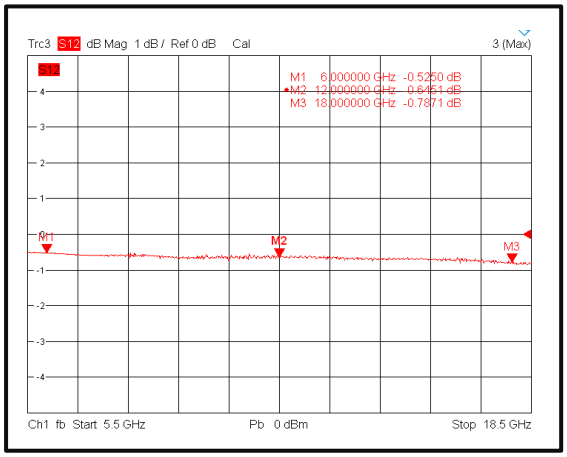
Environmental Specifications and Test Standards

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
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)

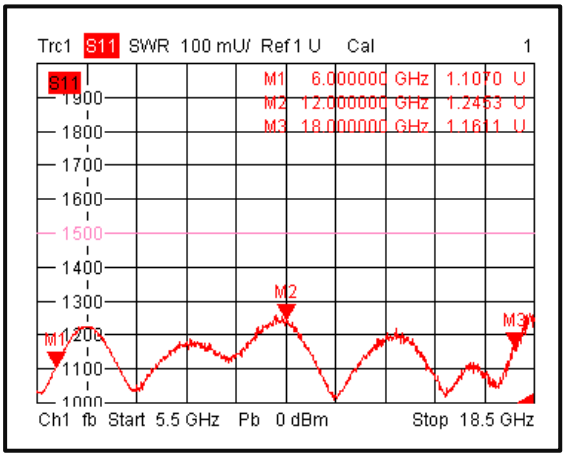
*For vibration testing details please see additional information section.

Typical Performance Plots

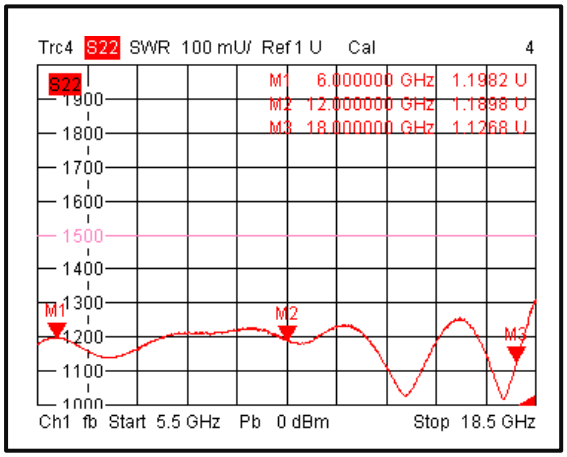
Insertion Loss



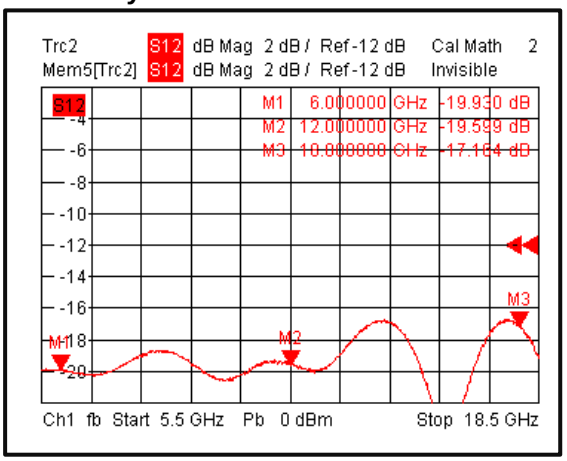
Primary VSWR



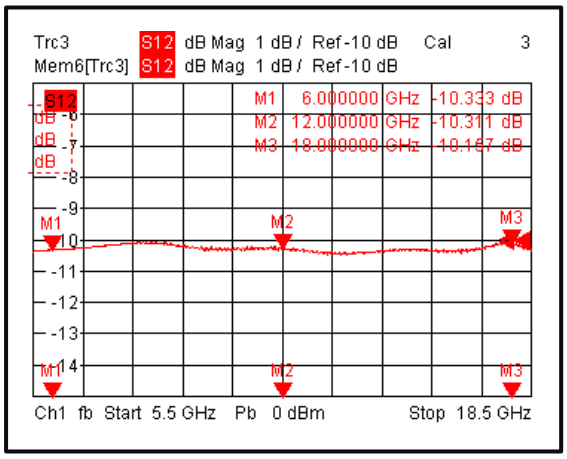
Secondary VSWR



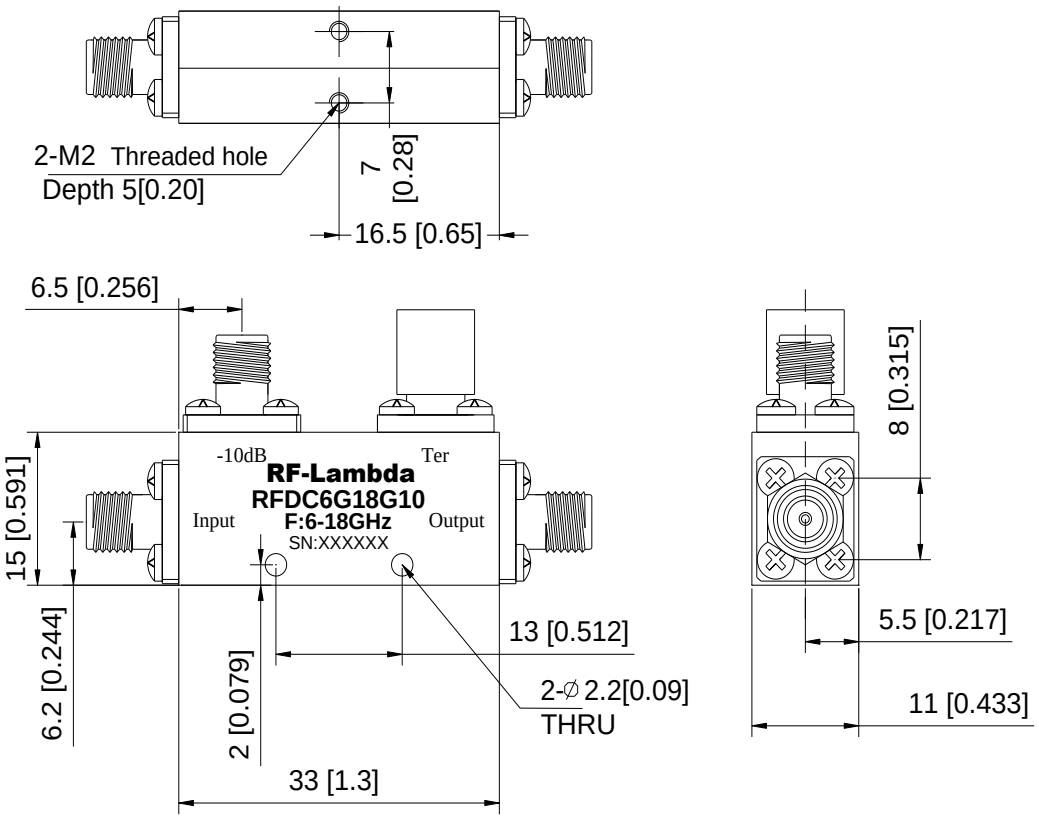
Directivity



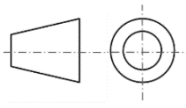
Nominal Coupling



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
RFDC6G18G10	Standard	6GHz-18GHz Directional Coupler

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