

WR42 Waveguide High Power Isolator 18GHz-26.5GHz



Product Description

RFWHI42BD is a WR42 waveguide high power isolator with a frequency range of 18 to 26.5GHz.

The isolator has a typical isolation of 19dB. The maximum insertion loss is 0.65dB.

The Isolator waveguide type is WR42.

Features

- High power handling up to 200W
- Wide band operation
- High isolation within operational band
- Low Insertion Loss
- Stable performance over temperature

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 (T_A=+25°C)

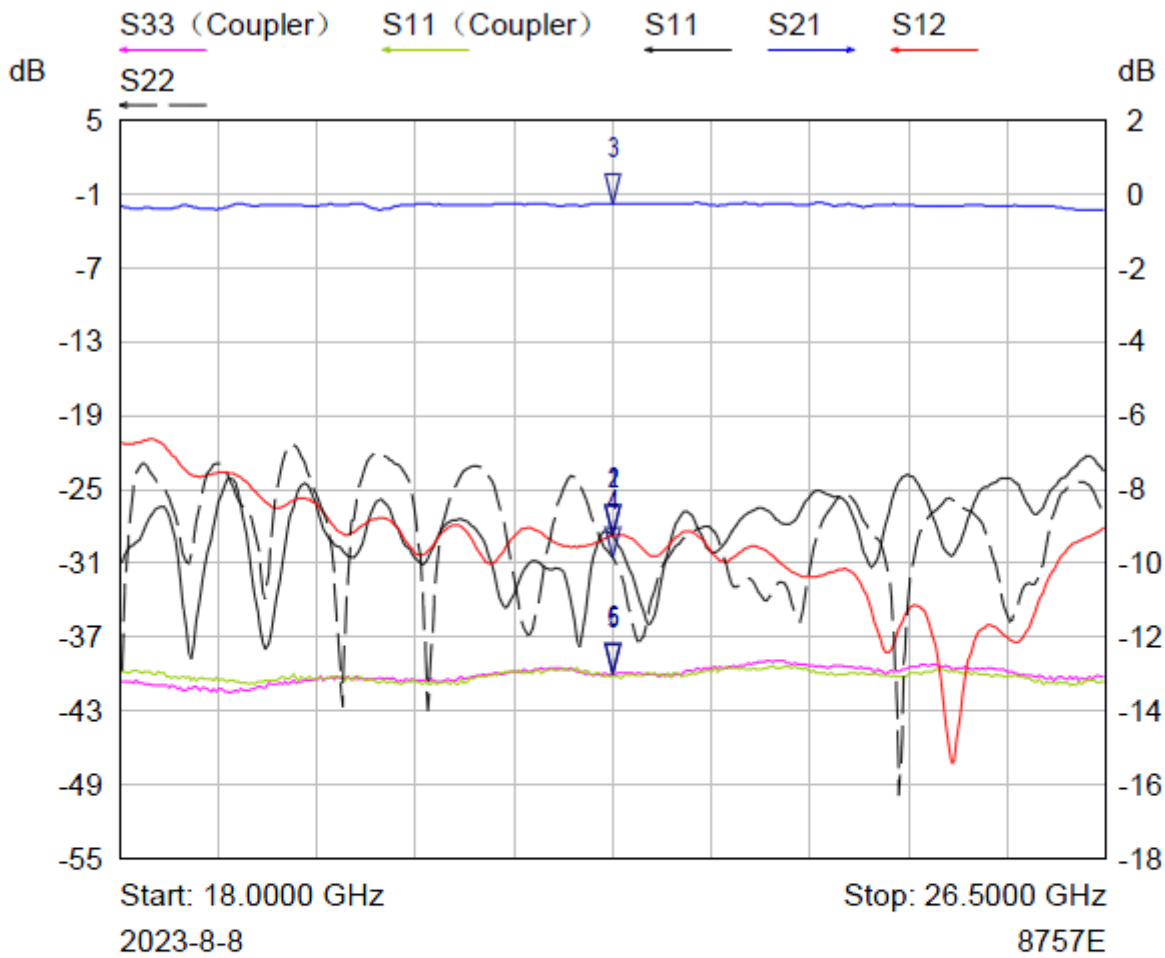
Parameter	Min	Typ	Max	Units
Frequency Range	18		26.5	GHz
Coupler@ Port1 and Port3	@ 18GHz	40 ± 0.3		dB
	@ 26.5GHz	39 ± 0.5		
Insertion Loss		0.5	0.65	dB
Reverse Isolation	17	19		dB
Return Loss	17	19		dB
Forward Power (CW)			200	W
Reverse Power (CW) (The power is absorbed by the power load, < 10s)			50	W
Rotation		Clockwise (Standard) Counter Clockwise (upon request)		
Weight		-		lbs.
Coupler Connector		3.5mm-Female		
Flange Type		UG 595/U		
Waveguide type		WR42		
Material		Aluminum alloy or Copper		
Finish		Conductive oxide, not painted		

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-20°C to +50°C (force-air cooling)
Storage Temperature	-40°C to +85°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



Mkr	Trace	X-Axis	Value	Notes
1 ▾	S11	22.2500 GHz	-28.75 dB	
2 ▾	S12	22.2500 GHz	-28.74 dB	
3 ▾	S21	22.2500 GHz	-0.28 dB	
4 ▾	S22	22.2500 GHz	-30.55 dB	
5 ▾	S11 (Coupler)	22.2500 GHz	-39.97 dB	
6 ▾	S33 (Coupler)	22.2500 GHz	-39.92 dB	

Additional Information

Documentation	Webpage
ESD Policy	https://rflambda.com/pdf/rflambda_esd_control.pdf
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
RFWHI42BD	Waveguide Type WR42	18GHz–26.5GHz WR42 Waveguide Isolator

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