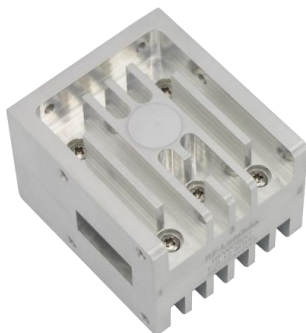


250W WR90 Waveguide Circulator 8GHz–12.4GHz



Product Description

The RFWC90C is a waveguide circulator with a frequency range of 8 to 12.4GHz.

The circulator has a typical isolation of 20dB. The maximum insertion loss is 0.4dB.

The circulator's interface is WR90.

Features

- High power handling up to 250W
- Wide band operation
- High isolation within operational band
- Low Insertion Loss
- Stable performance over temperature
- All specifications can be modified upon request

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 ($T_A=+25^{\circ}\text{C}$)

Parameter	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		8 - 8.2			8.2 - 12.4		GHz
Insertion Loss		0.35	0.4		0.25	0.3	dB
Isolation	19	20		20	21		dB
VSWR		1.20	1.25		1.15	1.2	:1
Forward Power			250				W
Weight			0.5 Max.				lbs.
Rotation			Clockwise (Standard) Counter Clockwise (upon request)				
Interface				WR90			
Flange Type				UG39/U			

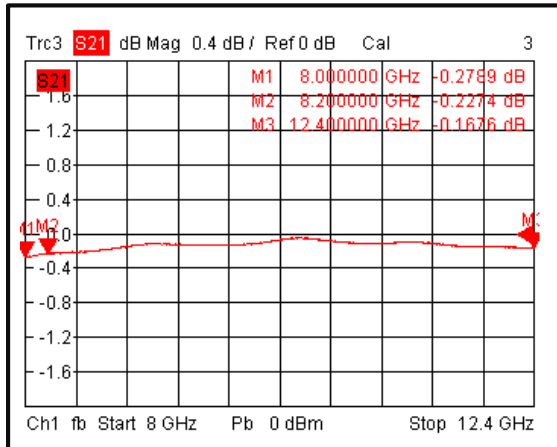
Environmental Specifications and Test Standards

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)

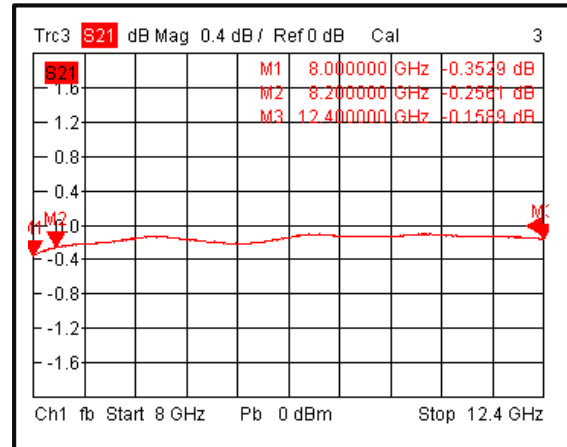
*For vibration testing details please see additional information section.

Typical Performance Plots

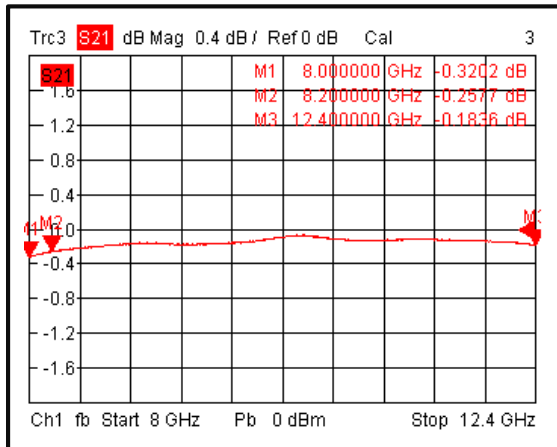
Insertion Loss (Port 1-Port 2)



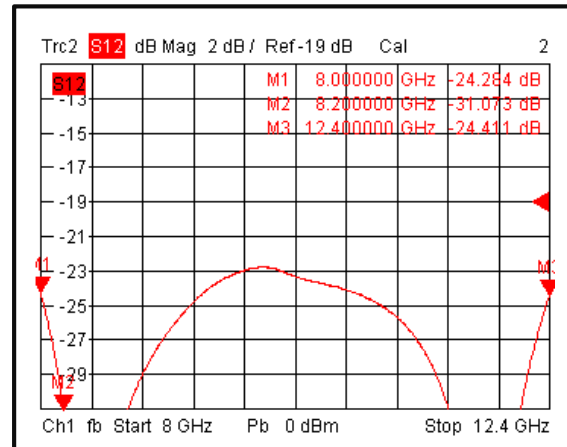
Insertion Loss (Port 2-Port 3)



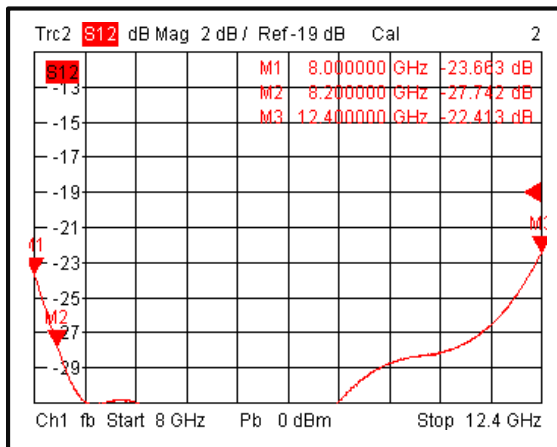
Insertion Loss (Port 3-Port 1)



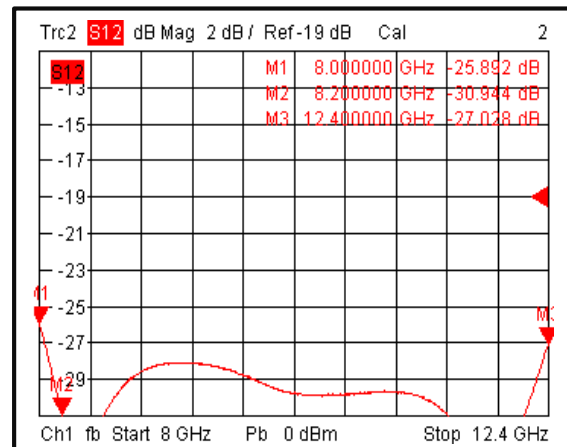
Isolation (Port 2-Port 1)



Isolation (Port 3-Port 2)

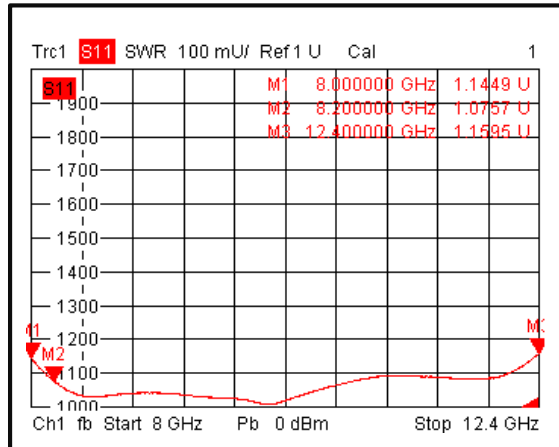


Isolation (Port 1-Port 3)

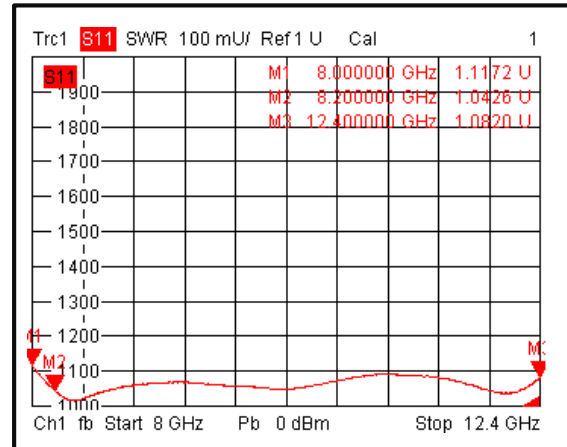


Typical Performance Plots

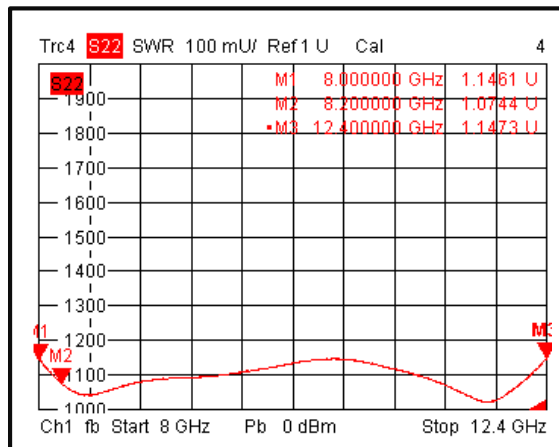
VSWR 1



VSWR 2

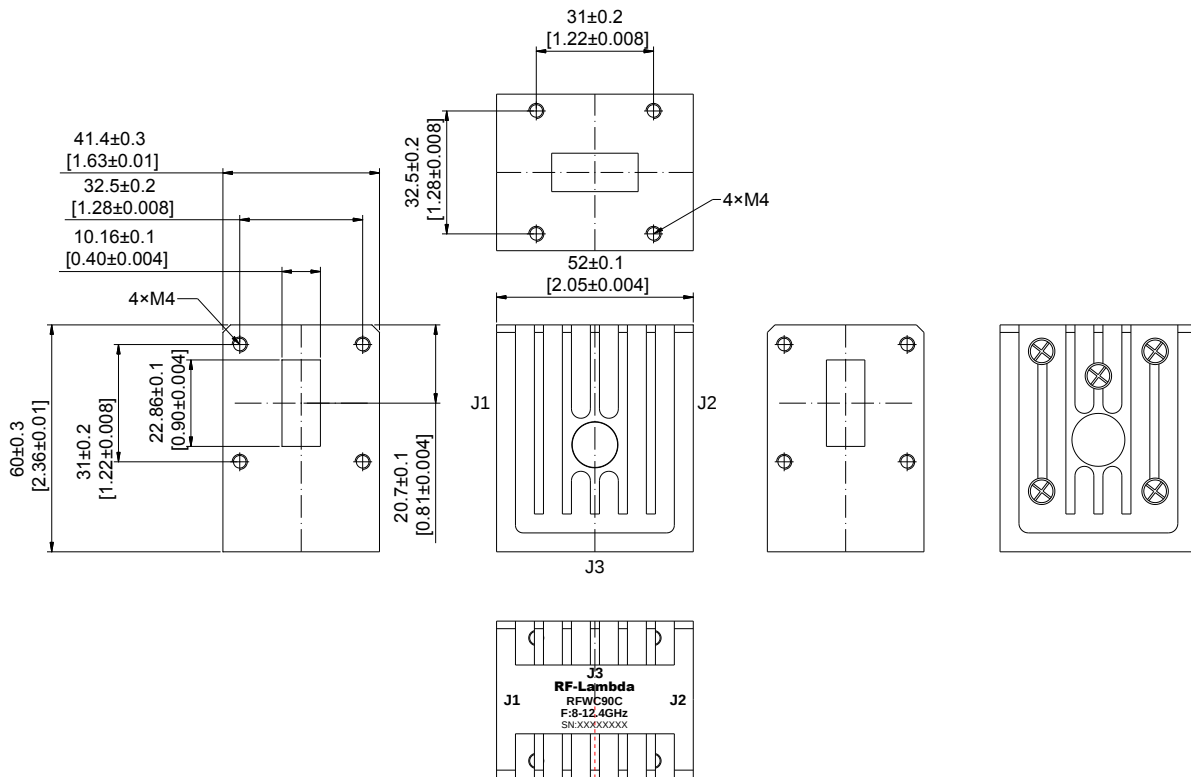
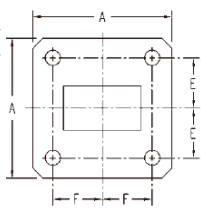


VSWR 3



Outline Drawing

WR90	WG16	R100
UG39/U	UBR100	
Dimensions	inches	mm
A	1.625 ¹	41.40
E	0.640	16.26
F	0.610	15.49
Hole Dia.	0.169 ²	4.255



Notes:

1. Package Material: Aluminum Alloy
2. Finish: Conductive Oxide
3. All dimensions are in millimeters [inches].
4. Outline Tolerances $\pm 0.5[0.02]$, Mounting Holes Tolerances $\pm 0.2[0.008]$ unless otherwise specified.

Additional Information

Documentation

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

Webpage

Ordering Information

Part Number	Modification	Description
RFWC90C	WR90	8GHz-12.4GHz Waveguide Circulator

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