Wide Band Coaxial Circulator
45GHz-50GHz

Product Description

RFLC45G50GA is a wide band coaxial circulator with a frequency range of 45 to 50GHz.

The circulator has a typical isolation of 15dB. The maximum insertion loss is 1.3dB.

The circulator input and output connectors are 2.4mm Female.

Features

- High power handling up to 20W
- 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=+25ºC)

Parameter	Min.	Typ.	Max.	Units
Frequency Range		45-50		GHz
Insertion Loss		0.8	1.3	dB
Isolation	12	15		dB
VSWR		1.5	1.8	:1
Average Power (CW)			20	W
Rotation		Clockwise		
Input / Output Connectors		2.4mm-Female(Input) – 2.4mm-Female(Output)		
Weight		0.19 Max.		lbs.
Impedance		50		Ω

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

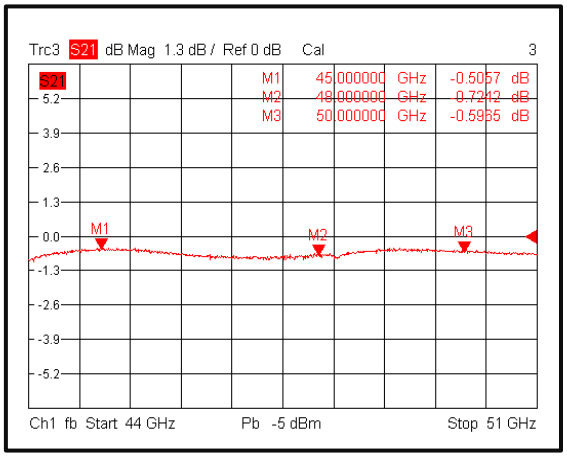
Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-20ºC to +70ºC (Case Temperature)
Storage Temperature	-40ºC to +85ºC
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)

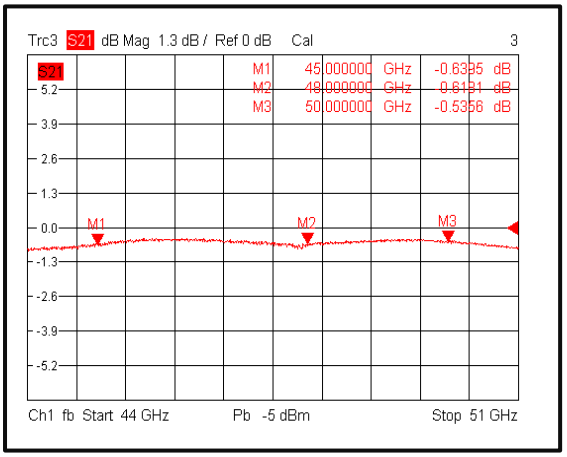
*For vibration testing details please see additional information section.

Typical Performance Plots

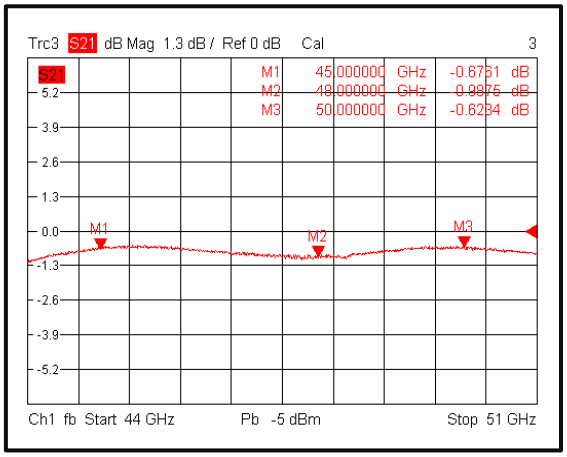
Insertion Loss (Port 1-Port 2)



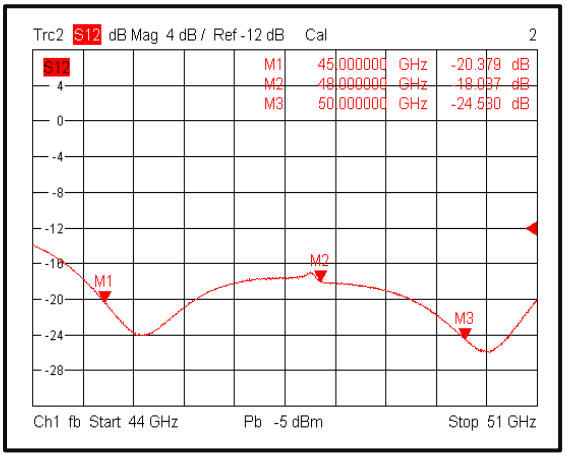
Insertion Loss (Port 2-Port 3)



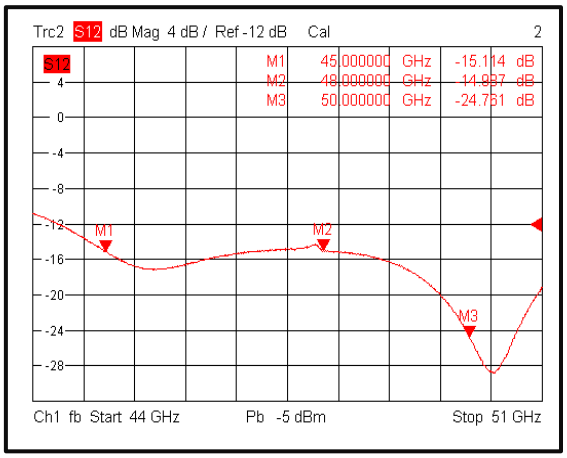
Insertion Loss (Port 3-Port 1)



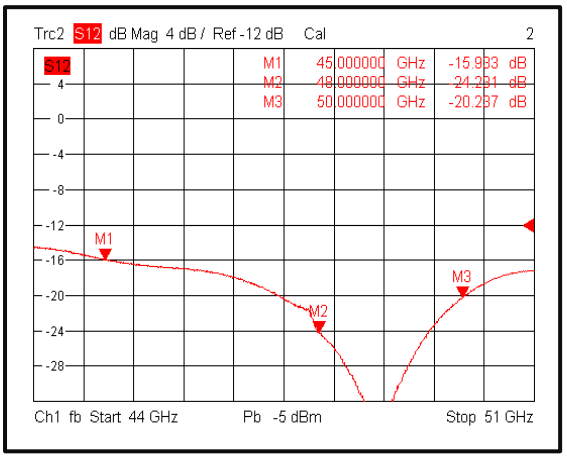
Isolation (Port 2-Port 1)



Isolation (Port 3-Port 2)

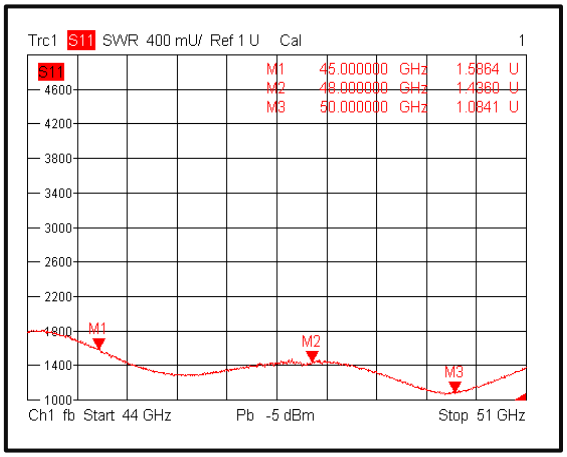


Isolation (Port 1-Port 3)

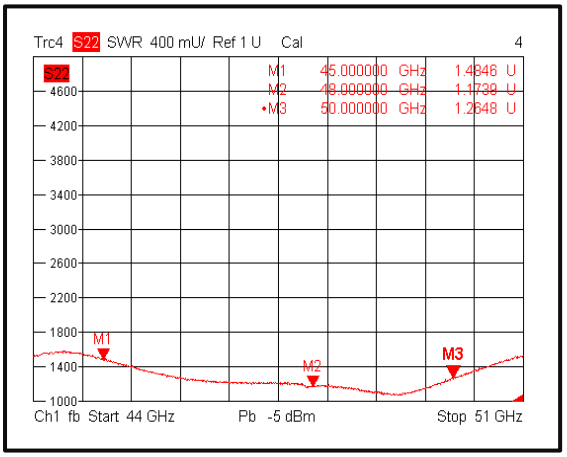


Typical Performance Plots

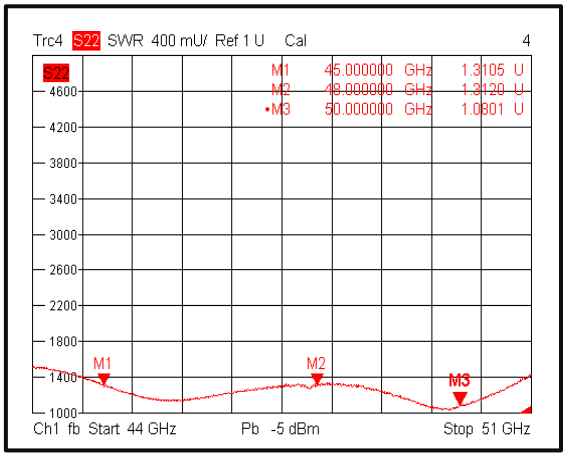
VSWR 1



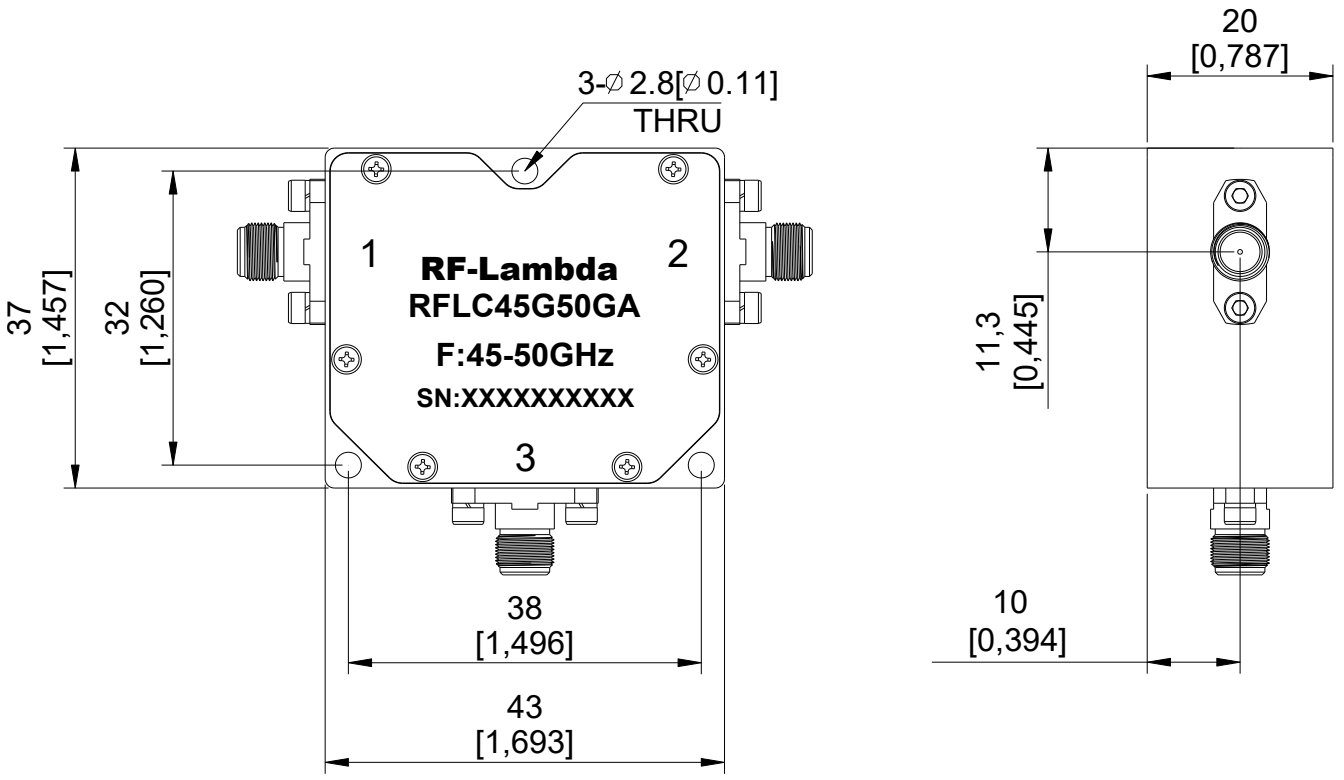
VSWR 2



VSWR 3



Outline Drawing



Notes:
1. Package Material: Aluminum alloy
2. Finish: Nickel Plated
3. All dimensions are in millimeters [inches].
4. Outline Tolerances ±0.5[0.02], Mounting Holes Tolerances ±0.2(0.008) .unless otherwise specified

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
RFLC45G50GA	Connectors 2.4mm-Female	45GHz-50GHz Coaxial Circulator

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