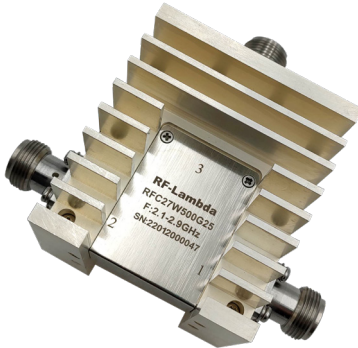


500W High Power Coaxial Circulator 2.1GHz-2.9GHz



Product Description

The RFC27W500G25 is a coaxial circulator with a frequency range of 2.1 to 2.9GHz.

The circulator has a typical isolation of 20dB. The maximum insertion loss is 0.5dB.

The circulator's Connectors are N-Female.

Features

- High power handling up to 500W
- 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 ($T_A=+25^\circ\text{C}$)

| Parameter | Min. | Typ. | Max. | Units |
|---------------------------|------|-----------|-----------|----------|
| Frequency Range | | 2.1 – 2.9 | | GHz |
| Insertion Loss | | 0.35 | 0.5 | dB |
| Isolation | 20 | 21 | | dB |
| VSWR | | 1.15 | 1.2 | :1 |
| Power Handling (CW) | | | 500 | W |
| Rotation | | | Clockwise | |
| Input / Output Connectors | | | N-Female | |
| Weight | | 0.91 | | lbs. |
| Impedance | | 50 | | Ω |

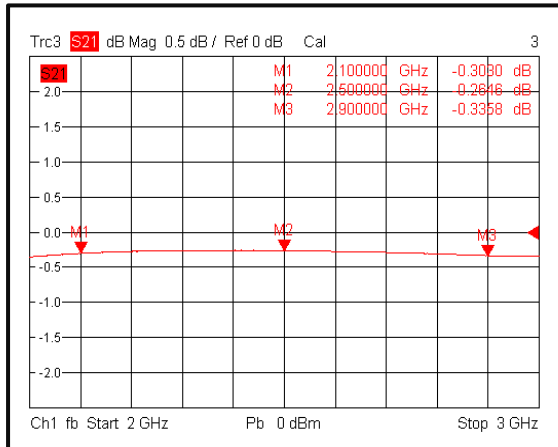
Environmental Specifications and Test Standards

| Parameter | Description |
|-----------------------------------|---|
| Operational Temperature | -20°C to +70°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) |

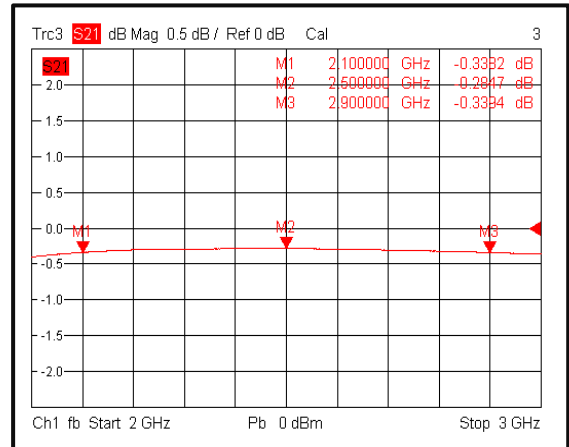
*For vibration testing details please see additional information section.

Typical Performance Plots

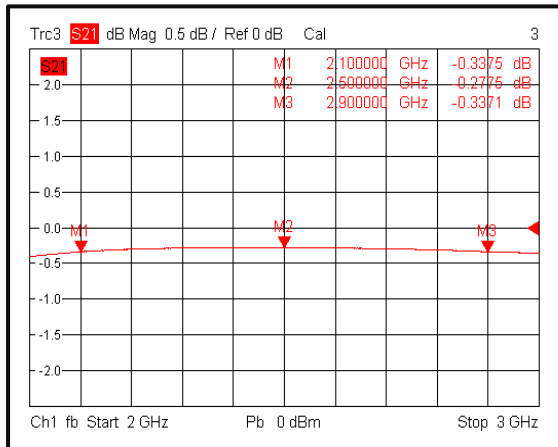
Insertion Loss (Port 1-Port 2)



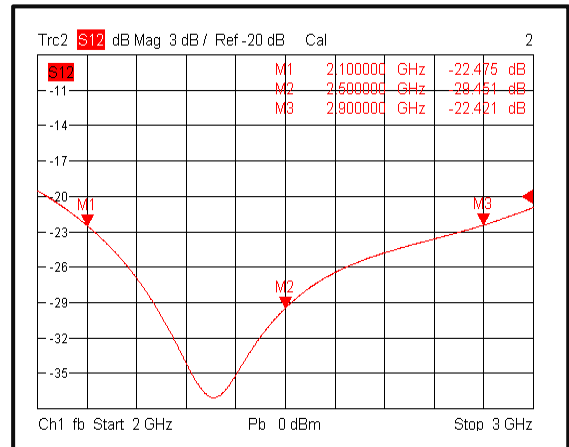
Insertion Loss (Port 2-Port 3)



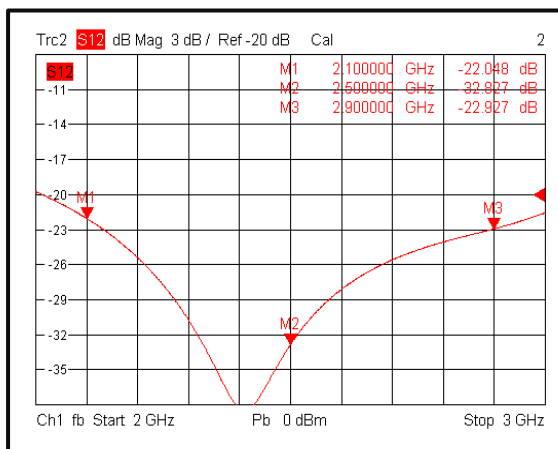
Insertion Loss (Port 3-Port 1)



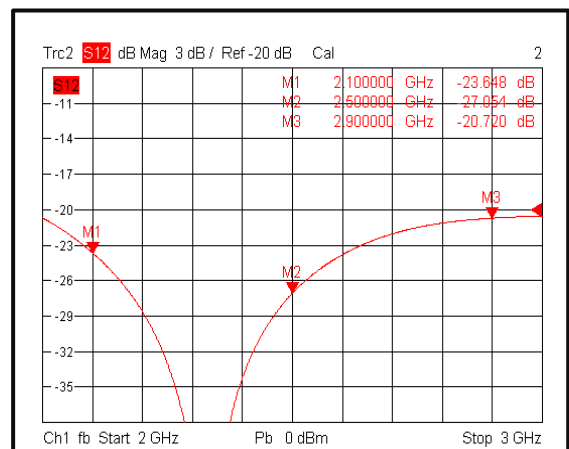
Isolation (Port 2-Port 1)



Isolation (Port 3-Port 2)

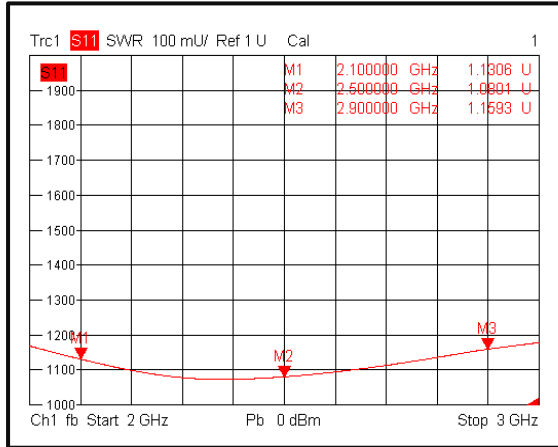


Isolation (Port 1-Port 3)

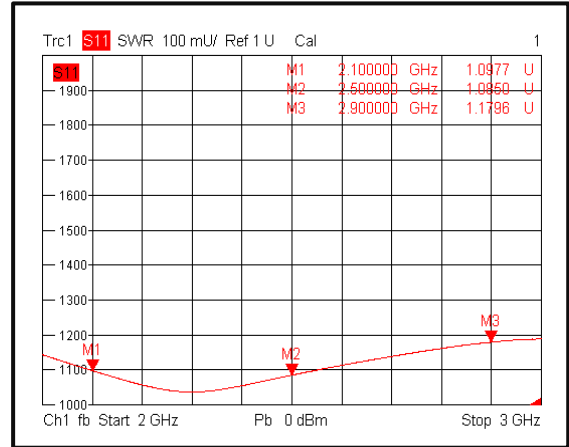


Typical Performance Plots

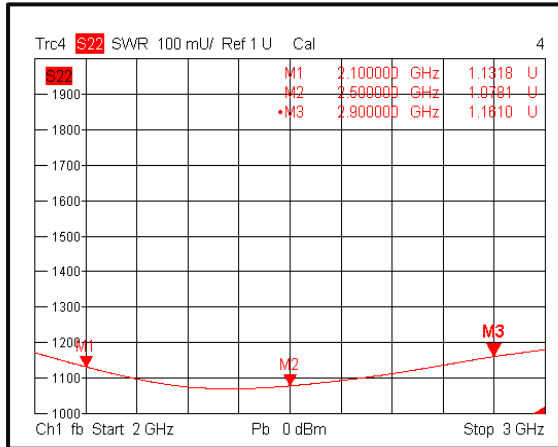
VSWR 1



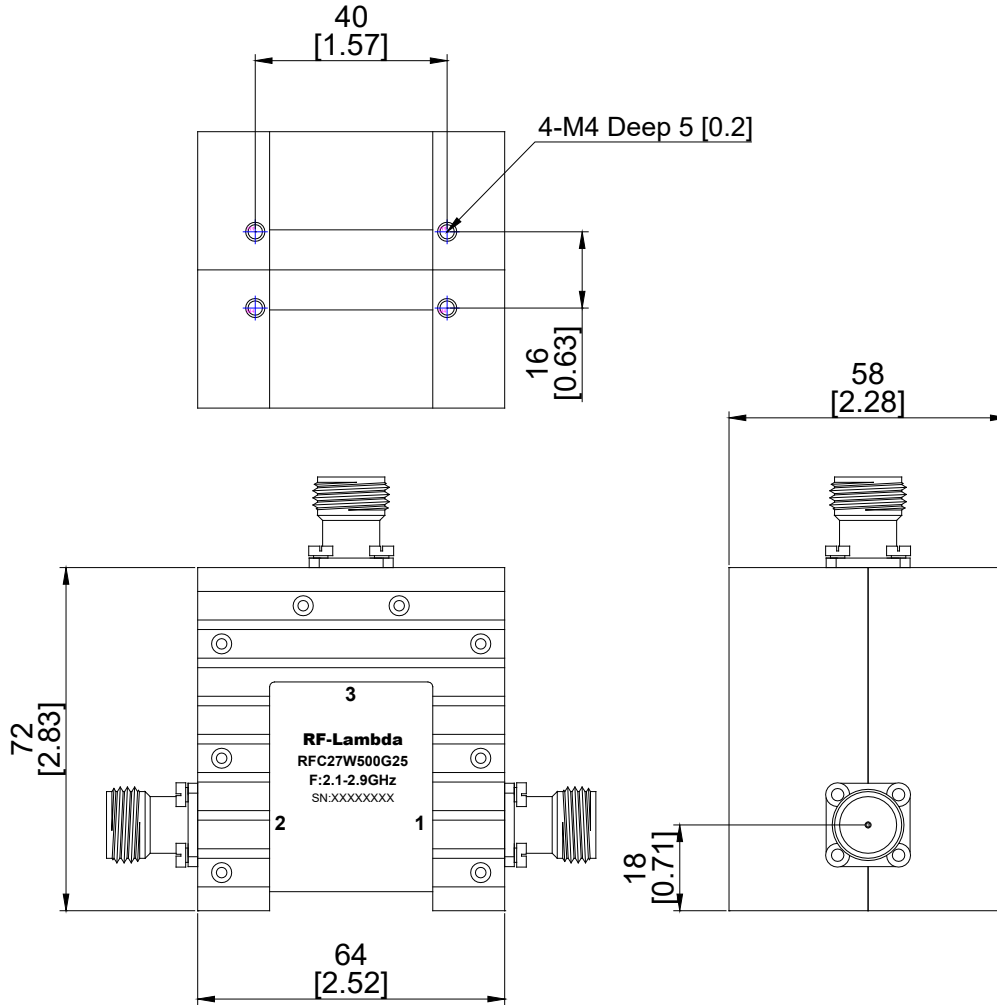
VSWR 2



VSWR3



Outline Drawing



Notes:

1. Package Material: Aluminum alloy
2. Plating: 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
5. * Air cooling is Required - Mandatory for High Power Operation .

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 |
|--------------|---|----------------------------------|
| RFC27W500G25 | Input Connector N-Female and Output Connector N-Female | 2.1GHz-2.9GHz Coaxial Circulator |

Important Notice

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