

## Wide Band Coaxial Circulator 12GHz-18GHz



### Product Description

RFLC-601-6 is a wide band coaxial circulator with a frequency range of 12 to 18GHz.

The circulator has a typical isolation of 16dB. The maximum insertion loss is 0.6dB.

The circulator input and output connectors are SMA Female.

### Features

- High power handling up to 10W
- Wide band operation
- High isolation 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 ( $T_A=+25^{\circ}\text{C}$ )

| Parameter                 | Min. | Typ.              | Max. | Units    |
|---------------------------|------|-------------------|------|----------|
| Frequency Range           |      | 12-18             |      | GHz      |
| Insertion Loss            |      | 0.5               | 0.6  | dB       |
| Isolation                 | 15   | 16                |      | dB       |
| VSWR                      |      | 1.4               | 1.5  | :1       |
| Forward Power (CW)        |      |                   | 10   | W        |
| Rotation                  |      | Counter Clockwise |      |          |
| Input / Output Connectors |      | SMA-Female        |      |          |
| Weight                    |      | 0.05 Max.         |      | lbs.     |
| Impedance                 |      | 50                |      | $\Omega$ |

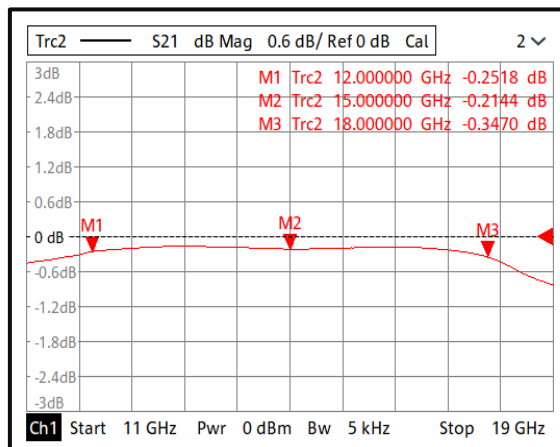
## Environmental Specifications and Test Standards

| Parameter                         | Description                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature           | -20°C to +70°C<br>(Case Temperature)                                                                                                                                                                            |
| Storage Temperature               | -40°C to +85°C                                                                                                                                                                                                  |
| Thermal Shock                     | -20°C → +70°C<br>(5 Cycles / 10 hours)                                                                                                                                                                          |
| *Random Vibration                 | MIL-STD-202G<br>Table 214-I, Test Condition Letter C<br>1.5 Hours Per Axis                                                                                                                                      |
| Shock                             | 1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s<br>2. Weight <=20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s<br>3. Total 18 times (6 directions, 3 repetitions per direction). |
| Altitude                          | Standard: 30,000 Ft (Epoxy Sealed Controlled Environment)<br>Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)                                                                                             |
| Hermetically Sealed<br>(Optional) | MIL-STD-883 (For Hermetically Sealed Units)                                                                                                                                                                     |

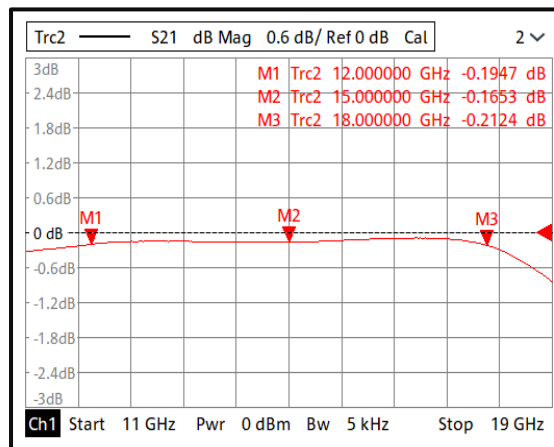
\*For vibration testing details please see additional information section.

Typical Performance Plots

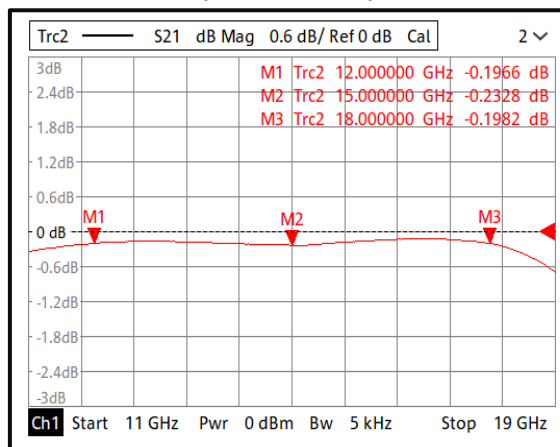
Insertion Loss (Port 1-Port 2)



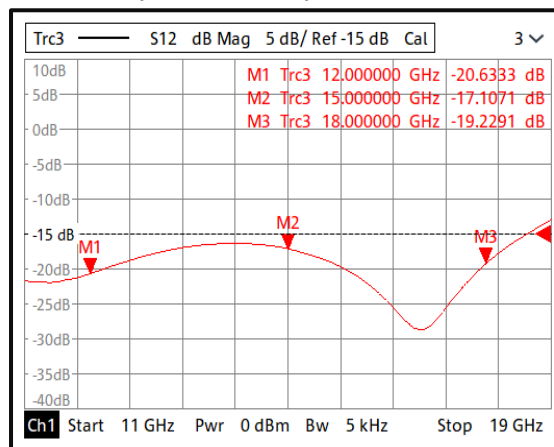
Insertion Loss (Port 2-Port 3)



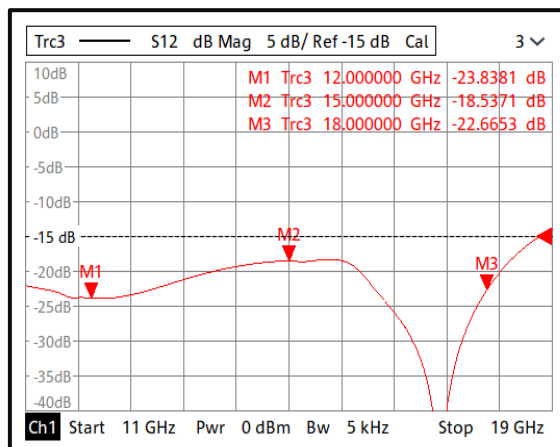
Insertion Loss (Port 3-Port 1)



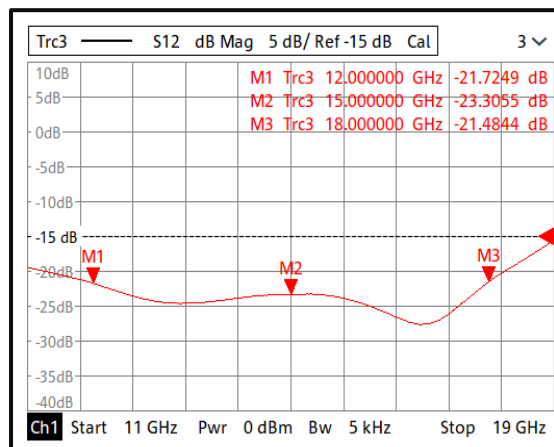
Isolation (Port 2-Port 1)



Isolation (Port 3-Port 2)

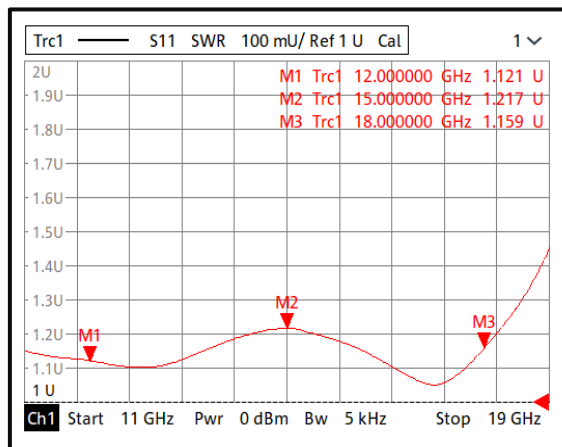


Isolation (Port 1-Port 3)

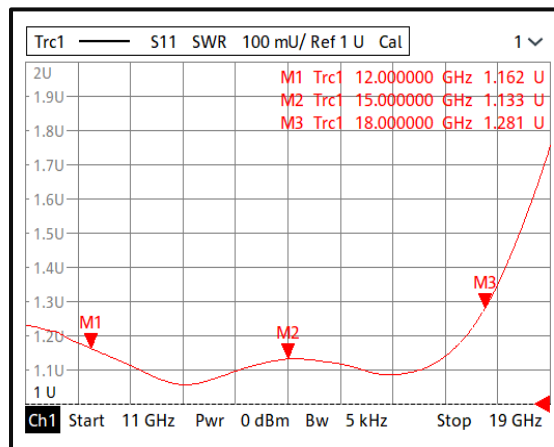


**Typical Performance Plots**

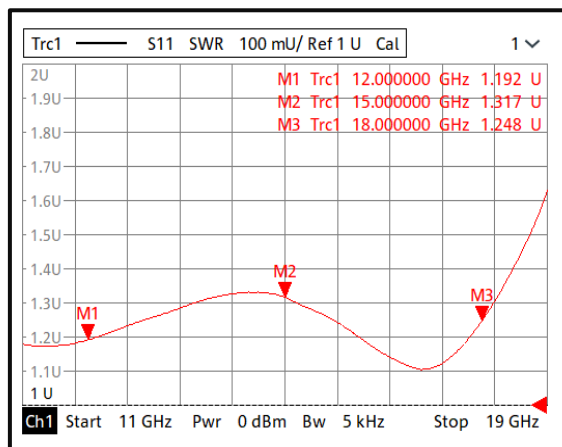
**VSWR 1**



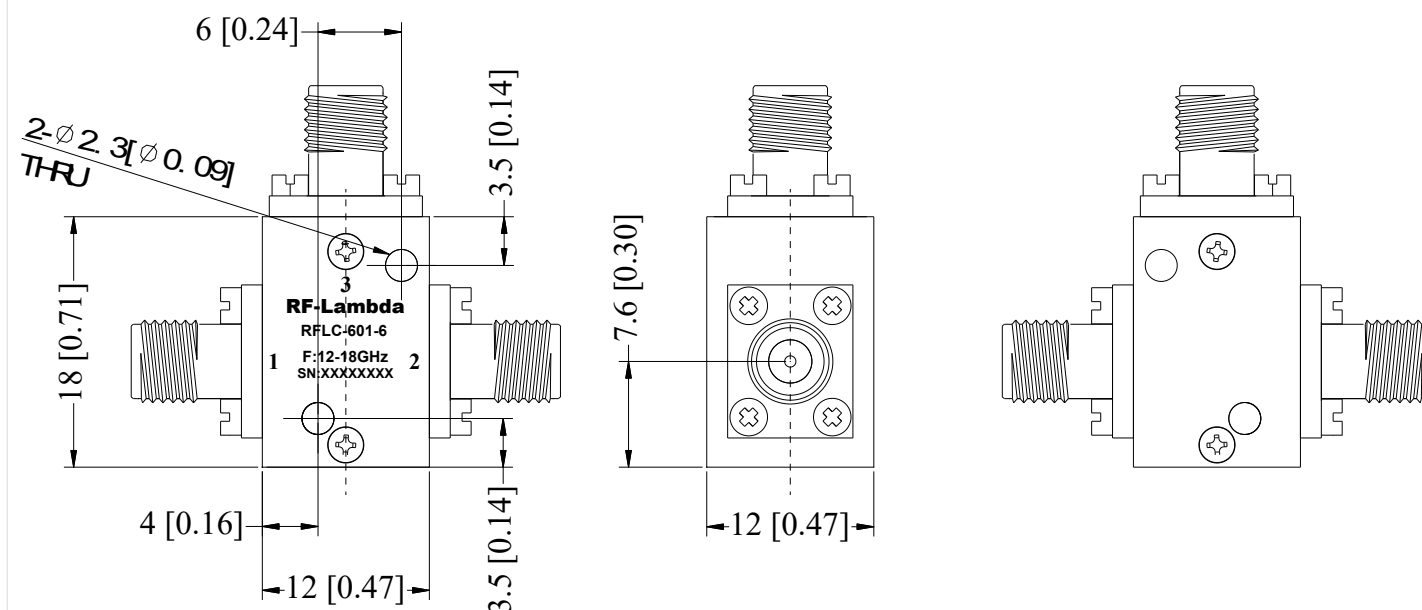
**VSWR 2**



**VSWR 3**



## Outline Drawing



### Notes:

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

### Additional Information

| Documentation                   | Webpage                                                                                                                                                       |
|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ESD Policy                      | <a href="https://rflambda.com/pdf/rflambda_esd_control.pdf">https://rflambda.com/pdf/rflambda_esd_control.pdf</a>                                             |
| Connector Torque Specifications | <a href="https://www.rflambda.com/pdf/Torque_Specifications.pdf">https://www.rflambda.com/pdf/Torque_Specifications.pdf</a>                                   |
| Random Vibration Test Standard  | <a href="https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf">https://www.rflambda.com/pdf/rflambda_random_vibration_MIL-STD-202G.pdf</a> |

**Ordering Information**

| Part Number | Modification | Description                    |
|-------------|--------------|--------------------------------|
| RFLC-601-6  | Standard     | 12GHz-18GHz Coaxial Circulator |

**Important Notice**

The information contained herein is believed to be reliable. RF-Lambda makes no warranties regarding the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for any of the information contained herein. RF-Lambda assumes no responsibility or liability whatsoever for the use of the information contained herein. The information contained herein is provided "AS IS, WHERE IS" and with all faults, and the entire risk associated with such information is entirely with the user. All information contained herein is subject to change without notice. Customers should obtain and verify the latest relevant information before placing orders for RF-Lambda products. The information contained herein or any use of such information does not grant, explicitly or implicitly, to any party any patent rights, licenses, or any other intellectual property rights, whether with regard to such information itself or anything described by such information.

RF-Lambda products are not warranted or authorized for use as critical components in medical, life-saving, or life sustaining applications, or other applications where a failure would reasonably be expected to cause severe personal injury or death.