

## Coaxial Cavity Band Pass Filter 2.14GHz-3.1GHz



### Product Description

RBPF21G31G is a coaxial cavity band pass filter with a frequency range of 2.14 to 3.1GHz.

The power handling of this band pass filter is 20W. The insertion loss is 1.5 dB with a typical rejection of 30dB.

The working temperature of this product is between - 25°C and + 70°C.

### Features

- High Rejection
- Low Insertion Loss
- Excellent Temperature Stability
- Miniaturization
- Filter Type: Cavity

### 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, TA = +25°C

| Parameter                 | Min  | Typ      | Max | Units |
|---------------------------|--|----------|-----|-------|
| Frequency Range           | 2.14                                       |          | 3.1 | GHz   |
| Insertion Loss            |  | 0.7      | 1.5 | dB    |
| Pass Band Ripple          |  | 0.3      |     | dB    |
| VSWR                      |  | 1.4      | 1.6 | :1    |
| Rejection                 | @2040MHz                                   | 20       | 30  | dB    |
|                           | @400MHz                                    | 40       | 80  | dB    |
|                           | @4000-6000MHz                              | 30       | 55  | dB    |
| Power Rating              | Average                                    |          | 20  | W     |
|                           | Peak<br>(10% Duty Cycle, 1 us Pulse Width) |          | 100 | W     |
| Weight                    |  | 1.6 Typ. |     | lbs   |
| Impedance                 |  | 50       |     | Ω     |
| Input / Output Connectors | SMA-Female(Input) – SMA-Female(Output)     |          |     |       |
| Package                   | Epoxy Sealed (Standard)                    |          |     |       |
|                           | Hermetically Sealed (Optional)             |          |     |       |

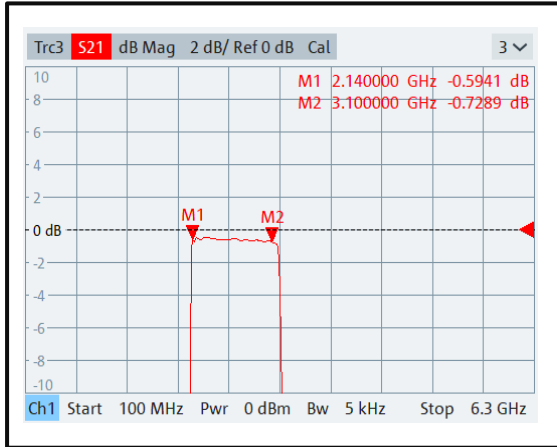
**Environmental Specifications and Test Standards**

| Parameter                         | Description   |
|-----------------------------------|---|
| Operational Temperature           | -25°C to +70°C<br>(Case Temperature)  |
| Storage Temperature               | -40°C to +85°C  |
| Thermal Shock                     | -40°C → +85°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)   |

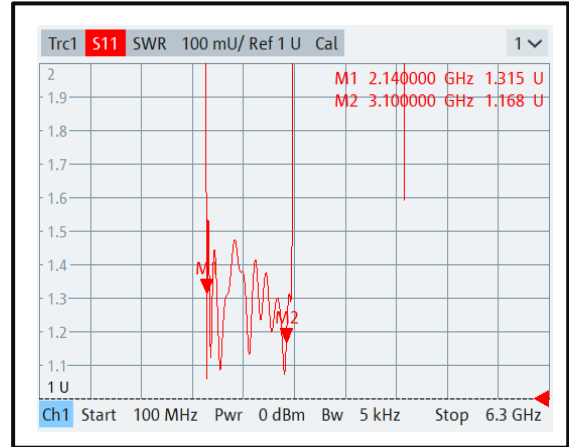
\*\*For vibration testing details please see additional information section.

Typical Performance Plots

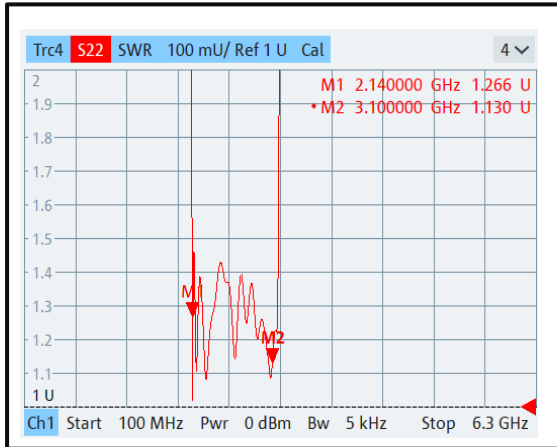
Insertion Loss



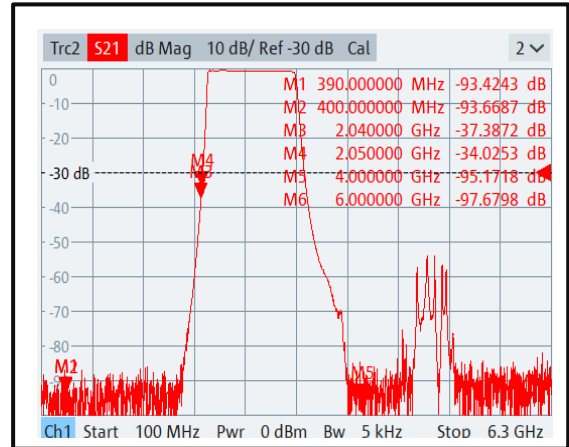
Input VSWR



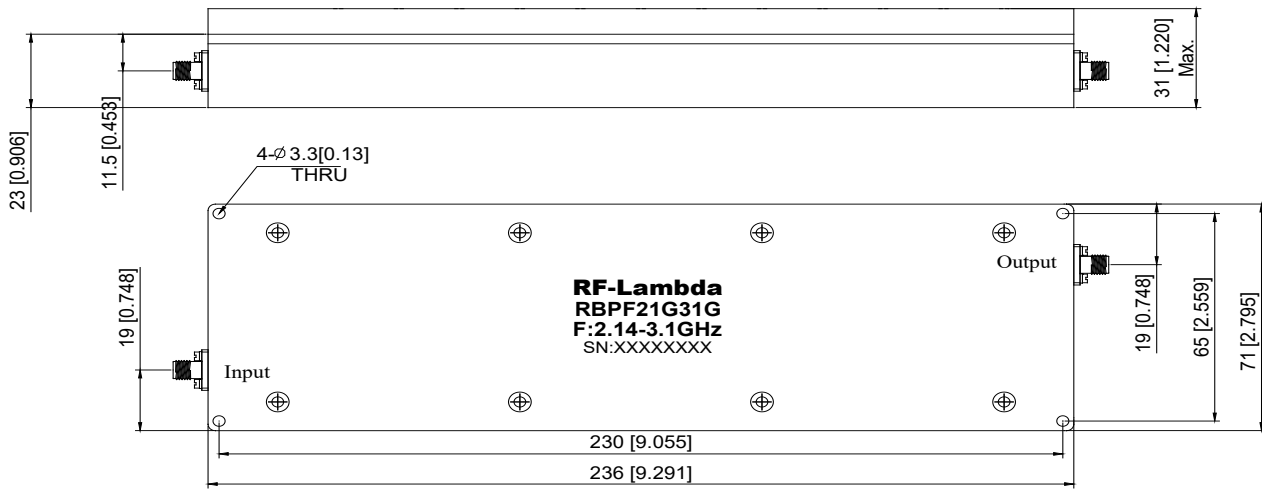
Output VSWR



Rejection

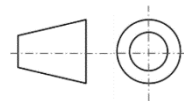


**Outline Drawing**



Notes:

1. Package Material: Aluminum
2. Finish: Blue Paint
3. All dimensions are in millimeters [inches].
4. Outline Tolerances  $\pm 1.0[0.04]$ , Mounting Hole Tolerances  $\pm 0.5[0.02]$  unless otherwise specified.



Additional Information

| Documentation                   | Webpage   |
|---------------------------------|---|
| 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                  |
|-------------|--------------|------------------------------|
| RBPF21G31G  | Standard     | 2.14-3.1GHz Band Pass Filter |

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