

## Ultra Wide Band Coaxial Circulator 400MHz-500MHz



Note: The photo is for illustration purposes only. Please refer to outline drawing.

### Product Description

RFLC101M40M50 is an ultra wide band coaxial circulator with a frequency range of 400 to 500MHz.

The circulator has a typical isolation of 21dB. The maximum insertion loss is 0.5dB.

The circulator input and output connectors are SMA-Female or N-Female.

### Features

- High power handling up to 50W
- 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 ( $T_A=+25^{\circ}\text{C}$ )

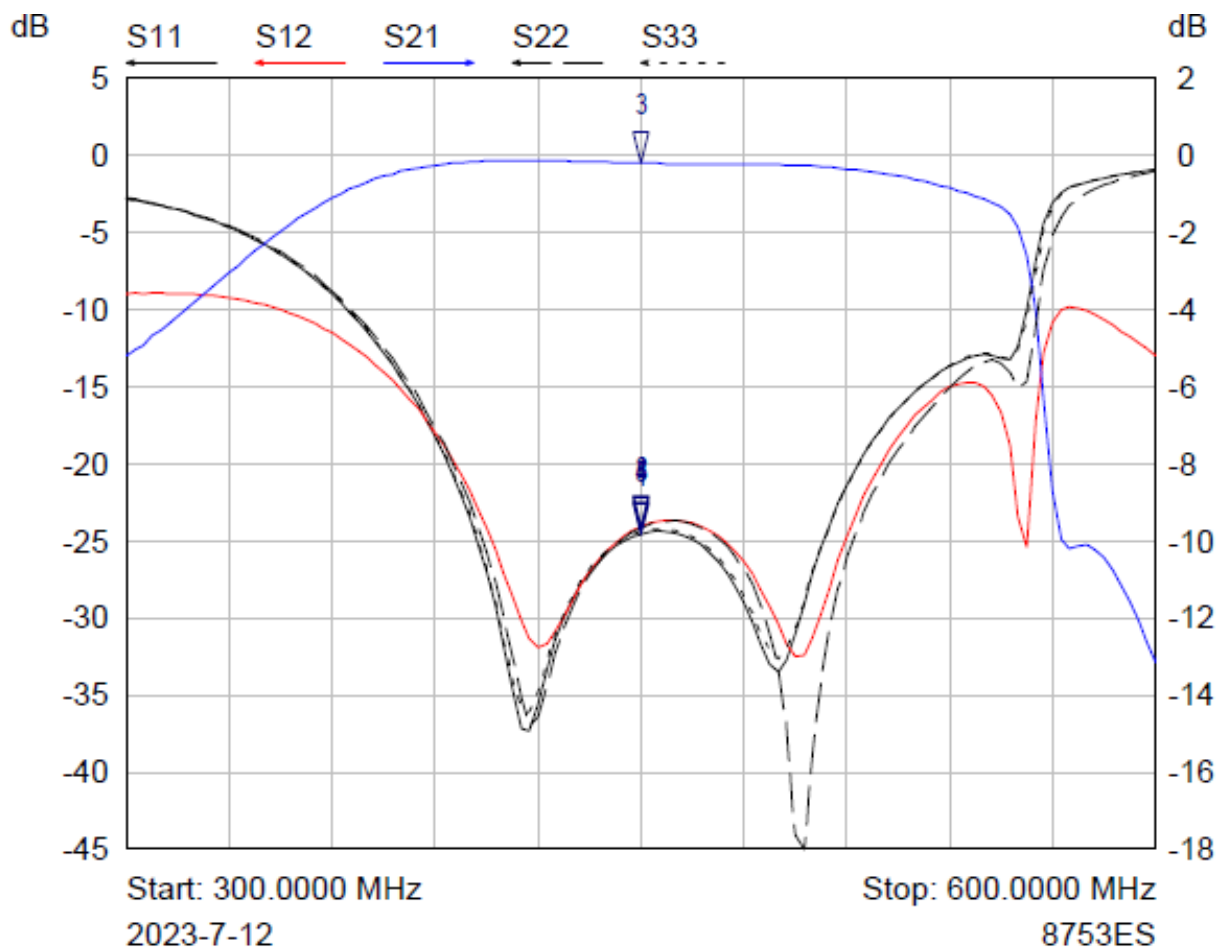
| Parameter                 | Min | Typ                                                      | Max  | Units    |
|---------------------------|-----|----------------------------------------------------------|------|----------|
| Frequency Range           |     | 400 – 500                                                |      | MHz      |
| Insertion Loss            |     | 0.40                                                     | 0.50 | dB       |
| Isolation                 | 20  | 21                                                       |      | dB       |
| VSWR                      |     | 1.20                                                     | 1.25 | :1       |
| Power Handling (CW)       |     |                                                          | 50   | W        |
| Rotation                  |     | Clockwise (Standard)<br>Counter Clockwise (Upon Request) |      |          |
| Input / Output Connectors |     | RFLC101M40M50S (SMA–Female)<br>RFLC101M40M50N (N-Female) |      |          |
| Impedance                 |     | 50                                                       |      | $\Omega$ |

## Environmental Specifications and Test Standards

| Parameter                         | Description                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature           | -40°C to +85°C<br>(Case Temperature)                                                                                                                                                                            |
| Storage Temperature               | -50°C to +105°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)                                                                                                                                                                     |

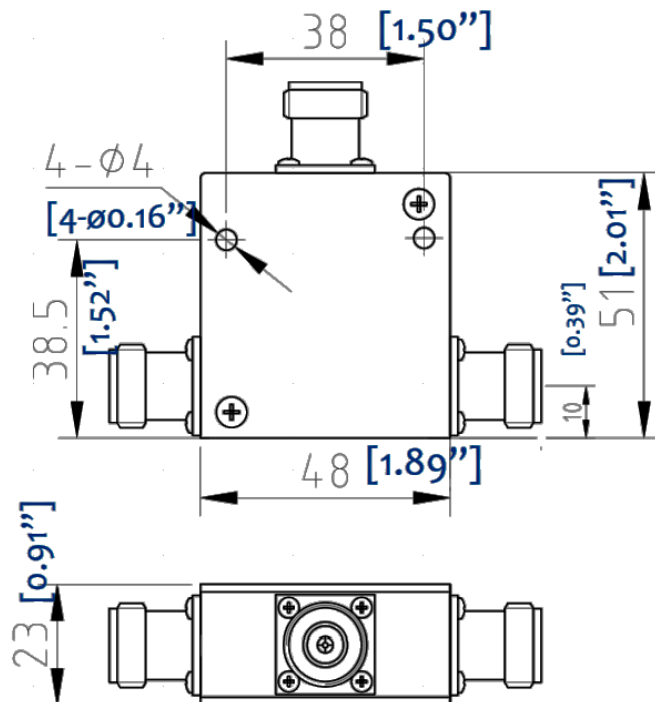
\*For vibration testing details please see additional information section.

Typical Performance Plots



| Mkr | Trace | X-Axis       | Value     | Notes |
|-----|-------|--------------|-----------|-------|
| 1 ▾ | S11   | 450.0000 MHz | -24.54 dB |       |
| 2 ▾ | S12   | 450.0000 MHz | -24.07 dB |       |
| 3 ▾ | S21   | 450.0000 MHz | -0.20 dB  |       |
| 4 ▾ | S22   | 450.0000 MHz | -24.14 dB |       |
| 5 ▾ | S33   | 450.0000 MHz | -24.41 dB |       |

Outline Drawing



N-Female Shown

Notes:

1. Package Material: Aluminum Alloy/Copper
2. Finish: Nickel Plated
3. All dimensions are in millimeters [inches].
4. Standard torque wrench must be used to secure RF connectors.

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                      |
|----------------|-----------------------|----------------------------------|
| RFLC101M40M50S | Connectors SMA-Female | 400MHz-500MHz Coaxial Circulator |
| RFLC101M40M50N | Connectors N-Female   | 400MHz-500MHz Coaxial Circulator |

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