

## Triple Junction Circulator 1.8GHz-3.6GHz



### Product Description

RFLC-313-1 is a triple junction circulator with a 300MHz BW withing a frequency range of 1.8 to 3.6GHz.

The circulator has a minimum isolation of 50dB. The maximum insertion loss is 0.5dB.

The operating temperature of this product is within -40 to +85°C

### Features

- High power handling up to 100W
- 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 ( $T_A=+25^{\circ}\text{C}$ )

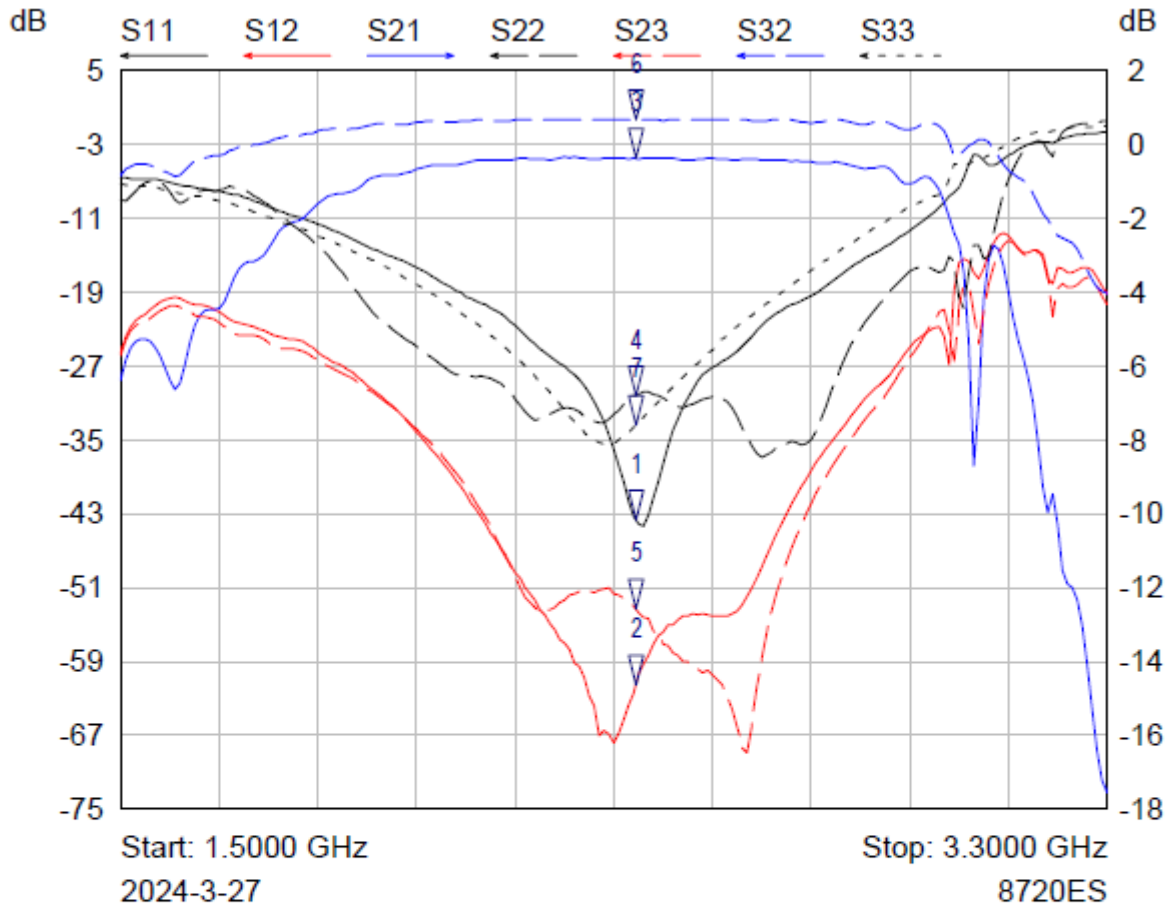
| Parameter                 |     | Min.                                                   | Typ. | Max. | Units |    |
|---------------------------|-----|--------------------------------------------------------|------|------|-------|----|
| Frequency Range           |     | 1.8 – 3.6 (2440 +/-150MHz shown)                       |      |      | GHz   |    |
| Bandwidth                 |     | 300                                                    |      |      | MHz   |    |
| Insertion Loss            | 1-2 | 0.5                                                    |      |      | dB    |    |
|                           | 2-3 | 0.5                                                    |      |      |       |    |
| Isolation                 | 2-1 | 50                                                     |      |      |       | dB |
|                           | 3-2 | 50                                                     |      |      |       |    |
| VSWR                      |     | 1.2                                                    |      |      | :1    |    |
| Forward Power             |     | 100                                                    |      |      | W     |    |
| Reverse Power             |     | 10                                                     |      |      | W     |    |
| Rotation                  |     | Clockwise (Standard)<br>Count Clockwise (upon request) |      |      |       |    |
| Input / Output Connectors |     | SMA-Female                                             |      |      |       |    |
| Weight                    |     | -                                                      |      |      | lbs.  |    |

Environmental Specifications and Test Standards

| Parameter                         | Description                                                                                                                                                                                                     |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature           | -40°C to +85°C<br>(Case Temperature)                                                                                                                                                                            |
| Storage Temperature               | -40°C to +100°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)                                                                                                                                                                     |

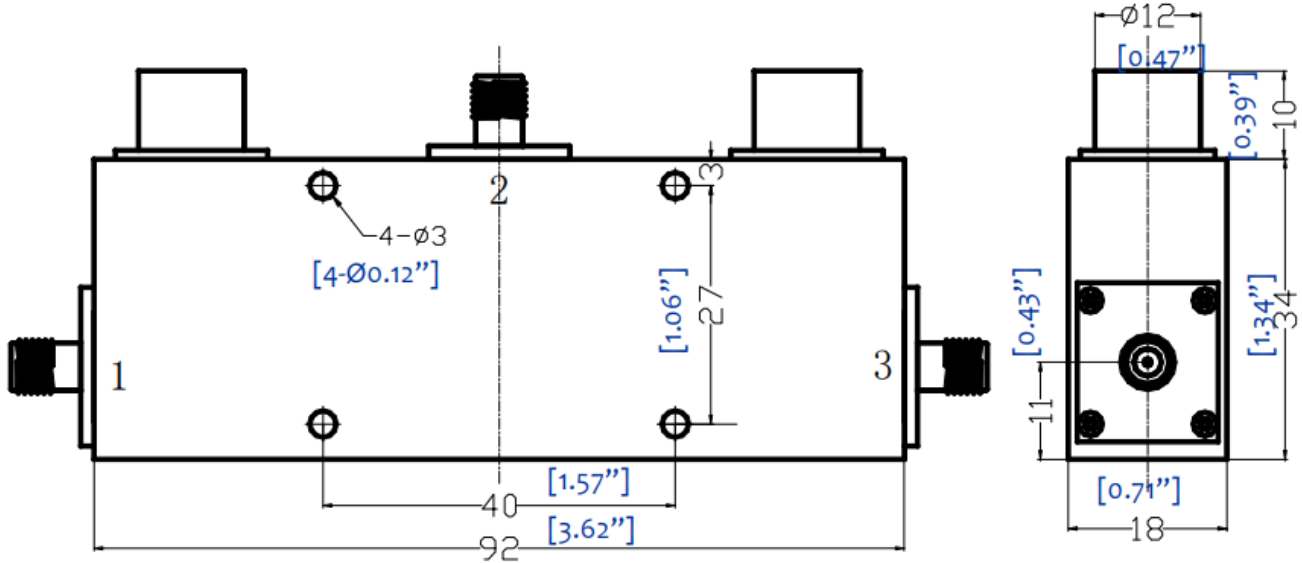
\*For vibration testing details please see additional information section.

Typical Performance Plots



| Mkr | Trace | X-Axis     | Value     | Notes |
|-----|-------|------------|-----------|-------|
| 1 ▽ | S11   | 2.4400 GHz | -43.63 dB |       |
| 2 ▽ | S12   | 2.4400 GHz | -61.48 dB |       |
| 3 ▽ | S21   | 2.4400 GHz | -0.39 dB  |       |
| 4 ▽ | S22   | 2.4400 GHz | -30.15 dB |       |
| 5 ▽ | S23   | 2.4400 GHz | -53.27 dB |       |
| 6 ▽ | S32   | 2.4400 GHz | -0.36 dB  |       |
| 7 ▽ | S33   | 2.4400 GHz | -33.38 dB |       |

**Outline Drawing**



**Notes:**

1. Package Material: Aluminum Alloy
2. Finish: Conductive no paint
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                              |
|-------------|--------------|------------------------------------------|
| RFLC-313-1  | Standard     | 1.8GHz-3.6GHz Triple Junction Circulator |

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