

## Coaxial 200W 10dB Directional Coupler 0.8GHz-2.5GHz



### Product Description

RFDC8M3G10B is a coaxial directional coupler with a frequency range of 0.8 to 2.5GHz.

The power handling of this directional coupler is 200W. The insertion loss is 0.3dB with a typical directivity of 25dB.

The working temperature of this product is between - 40°C and + 85°C.

### Features

- High power handling up to 200W
- Wide band operation
- High directivity 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, TA = +25°C

| Parameter                         | Min     | Typ  | Max                                     | Min | Typ  | Max  | Units |
|-----------------------------------|---------|------|---|-----|------|------|-------|
| Frequency Range                   | 0.8     |      | 1.6                                     | 1.6 |      | 2.5  | GHz   |
| Nominal Coupling                  | 9       | 10   | 11                                      | 9   | 10   | 11   | dB    |
| Frequency Sensitivity             |         | ±0.3 | ±0.4                                    |     | ±0.2 | ±0.3 | dB    |
| Directivity                       | 20      | 25   |   | 20  | 22   |      | dB    |
| Insertion Loss<br>(Excl Coupling) |         |      | 0.3                                     |     |      | 0.3  | dB    |
| Insertion Loss (True)             |         | 0.55 | 0.75                                    |     | 0.55 | 0.75 | dB    |
| VSWR Primary                      |         | 1.1  | 1.2                                     |     | 1.15 | 1.2  | : 1   |
| VSWR Secondary                    |         | 1.1  | 1.2                                     |     | 1.16 | 1.2  | : 1   |
| Power Rating                      | Average |      | 200                                     |     |      |      | W     |
|                                   | Peak    |      | 1<br>(10% Duty Cycle, 1 us Pulse Width) |     |      |      | KW    |
| Weight                            |         |      | 0.56 Max.                               |     |      |      | lbs   |
| Impedance                         |         |      | 50                                      |     |      |      | Ω     |
| Input / Output Connectors         |         |      | N-Female(Input) – N-Female(Output)      |     |      |      |       |
| Package                           |         |      | Epoxy Sealed (Standard)                 |     |      |      |       |
|                                   |         |      | Hermetically Sealed (Optional)          |     |      |      |       |

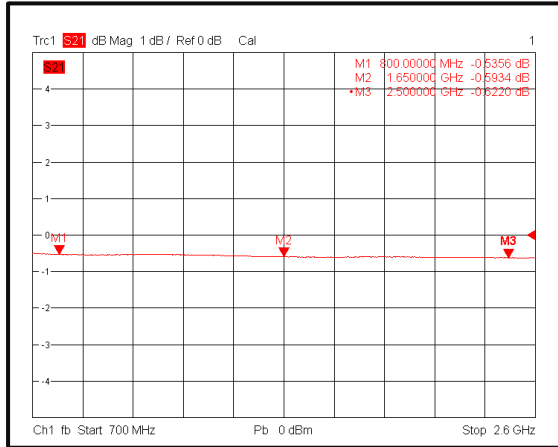
**Environmental Specifications and Test Standards**

| 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)   |

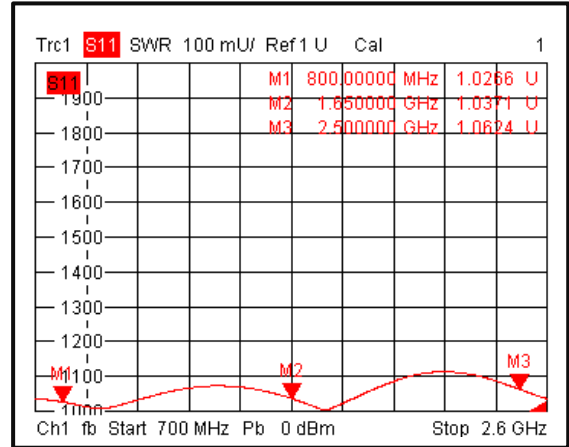
\*For vibration testing details please see additional information section.

Typical Performance Plots

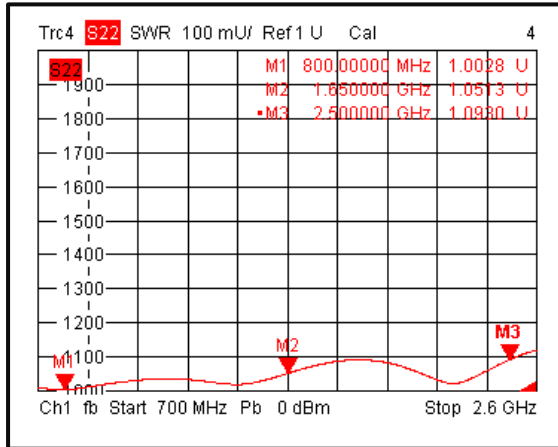
Insertion Loss



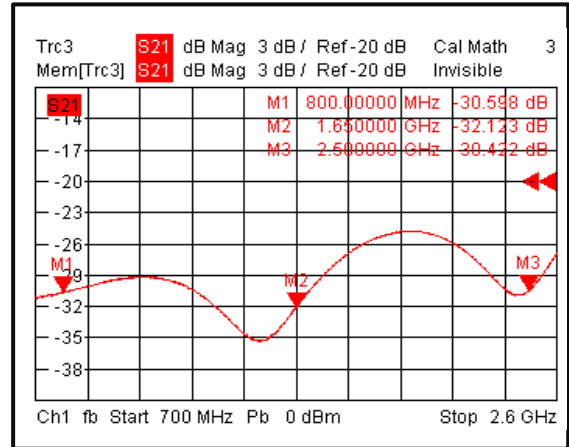
Primary VSWR



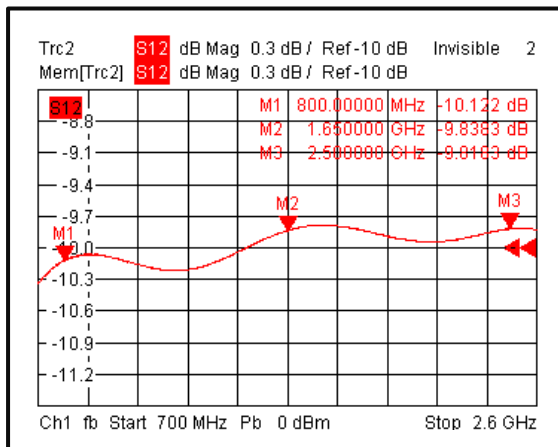
Secondary VSWR



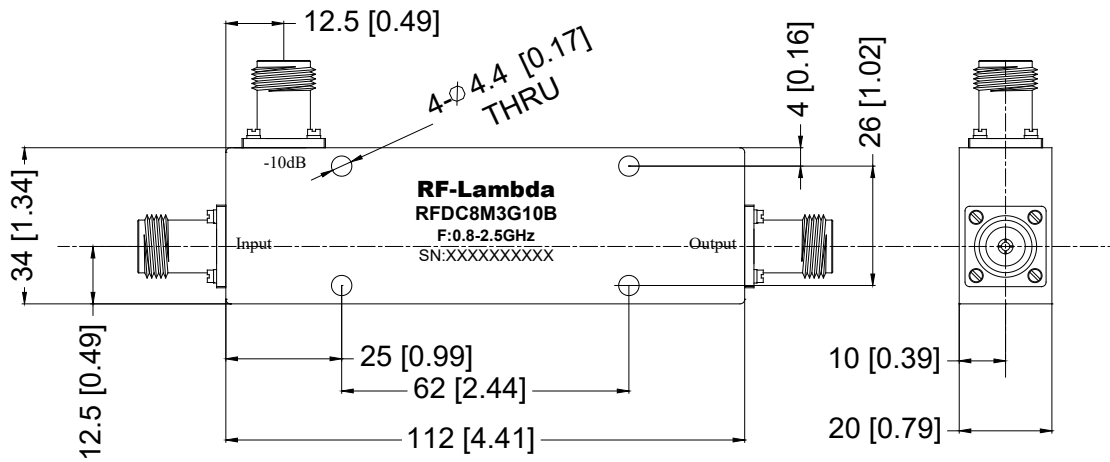
Directivity



Nominal Coupling

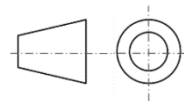


**Outline Drawing**



Notes:

1. Package Material: Aluminum
2. Finish: Blue Painted
3. All dimensions are in millimeters [inches].
4. Outline Tolerances  $\pm 0.5$  [0.02], Mounting Hole Tolerances  $\pm 0.2$  [0.008] 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                    |
|-------------|---------------------|--------------------------------|
| RFDC8M3G10B | Connectors N-Female | 0.8-2.5GHz Directional Coupler |

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