



# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

## RFDC6G18G10

### Coaxial 50W 10dB Directional Coupler 6 - 18GHz



#### Features

- High power handling up to 50W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss
- Stable performance over temperature

#### Typical Applications

- Aerospace and military applications
- Test and Measurement
- Wireless Infrastructure

Electrical Specifications,  $T_A=25\text{ }^{\circ}\text{C}$

| Parameters                        |         | Min.       | Typ.      | Max.      | Units  |
|-----------------------------------|---------|------------|-----------|-----------|--------|
| Frequency Range                   |         | 6          |           | 18        | GHz    |
| Nominal Coupling                  |         | 9          | 10        | 11        | dB     |
| Frequency Sensitivity             |         |            | $\pm 0.4$ | $\pm 0.7$ | dB     |
| Directivity                       |         | 12         | 15        |           | dB     |
| Insertion Loss<br>(Excl Coupling) |         |            |           | 0.5       | dB     |
| Insertion Loss (True)             |         |            | 0.8       | 0.9       | dB     |
| VSWR Primary                      |         |            | 1.3       | 1.5       | : 1    |
| VSWR Secondary                    |         |            | 1.4       | 1.5       | : 1    |
| Power Rating                      | Average | 50         |           |           | W      |
|                                   | Peak    | 500        |           |           | W      |
| Impedance                         |         | 50         |           |           | Ohms   |
| Weight                            |         | 1.06       |           |           | ounces |
| Input / Output Connectors         |         | SMA-Female |           |           |        |
| Material                          |         | Aluminum   |           |           |        |
| Finish                            |         | Blue Paint |           |           |        |

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### Environmental Specifications and Test Standards

| Parameter                        | Standard      | Description                                                                                                                                                                                                     |
|----------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operational Temperature          | MIL-STD-39016 | -45°C~+85°C                                                                                                                                                                                                     |
| Storage Temperature              |               | -55°C~+125°C                                                                                                                                                                                                    |
| Thermal Shock                    |               | 1 Hour@ -45°C → 1 Hour @ +85°C (5 Cycles)                                                                                                                                                                       |
| Random Vibration                 |               | Acceleration Spectral Density 6 (m/s)<br>Total 92.6 RMS                                                                                                                                                         |
| Electrical & Temperature Burn In |               | Temperature +85°C for 72 Hours                                                                                                                                                                                  |
| 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                         | MIL-STD-883   | Standard: 30,000 Ft (Epoxy Sealed Controlled Environment)<br>Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)                                                                                             |
| Hermetically Sealed (Optional)   |               | MIL-STD-883 (For Hermetically Sealed Units)                                                                                                                                                                     |

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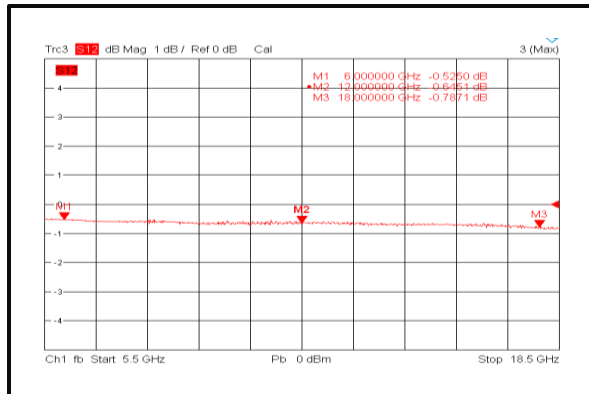
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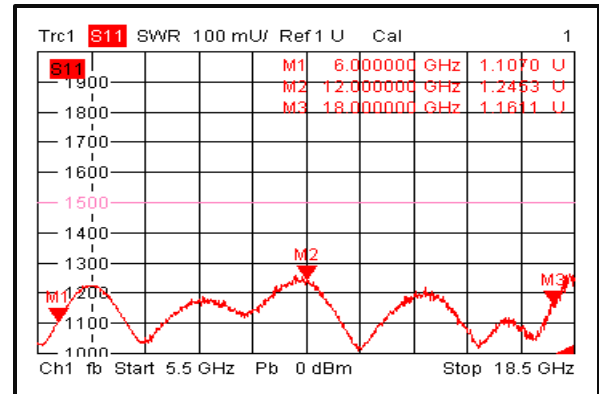
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### Typical Performance Plots

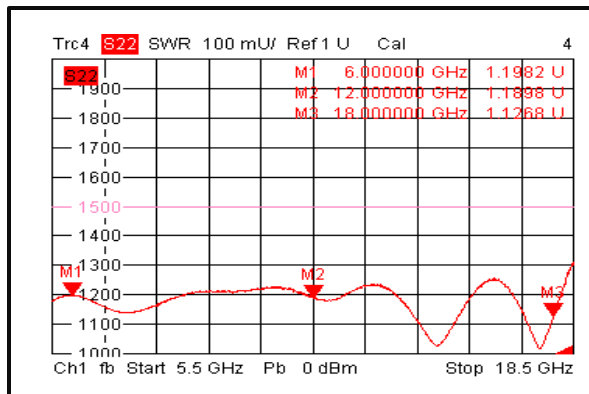
#### Insertion Loss



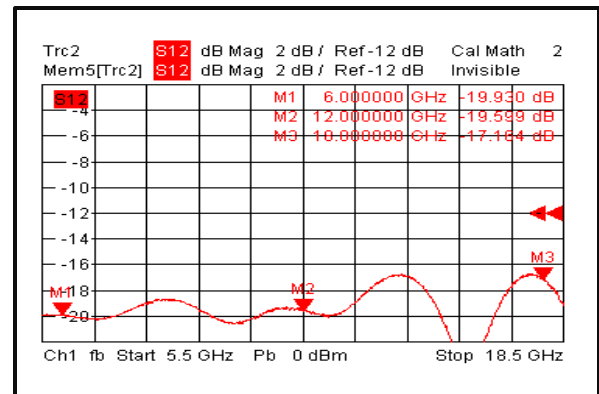
#### Primary VSWR



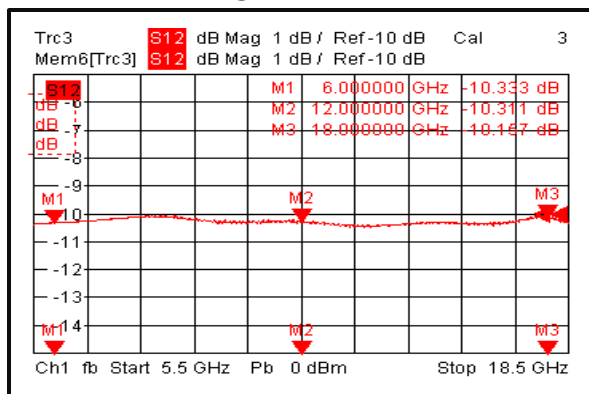
#### Secondary VSWR



#### Directivity



#### Nominal Coupling



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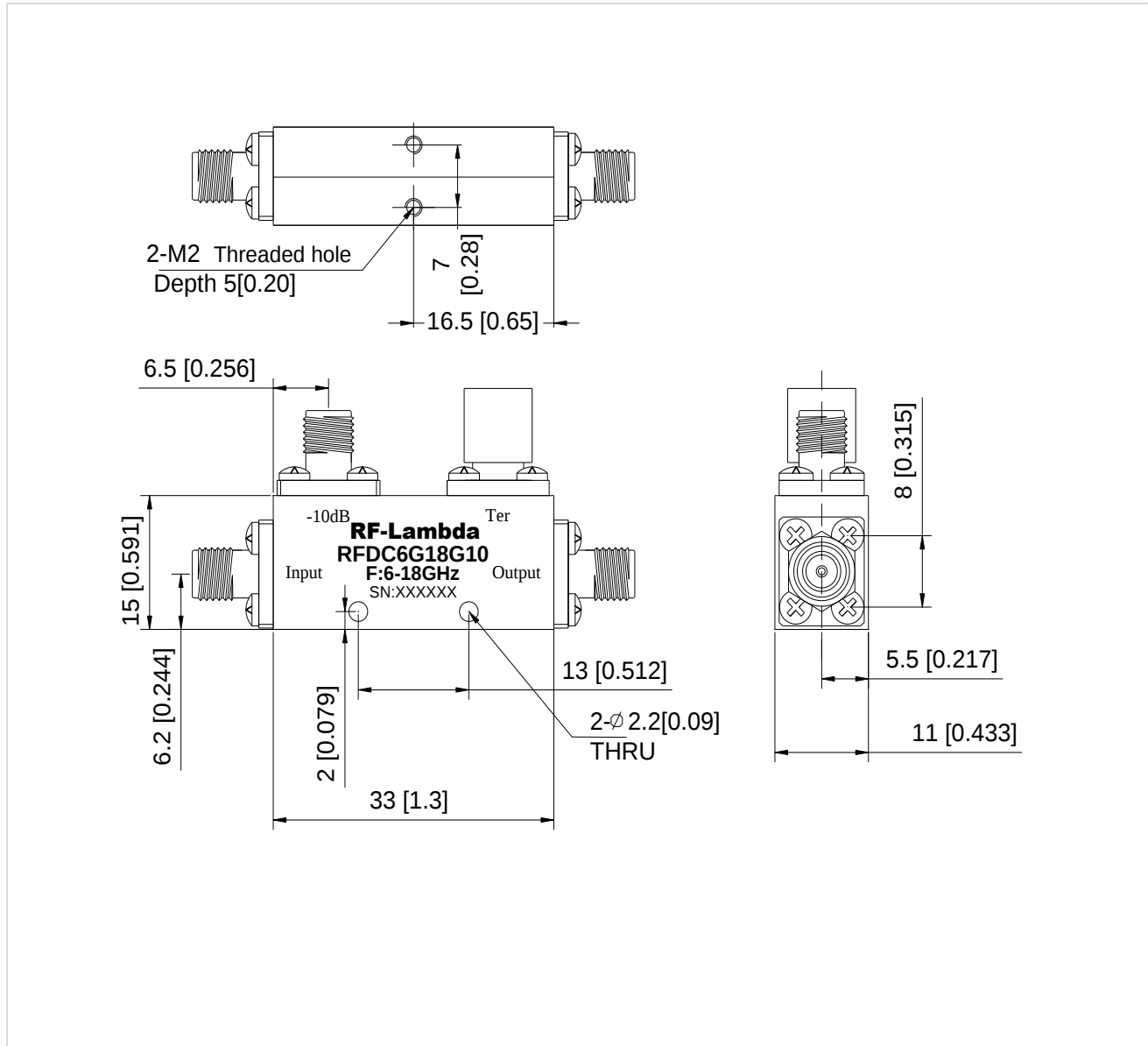
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### Outline Drawing:

All Dimensions in mm [inches]

Tolerance  $\pm 0.15$  [0.008]



### Important Notice

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