

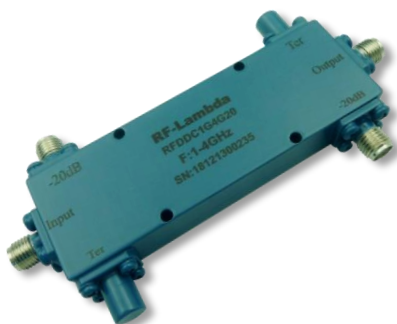


# RF-LAMBDA

LEADER OF RF BROADBAND SOLUTIONS

## RFDDC1G4G20N

### Coaxial 50W 20dB Dual Directional Coupler 1 - 4GHz



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



#### Features

- High power handling up to 50W
- Wide band operation
- High directivity within operational band
- Low Insertion Loss
- High peak to average handling capability

#### Typical Applications

- Test and Measurement
- Aerospace and military applications
- LMDS multi-carrier operation

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

| Parameter                      |         | Min.       | Typ.      | Max.      | Units  |
|--------------------------------|---------|------------|-----------|-----------|--------|
| Frequency Range                |         | 1          |           | 4         | GHz    |
| Nominal Coupling               |         | 19         | 20        | 21        | dB     |
| Frequency Sensitivity          |         |            | $\pm 0.7$ | $\pm 1.0$ | dB     |
| Directivity                    |         | 18         | 22        |           | dB     |
| Insertion Loss (Excl Coupling) |         |            |           | 0.4       | dB     |
| Insertion Loss (True)          |         |            | 0.3       | 0.5       | dB     |
| VSWR Primary                   |         |            | 1.25      | 1.3       | : 1    |
| VSWR Secondary                 |         |            | 1.25      | 1.3       | : 1    |
| Power Rating                   | Average | 50         |           |           | W      |
|                                | Peak    | 1          |           |           | kW     |
| Impedance                      |         | 50         |           |           | Ohms   |
| Weight                         |         | /          |           |           | ounces |
| Input / Output Connectors      |         | N-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                         |               | 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   | MIL-STD-883 (For Hermetically Sealed Units)                                                                                                                                                                     |

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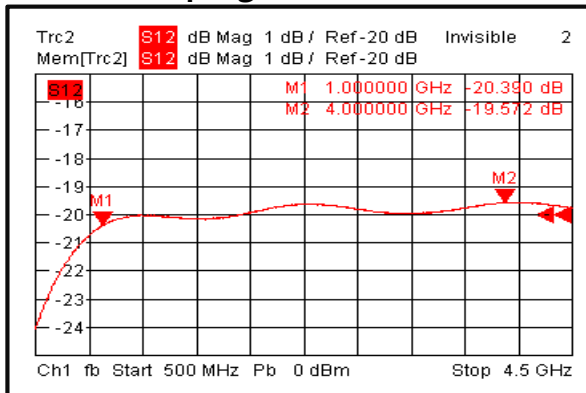
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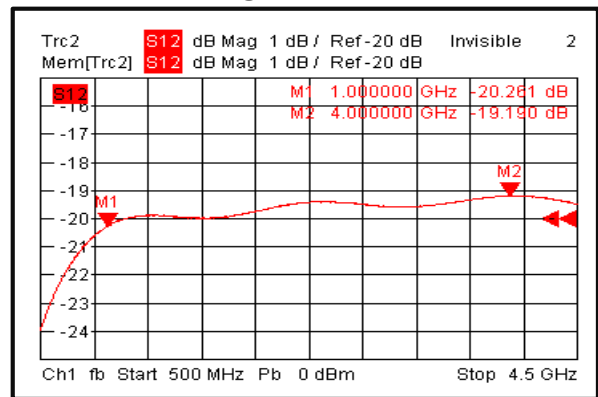
## RFDDC1G4G20N

### Typical Performance Plots

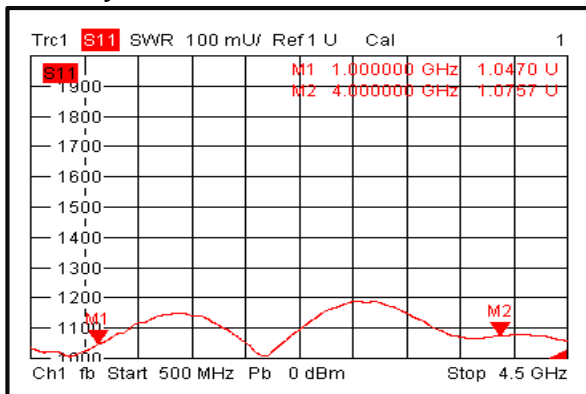
#### Nominal Coupling 1



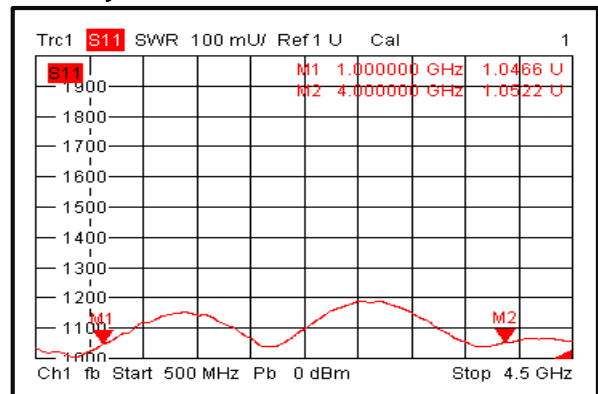
#### Nominal Coupling 2



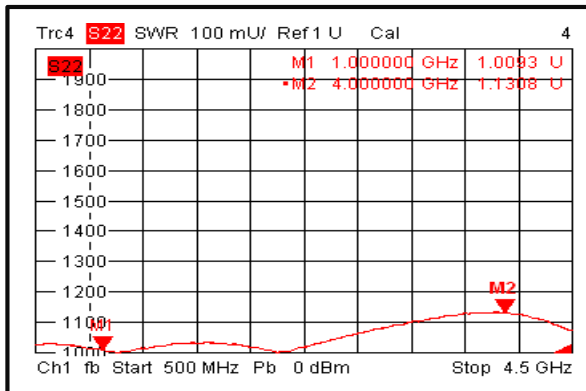
#### Primary VSWR 1



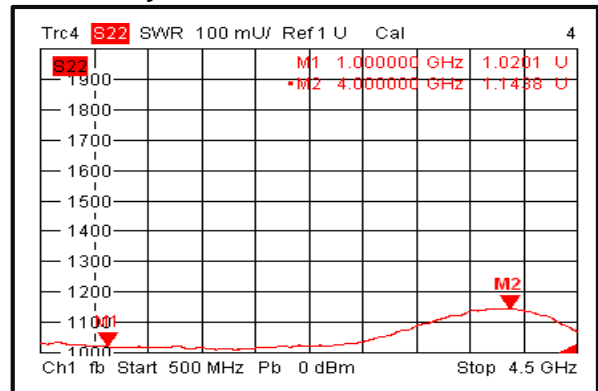
#### Primary VSWR 2



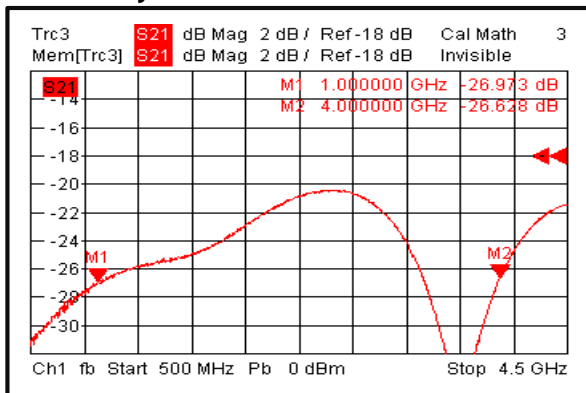
#### Secondary VSWR 1



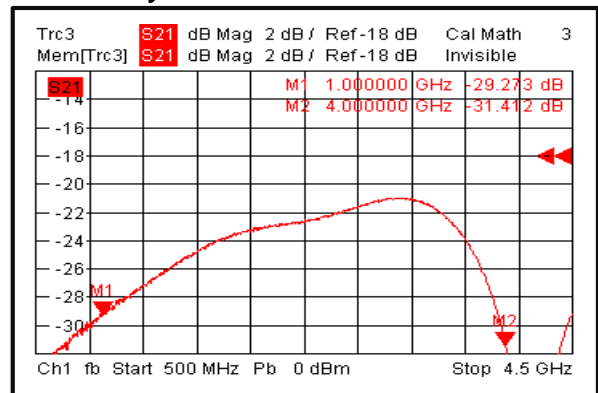
#### Secondary VSWR 2



#### Directivity 1



#### Directivity 2



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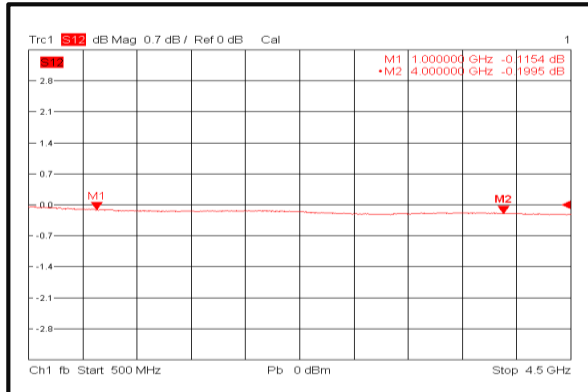


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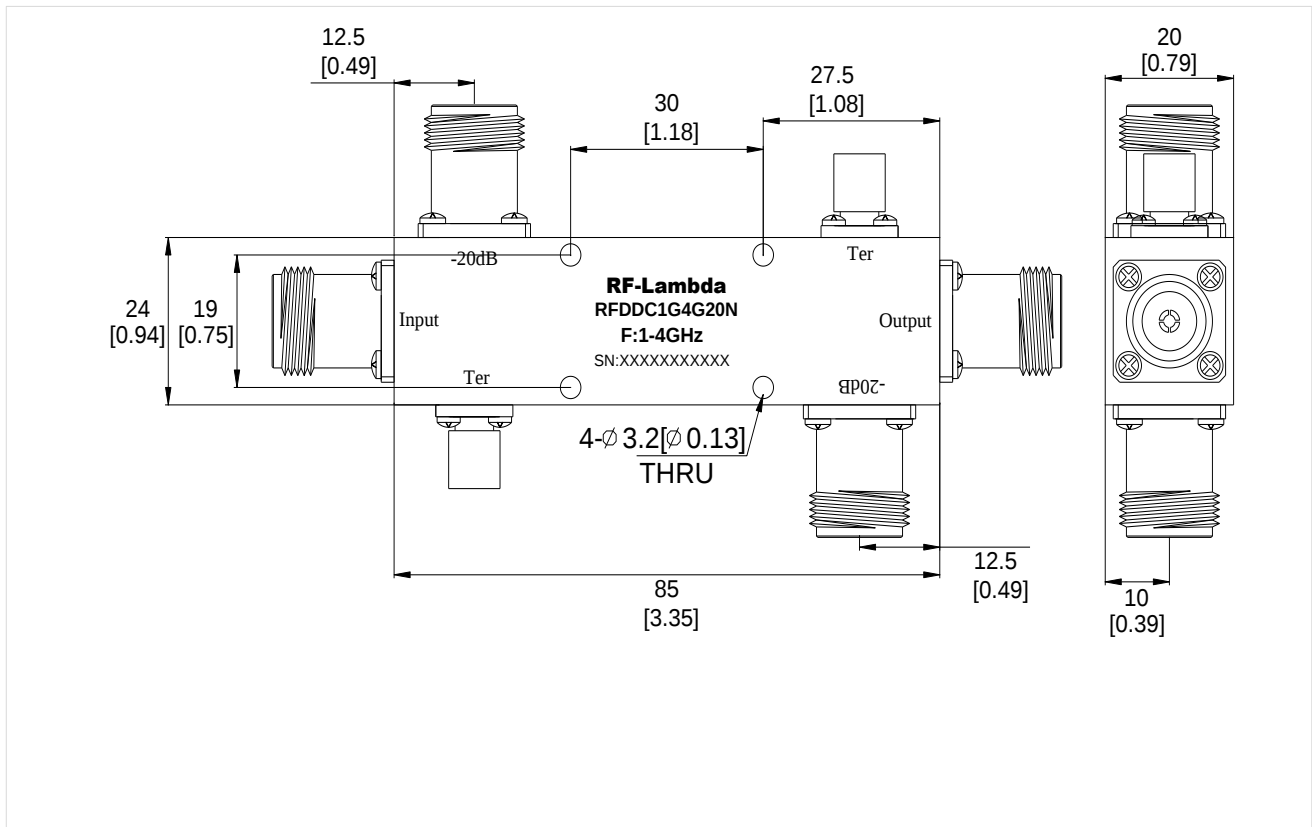
### Insertion Loss



### Outline Drawing:

All Dimensions in mm [inches]

Tolerance  $\pm 0.3$  [0.012]



### Important Notice

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