

## Surface Mount

CASE STYLE F: CD542

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

| Reel Size | Devices/Reel     |
|-----------|------------------|
| 7"        | 20, 50, 100, 200 |
| 13"       | 500, 1000        |

Permanent damage may occur if any of these limits are exceeded

|                      |   |
|----------------------|---|
| INPUT                | 1 |
| OUTPUT               | 6 |
| COUPLED              | 3 |
| GROUND               | 2 |
| 50Ω TERM EXTERNAL    | 4 |
| ISOLATE (DO NOT USE) | 5 |

Suggested Layout,  
Tolerance to be within  $\pm .002$

| A    | B    | C    | D    | E    | F    | G    |
|------|------|------|------|------|------|------|
| .272 | .310 | .220 | .100 | .112 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 2.84 | 1.40 | 2.54 |

|      |      |      |      |       |
|------|------|------|------|-------|
| H    | J    | K    | L    | wt    |
| .030 | .026 | .065 | .300 | grams |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.20  |

RESISTOR R1: 49.9 OHM, 0603 SIZE.

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030"  $\pm$  .002"; COPPER: 1/2 OZ. EACH SIDE.  
2. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

 DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

- useable to 1500 MHz
- low mainline loss, 0.5 dB typ.
- high directivity, 26 dB typ.
- aqueous washable
- protected by U.S Patents 6,133,525 & 6,140,887

- cable tv

| FREQ.<br>(MHz)                 | COUPLING<br>(dB) |          | MAINLINE LOSS <sup>1</sup><br>(dB) |      | DIRECTIVITY<br>(dB) |       | VSWR<br>(:1) | POWER<br>INPUT, W |           |
|--------------------------------|------------------|----------|------------------------------------|------|---------------------|-------|--------------|-------------------|-----------|
|                                | Nom.             | Flatness | Typ.                               | Max. | Typ.                | Min.  |              | Typ.              | L<br>Max. |
| f <sub>L</sub> -f <sub>U</sub> |                  |          |                                    |      |                     |       |              |                   |           |
| 100-1200                       | 20±0.75          | ±0.7     | 0.5                                | 1.1  |                     | 26 13 | 1.17         | 1.0               | 1.0       |

1. Mainline loss includes theoretical power loss at coupled port.

| Frequency<br>(MHz) | Mainline Loss<br>(dB)<br>In-Out | Coupling<br>(dB)<br>In-Cpl | Directivity<br>(dB) | In    | Return Loss<br>(dB)<br>Out | Cpl   |
|--------------------|---------------------------------|----------------------------|---------------------|-------|----------------------------|-------|
| 100.00             | 0.34                            | 19.94                      | 22.33               | 29.24 | 25.01                      | 30.72 |
| 250.00             | 0.37                            | 20.14                      | 22.91               | 26.99 | 24.13                      | 28.60 |
| 350.00             | 0.39                            | 20.24                      | 23.45               | 25.38 | 22.81                      | 26.88 |
| 500.00             | 0.46                            | 20.56                      | 26.44               | 23.21 | 21.05                      | 24.55 |
| 600.00             | 0.50                            | 20.50                      | 27.16               | 22.03 | 19.94                      | 23.24 |
| 700.00             | 0.53                            | 20.55                      | 27.78               | 21.02 | 18.96                      | 22.06 |
| 800.00             | 0.56                            | 20.58                      | 27.00               | 20.17 | 18.09                      | 21.12 |
| 900.00             | 0.61                            | 20.61                      | 25.40               | 19.23 | 17.25                      | 20.16 |
| 1100.00            | 0.69                            | 20.61                      | 22.34               | 17.44 | 15.64                      | 18.19 |
| 1200.00            | 0.76                            | 20.63                      | 20.72               | 16.56 | 14.90                      | 17.35 |

at RF level of -10 dBm

| Frequency (MHz) | Insertion Loss (dB) |
|-----------------|---------------------|
| 100             | 0.35                |
| 320             | 0.38                |
| 540             | 0.48                |
| 760             | 0.55                |
| 980             | 0.65                |
| 1200            | 0.75                |

at RF level of -10 dBm

| Frequency (MHz) | Coupling (dB) | Directivity (dB) |
|-----------------|---------------|------------------|
| 100             | 18.0          | 22.0             |
| 320             | 18.5          | 22.5             |
| 540             | 19.0          | 27.0             |
| 600             | 19.0          | 28.0             |
| 760             | 19.0          | 27.5             |
| 980             | 19.0          | 24.0             |
| 1200            | 19.0          | 21.5             |

| Frequency (MHz) | IN (dB) | OUT (dB) | CPL (dB) |
|-----------------|---------|----------|----------|
| 100             | 28      | 25       | 30       |
| 320             | 25      | 22       | 28       |
| 540             | 22      | 19       | 25       |
| 760             | 19      | 17       | 22       |
| 980             | 17      | 16       | 19       |
| 1200            | 16      | 15       | 17       |

DIRECTIONAL COUPLER  
(DC SHORT TO GND)\*

RF INPUT

RF OUTPUT

COUPLED RF

TERMINATION EXTERNAL

\* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) AND EXTERNAL TERMINATION.

## Notes

**Notes:**

**A.** Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

**B.** Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

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REV. F  
M151107  
ED-7776/1  
ADC-20-12+  
WZ/TD/CP/AM  
200414