

Surface Mount Directional Coupler

50Ω 10 to 500 MHz

ADC-26-52+



CASE STYLE: CD636
PRICE:\$7.95 ea. QTY (10)

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

Available Tape and Reel at no extra cost

| Reel Size | Devices/Reel |
|-----------|---------------------------|
| 7" | 10, 20, 50, 100, 200, 500 |
| 13" | 1000 |

Maximum Ratings

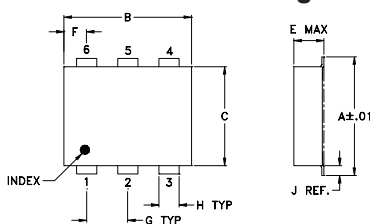
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |

Permanent damage may occur if any of these limits are exceeded.

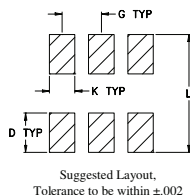
Pin Connections

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

Outline Drawing



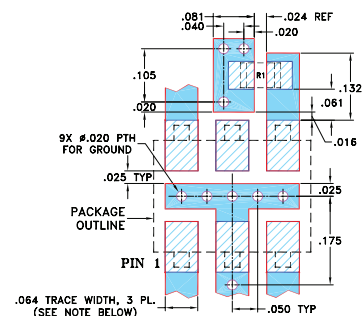
PCB Land Pattern



Outline Dimensions (inch/mm)

| A | B | C | D | E | F | G |
|------|------|------|------|-------|------|------|
| .272 | .310 | .220 | .100 | .162 | .055 | .100 |
| 6.91 | 7.87 | 5.59 | 2.54 | 4.11 | 1.40 | 2.54 |
| H | J | K | L | wt | | |
| .030 | .026 | .065 | .300 | grams | | |
| 0.76 | 0.66 | 1.65 | 7.62 | 0.25 | | |

Demo Board MCL P/N: TB-05 Suggested PCB Layout (PL-095)



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. 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

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-Circuits' applicable established test performance criteria and measurement instructions.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 10-500 MHz
- low insertion loss, 0.2 dB typ.
- high directivity, 21 dB typ.
- aqueous washable
- protected by U.S. Patents 6,133,525 & 6,140,887

Applications

- VHF/UHF
- reflective power measurements
- communications
- signal sampling

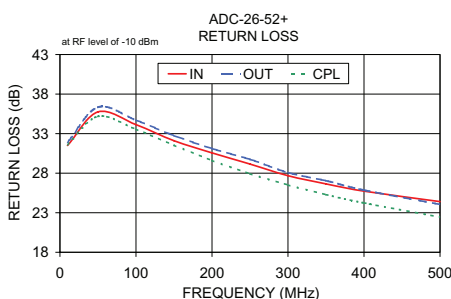
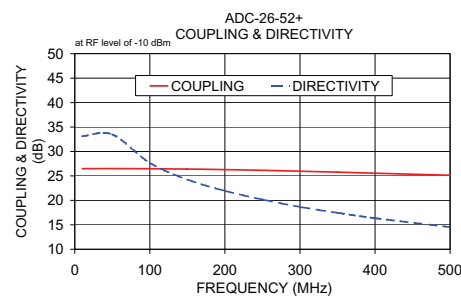
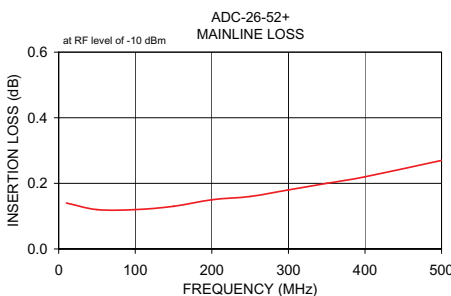
Directional Coupler Electrical Specifications

| FREQ. RANGE (MHz) | COUPLING (dB) | | MAINLINE LOSS ¹ (dB) | | | DIRECTIVITY (dB) | | | VSWR (:1) | POWER INPUT ² (W) | | |
|--------------------------------|---------------|----------|---------------------------------|------|------|------------------|------|------|-----------|------------------------------|------|------|
| | Nom. | Typ. | L | M | U | L | M | U | | LM | U | |
| f _c -f _u | | Flatness | Typ. | Max. | Typ. | Max. | Typ. | Min. | Typ. | Min. | Typ. | Max. |
| 10-500 | 26.0±0.5 | ±0.9 | 0.15 | 0.35 | 0.2 | 0.3 | 0.3 | 0.5 | 35 | 22 | 25 | 16 |
| | | | | | | | | | | | 18 | 11 |
| | | | | | | | | | | | 1.1 | |
| | | | | | | | | | | | 2.0 | 5 |

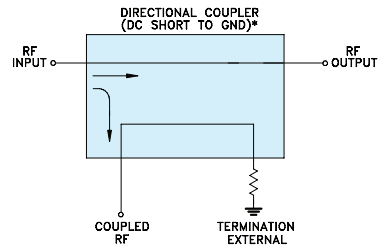
- L= 10-100 MHz M= 100-250 MHz U= 250-500 MHz
1. Mainline loss includes theoretical power loss at coupled port.
2. Derate linearly to 0.5 Watt for "L, M" band and 1 Watt for "U" band at 85°C.

Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) | | Coupling (dB) | Directivity (dB) | Return Loss (dB) | | |
|-----------------|--------------------|--------|---------------|------------------|------------------|-------|-----|
| | In-Out | In-Cpl | | | In | Out | Cpl |
| 10.00 | 0.14 | 26.49 | 33.14 | 31.50 | 31.90 | 31.60 | |
| 50.00 | 0.12 | 26.51 | 33.50 | 35.75 | 36.35 | 35.18 | |
| 100.00 | 0.12 | 26.48 | 27.68 | 34.14 | 34.71 | 33.55 | |
| 150.00 | 0.13 | 26.41 | 24.27 | 32.10 | 32.76 | 31.53 | |
| 200.00 | 0.15 | 26.29 | 21.96 | 30.57 | 31.12 | 29.61 | |
| 250.00 | 0.16 | 26.14 | 20.19 | 29.15 | 29.75 | 27.93 | |
| 300.00 | 0.18 | 25.97 | 18.67 | 27.68 | 28.08 | 26.51 | |
| 350.00 | 0.20 | 25.77 | 17.46 | 26.65 | 27.05 | 25.29 | |
| 400.00 | 0.22 | 25.56 | 16.37 | 25.73 | 25.86 | 24.24 | |
| 500.00 | 0.27 | 25.14 | 14.54 | 24.41 | 24.06 | 22.45 | |



Electrical Schematic



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

