

Surface Mount Directional Coupler

ADC-6-1R+

50Ω 5 to 200 MHz

Maximum Ratings

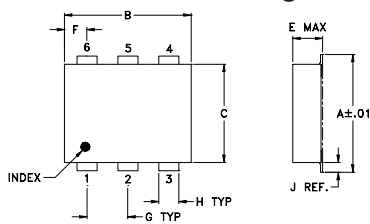
| | |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |

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

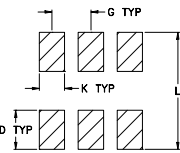
Pin Connections

| | |
|----------------------|-----|
| INPUT | 1 |
| OUTPUT | 6 |
| COUPLED | 3 |
| GROUND | 2,5 |
| ISOLATE (DO NOT USE) | 4 |

Outline Drawing



PCB Land Pattern



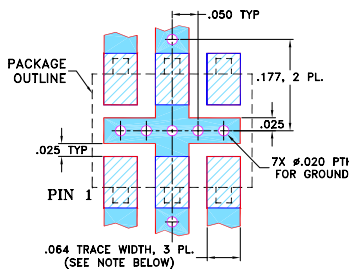
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

| 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 |

Demo Board MCL P/N: TB-32 Suggested PCB Layout (PL-094)



- NOTES:
- 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.
 - 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-Circuit's applicable established test performance criteria and measurement instructions.
 C. The parts covered by this specification document are subject to Mini-Circuit's 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-Circuit's website at www.minicircuits.com/MCLStore/terms.jsp

Features

- wideband, 5 to 200 MHz
- low mainline loss, 1.7 dB typ.
- excellent coupling flatness, ±0.1 typ.
- aqueous washable
- protected by U.S. Patents 6,133,525 & 6,140,887

Applications

- communications
- cable tv



Generic photo used for illustration purposes only
CASE STYLE: CD542

+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" | 20, 50, 100, 200 |
| 13" | 500, 1000 |

Directional Coupler Electrical Specifications

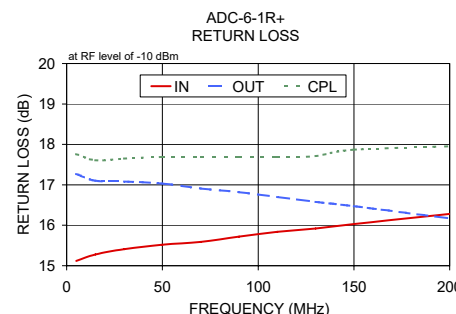
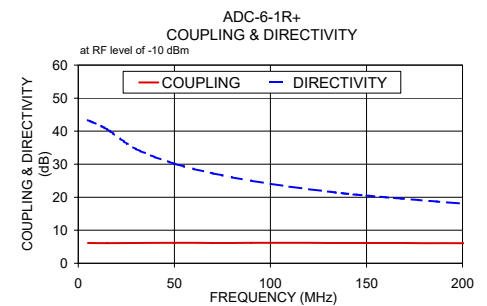
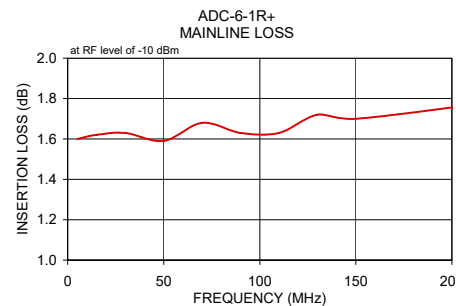
| FREQ. (MHz) | COUPLING (dB) | | MAINLINE LOSS ¹ (dB) | | | DIRECTIVITY (dB) | | | VSWR (:1) | POWER INPUT, W | | | | | | | |
|--------------------------------|---------------|----------|---------------------------------|------|------|------------------|------|------|-----------|----------------|------|----|----|----|------|-----|-----|
| | Nom. | Flatness | L | M | U | L | M | U | | Typ. | L | MU | | | | | |
| f _c -f _u | | | Typ. | Max. | Typ. | Max. | Typ. | Max. | Typ. | Max. | Max. | | | | | | |
| 5-200 | 6.2±0.3 | ±0.3 | 1.6 | 2.0 | 1.7 | 2.0 | 1.7 | 2.1 | 35 | 22 | 25 | 18 | 17 | 13 | 1.33 | 0.5 | 0.5 |

L= 5-50 MHz M= 50-100 MHz U= 100-200 MHz

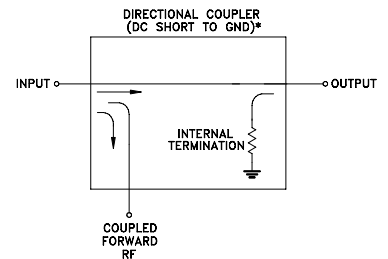
1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

| Frequency (MHz) | Mainline Loss (dB) In-Out | Coupling (dB) In-Cpl | Directivity (dB) | Return Loss (dB) | | |
|-----------------|---------------------------|----------------------|------------------|------------------|-------|-------|
| | | | | In | Out | Cpl |
| 5.00 | 1.60 | 6.15 | 43.32 | 15.12 | 17.27 | 17.76 |
| 15.00 | 1.62 | 6.11 | 40.58 | 15.28 | 17.10 | 17.61 |
| 30.00 | 1.63 | 6.14 | 34.62 | 15.41 | 17.08 | 17.65 |
| 50.00 | 1.59 | 6.18 | 30.14 | 15.52 | 17.03 | 17.69 |
| 70.00 | 1.68 | 6.13 | 27.21 | 15.59 | 16.91 | 17.69 |
| 90.00 | 1.63 | 6.19 | 24.97 | 15.72 | 16.82 | 17.69 |
| 110.00 | 1.63 | 6.19 | 23.20 | 15.84 | 16.70 | 17.69 |
| 130.00 | 1.72 | 6.15 | 21.73 | 15.92 | 16.58 | 17.71 |
| 150.00 | 1.70 | 6.17 | 20.47 | 16.03 | 16.47 | 17.87 |
| 220.00 | 1.78 | 6.07 | 17.12 | 16.38 | 16.05 | 17.98 |



Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. E
M158496
ED-6746
ADC-6-1R
WZ/TD/CP/AM
200414
Page 1 of 1

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Signal Conditioning](#) category:

Click to view products by [Mini-Circuits](#) manufacturer:

Other Similar products are found below :

[MAPDCC0001](#) [MAPDCC0004](#) [PD0409J5050S2HF](#) [880157](#) [HHS-109-PIN](#) [DC1417J5005AHF](#) [AFS14A30-2185.00-T3](#) [AFS14A35-1591.50-T3](#) [DS-323-PIN](#) [B39321R801H210](#) [1A0220-3](#) [JP510S](#) [LFB212G45SG8C341](#) [LFB322G45SN1A504](#) [LFL182G45TC3B746](#) [SF2159E](#) [30057](#)
[FM-104-PIN](#) [CER0813B](#) [MAPDCC0005](#) [3A325](#) [40287](#) [41180](#) [ATB3225-75032NCT](#) [BD0810N50100AHF](#) [BD2425J50200AHF](#)
[C5060J5003AHF](#) [JHS-115-PIN](#) [JP503AS](#) [DC0710J5005AHF](#) [DC2327J5005AHF](#) [DC3338J5005AHF](#) [43020](#) [LFB2H2G60BB1C106](#)
[LFL15869MTC1B787](#) [X3C19F1-20S](#) [XC3500P-20S](#) [10013-20](#) [SF2194E](#) [CDBLB455KCAX39-B0](#) [TGL2208-SM, EVAL](#) [RF1353C](#)
[PD0922J5050D2HF](#) [1E1305-3](#) [1G1304-30](#) [B0922J7575AHF](#) [2020-6622-20](#) [TP-102-PIN](#) [TP-103-PIN](#) [BD1222J50200AHF](#)