Surface Mount

Directional Coupler

ADC-10-4-75R+

75Ω 5 to 1000 MHz



Generic photo used for illustration purposes only

CASE STYLE: CD636

+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

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
NOT USED	4

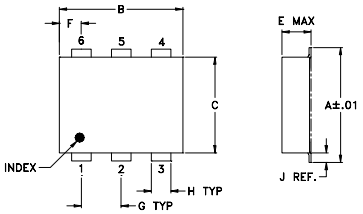
Features

- wideband, 5-1000 MHz
- good directivity, 20 dB typ.
- good VSWR, 1.2:1 typ.
- internal load, no external components required
- aqueous washable
- protected by US Patents 6,133,525 & 6,140,887

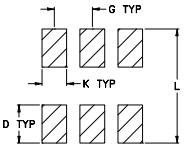
Applications

- CATV power tap

Outline Drawing



PCB Land Pattern



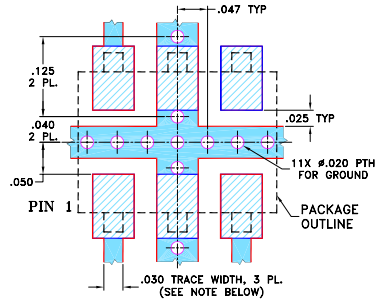
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.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-356
Suggested PCB Layout (PL-213)



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 SMOBS (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS[1] (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT, W
			L		M		U		L		M		U			
f_L-f_U	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.
5-1000	9.6±0.5	±0.5	1.0	1.8	1.1	1.6	1.5	1.8	22	17	21	16	20	14	1.2	1.0

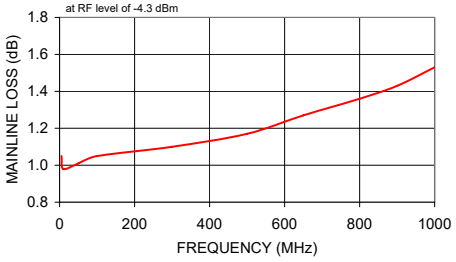
L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz

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

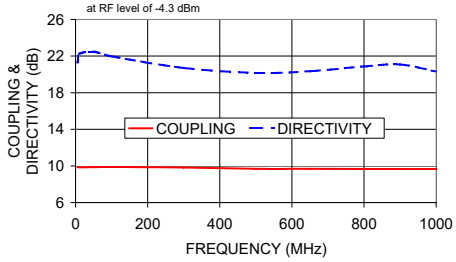
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)	Coupling (dB)	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl		In	Out	Cpl
5.00	1.05	9.88	21.29	19.29	26.04	18.58
10.00	0.98	9.85	22.23	20.18	32.36	19.76
50.00	1.01	9.86	22.50	20.25	38.76	19.95
100.00	1.05	9.88	21.97	20.46	34.63	19.87
300.00	1.10	9.83	20.70	20.68	25.43	19.72
500.00	1.17	9.69	20.16	22.10	21.80	20.73
650.00	1.27	9.69	20.34	30.01	22.46	21.32
800.00	1.36	9.67	20.86	29.75	23.14	21.37
900.00	1.43	9.67	21.08	31.38	24.67	19.79
1000.00	1.53	9.67	20.31	40.80	24.59	18.03

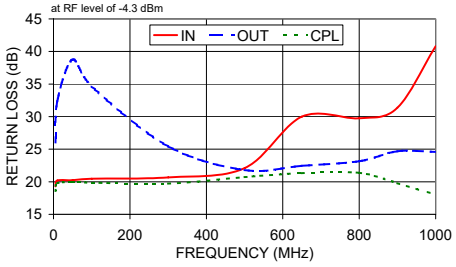
ADC-10-4-75R+
MAINLINE LOSS



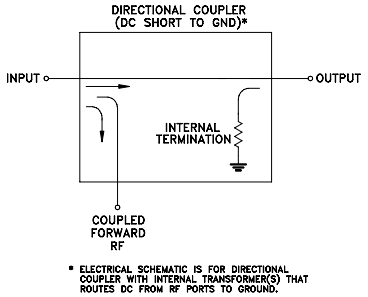
ADC-10-4-75R+
COUPLING & DIRECTIVITY



ADC-10-4-75R+
RETURN LOSS



Electrical Schematic



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

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-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

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