

# Surface Mount Directional Coupler

## ADC-20-4-75R+

75Ω 40 to 1000 MHz

### Maximum Ratings

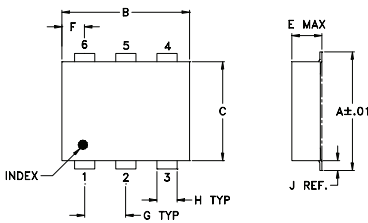
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

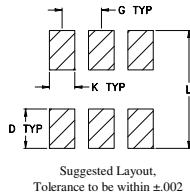
### Pin Connections

INPUT	1
OUTPUT	6
COUPLED	3
GROUND	2,5
NOT USED	4

### Outline Drawing



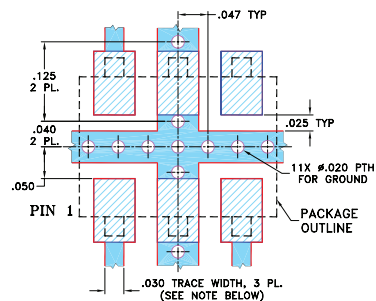
### PCB Land Pattern



### 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-356 Suggested PCB Layout (PL-213)



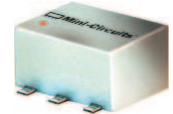
- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
  - BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
  - DENOTES PCB COPPER LAYOUT WITH SMOBS (SOLDER MASK OVER BARE COPPER)
  - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

### Features

- wideband, 40-1000 MHz
- low mainline loss, 0.6 dB typ.
- excellent VSWR, 1.1:1 typ.
- internal load, no external components required
- protected by U.S. Patents 6,133,525 & 6,140,887

### Applications

- cable tv



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

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

Available Tape and Reel at no extra cost

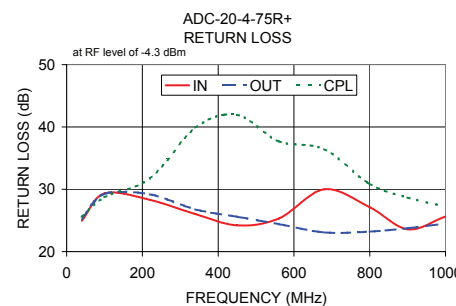
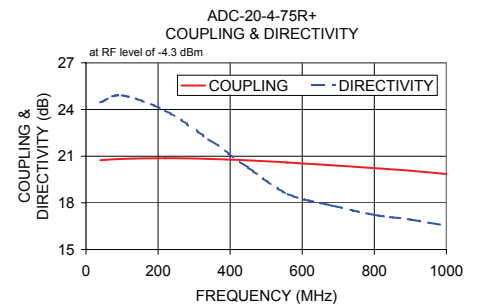
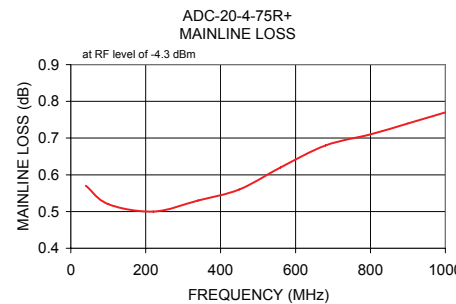
### Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)			DIRECTIVITY (dB)			VSWR (:1)	POWER INPUT, W							
	Nom.	Flatness	L	M	U	L	M	U		Typ.	L	MU					
f <sub>c</sub> -f <sub>u</sub>			Typ.	Max.	Typ.	Max.	Typ.	Max.		Typ.	Max.	Max.					
40-1000	20.5±0.5	±0.8	0.5	0.8	0.6	0.9	0.7	1.2	24	17	20	15	17	12	1.10	1.0	1.0

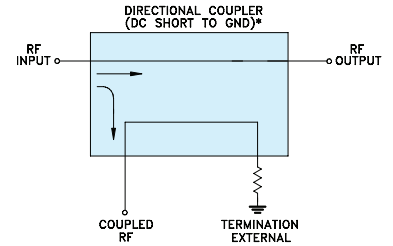
L= 40-400 MHz M= 400-500 MHz U= 500-1000 MHz  
1. Mainline loss includes theoretical power loss at coupled port.

### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
40.00	0.57	20.74	24.46	24.97	25.29	25.60
100.00	0.52	20.82	24.90	29.34	29.25	28.73
220.00	0.50	20.87	23.92	28.31	29.17	31.75
340.00	0.53	20.82	22.10	26.02	26.77	39.90
450.00	0.56	20.73	20.26	24.23	25.60	41.94
560.00	0.62	20.59	18.57	25.31	24.40	37.70
680.00	0.68	20.42	17.84	30.01	23.08	36.42
800.00	0.71	20.23	17.23	27.10	23.22	30.86
900.00	0.74	20.07	16.93	23.57	23.74	28.67
1000.00	0.77	19.86	16.53	25.62	24.50	27.23



### Electrical Schematic



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

### Notes

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