

# Directional Coupler

## ADC-18-4-75R+

75Ω

20 to 1000 MHz



Generic photo used for illustration purposes only  
CASE STYLE: CD542

### 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, 20-1000 MHz
- good directivity, 25 dB typ.
- excellent VSWR, 1.15:1 typ.
- internal load, no external components required
- aqueous washable
- protected by US Patent 6,133,525 & 6,140,887

### Applications

- CATV power tap

**+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

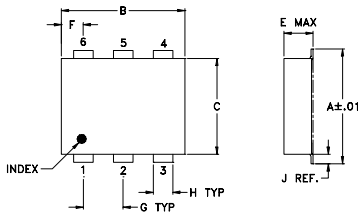
FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS <sup>1</sup> (dB)			DIRECTIVITY (dB)			VSWR (:1)	POWER INPUT, W						
	L	M	L	M	U	L	M	U								
$f_L$ - $f_U$	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Max.				
20-1000	17.7±0.5	±0.5	0.6	1.0	0.5	0.9	0.7	1.2	30	19	25	18	20	11	1.15	1.0

L= 20-200 MHz M= 200-500 MHz U= 500-1000 MHz  
1. Mainline loss includes theoretical power loss at coupled port.

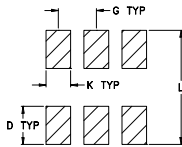
### Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
	In-Out	In-Cpl			In	Out	Cpl
20.00	0.64	17.79	32.89	20.76	22.00	20.42	
50.00	0.58	17.73	41.84	24.04	26.77	23.55	
100.00	0.55	17.70	43.88	25.58	29.90	24.90	
240.00	0.56	17.71	30.92	27.26	35.24	27.17	
400.00	0.60	17.67	24.83	27.68	34.53	28.00	
540.00	0.65	17.63	21.34	28.01	31.80	27.82	
680.00	0.71	17.55	18.57	29.46	29.91	25.76	
800.00	0.76	17.47	16.59	31.69	28.56	23.12	
900.00	0.80	17.40	15.17	35.90	27.62	21.50	
1000.00	0.86	17.33	13.84	42.87	27.02	20.11	

### Outline Drawing



### PCB Land Pattern

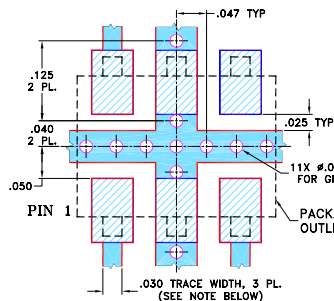


Suggested Layout, Tolerance to be within ±.002

### 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

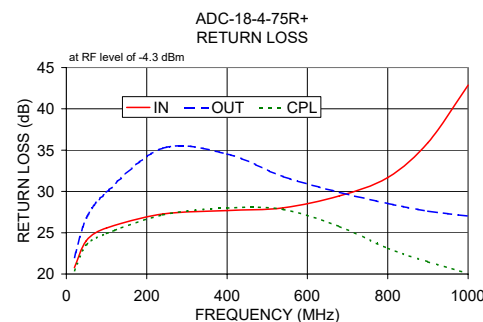
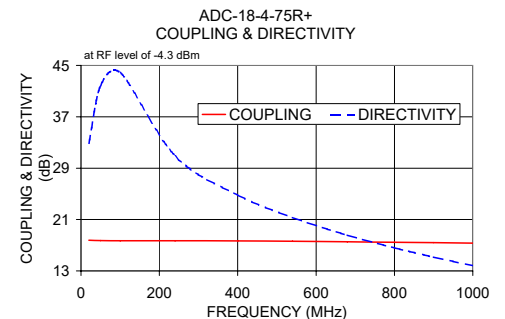
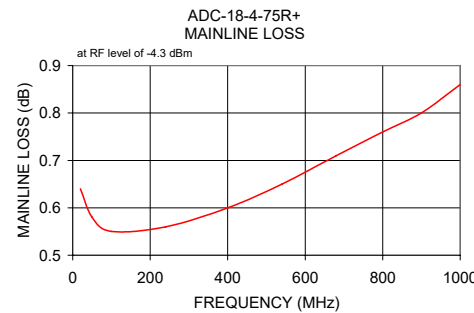
### Demo Board MCL P/N: TB-356 Suggested PCB Layout (PL-213)



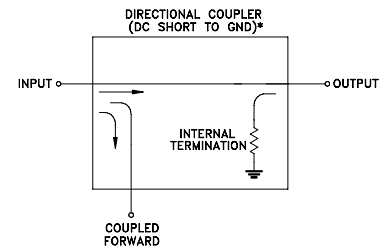
- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .030" ± .002"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.  
■ DENOTES PCB COPPER LAYOUT WITH SMOBS (SOLDER MASK OVER BARE COPPER)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

#### 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.  
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### Electrical Schematic



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