

# Surface Mount Directional Coupler

50Ω 5 to 200 MHz

ADC-6-1R+  
ADC-6-1R



## Maximum Ratings

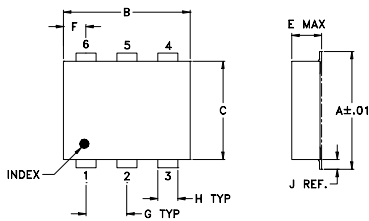
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

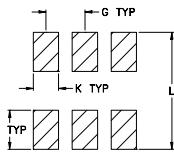
## Pin Connections

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

## Outline Drawing



## PCB Land Pattern

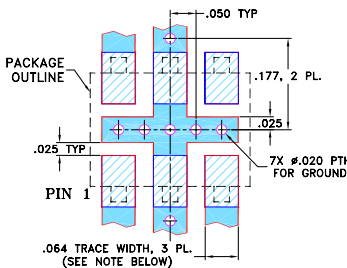


Suggested Layout,  
Tolerance to be within ±.002

## 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: 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

## 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

CASE STYLE: GD542  
PRICE: \$7.95 ea. QTY (10-49)

+ RoHS compliant in accordance  
with EU Directive (2002/95/EC)

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

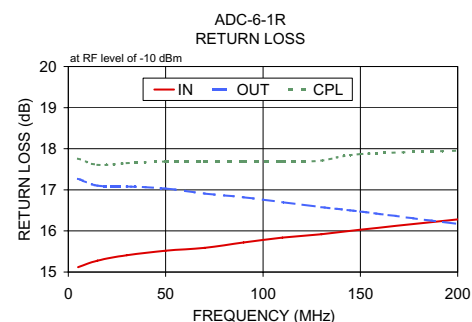
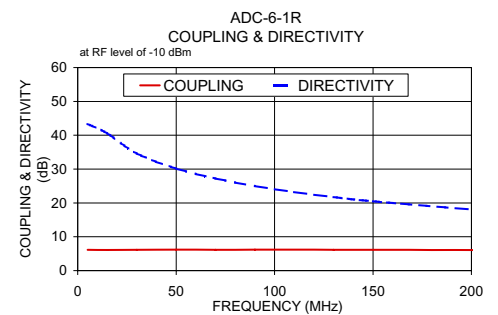
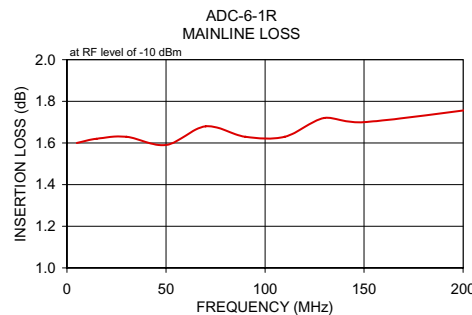
## Directional Coupler Electrical Specifications

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>L</sub> -f <sub>U</sub>			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

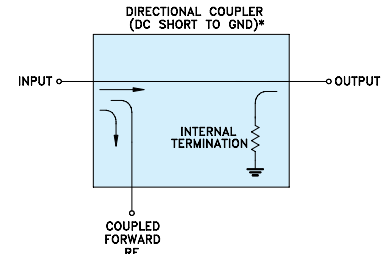
L= 5-50 MHz M= 50-100 MHz U= 100-200 MHz  
1. Mainline loss includes theoretical power loss at coupled port.

## Typical Performance Data

Frequency (MHz)	Mainline Loss (dB)		Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
	In-Out				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.

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IF/RF MICROWAVE COMPONENTS

REV. C  
M119986  
ED-6746  
ADC-6-1R  
WZ/TD/CP/AM  
081111