

Surface Mount Directional Coupler

75Ω 5 to 1000 MHz

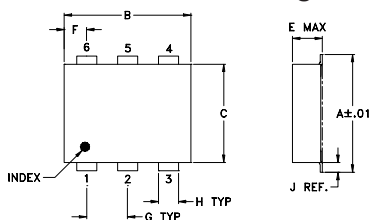
Maximum Ratings

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.	

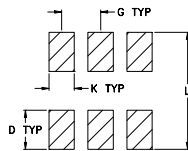
Pin Connections

INPUT	1
OUTPUT	6
COUPLED	3
GROUND	2
75Ω TERM EXTERNAL	4
ISOLATE (DO NOT USE)	5

Outline Drawing



PCB Land Pattern

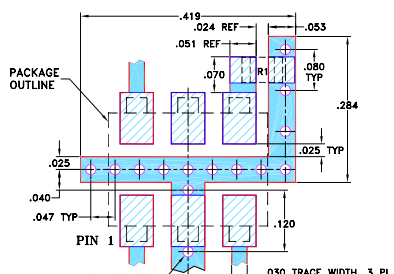


Suggested Layout,
Tolerance to be within ±.002

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-08 Suggested PCB Layout (PL-042)



- 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.
 3. DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 4. DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Features

- wideband, 5-1000 MHz
- low mainline loss, 0.9 db typ.
- excellent coupling flatness, ±0.2 typ.
- aqueous washable
- protected by U.S. Patents 6,133,525 & 6,140,887

Applications

- cable tv
- communications



CASE STYLE: CD542
PRICE:\$6.95 ea. QTY (10)

+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"	10, 20, 50, 100, 200, 500
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 Typ. Max.	M Typ. Max.	U Typ. Max.	L Typ. Min.	M Typ. Min.	U Typ. Min.		L Max.	MU Max.
5-1000	10.5±0.5	±0.5	0.85 1.4	0.9 1.4	1.0 1.4	40 20	18 12	12 8	1.2	1.0	1.0

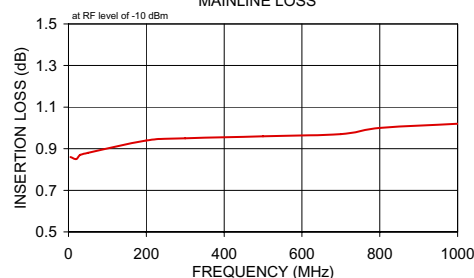
L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz

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

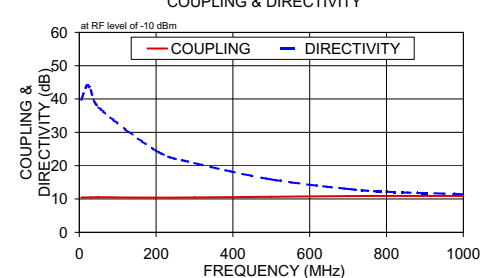
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	0.86	10.49	39.77	21.07	35.08	19.58
20.00	0.85	10.47	44.02	21.45	54.46	20.21
30.00	0.87	10.47	42.61	21.33	45.16	20.18
50.00	0.88	10.54	37.53	21.23	39.56	20.11
200.00	0.94	10.44	24.51	21.30	19.31	20.41
300.00	0.95	10.45	20.79	20.99	25.49	20.87
500.00	0.96	10.68	15.89	19.89	21.12	22.93
700.00	0.97	10.87	13.00	17.97	18.87	25.71
800.00	1.00	10.91	12.16	17.94	19.06	27.11
1000.00	1.02	10.93	11.40	17.55	20.58	24.44

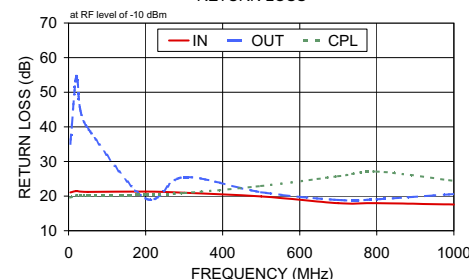
ADC-10-4-75 MAINLINE LOSS



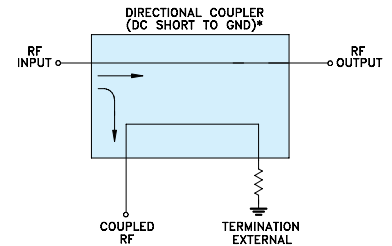
ADC-10-4-75 COUPLING & DIRECTIVITY



ADC-10-4-75 RETURN LOSS



Electrical Schematic



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

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.
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