

Surface Mount Directional Coupler

ADC-20-4

50Ω 5 to 1000 MHz



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
50Ω TERM EXTERNAL	4
ISOLATE (DO NOT USE)	5

Features

- wideband, 5-1000 MHz
- low mainline loss, 0.5 dB typ.
- high directivity, 21 dB typ.
- aqueous washable
- protected by U.S. Patents 6,133,525 & 6,140,887

Applications

- cable tv
- communications

Available Tape and Reel at no extra cost

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

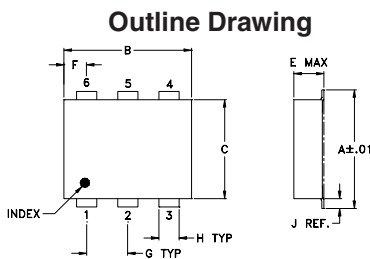
Directional Coupler Electrical Specifications

FREQ. (MHz)	COUPLING (dB)		MAINLINE LOSS ¹ (dB)			DIRECTIVITY (dB)			VSWR (:1)	POWER INPUT, W							
	Nom.	Flatness	L	M	U	L	M	U		Typ.	L	MU					
f _L -f _U			Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Max.	Max.						
5-1000	20.0±0.5	±0.8	0.4	0.8	0.5	1.0	0.7	1.3	20	18	21	17	21	15	1.1	1.0	1.0

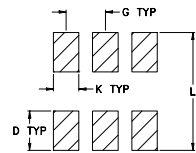
L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz
 1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB)		
				In	Out	Cpl
5.00	0.41	19.60	20.25	26.42	27.32	22.39
10.00	0.37	19.61	19.75	29.58	31.08	25.96
50.00	0.36	19.67	20.03	32.86	36.64	31.40
100.00	0.37	19.69	20.19	31.12	34.33	29.86
200.00	0.41	19.77	20.38	27.29	29.92	25.70
500.00	0.52	19.94	20.50	21.37	23.07	19.21
600.00	0.56	19.91	20.51	20.13	21.56	17.75
700.00	0.60	19.90	20.14	18.93	20.38	16.62
800.00	0.65	19.90	19.28	17.86	19.26	15.63
900.00	0.70	19.86	18.29	16.81	18.23	14.77
1000.00	0.76	19.84	17.38	15.80	17.18	13.97



PCB Land Pattern

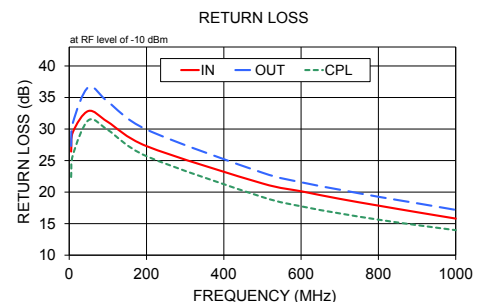
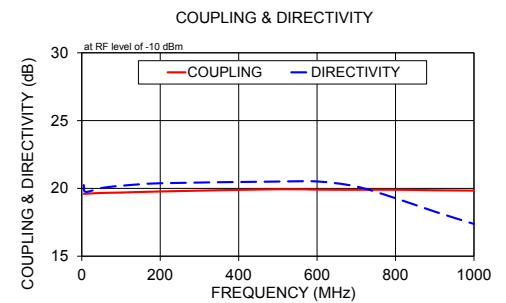
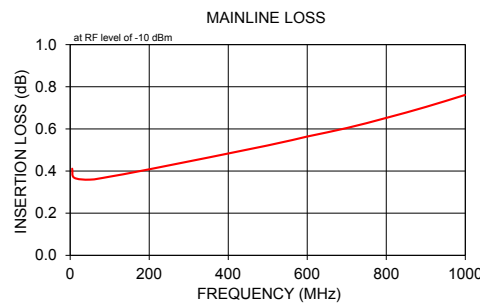
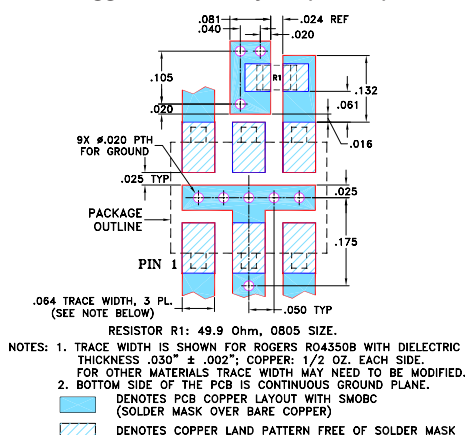


Suggested Layout, Tolerance to be within ±0.02

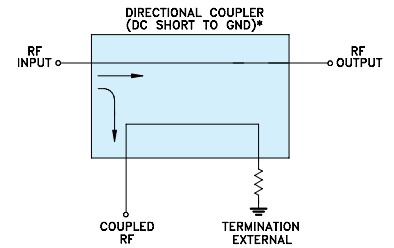
Outline Dimensions (inch/mm)

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-05 Suggested PCB Layout (PL-095)



Electrical Schematic



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

Notes
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