

Surface Mount Directional Coupler

ADC-20-4

50Ω 5 to 1000 MHz



CASE STYLE: CD542

Maximum Ratings

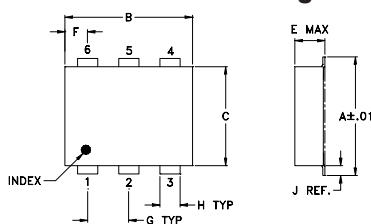
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C

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

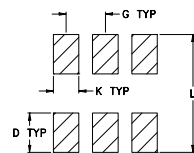
Pin Connections

INPUT	1
OUTPUT	6
COUPLED	3
GROUND	2
50Ω TERM EXTERNAL	4
ISOLATE (DO NOT USE)	5

Outline Drawing



PCB Land Pattern



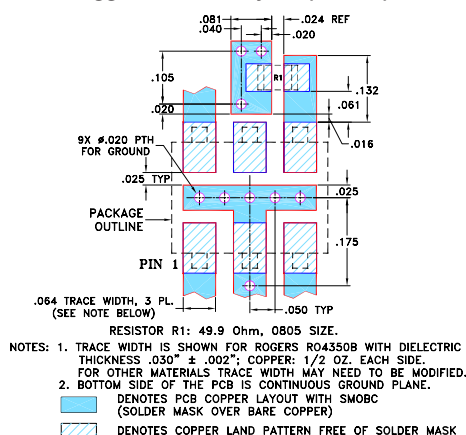
Suggested Layout,
Tolerance to be within ±.002

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-05 Suggested PCB Layout (PL-095)



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

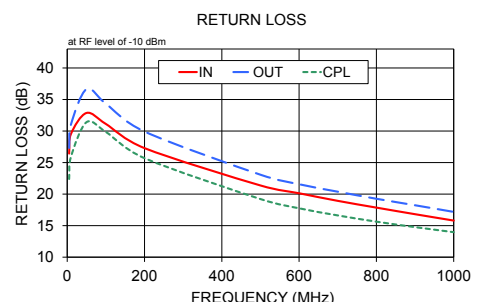
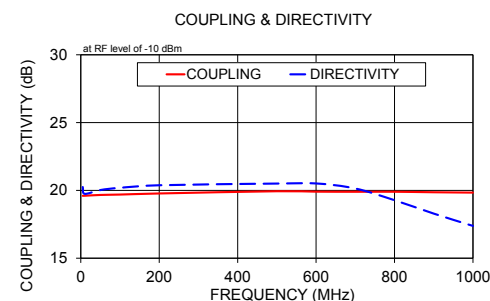
Directional Coupler Electrical Specifications

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 _c -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

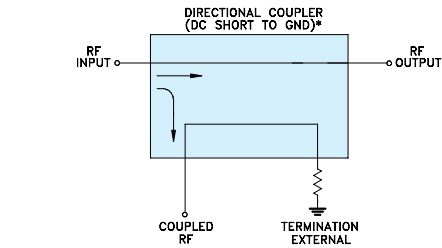
L= 5-50 MHz M= 50-500 MHz U= 500-1000 MHz
 1. Mainline loss includes theoretical power loss at coupled port.

Typical Performance Data

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



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