Surface Mount

Directional Coupler

ADC-12-7550+

50/75Ω 5 to 1000 MHz

CASE STYLE: CD542

+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

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 75Ω	1
OUTPUT 75Ω	6
COUPLED 50Ω	3
GROUND	2
50Ω TERM EXTERNAL	4
ISOLATE (DO NOT USE)	5

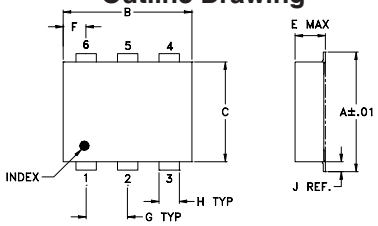
Features

- wideband, 5-1000 MHz
- low mainline loss, 0.7 dB typ.
- excellent IN/OUT VSWR, 1.2:1 typ.
- unique circuit, 75Ω at IN/OUT and 50Ω at CPL
- aqueous washable
- protected by US Patents 6,133,525 & 6,140,887

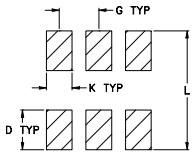
Applications

- CATV

Outline Drawing



PCB Land Pattern



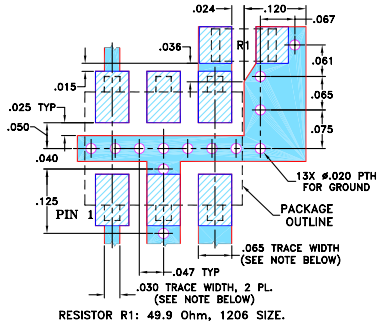
Suggested Layout,
Tolerance to be within ±.002

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-358
Suggested PCB Layout (PL-215)



RESISTOR R1: 49.9 Ohm, 1206 SIZE.

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 WITH BARE COPPER)
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Directional Coupler Electrical Specifications

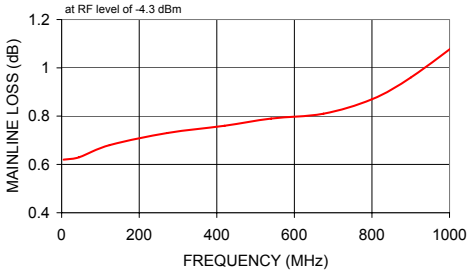
FREQ. (MHz)	COUPLING at 50Ω (dB)		[1] MAINLINE LOSS at 75Ω (dB)						DIRECTIVITY (dB)						VSWR (:1)	POWER INPUT (W)
			L		M		U		L		M		U			
	Nom.	Flatness	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Min.	Typ.	Min.	Typ.	Min.	Typ.	Max.
5-1000	12.5±1.0	±1.0	0.6	1.0	0.7	1.2	0.85	1.8	13	10	12	9	11	7	1.5	1.0

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

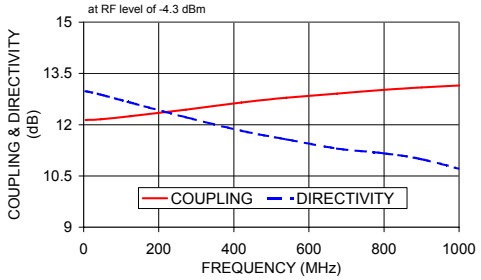
Typical Performance Data

Frequency (MHz)	Mainline Loss (dB) In-Out	Coupling (dB) In-Cpl	Directivity (dB)	Return Loss (dB) In	Return Loss (dB) Out	Return Loss (dB) Cpl
5.00	0.62	12.14	12.98	20.67	32.11	27.86
45.00	0.63	12.16	12.88	21.27	36.89	27.24
124.00	0.68	12.25	12.65	21.67	30.63	21.83
272.00	0.73	12.44	12.22	21.77	24.00	16.13
420.00	0.76	12.65	11.82	20.91	20.71	13.09
540.00	0.79	12.79	11.57	19.83	19.25	11.53
675.00	0.81	12.91	11.30	19.50	18.71	10.32
800.00	0.87	13.02	11.16	19.81	18.63	9.57
900.00	0.96	13.09	10.99	20.08	18.64	9.14
1045.00	1.13	13.17	10.58	19.34	18.34	8.69

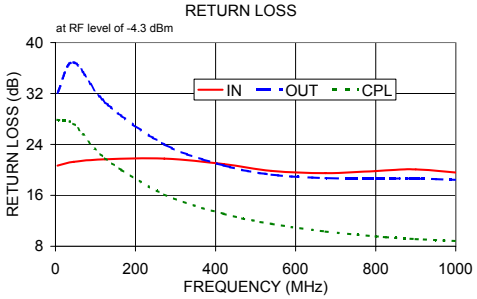
ADC-12-7550+
MAINLINE LOSS
at RF level of -4.3 dBm



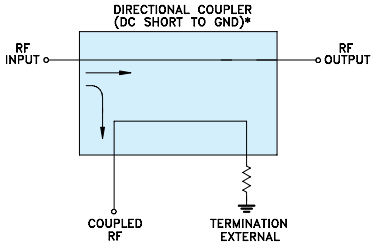
ADC-12-7550+
COUPLING & DIRECTIVITY
at RF level of -4.3 dBm



ADC-12-7550+
RETURN LOSS
at RF level of -4.3 dBm



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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