

Engineering Development Model

Directional Coupler

ADC-ED12010/1

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability. At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.



CASE STYLE : CD542

Please click "Back", and then click "Contact Us" for Applications support.

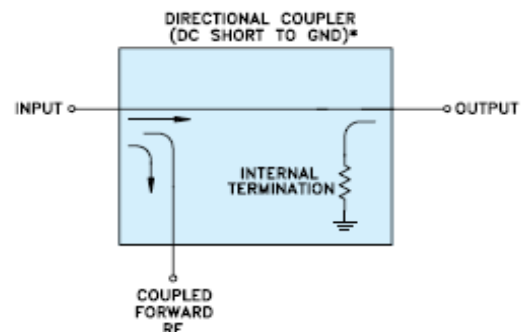
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		5		600	MHz
Coupling	Nominal		10.5 ± 0.5		dB
	Flatness		± 0.5		dB
Mainline Loss **	5-50 MHz		0.75		dB
	50-300 MHz		0.77		dB
	300-600 MHz		0.90		dB
Directivity	5-50 MHz		38		dB
	50-300 MHz		35		dB
	300-600 MHz		33		dB
VSWR	50-600 MHz		1.2		(:1)
RF Power Input	50-600 MHz			1.0	W

Note: ** Mainline loss includes theoretical coupled power loss of 0.41 dB at 10.5 dB coupling.

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

PIN CONNECTIONS	
INPUT	6
OUTPUT	1
COUPLED	4
GROUND	2,5
NOT USED	3

Electrical Schematic



* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) THAT ROUTES DC FROM RF PORTS TO GROUND.

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Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				IN	OUT	CPL
1.0	1.03	10.66	26.50	17.83	20.68	15.47
3.0	0.82	10.51	32.92	21.17	27.38	18.81
5.0	0.77	10.47	35.58	22.19	29.92	19.84
7.0	0.75	10.46	36.85	22.64	31.11	20.33
10.0	0.75	10.47	38.45	22.91	32.21	20.67
30.0	0.73	10.47	40.22	22.96	31.95	20.96
50.0	0.74	10.49	39.46	23.05	31.55	20.78
70.0	0.76	10.51	37.56	23.11	31.30	20.51
90.0	0.77	10.52	36.11	22.98	30.67	20.14
100.0	0.77	10.53	35.53	22.89	30.35	19.91
200.0	0.82	10.62	30.72	22.44	27.47	17.62
300.0	0.85	10.70	27.27	21.85	24.87	15.52
400.0	0.88	10.77	24.79	21.04	22.90	13.82
410.0	0.88	10.77	24.55	20.97	22.75	13.67
420.0	0.88	10.78	24.33	20.89	22.61	13.53
430.0	0.89	10.79	24.11	20.78	22.44	13.40
440.0	0.89	10.79	23.91	20.68	22.27	13.27
450.0	0.90	10.80	23.71	20.56	22.09	13.13
451.0	0.90	10.80	23.70	20.55	22.07	13.12
453.0	0.90	10.80	23.66	20.53	22.03	13.10
455.0	0.90	10.80	23.63	20.51	21.99	13.07
457.0	0.90	10.80	23.59	20.48	21.96	13.04
459.0	0.90	10.80	23.54	20.46	21.93	13.02
460.0	0.90	10.80	23.54	20.46	21.91	13.01
461.0	0.90	10.81	23.50	20.45	21.89	12.99
463.0	0.90	10.81	23.47	20.43	21.85	12.97
465.0	0.90	10.81	23.43	20.41	21.83	12.94
467.0	0.90	10.81	23.40	20.39	21.79	12.92
469.0	0.90	10.81	23.35	20.37	21.76	12.89
470.0	0.90	10.81	23.33	20.37	21.74	12.88
480.0	0.91	10.82	23.14	20.28	21.59	12.75
490.0	0.91	10.82	22.96	20.18	21.45	12.63
500.0	0.92	10.83	22.80	20.09	21.31	12.51
600.0	0.97	10.87	21.22	19.22	19.98	11.49
700.0	1.02	10.89	19.75	18.51	18.86	10.66
800.0	1.09	10.89	18.56	17.91	17.84	10.01
900.0	1.16	10.86	17.37	17.48	16.99	9.55
1000.0	1.25	10.81	16.22	17.23	16.23	9.20
1250.0	1.55	10.56	13.79	17.68	14.63	8.75
1500.0	2.01	10.21	11.66	20.64	13.52	8.86
2000.0	4.14	10.37	8.85	13.15	11.18	10.43



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RF/MICROWAVE COMPONENTS

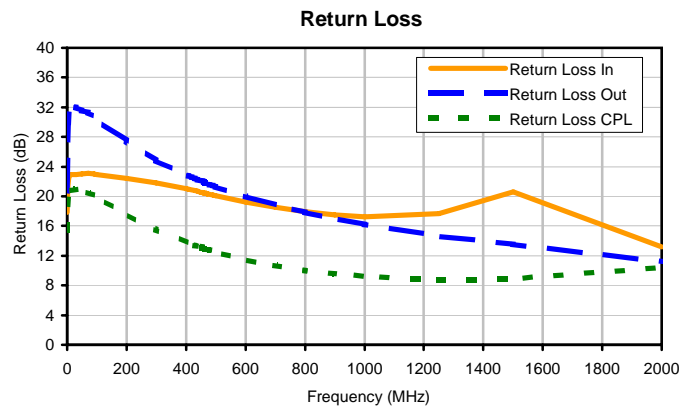
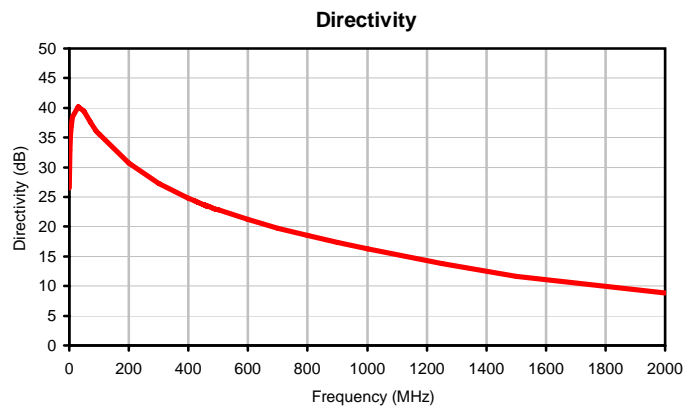
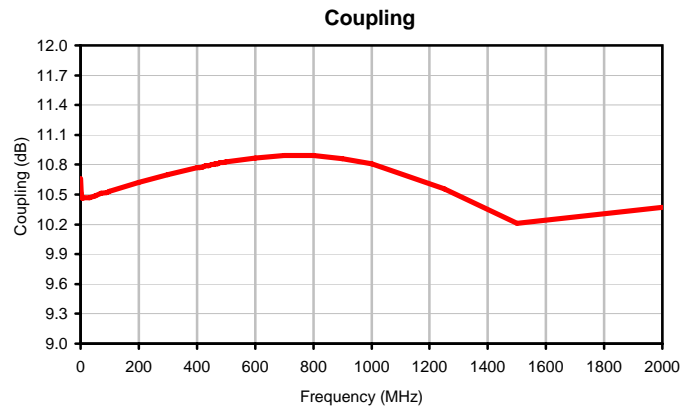
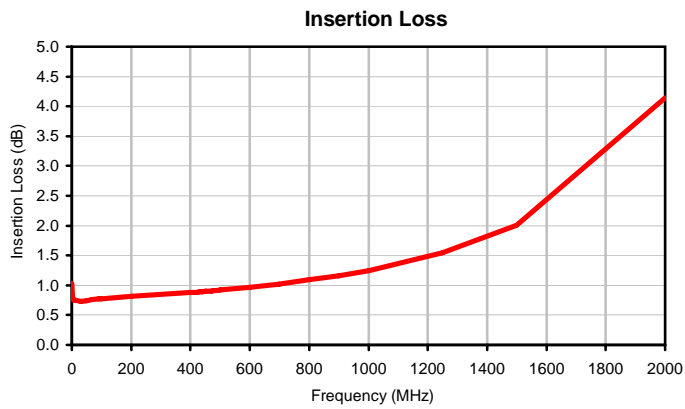


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12/29/2008
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Directional Coupler

Typical Performance Curves

ADC-ED12010/1



Case Style

CD

CD541
CD542
CD636
CD637

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within $\pm .002$

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT, GRAM
CD541					.082 (2.08)							.15
CD542	.272 (6.91)	.310 (7.87)	.220 (5.58)	.100 (2.54)	.112 (2.84)	.055 (1.40)	.100 (2.54)	.030 (0.76)	.026 (0.66)	.065 (1.65)	.300 (7.62)	.20
CD636					.162 (4.11)							.25
CD637					.206 (5.23)							.40

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

Notes:

- Case material: Plastic.
- Termination finish:
 - For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
 - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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Tape & Reel Packaging TR-F34



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
			Standard	100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.
Refer to pricing and availability on individual model dashboard.

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Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-40° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215