

Directional Coupler

ADC-ED9780/1

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.



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

CASE STYLE : CD637

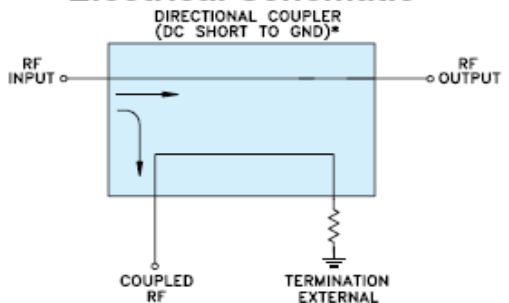
ELECTRICAL SPECIFICATIONS 75Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		0.5		2000	MHz
Coupling	Nominal		8.1 ± 0.7		dB
	Flatness		± 0.7		dB
Mainline Loss **	0.5-5 MHz		1.62		dB
	5-1000 MHz		1.44		dB
	1000-2000 MHz		2.81		dB
Directivity	0.5-5 MHz		16		dB
	5-1000 MHz		18		dB
	1000-2000 MHz		14		dB
VSWR	0.5-2000 MHz		1.2		(:1)
RF Power Input	0.5-2000 MHz			1.0	W

Note: **Mainline loss includes theoretical coupled power loss of 0.731 dB at 8.1 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 FORWARD	4
75Ω TERM. EXTERNAL	3
GROUND	2, 5

Electrical Schematic



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

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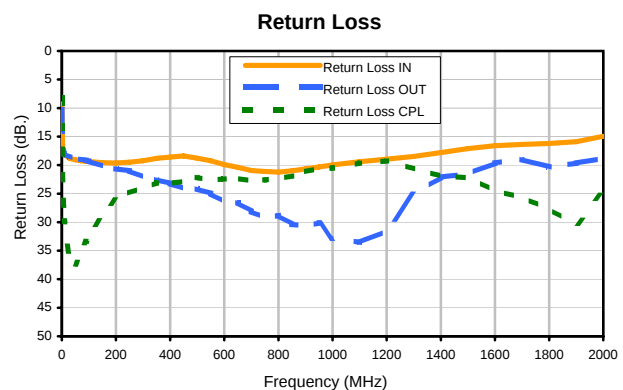
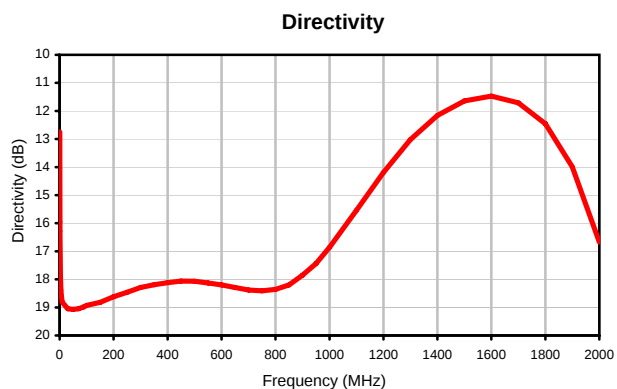
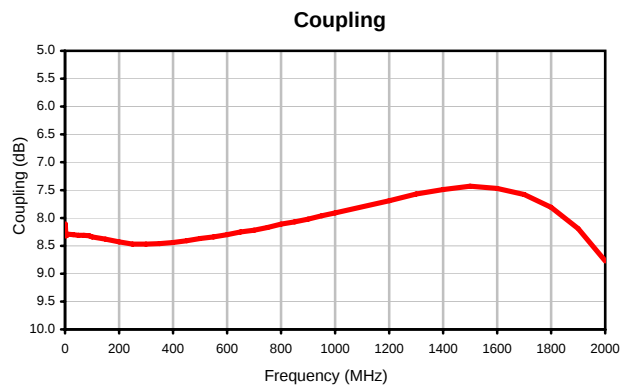
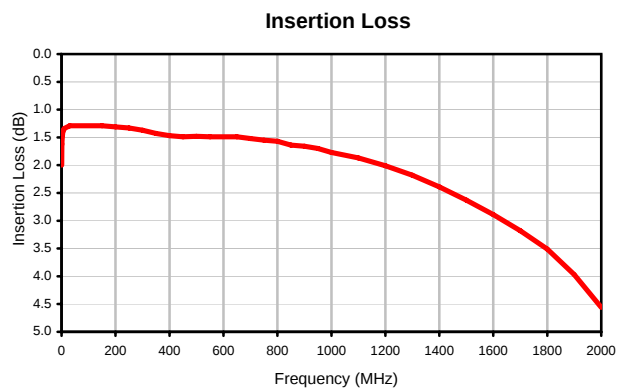
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	(dB) OUT	CPL
0.5	2.00	8.16	12.75	9.26	10.26	8.21
0.9	1.63	8.11	15.96	13.02	13.69	13.15
1.0	1.61	8.12	16.29	13.56	14.10	14.05
3.0	1.48	8.32	17.88	16.52	16.63	21.63
5.0	1.40	8.32	18.39	17.38	17.41	25.08
7.0	1.37	8.31	18.63	17.80	17.79	27.43
9.0	1.35	8.30	18.78	18.05	18.03	29.21
10.0	1.34	8.29	18.82	18.16	18.10	29.95
30.0	1.29	8.30	19.05	18.84	18.66	37.42
50.0	1.29	8.31	19.07	19.08	18.80	37.33
70.0	1.29	8.31	19.05	19.24	18.96	35.45
90.0	1.29	8.32	18.98	19.35	19.15	33.38
100.0	1.29	8.34	18.93	19.39	19.29	32.28
150.0	1.29	8.38	18.82	19.58	20.18	28.87
200.0	1.31	8.43	18.62	19.62	20.65	26.06
250.0	1.33	8.47	18.46	19.50	21.00	24.87
300.0	1.37	8.47	18.29	19.24	22.12	23.95
350.0	1.43	8.46	18.19	18.81	22.56	23.11
400.0	1.47	8.44	18.12	18.58	23.23	23.19
450.0	1.49	8.41	18.06	18.40	24.13	22.88
500.0	1.48	8.37	18.07	18.80	24.17	22.16
550.0	1.49	8.34	18.13	19.23	24.98	22.64
600.0	1.49	8.30	18.20	19.92	26.50	22.40
650.0	1.49	8.25	18.29	20.38	26.55	22.34
700.0	1.52	8.22	18.38	20.94	28.14	22.75
750.0	1.55	8.17	18.41	21.12	29.26	22.61
800.0	1.57	8.11	18.36	21.23	28.81	22.35
850.0	1.64	8.07	18.20	21.01	30.41	21.89
900.0	1.66	8.02	17.85	20.66	30.61	21.15
950.0	1.70	7.96	17.44	20.33	30.14	20.61
1000.0	1.77	7.91	16.86	19.96	32.82	20.53
1100.0	1.87	7.80	15.54	19.41	33.56	19.64
1200.0	2.01	7.69	14.19	18.96	31.51	19.26
1300.0	2.18	7.57	13.02	18.47	25.00	20.69
1400.0	2.39	7.49	12.16	17.80	22.10	21.93
1500.0	2.63	7.43	11.64	17.12	21.54	22.21
1600.0	2.89	7.47	11.47	16.61	19.62	24.52
1700.0	3.18	7.58	11.71	16.38	19.00	25.68
1800.0	3.51	7.81	12.46	16.20	20.34	27.69
1900.0	3.97	8.19	13.99	15.91	19.66	30.39
2000.0	4.56	8.77	16.67	14.96	18.83	24.71

Directional Coupler

Typical Performance Curves

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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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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