

Directional Coupler

TRDC-ED12976/1

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.



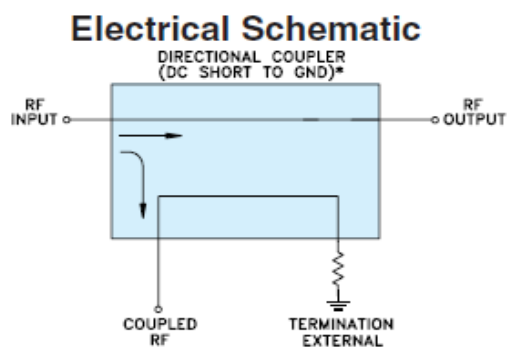
CASE STYLE : 99-01-1215

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		15		1350 MHz
Coupling	Nominal		13 ± 0.5	dB
	Flatness		± 0.185	dB
Mainline Loss *	15-150 MHz		1.00	dB
	150-675 MHz		0.85	dB
	675-1350 MHz		0.90	dB
Directivity	15-150 MHz		24	dB
	150-675 MHz		23	dB
	675-1350 MHz		18	dB
VSWR	15-1350 MHz		1.1	(:1)
RF Power Input	15-1350 MHz			1 W

Note: * Mainline loss includes theoretical coupled power loss of 0.22 dB at 13 dB coupling.

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

PIN CONNECTIONS	
INPUT	1
OUTPUT	6
COUPLED	3
75Ω TERM EXTERNAL	4
GROUND	2

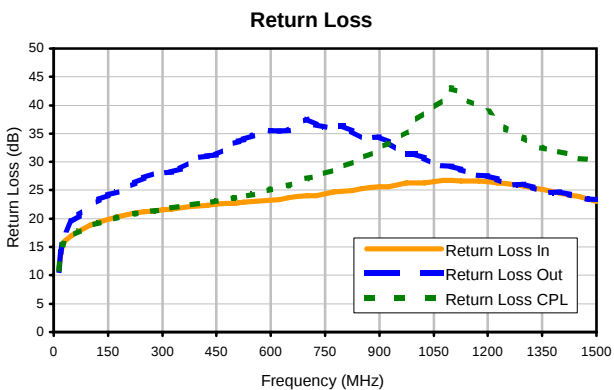
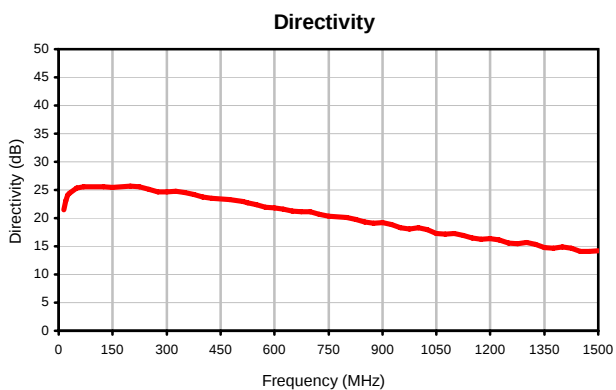
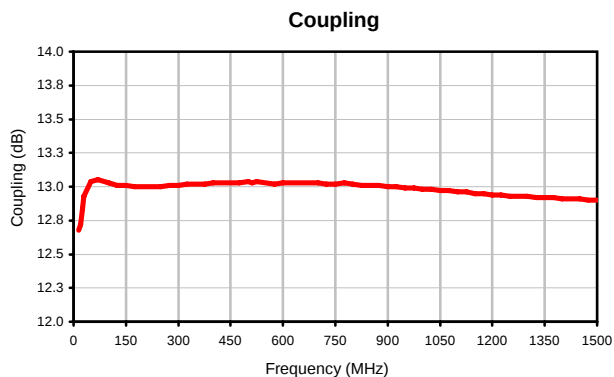
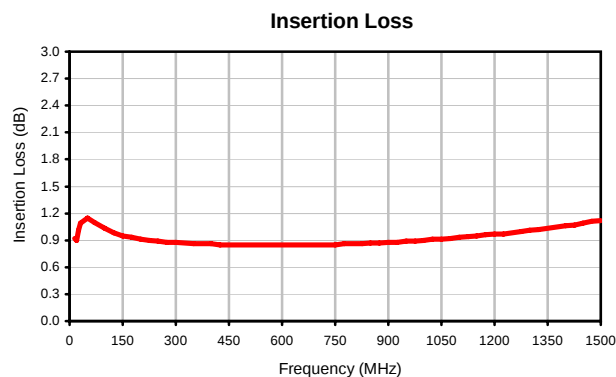


* ELECTRICAL SCHEMATIC IS FOR DIRECTIONAL COUPLER WITH INTERNAL TRANSFORMER(S) AND EXTERNAL TERMINATION.

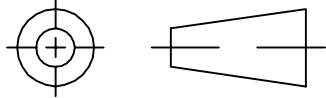
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				IN	OUT	CPL
15.0	0.92	12.68	21.49	10.92	10.84	11.01
20.0	0.90	12.72	23.11	13.81	14.08	13.86
25.0	1.01	12.84	24.06	15.38	16.28	15.39
30.0	1.09	12.93	24.46	16.02	17.42	16.02
50.0	1.15	13.04	25.33	17.04	19.36	17.04
70.0	1.10	13.05	25.62	17.82	20.60	17.79
100.0	1.03	13.03	25.62	18.80	22.23	18.77
125.0	0.98	13.01	25.55	19.41	23.31	19.35
150.0	0.95	13.01	25.44	19.86	24.12	19.80
175.0	0.93	13.00	25.54	20.26	24.76	20.21
200.0	0.91	13.00	25.67	20.63	25.41	20.60
225.0	0.90	13.00	25.54	20.97	26.25	20.92
250.0	0.89	13.00	25.14	21.21	27.22	21.15
275.0	0.88	13.01	24.70	21.37	27.97	21.35
300.0	0.88	13.01	24.69	21.53	28.11	21.59
325.0	0.87	13.02	24.75	21.72	28.17	21.89
350.0	0.86	13.02	24.59	21.92	28.83	22.20
375.0	0.86	13.02	24.26	22.07	29.91	22.46
400.0	0.86	13.03	23.80	22.19	30.78	22.64
425.0	0.85	13.03	23.55	22.35	31.01	22.84
450.0	0.85	13.03	23.44	22.53	31.31	23.16
475.0	0.85	13.03	23.29	22.64	32.28	23.51
500.0	0.85	13.04	23.11	22.73	33.28	23.75
512.0	0.85	13.03	22.93	22.79	33.62	23.84
525.0	0.85	13.04	22.70	22.89	33.93	23.94
550.0	0.85	13.03	22.34	23.07	34.65	24.25
575.0	0.85	13.02	21.98	23.16	35.34	24.71
600.0	0.85	13.03	21.79	23.24	35.55	25.22
625.0	0.85	13.03	21.61	23.41	35.41	25.54
650.0	0.85	13.03	21.28	23.73	35.56	25.85
675.0	0.85	13.03	21.16	23.97	36.94	26.39
700.0	0.85	13.03	21.11	24.03	37.64	27.04
725.0	0.85	13.02	20.63	24.09	36.53	27.57
750.0	0.85	13.02	20.29	24.39	36.09	28.02
775.0	0.86	13.03	20.22	24.69	36.31	28.57
800.0	0.86	13.02	20.08	24.81	36.38	29.23
825.0	0.86	13.01	19.80	24.91	35.39	29.91
850.0	0.87	13.01	19.28	25.23	34.16	30.65
875.0	0.87	13.01	19.14	25.51	34.22	31.53
900.0	0.88	13.00	19.20	25.58	34.42	32.53
925.0	0.88	13.00	18.87	25.64	33.51	33.35
950.0	0.89	12.99	18.34	25.94	32.08	34.08
975.0	0.89	12.99	18.08	26.26	31.39	35.34
1000.0	0.90	12.98	18.26	26.33	31.42	37.21
1025.0	0.91	12.98	17.99	26.35	30.70	38.74
1050.0	0.91	12.97	17.31	26.53	29.54	39.63
1075.0	0.92	12.97	17.20	26.78	29.35	41.02
1100.0	0.93	12.96	17.30	26.73	29.28	42.89
1125.0	0.94	12.96	16.98	26.61	28.67	42.33
1150.0	0.95	12.95	16.47	26.64	27.94	40.76
1175.0	0.96	12.95	16.26	26.66	27.62	39.94
1200.0	0.97	12.94	16.41	26.52	27.58	38.83
1225.0	0.97	12.94	16.16	26.35	26.99	37.17
1250.0	0.98	12.93	15.52	26.20	26.09	35.77
1275.0	1.00	12.93	15.44	26.00	25.98	34.96
1300.0	1.01	12.93	15.63	25.69	26.03	34.15
1325.0	1.02	12.92	15.37	25.40	25.51	33.15
1350.0	1.03	12.92	14.73	25.20	24.74	32.48
1375.0	1.05	12.92	14.66	24.87	24.66	32.20
1400.0	1.06	12.91	14.92	24.45	24.73	31.86
1425.0	1.07	12.91	14.66	24.14	24.26	31.21
1450.0	1.09	12.91	14.11	23.89	23.60	30.64
1475.0	1.11	12.90	14.04	23.51	23.42	30.50
1500.0	1.12	12.90	14.19	23.03	23.35	30.51

Typical Performance Curves



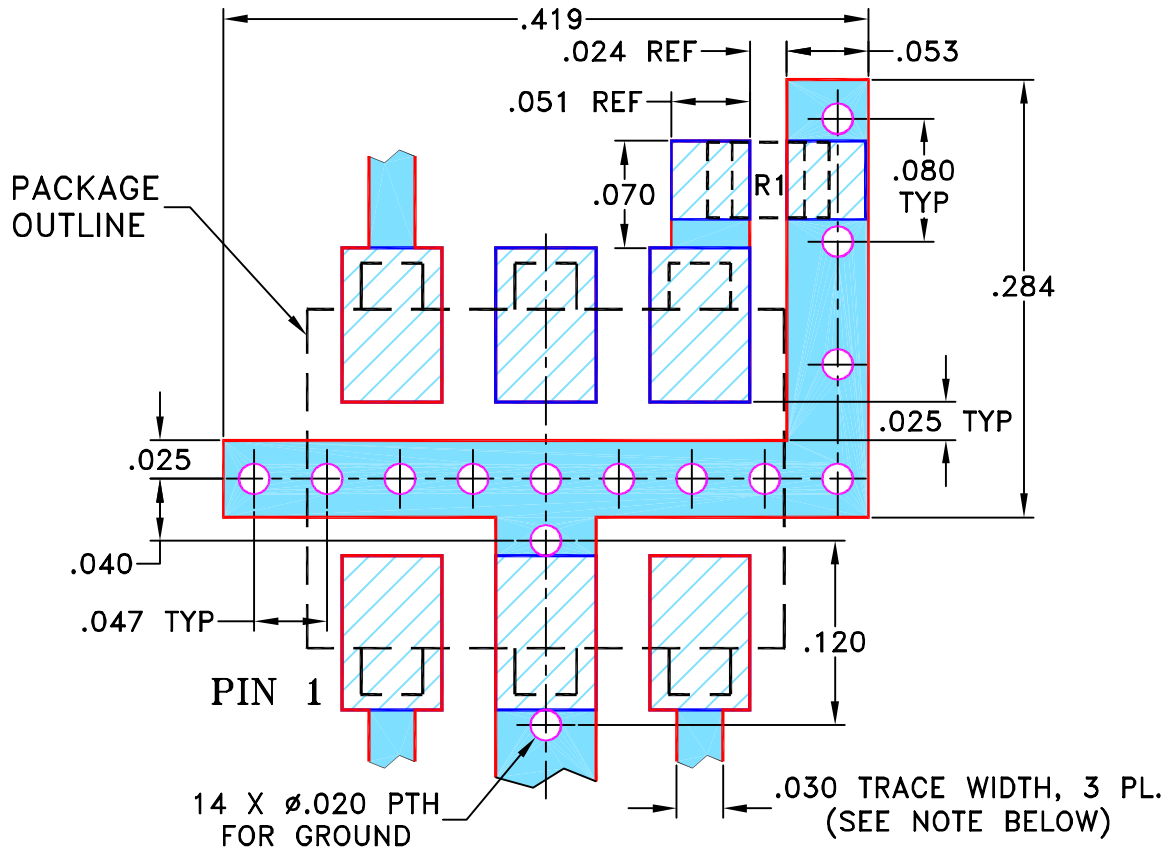
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M81068	NEW RELEASE	07/22/02	GF	LC
A	M102713	ADDED NOTE 2 & "...WITH SMOBC"	01/17/06	MMG	IL

**SUGGESTED MOUNTING CONFIGURATION FOR
CD542 CASE STYLE, "kd" PIN CONNECTION**



RESISTOR R1: 75 Ohm, 0805 SIZE.

- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030" $\pm$.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 OVER BARE COPPER)



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

DRAWN

GF

06/21/02

TOLERANCES ON:

CHECKED

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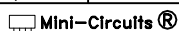
07/22/02

2 PL DECIMALS $\pm$

APPROVED

LC

07/22/02

3 PL DECIMALS $\pm$.005ANGLES $\pm$ FRACTIONS $\pm$ 

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ASHEETA1.DWG REV:A DATE:01/12/95



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Brooklyn NY 11235

PL, kd, 75, CD542, ADC, TB-08

SIZE
A

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15542

DRAWING NO:
98-PL-042

REV:
A

FILE: 98PL042

SCALE: 8:1

SHEET: 1 OF 1



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

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