

Directional Coupler

JDC-ED5508A

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 : BH292

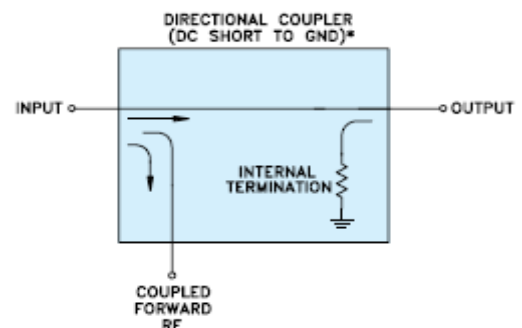
ELECTRICAL SPECIFICATIONS 75Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		3		1400	MHz
Coupling	Nominal		10.5 ± 0.5		dB
	Flatness		± 0.2		dB
Mainline Loss **	3-30 MHz		1.30		dB
	30-700 MHz		1.25		dB
	700-1400 MHz		1.50		dB
Directivity	3-30 MHz		23		dB
	30-700 MHz		25		dB
	700-1400 MHz		20		dB
VSWR	3-1400 MHz		1.2		(:1)
RF Power Input	3-1400 MHz			0.5	W

Note: ** Mainline loss includes theoretical coupled power loss of 0.405 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	1
OUTPUT	6
COUPLED FORWARD	3
GROUND	2, 5
ISOLATE	4

Electrical Schematic



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

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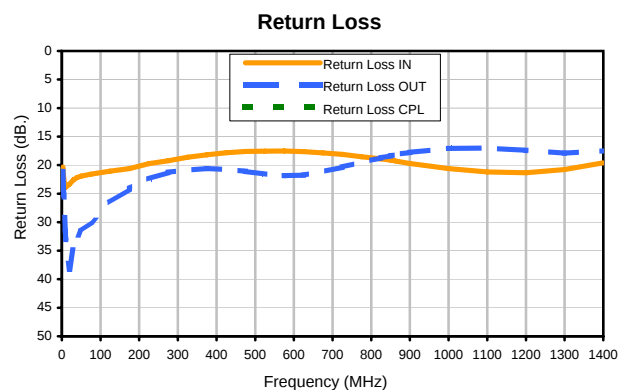
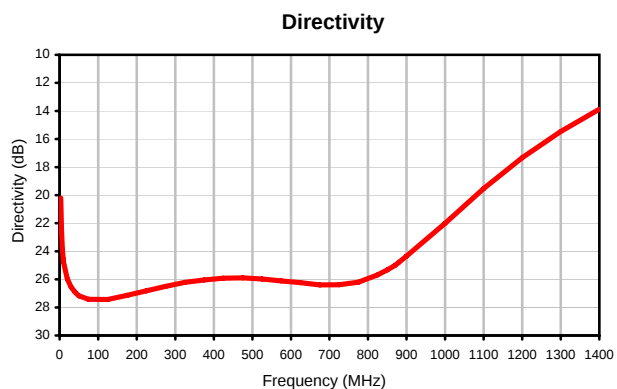
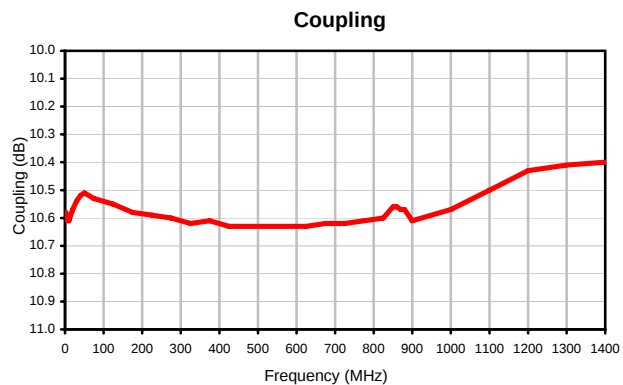
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	(dB) OUT	CPL
3.0	1.46	10.58	20.21	20.32	21.13	13.18
5.0	1.36	10.60	22.58	22.35	25.18	15.06
7.0	1.30	10.61	23.81	23.34	28.50	16.21
9.0	1.27	10.61	24.53	23.78	31.52	16.94
10.0	1.25	10.61	24.75	23.90	33.06	17.21
20.0	1.18	10.57	25.98	23.32	38.27	18.08
30.0	1.14	10.54	26.56	22.58	34.26	18.08
40.0	1.12	10.52	26.91	22.16	32.51	18.01
50.0	1.12	10.51	27.17	21.93	31.60	17.98
75.0	1.12	10.53	27.42	21.59	29.97	18.03
125.0	1.15	10.55	27.43	21.07	26.55	18.53
175.0	1.16	10.58	27.14	20.62	24.11	19.70
225.0	1.19	10.59	26.82	19.74	22.43	20.93
275.0	1.20	10.60	26.50	19.25	21.25	22.42
325.0	1.22	10.62	26.22	18.61	20.89	24.54
375.0	1.23	10.61	26.04	18.19	20.58	26.35
425.0	1.26	10.63	25.92	17.84	20.77	28.94
475.0	1.28	10.63	25.90	17.60	21.10	31.08
525.0	1.31	10.63	25.97	17.55	21.60	32.62
575.0	1.33	10.63	26.11	17.54	21.84	32.81
625.0	1.34	10.63	26.24	17.65	21.75	31.48
675.0	1.37	10.62	26.40	17.86	21.16	29.12
725.0	1.38	10.62	26.39	18.11	20.37	26.65
775.0	1.40	10.61	26.20	18.55	19.47	24.30
825.0	1.42	10.60	25.68	18.91	18.73	22.27
850.0	1.40	10.56	25.33	19.13	18.36	21.39
860.0	1.40	10.56	25.16	19.24	18.23	21.04
870.0	1.42	10.57	25.00	19.37	18.10	20.68
880.0	1.43	10.57	24.79	19.48	17.99	20.34
900.0	1.48	10.61	24.34	19.70	17.78	19.69
1000.0	1.51	10.57	22.01	20.60	17.08	17.66
1100.0	1.56	10.50	19.53	21.20	17.01	16.74
1200.0	1.63	10.43	17.33	21.34	17.42	16.93
1300.0	1.73	10.41	15.46	20.77	17.91	18.08
1400.0	1.85	10.40	13.88	19.61	17.49	18.73

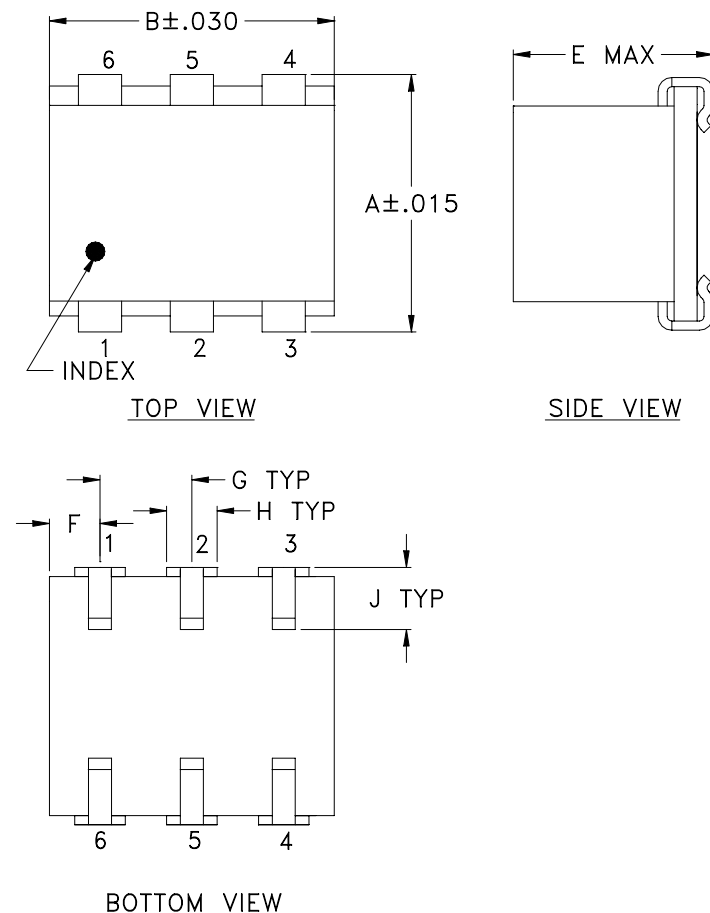
Directional Coupler

Typical Performance Curves

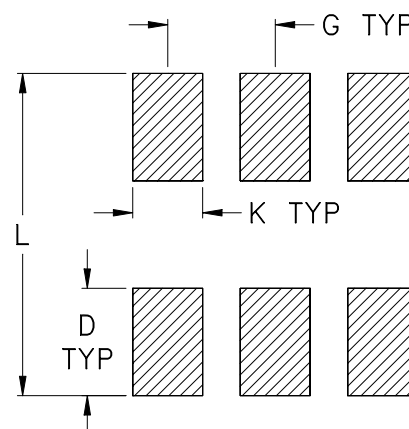
JDC-ED5508A



Outline Dimensions



PCB Land Pattern



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

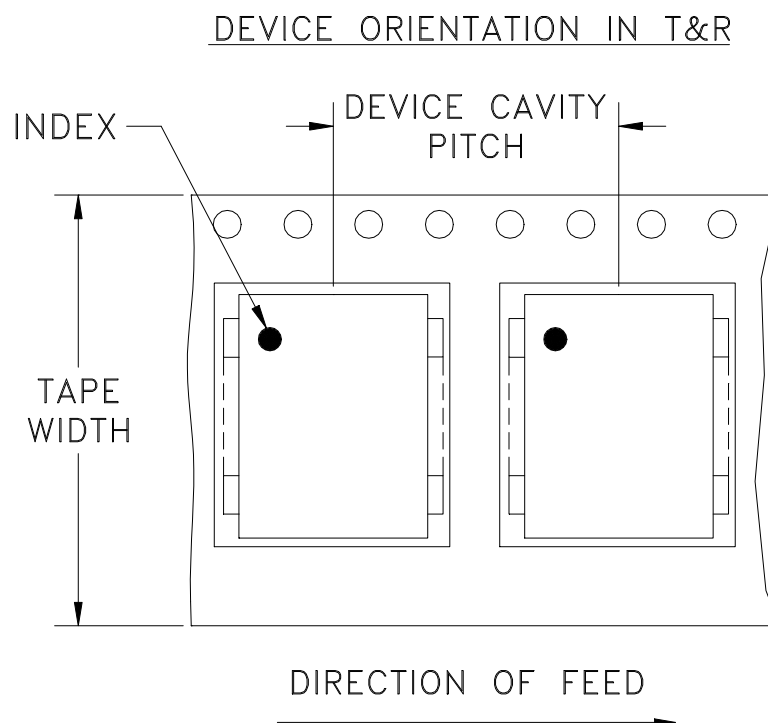
CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAM
BH292	.280 (7.11)	.310 (7.87)	- -	.100 (2.54)	.225 (5.72)	.055 (1.40)	.100 (2.54)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.300 (7.62)	.45

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

Notes:

- Case material: Ceramic.
- 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.

Tape & Reel Packaging TR-F24



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
16	12	13	500

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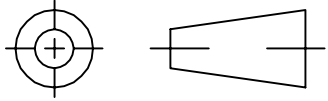
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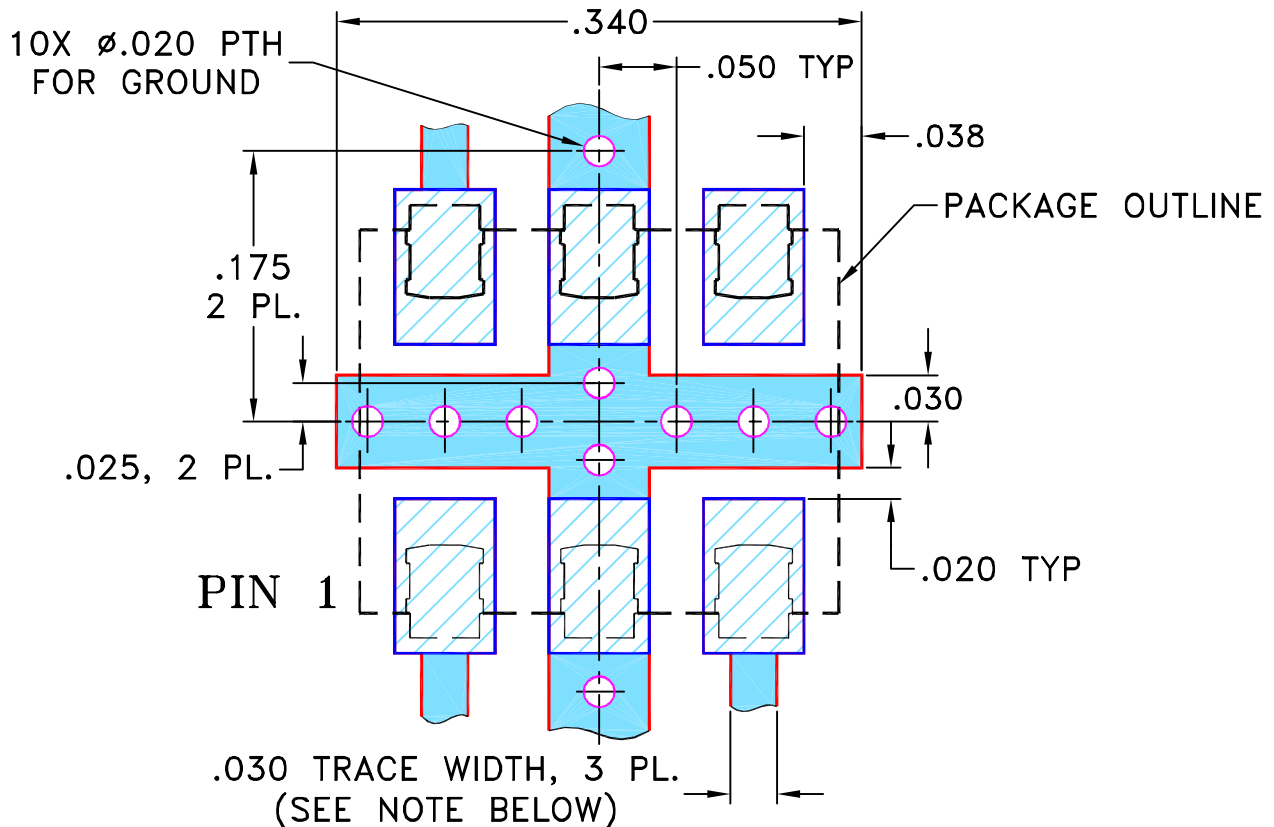
THIRD ANGLE PROJECTION



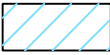
REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M81096	NEW RELEASE	07/23/02	MMG	LC
A	M102713	ADDED NOTE 2 & "...WITH SMOBC"	01/17/06	MMG	IL

SUGGESTED MOUNTING CONFIGURATION FOR BH292 CASE STYLE, "hz" PIN CONNECTION



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B 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

TOLERANCES ON:

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

DRAWN

MMG

06/14/02

CHECKED

AV

07/23/02

APPROVED

LC

07/23/02


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Brooklyn NY 11235

PL, hz, 75, BH292, JDC, TB-33

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-044

REV:

A

FILE: 98PL044

SCALE:

8:1

SHEET:

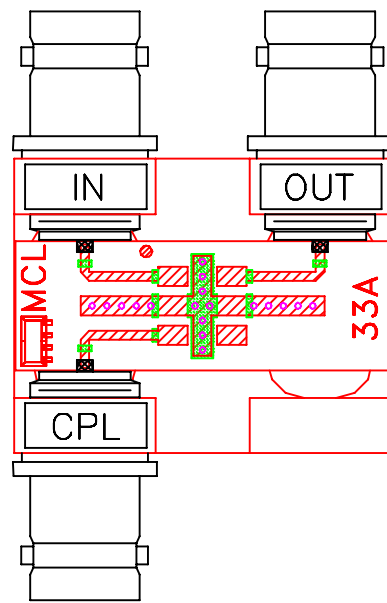
1 OF 1

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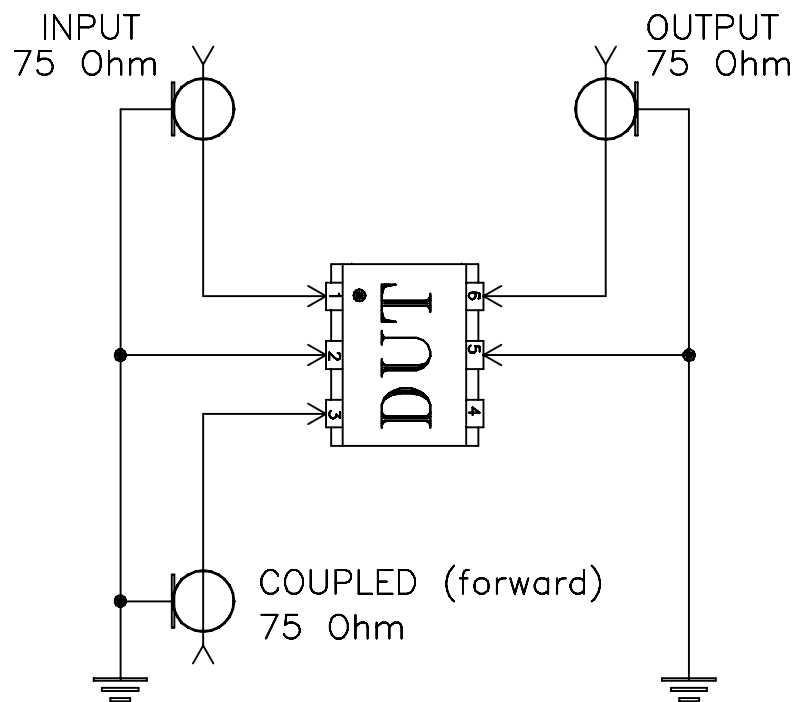
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ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit



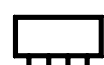
TB-33



Schematic Diagram

Notes:

1. 75 Ohm BNC Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.030 inch.

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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