Engineering Development Model

Directional Coupler SYDC-ED14337/2

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 : 99-01-1613

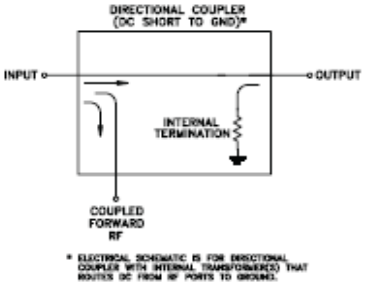
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		50		4000	MHz
Coupling	**Nominal**		24±1		dB
	Flatness		±1.8		dB
Mainline Loss*	**50 MHz**		0.8		dB
	2200 MHz		1.4		dB
	3600 MHz		2.3		dB
	4000 MHz		2.5		dB
Directivity	**50 MHZ**		24		dB
	2000 MHz		18		dB
	3600 MHz		12		dB
	4000 MHz		9		dB
VSWR	**50-4000 MHz**		1.5		(:1)
RF Power Input	**50-4000 MHz**			3	W

Note: * Mainline loss includes theoretical coupled power loss of .017 dB at 24 dB coupling.

MAXIMUM RATINGS	
Operating Temperature	-40°C to +60°C
Storage Temperature	-55°C to 100°C

PIN CONNECTIONS	
INPUT	8
OUTPUT	1
COUPLED	5
GROUND	2,3,4,6,7

Electrical Schematic



Directional Coupler SYDC-ED14337/2

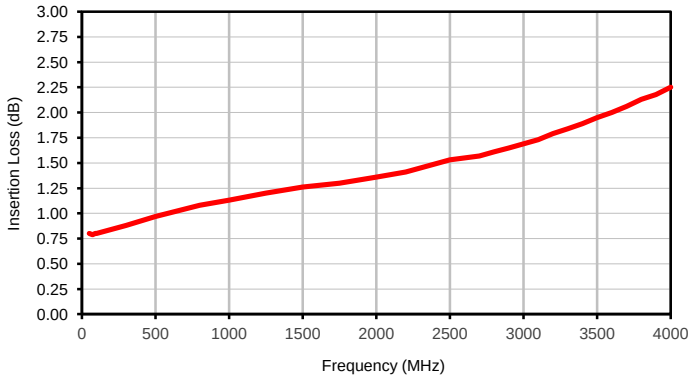
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS (dB)		
				IN	OUT	CPL
50.0	0.80	22.62	27.40	24.30	25.12	23.46
70.0	0.79	22.70	28.36	25.52	26.64	23.86
90.0	0.80	22.78	28.62	26.34	27.78	24.17
100.0	0.80	22.81	28.56	26.61	28.23	24.31
300.0	0.88	23.56	23.36	27.95	31.68	26.11
500.0	0.97	24.24	19.80	28.11	32.63	27.37
800.0	1.08	24.77	18.16	29.34	34.62	27.80
1000.0	1.13	24.81	17.99	30.17	35.41	27.25
1250.0	1.20	24.74	18.41	31.24	34.36	26.34
1500.0	1.26	24.56	19.35	31.96	32.58	25.85
1750.0	1.30	24.41	20.16	32.19	31.29	26.11
2000.0	1.36	24.36	20.63	32.54	29.89	27.98
2200.0	1.41	24.37	20.54	32.06	28.03	31.05
2500.0	1.53	24.59	20.20	28.93	25.13	35.46
2600.0	1.55	24.71	19.19	28.71	23.99	33.51
2700.0	1.57	24.67	18.06	26.74	23.15	30.81
2800.0	1.61	24.72	17.48	25.13	22.16	27.74
2900.0	1.65	24.77	16.92	23.73	21.41	25.43
3000.0	1.69	24.87	15.98	22.96	20.63	23.52
3100.0	1.73	24.96	14.88	22.16	20.05	21.96
3200.0	1.79	25.05	14.27	21.06	19.52	20.64
3300.0	1.84	25.11	13.63	20.65	19.18	19.51
3400.0	1.89	25.17	12.92	20.00	18.77	18.62
3500.0	1.95	25.30	11.91	19.31	18.50	17.84
3600.0	2.00	25.41	11.21	18.94	18.19	17.16
3700.0	2.06	25.51	10.48	18.50	18.22	16.60
3800.0	2.13	25.63	9.87	17.78	18.07	16.11
3900.0	2.18	25.75	9.09	17.46	18.24	15.75
4000.0	2.25	25.90	8.43	17.03	18.33	15.43

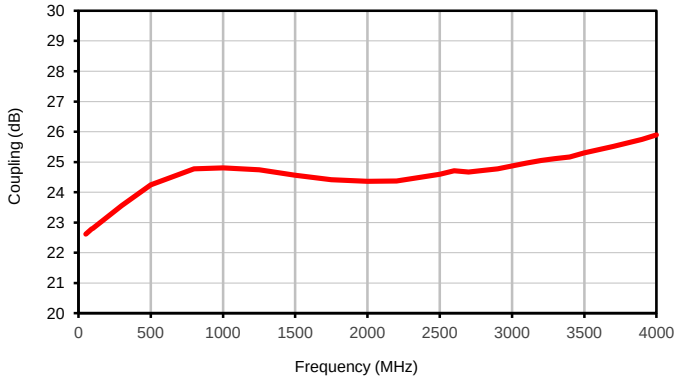
Directional Coupler SYDC-ED14337/2

Typical Performance Curves

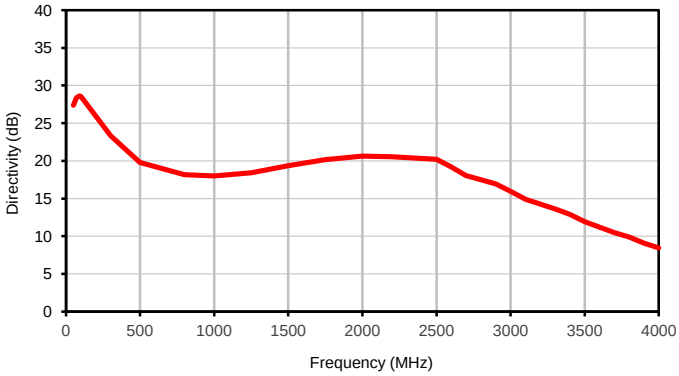
Insertion Loss



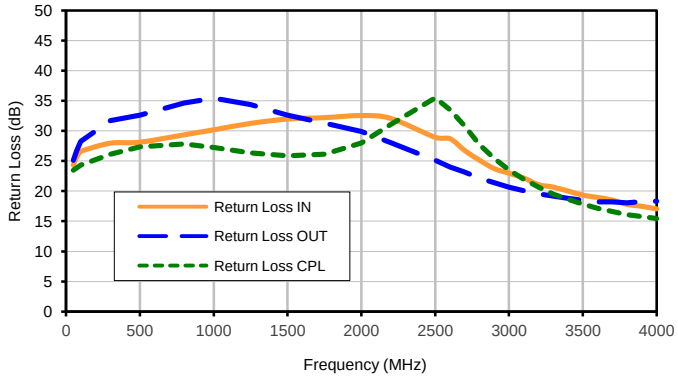
Coupling



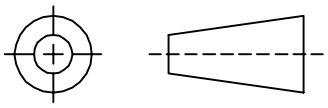
Directivity



Return Loss

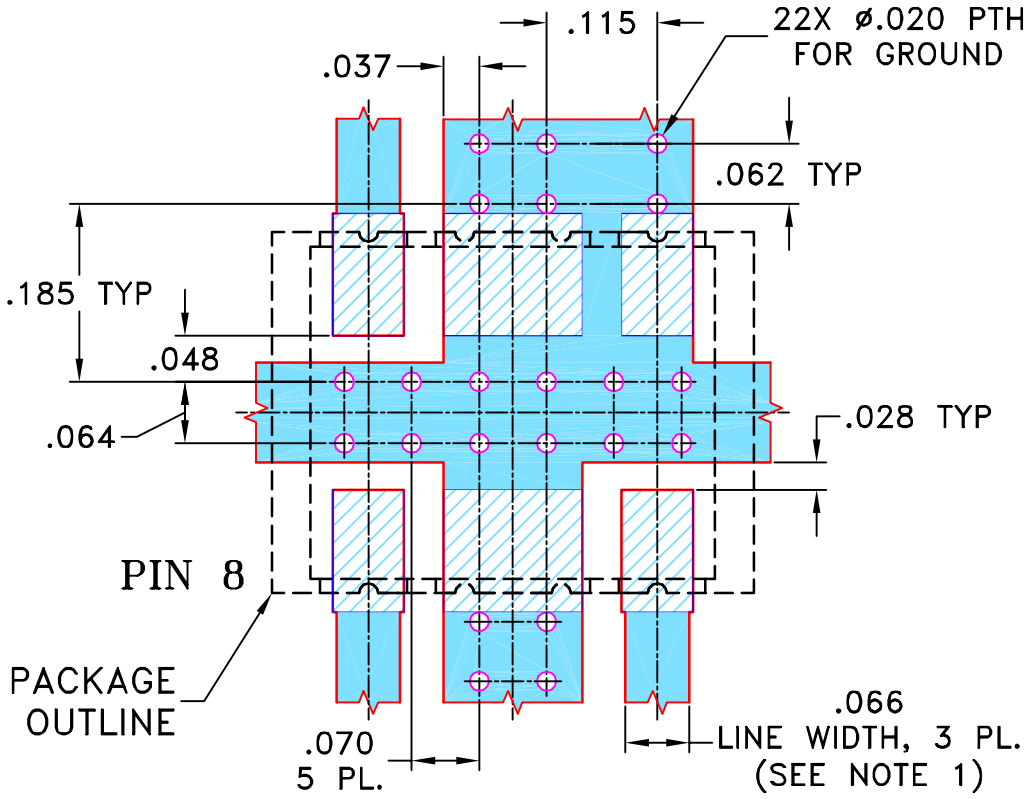


THIRD ANGLE PROJECTION



REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M93215	NEW RELEASE	07/14/04	AV	WP
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR AH202 CASE STYLE, "pu" PIN CONNECTION.



NOTE:

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 OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	AV	07/02/04
TOLERANCES ON:	CHECKED	GF	07/14/04
2 PL DECIMALS ±	APPROVED	WP	07/14/04
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

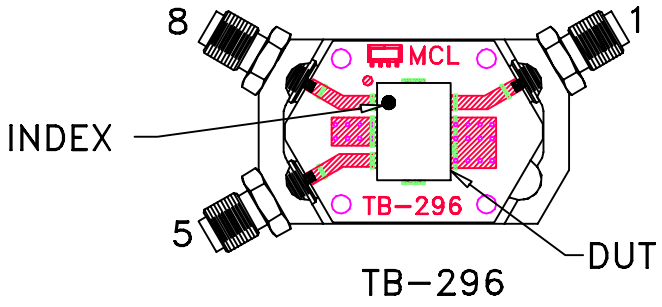
PL, pu, AH202, SYDC, TB-296

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-160	A

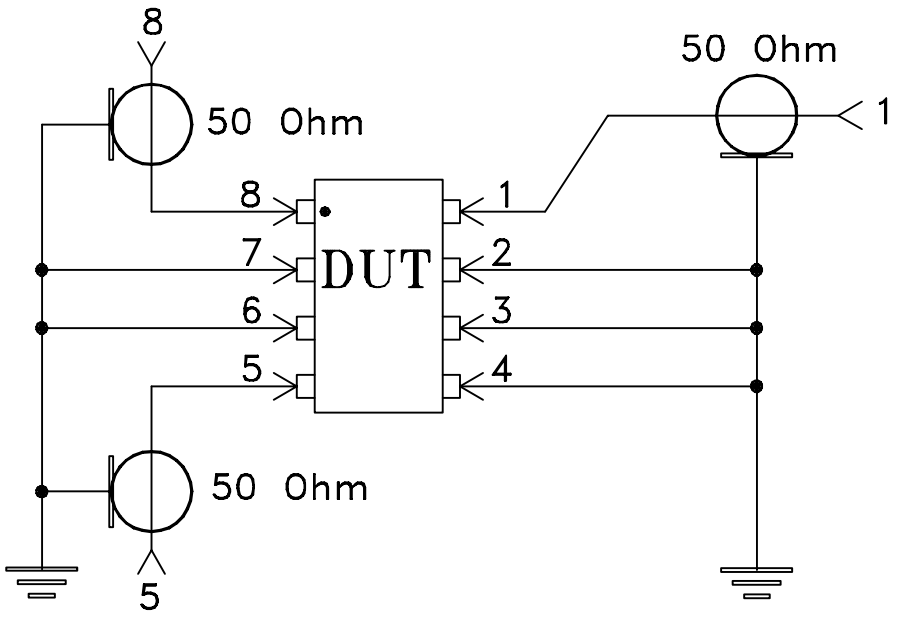
FILE:	SCALE:	SHEET:
98PL160	5:1	1 OF 1

Evaluation Board and Circuit

For Pin Connections refer to Data Sheet of the DUT



TB-296



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

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Environmental Specifications **ENV02T5**

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 60° C Case 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, Para 4.2.5, Test S, 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