

Directional Coupler

SYD-ED11713/2

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 : AH202

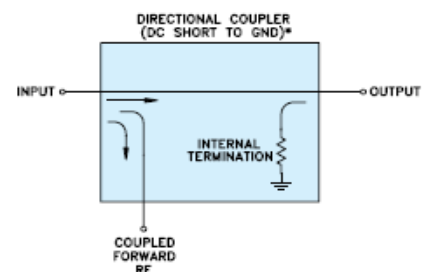
ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		Min.	Typ.	Max.	Units
Frequency		30		3000	MHz
Coupling	Nominal		20.8 ± 0.65		dB
	Flatness		± 1.4		dB
Mainline Loss *	30-300 MHz		0.90		dB
	300-1500 MHz		1.10		dB
	1500-3000 MHz		1.50		dB
Directivity	30-300 MHz		16		dB
	300-1500 MHz		17		dB
	1500-3000 MHz		21		dB
VSWR	30-3000 MHz		1.2		(:1)
Power Input	30-3000 MHz			1	W

Note: * Mainline loss includes theoretical coupled power loss of 0.036 dB at 20.8 dB coupling.

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

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

Electrical Schematic



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

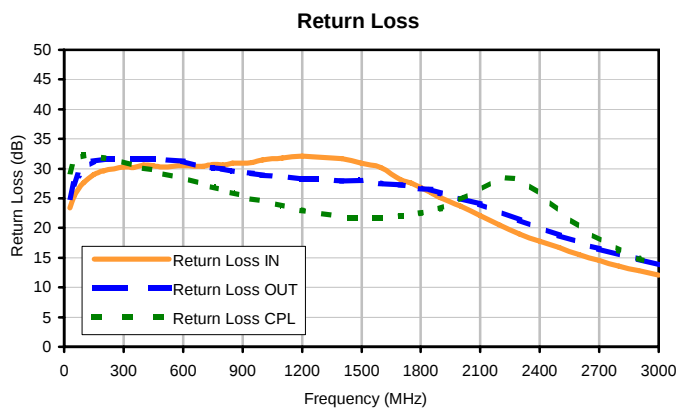
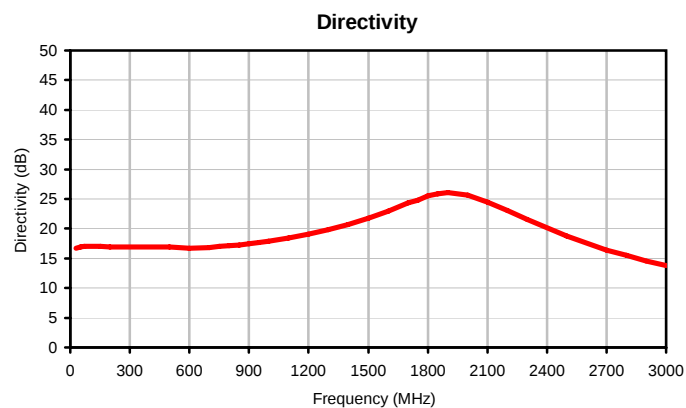
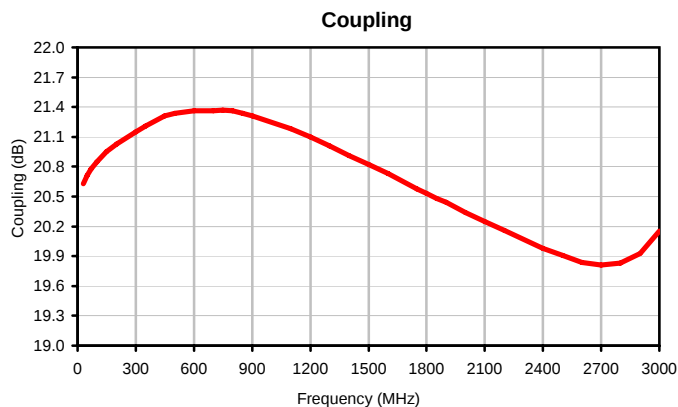
Directional Coupler

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Typical Performance Data

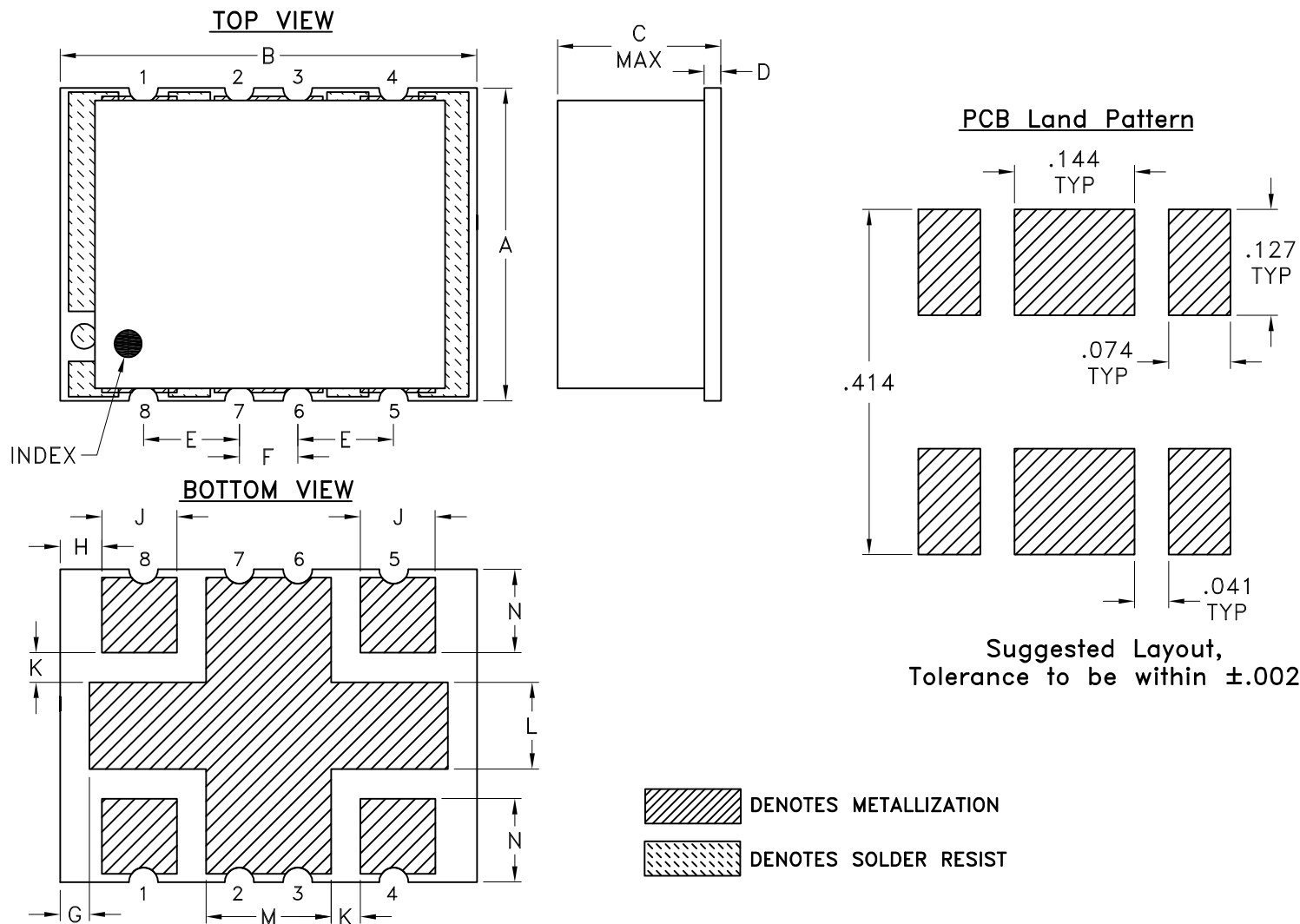
FREQUENCY (MHz)	INSERTION LOSS (dB)	COUPLING (dB)	DIRECTIVITY (dB)	RETURN LOSS		
				IN	OUT	CPL
30.0	0.83	20.63	16.70	23.40	25.11	29.41
50.0	0.83	20.71	16.93	25.25	27.37	31.09
70.0	0.85	20.78	17.01	26.54	28.85	31.82
100.0	0.88	20.85	17.00	27.72	30.06	32.18
150.0	0.91	20.95	17.05	29.03	31.21	32.26
200.0	0.93	21.03	16.97	29.61	31.61	31.79
300.0	0.97	21.15	16.91	30.29	31.57	31.09
350.0	0.98	21.21	16.90	30.16	31.58	30.45
400.0	0.99	21.26	16.87	30.62	31.58	30.04
450.0	1.00	21.31	16.87	30.49	31.59	29.80
500.0	1.02	21.34	16.88	30.29	31.52	29.22
600.0	1.04	21.36	16.72	30.45	31.30	28.29
700.0	1.06	21.36	16.81	30.38	30.27	27.51
750.0	1.07	21.37	16.99	30.71	30.17	26.89
800.0	1.08	21.36	17.16	30.58	29.93	26.44
850.0	1.09	21.34	17.25	30.95	29.55	26.02
900.0	1.10	21.31	17.44	30.93	29.46	25.47
950.0	1.11	21.28	17.64	31.04	29.22	24.93
1000.0	1.12	21.25	17.85	31.49	28.92	24.56
1100.0	1.14	21.18	18.45	31.75	28.65	23.66
1200.0	1.16	21.10	19.04	32.15	28.26	22.98
1300.0	1.18	21.01	19.84	31.86	28.21	22.41
1400.0	1.20	20.91	20.71	31.69	27.88	21.91
1500.0	1.22	20.82	21.79	30.95	28.01	21.64
1600.0	1.24	20.73	22.95	30.15	27.51	21.78
1700.0	1.27	20.63	24.32	28.11	27.21	21.93
1750.0	1.28	20.58	24.81	27.63	27.03	22.15
1800.0	1.29	20.53	25.50	26.86	26.66	22.53
1850.0	1.31	20.48	25.86	25.93	26.48	22.89
1900.0	1.32	20.44	26.09	25.11	25.86	23.31
2000.0	1.35	20.34	25.63	23.75	25.02	24.76
2100.0	1.39	20.25	24.49	22.08	23.99	26.34
2200.0	1.43	20.16	23.06	20.48	22.70	28.54
2300.0	1.47	20.07	21.57	19.00	21.30	28.25
2400.0	1.52	19.98	20.10	17.79	20.02	25.83
2500.0	1.58	19.91	18.72	16.65	18.78	22.85
2600.0	1.63	19.84	17.52	15.51	17.60	20.15
2700.0	1.70	19.81	16.43	14.54	16.49	18.01
2800.0	1.77	19.83	15.48	13.63	15.56	16.24
2900.0	1.85	19.93	14.54	12.85	14.72	14.92
3000.0	1.93	20.15	13.78	12.11	13.84	13.96

Typical Performance Curves



Outline Dimensions

AH202



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	WT, GRAM
AH202	.38 (9.65)	.50 (12.70)	.25 (6.35)	.020 (0.51)	.115 (2.92)	.070 (1.78)	.035 (0.89)	.050 (1.27)	.090 (2.29)	.040 (1.02)	.105 (2.67)	.140 (3.56)	.095 (2.41)	.80

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

Notes:

- Case material: Plastic.
- Base material: Printed wiring laminate.
- Termination finish:
 - For RoHS 3-5 μ inch (.08-.13 microns) Gold over 120-240 μ inch (3.05-6.10 microns) Nickel plate.
 - All models, (+) suffix.
 - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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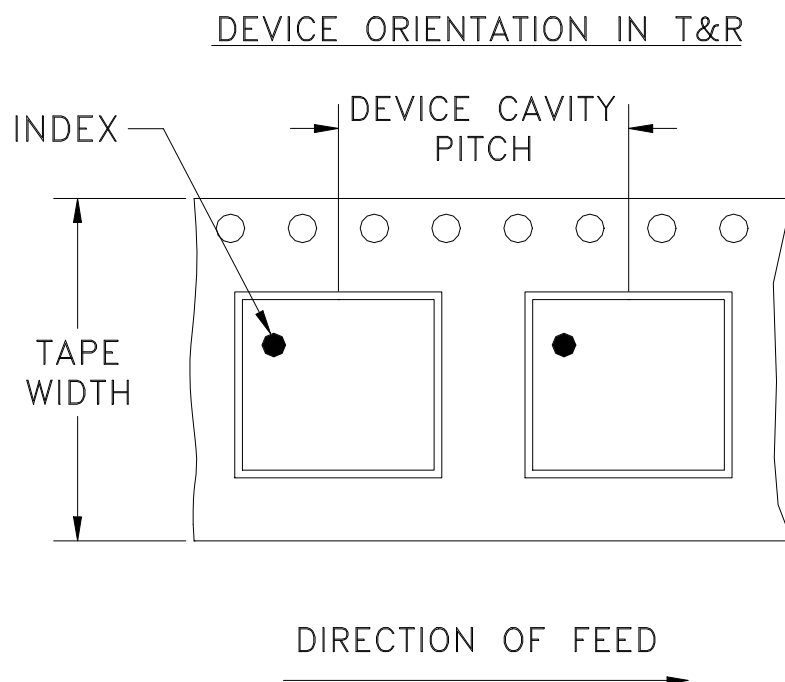
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REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M93215	NEW RELEASE	07/14/04	AV	WP
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GF	IL

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.

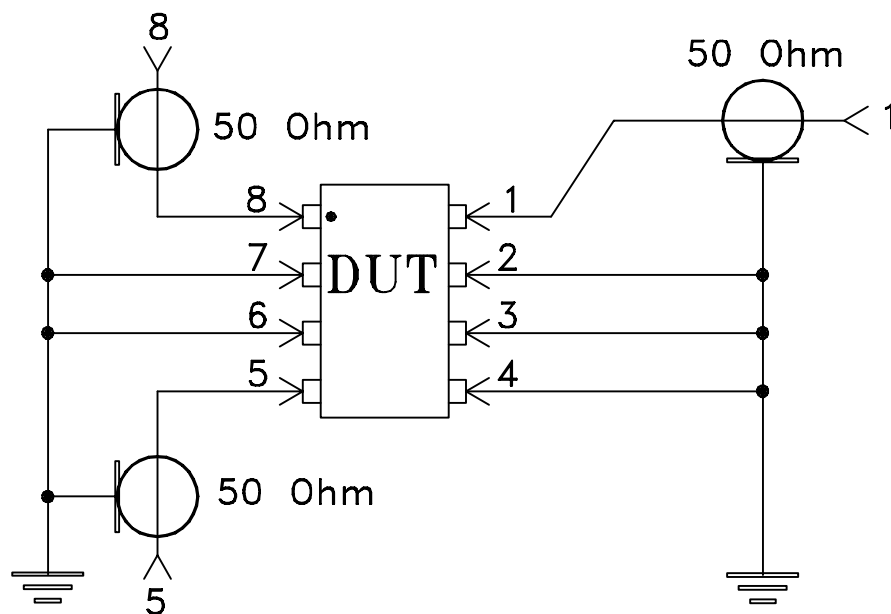
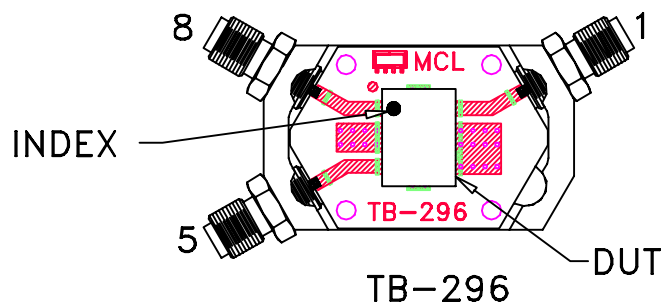
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

SHEET:	1 OF 1
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Evaluation Board and Circuit

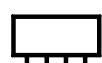
For Pin Connections refer to Data Sheet of the DUT



Schematic Diagram

Notes:

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

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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