

Engineering Development Model

Power Splitter/Combiner

SYPS-ED12377/2

3 Way-0°

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 75Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		5		1320 MHz
Isolation	5 - 50 MHz		31	dB
	50 - 660 MHz		26	dB
	660 - 1320 MHz		21	dB
Insertion Loss Above 4.8 dB	5 - 50 MHz		0.40	dB
	50 - 660 MHz		0.40	dB
	660 - 1320 MHz		1.00	dB
Phase Unbalance	5 - 50 MHz		0.035	deg.
	50 - 660 MHz		0.382	deg.
	660 - 1320 MHz		1.852	deg.
Amplitude Unbalance	5 - 50 MHz		0.010	dB
	50 - 660 MHz		0.035	dB
	660 - 1320 MHz		0.199	dB
VSWR	SUM Port		1.16	(:1)
	OUT Ports		1.21	(:1)

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

Functional Diagram



3 Way-0° Power Splitter/Combiner

SYPS-ED12377/2

Typical Performance Data

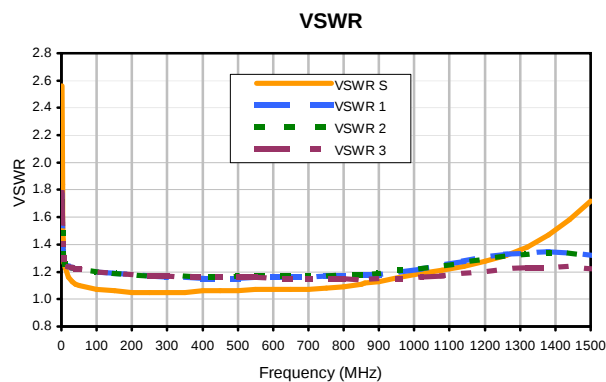
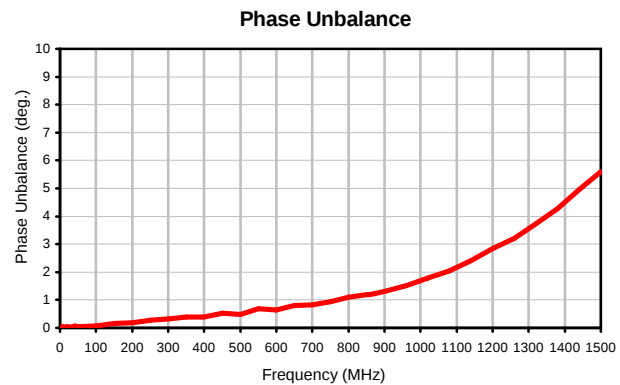
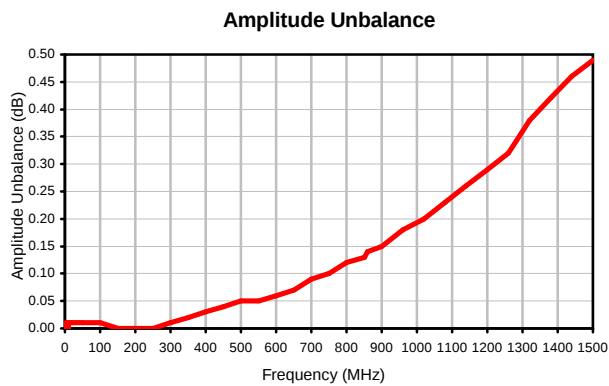
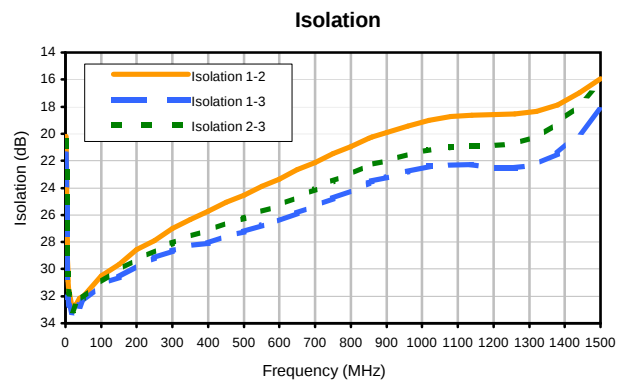
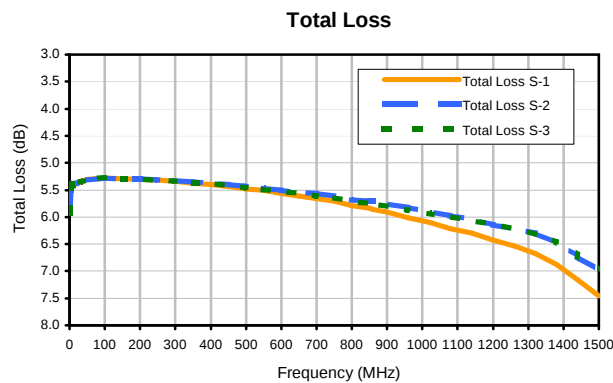
FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)			
	S-1	S-2	S-3		1-2	1-3	2-3			S	1	2	3
2.0	5.93	5.93	5.93	0.00	20.21	21.54	20.52	0.02	2.0	2.56	1.76	1.71	1.78
3.0	5.49	5.49	5.49	0.01	23.56	24.95	23.88	0.03	3.0	1.84	1.51	1.48	1.52
4.0	5.41	5.40	5.40	0.01	26.04	27.40	26.32	0.01	4.0	1.56	1.40	1.38	1.40
5.0	5.39	5.39	5.40	0.00	27.92	29.26	28.11	0.02	5.0	1.43	1.35	1.33	1.35
6.0	5.40	5.39	5.39	0.00	29.21	30.49	29.42	0.03	6.0	1.35	1.32	1.30	1.32
7.0	5.40	5.40	5.40	0.00	30.18	31.41	30.37	0.05	7.0	1.30	1.30	1.28	1.30
8.0	5.41	5.40	5.40	0.01	30.86	32.05	31.12	0.03	8.0	1.27	1.28	1.27	1.28
9.0	5.41	5.41	5.41	0.00	31.56	32.65	31.70	0.02	9.0	1.25	1.27	1.26	1.27
10.0	5.41	5.40	5.39	0.01	31.73	32.74	31.88	0.02	10.0	1.23	1.26	1.26	1.27
20.0	5.38	5.38	5.38	0.01	32.99	33.46	33.07	0.05	20.0	1.16	1.24	1.23	1.24
30.0	5.35	5.35	5.35	0.01	32.58	32.95	32.66	0.03	30.0	1.13	1.23	1.23	1.23
40.0	5.33	5.32	5.33	0.01	32.17	32.70	32.35	0.06	40.0	1.11	1.22	1.22	1.22
50.0	5.31	5.32	5.31	0.01	32.02	32.38	32.11	0.04	50.0	1.10	1.22	1.22	1.22
100.0	5.28	5.28	5.27	0.01	30.50	31.13	30.93	0.07	100.0	1.07	1.20	1.20	1.20
150.0	5.29	5.29	5.29	0.00	29.63	30.60	30.08	0.17	150.0	1.06	1.19	1.19	1.19
200.0	5.30	5.29	5.30	0.00	28.54	29.75	29.27	0.18	200.0	1.05	1.18	1.18	1.18
250.0	5.32	5.32	5.32	0.00	27.88	29.18	28.66	0.27	250.0	1.05	1.17	1.17	1.17
300.0	5.34	5.33	5.34	0.01	27.02	28.67	28.08	0.33	300.0	1.05	1.16	1.17	1.17
350.0	5.37	5.35	5.37	0.02	26.34	28.28	27.58	0.38	350.0	1.05	1.16	1.17	1.16
400.0	5.40	5.37	5.38	0.03	25.73	28.07	27.15	0.39	400.0	1.06	1.15	1.16	1.16
450.0	5.44	5.40	5.42	0.04	25.05	27.57	26.63	0.52	450.0	1.06	1.15	1.16	1.16
500.0	5.48	5.43	5.46	0.05	24.53	27.25	26.25	0.49	500.0	1.06	1.15	1.17	1.16
550.0	5.51	5.47	5.49	0.05	23.87	26.77	25.76	0.68	550.0	1.07	1.16	1.17	1.16
600.0	5.56	5.51	5.53	0.06	23.37	26.42	25.28	0.64	600.0	1.07	1.16	1.17	1.15
650.0	5.61	5.54	5.56	0.07	22.66	25.87	24.69	0.80	650.0	1.07	1.16	1.17	1.15
700.0	5.66	5.57	5.61	0.09	22.13	25.33	24.11	0.82	700.0	1.07	1.16	1.17	1.15
750.0	5.71	5.61	5.65	0.10	21.48	24.76	23.50	0.93	750.0	1.08	1.17	1.17	1.15
800.0	5.79	5.68	5.71	0.12	20.93	24.22	22.98	1.09	800.0	1.09	1.17	1.18	1.15
850.0	5.84	5.71	5.75	0.13	20.35	23.65	22.34	1.19	850.0	1.11	1.18	1.18	1.14
860.0	5.86	5.71	5.76	0.14	20.22	23.52	22.27	1.20	860.0	1.12	1.18	1.18	1.14
900.0	5.91	5.76	5.80	0.15	19.89	23.24	21.97	1.30	900.0	1.13	1.18	1.19	1.15
960.0	6.02	5.83	5.87	0.18	19.45	22.81	21.50	1.51	960.0	1.16	1.20	1.21	1.15
1020.0	6.10	5.90	5.93	0.20	19.01	22.43	21.17	1.79	1020.0	1.19	1.22	1.22	1.16
1080.0	6.21	5.98	5.99	0.23	18.75	22.34	20.98	2.04	1080.0	1.21	1.25	1.24	1.17
1140.0	6.30	6.04	6.06	0.26	18.64	22.28	20.90	2.41	1140.0	1.24	1.28	1.27	1.19
1200.0	6.43	6.14	6.14	0.29	18.59	22.49	20.92	2.84	1200.0	1.28	1.31	1.29	1.20
1260.0	6.54	6.22	6.22	0.32	18.52	22.52	20.73	3.21	1260.0	1.32	1.33	1.32	1.22
1320.0	6.68	6.30	6.32	0.38	18.33	22.27	20.25	3.74	1320.0	1.38	1.34	1.33	1.23
1380.0	6.88	6.48	6.46	0.42	17.86	21.46	19.27	4.27	1380.0	1.47	1.35	1.34	1.23
1440.0	7.16	6.72	6.70	0.46	17.00	19.93	17.81	4.96	1440.0	1.58	1.34	1.34	1.24
1500.0	7.46	6.98	6.97	0.49	15.93	18.31	16.20	5.59	1500.0	1.72	1.32	1.32	1.22

¹ Total Loss = Insertion Loss + 4.8dB Splitter Loss

3 Way-0° Power Splitter/Combiner

SYPS-ED12377/2

Typical Performance Curves



REV. X2
SYPS-ED12377/2
100707
Page 1 of 1



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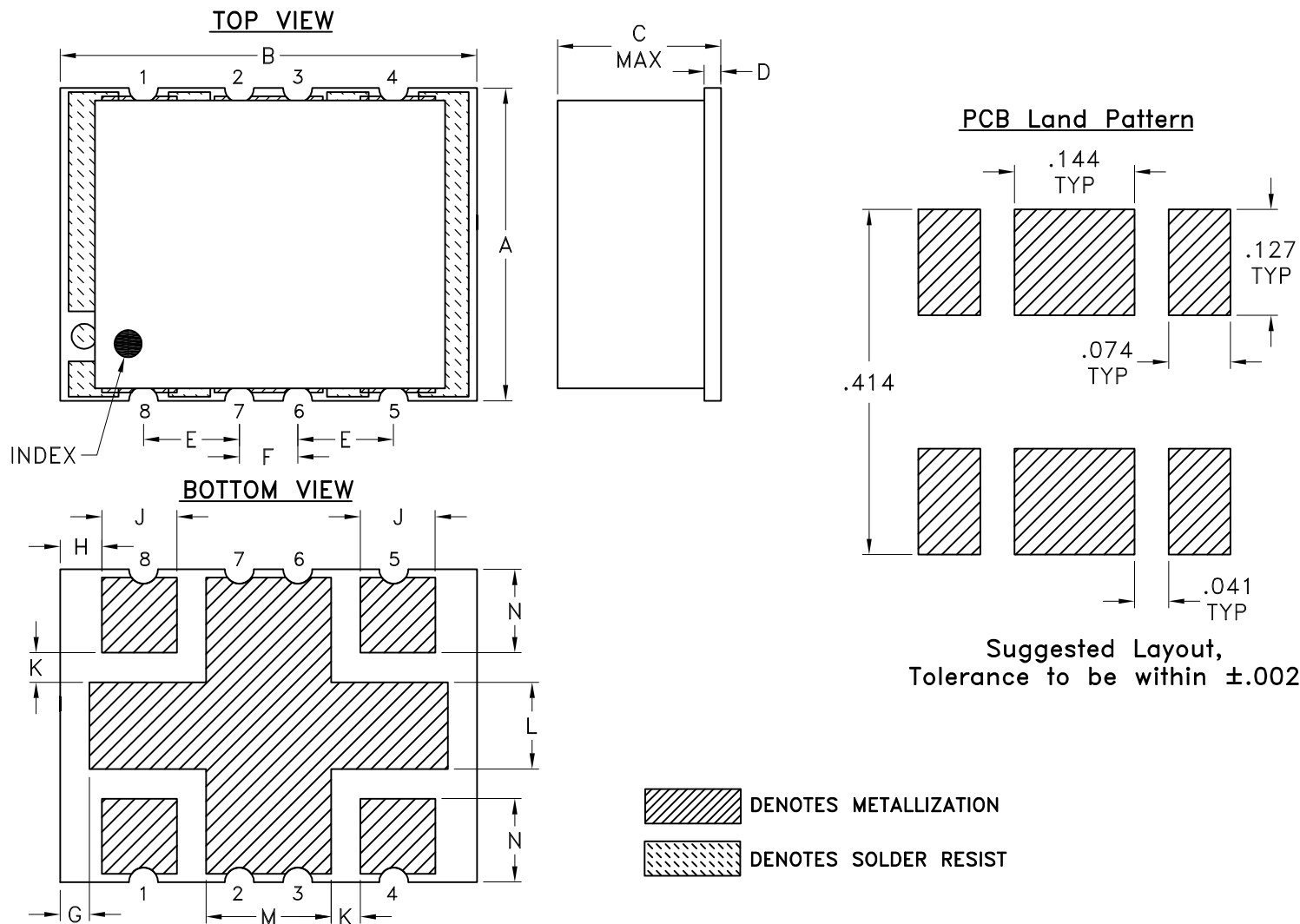
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Outline Dimensions

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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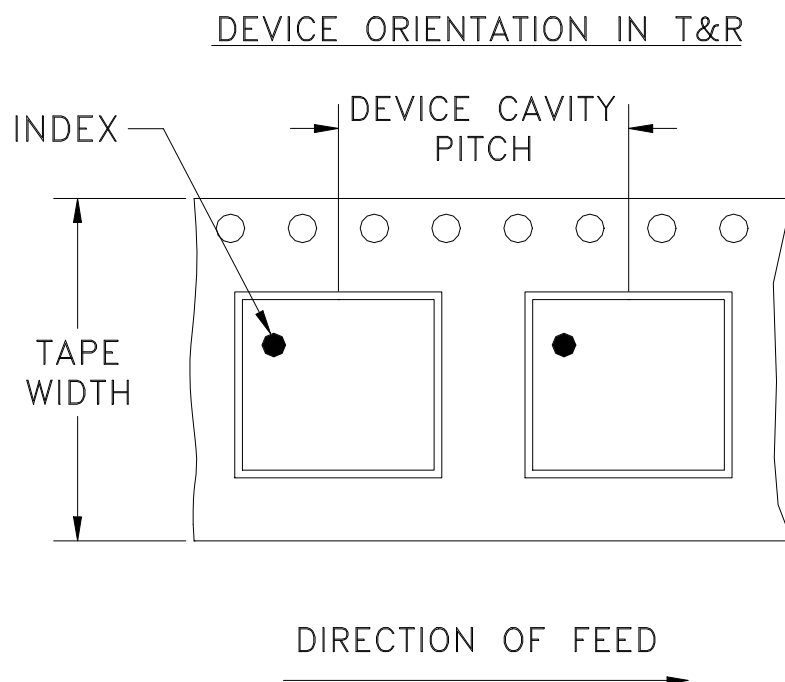
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Tape & Reel Packaging TR-F61



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
24	12	13	200

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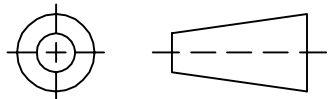
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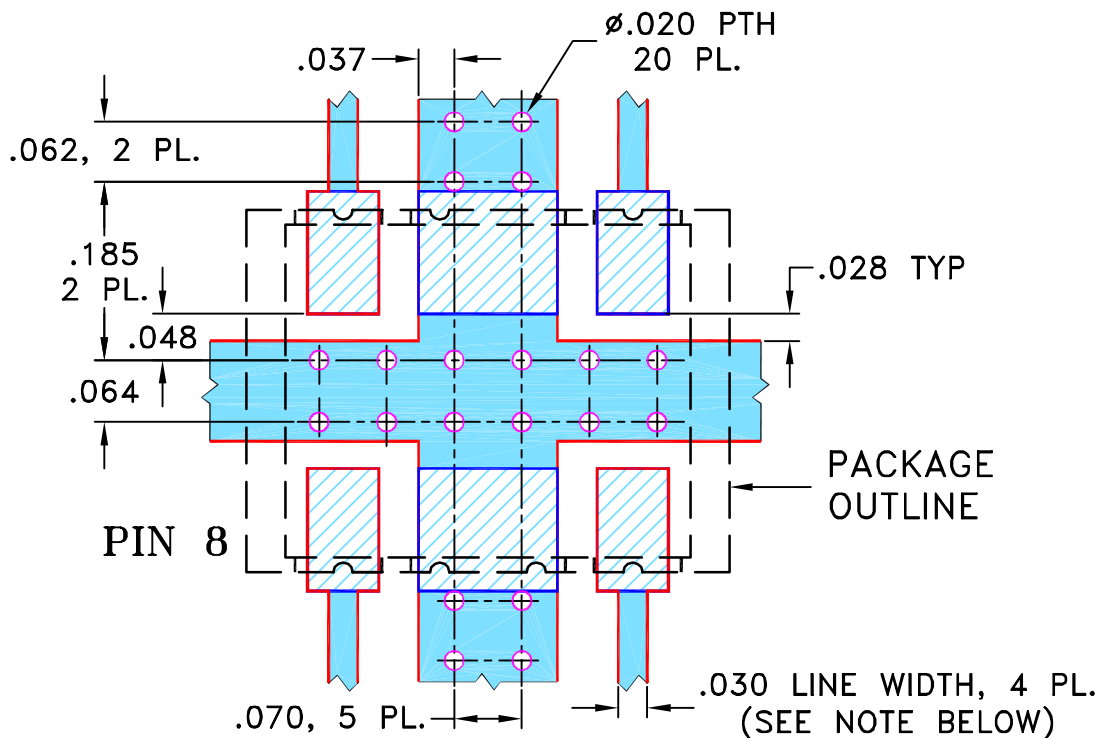
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M101377	NEW RELEASE	10/18/05	MMG	HY
A	M102713	ADDED "...WITH SMOBC"	01/12/06	GT	IL

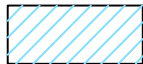
**SUGGESTED MOUNTING CONFIGURATION
FOR AH202 CASE STYLE, "rd" PIN CONNECTION.**

**NOTE:**

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

10/17/05

CHECKED

IL

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APPROVED

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PL, rd, 75, AH202, SYPS-3, TB-361

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SIZE
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15542

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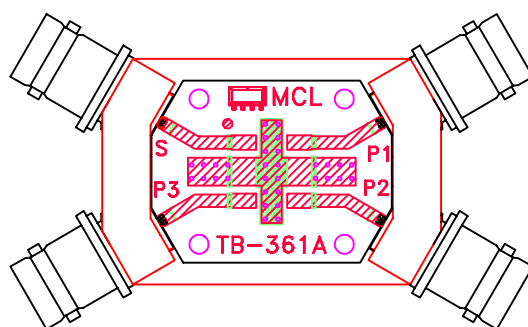
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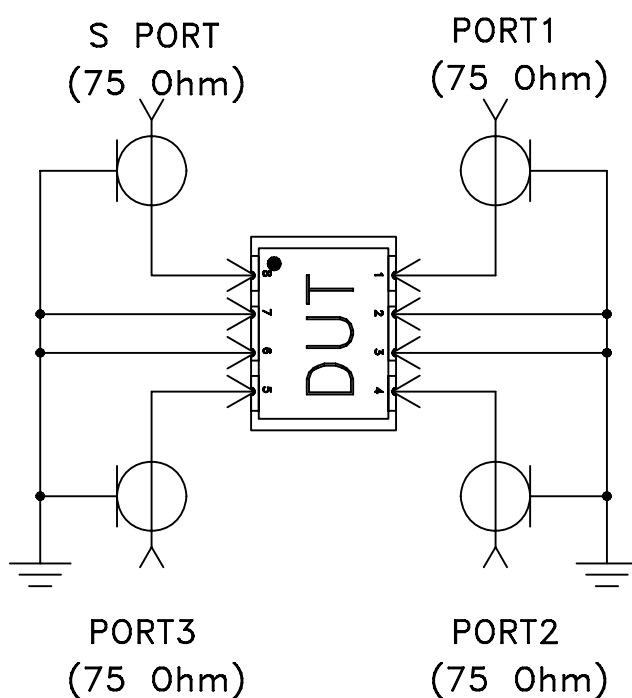
SCALE: 5:1

SHEET: 1 OF 1

Evaluation Board and Circuit



TB-361



Schematic Diagram

Notes:

1. 75 Ohm BNC-type Female connectors.
2. PCB Material: Rogers R04350 or its equivalent, Dielectric Constant=3.5, Thickness=.060"

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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