

Engineering Development Model

Power Splitter/Combiner

2 Way-0°

SYPS-ED12877/3

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 : AH202-2

ELECTRICAL SPECIFICATIONS 75Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		1		3000 MHz
Isolation	1 - 10 MHz		17	dB
	10 - 1500 MHz		23	dB
	1500 - 3000 MHz		19	dB
Insertion Loss Above 3.0 dB	1 - 10 MHz		0.50	dB
	10 - 1500 MHz		0.60	dB
	1500 - 3000 MHz		1.50	dB
Phase Unbalance	1 - 10 MHz		0.010	deg.
	10 - 1500 MHz		0.444	deg.
	1500 - 3000 MHz		0.713	deg.
Amplitude Unbalance	1 - 10 MHz		0.000	dB
	10 - 1500 MHz		0.044	dB
	1500 - 3000 MHz		0.076	dB
VSWR	SUM Port		1.27	(:1)
	OUT Ports		1.40	(:1)

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

Functional Diagram



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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	1	2
0.3	4.10	4.10	0.00	10.36	0.02	0.3	1.46	3.14	3.14
0.5	3.89	3.89	0.00	11.11	0.02	0.5	1.30	2.69	2.69
1.0	3.68	3.68	0.00	12.48	0.00	1.0	1.18	2.25	2.25
2.0	3.53	3.53	0.00	14.57	0.00	2.0	1.10	1.88	1.88
3.0	3.48	3.48	0.00	16.17	0.01	3.0	1.08	1.72	1.72
4.0	3.45	3.45	0.00	17.41	0.02	4.0	1.06	1.62	1.62
5.0	3.44	3.44	0.00	18.38	0.01	5.0	1.05	1.57	1.57
6.0	3.43	3.43	0.00	19.15	0.01	6.0	1.05	1.53	1.53
8.0	3.42	3.42	0.00	20.21	0.00	8.0	1.04	1.48	1.48
9.0	3.41	3.42	0.00	20.57	0.02	9.0	1.04	1.47	1.47
10.0	3.41	3.41	0.00	20.85	0.01	10.0	1.04	1.46	1.46
20.0	3.41	3.41	0.00	21.77	0.03	20.0	1.03	1.43	1.43
30.0	3.42	3.42	0.00	21.81	0.04	30.0	1.03	1.43	1.43
40.0	3.43	3.43	0.00	21.77	0.06	40.0	1.03	1.43	1.43
50.0	3.43	3.43	0.00	21.76	0.08	50.0	1.03	1.43	1.43
60.0	3.43	3.43	0.00	21.74	0.07	60.0	1.04	1.43	1.43
80.0	3.44	3.44	0.00	21.76	0.09	80.0	1.04	1.42	1.42
90.0	3.44	3.45	0.00	21.75	0.12	90.0	1.04	1.42	1.42
100.0	3.45	3.45	0.00	21.73	0.14	100.0	1.04	1.42	1.42
150.0	3.46	3.46	0.00	21.75	0.19	150.0	1.05	1.41	1.41
200.0	3.46	3.47	0.00	21.89	0.29	200.0	1.06	1.40	1.40
250.0	3.47	3.48	0.01	22.00	0.30	250.0	1.07	1.40	1.39
300.0	3.47	3.47	0.00	22.15	0.35	300.0	1.08	1.38	1.39
350.0	3.48	3.49	0.01	22.24	0.46	350.0	1.09	1.38	1.38
400.0	3.47	3.50	0.02	22.47	0.46	400.0	1.11	1.37	1.37
450.0	3.50	3.51	0.01	22.50	0.48	450.0	1.11	1.36	1.36
500.0	3.51	3.54	0.03	22.84	0.60	500.0	1.13	1.35	1.35
550.0	3.53	3.57	0.04	22.77	0.49	550.0	1.13	1.34	1.34
600.0	3.56	3.58	0.02	23.23	0.64	600.0	1.15	1.33	1.32
650.0	3.58	3.63	0.06	23.22	0.66	650.0	1.15	1.32	1.32
700.0	3.61	3.66	0.04	23.65	0.58	700.0	1.16	1.31	1.30
750.0	3.62	3.67	0.05	23.92	0.78	750.0	1.16	1.29	1.29
800.0	3.65	3.73	0.08	24.16	0.69	800.0	1.16	1.28	1.28
850.0	3.64	3.70	0.06	24.71	0.74	850.0	1.16	1.27	1.26
900.0	3.66	3.75	0.09	24.88	0.79	900.0	1.15	1.25	1.25
950.0	3.63	3.72	0.09	25.18	0.76	950.0	1.14	1.24	1.24
1000.0	3.63	3.73	0.10	25.59	0.76	1000.0	1.13	1.22	1.22
1500.0	3.88	4.01	0.13	22.49	0.58	1500.0	1.12	1.01	1.03
2000.0	4.15	4.18	0.03	19.17	0.16	2000.0	1.57	1.30	1.29
2500.0	5.28	5.25	0.03	18.75	1.12	2500.0	1.88	1.55	1.44
3000.0	5.07	4.79	0.29	17.00	2.31	3000.0	2.29	1.83	1.52
3040.0	5.58	5.03	0.55	17.59	2.71	3040.0	2.28	1.87	1.52
3060.0	5.66	5.12	0.54	17.22	2.18	3060.0	2.34	1.88	1.53
3080.0	5.79	5.29	0.50	16.91	2.66	3080.0	2.42	1.90	1.54
3100.0	6.10	5.48	0.61	17.09	3.36	3100.0	2.47	1.91	1.55
3140.0	6.58	5.81	0.77	16.90	2.60	3140.0	2.51	1.95	1.55
3160.0	6.77	6.04	0.73	16.58	2.64	3160.0	2.55	1.96	1.56
3180.0	7.14	6.39	0.75	16.59	3.21	3180.0	2.63	1.98	1.57
3200.0	7.48	6.68	0.80	16.35	4.17	3200.0	2.78	1.98	1.57
3240.0	8.12	7.23	0.88	15.88	2.94	3240.0	2.77	2.01	1.61
3260.0	8.59	7.67	0.91	15.81	3.77	3260.0	2.80	2.02	1.62
3280.0	9.14	8.10	1.04	15.63	4.06	3280.0	2.89	2.03	1.63
3300.0	9.55	8.46	1.10	15.28	3.78	3300.0	2.98	2.05	1.64

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

REV. X2

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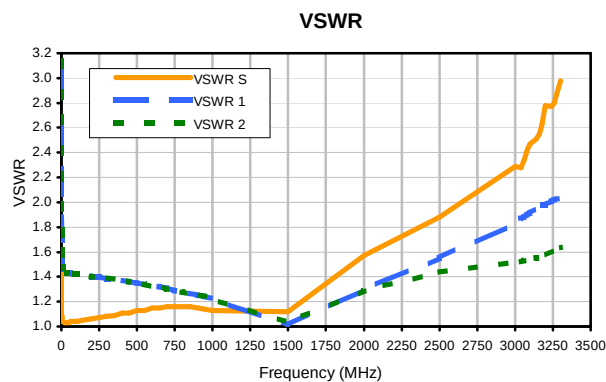
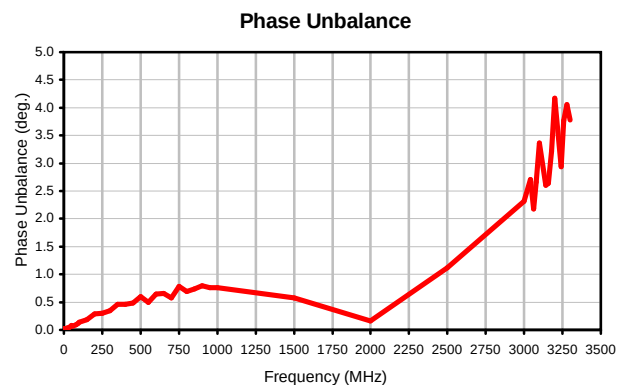
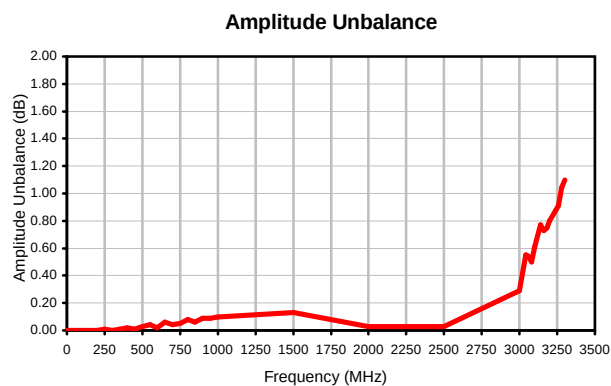
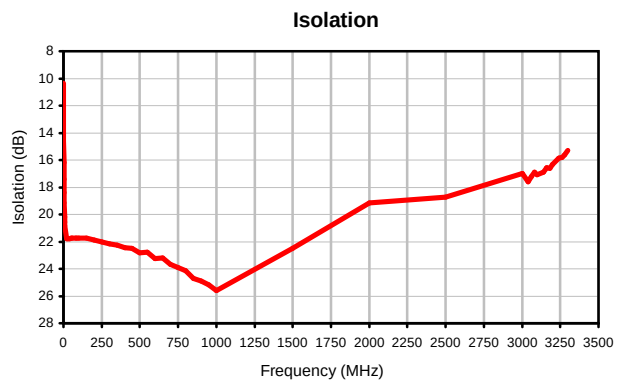
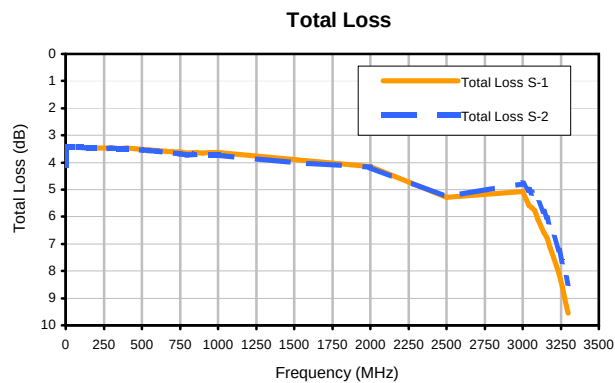
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2 Way-0° Power Splitter/Combiner

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Typical Performance Curves



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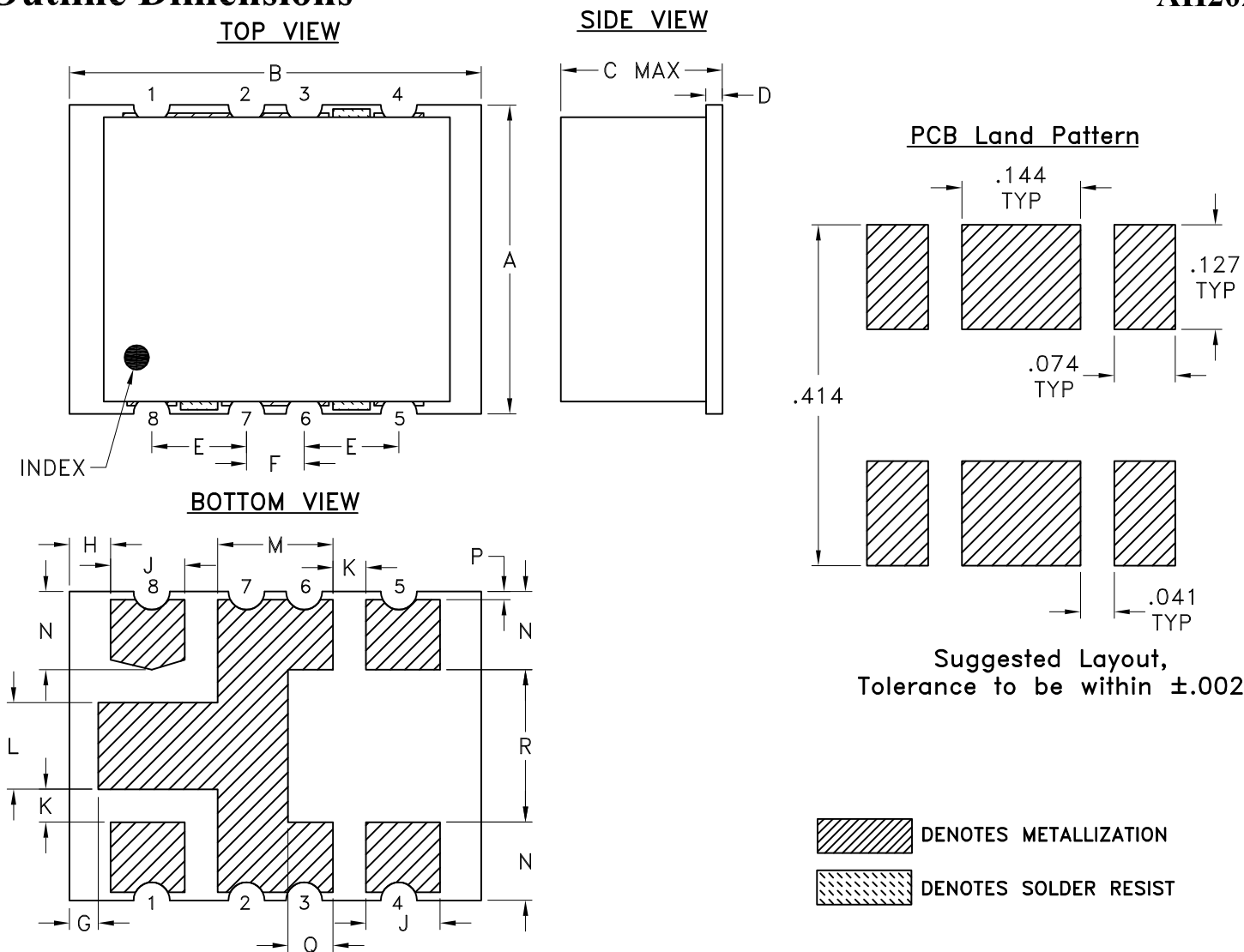
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Outline Dimensions

AH202-2



CASE#	A	B	C	D	E	F	G	H	J	K	L	M	N	P
AH202-2	.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)	.010 (0.25)

CASE#	Q	R	WT, GRAM
AH202-2	.055 (1.40)	.185 (4.70)	.52

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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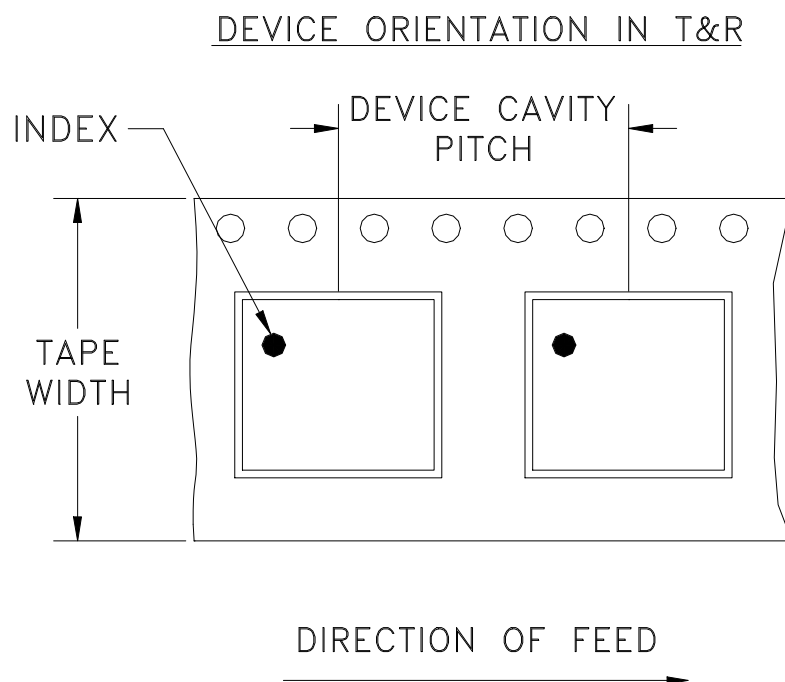
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Tape & Reel Packaging TR-F61



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

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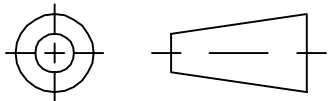
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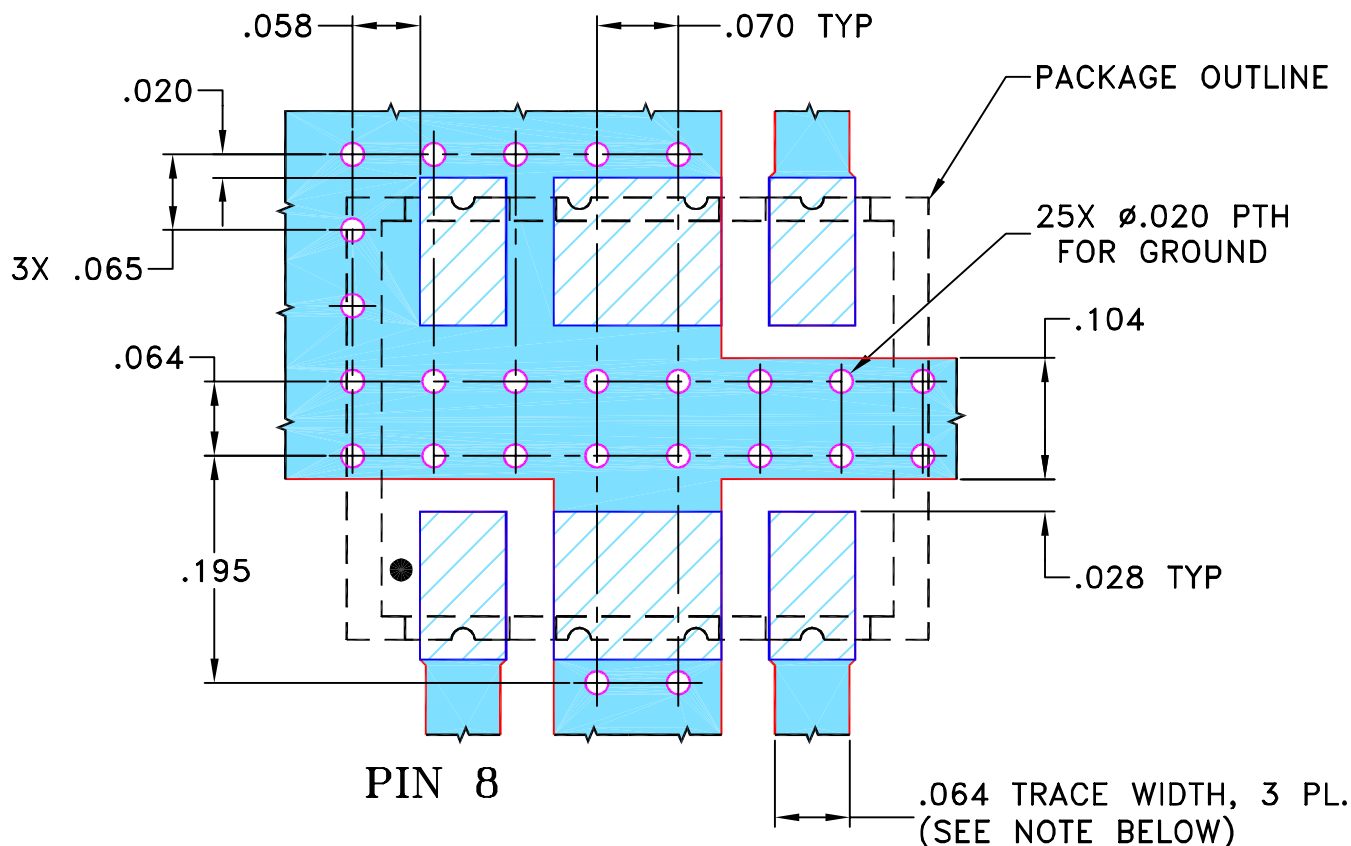
THIRD ANGLE PROJECTION



REVISIONS

REV OR	ECN No.	DESCRIPTION	DATE	DR	AUTH
	M109780	NEW RELEASE	04/17/07	PW	HY

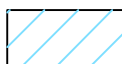
SUGGESTED MOUNTING CONFIGURATION FOR AH202-2 CASE STYLE, "sb" PIN CONNECTION



- NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .060" $\pm$.004"; 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

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DIMENSIONS ARE IN INCHES

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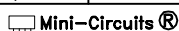
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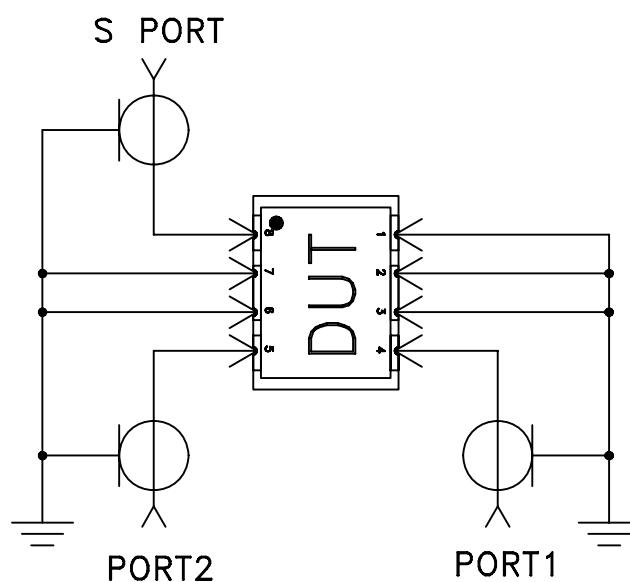
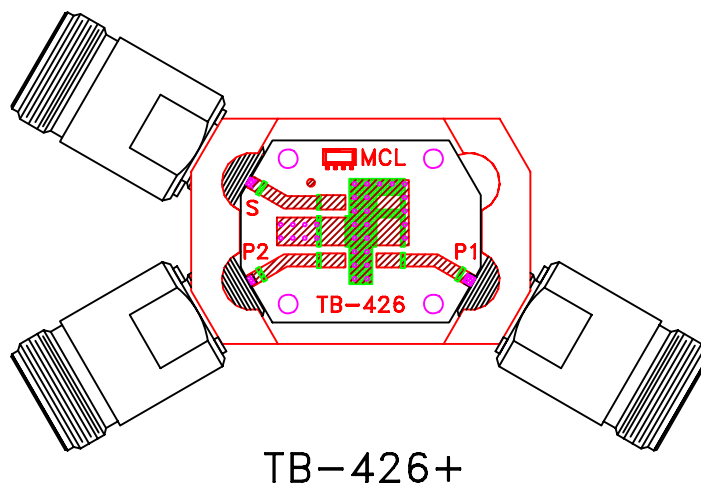
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Evaluation Board and Circuit



Schematic Diagram

Notes:

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

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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