

Engineering Development Model

Power Splitter/Combiner

SBTC-ED12468/1

2 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 : AT790

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		100		2000 MHz
Isolation	100 - 1000 MHz		25	dB
	1000 - 2000 MHz		21	dB
Insertion Loss Above 3.0 dB	100 - 1000 MHz		0.50	dB
	1000 - 2000 MHz		1.00	dB
Phase Unbalance	100 - 1000 MHz		1.129	deg.
	1000 - 2000 MHz		2.418	deg.
Amplitude Unbalance	100 - 1000 MHz		0.174	dB
	1000 - 2000 MHz		0.074	dB
VSWR	SUM Port		1.43	(:1)
	OUT Ports		1.40	(:1)

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

PIN CONNECTIONS	
SUM PORT	6
PORT 1	3
PORT 2	4
GND EXT	1, 2
NOT USED	5

Functional Diagram



2 Way-0° Power Splitter/Combiner

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Typical Performance Data

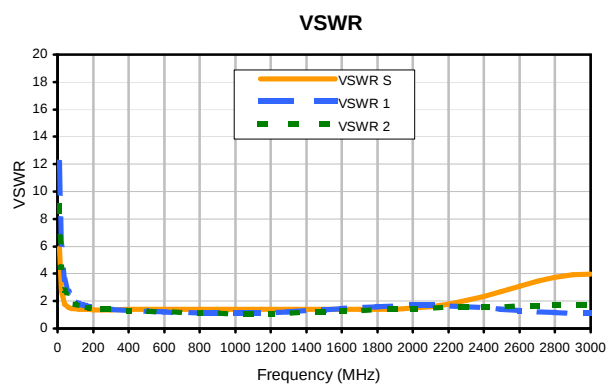
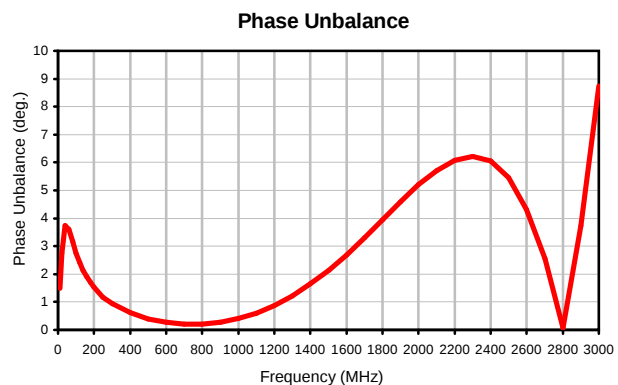
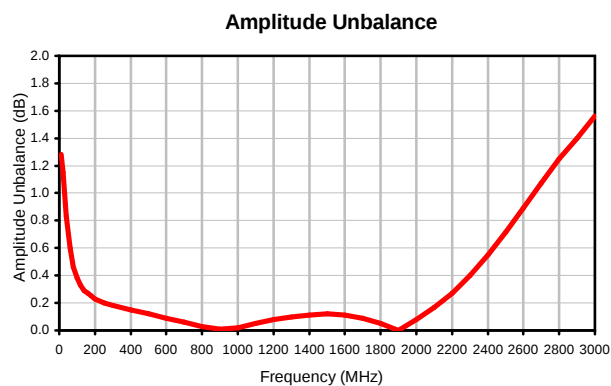
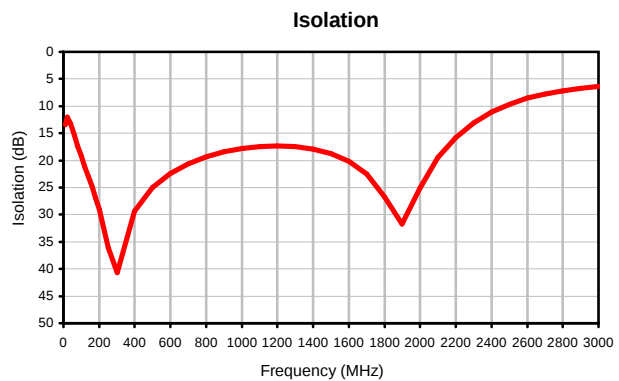
FREQ. (MHz)	TOTAL LOSS ¹ (dB)		AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2					S	1	2
10.00	7.20	5.92	1.28	13.42	1.50	10.00	5.90	12.11	8.91
20.00	5.02	3.87	1.15	11.97	2.75	20.00	2.76	6.10	4.47
40.00	4.10	3.28	0.83	13.20	3.73	40.00	1.79	3.55	2.80
60.00	3.84	3.24	0.60	15.28	3.59	60.00	1.56	2.66	2.23
80.00	3.72	3.26	0.46	17.32	3.16	80.00	1.47	2.23	1.95
100.00	3.66	3.28	0.38	19.23	2.75	100.00	1.43	1.99	1.78
120.00	3.63	3.30	0.33	21.11	2.41	120.00	1.41	1.84	1.68
140.00	3.60	3.31	0.29	22.97	2.14	140.00	1.39	1.74	1.61
160.00	3.59	3.32	0.27	24.86	1.91	160.00	1.38	1.66	1.55
180.00	3.57	3.33	0.25	26.86	1.70	180.00	1.38	1.60	1.51
200.00	3.56	3.33	0.23	29.06	1.53	200.00	1.37	1.56	1.48
250.00	3.54	3.34	0.20	36.10	1.18	250.00	1.37	1.47	1.42
300.00	3.54	3.36	0.18	40.74	0.95	300.00	1.37	1.41	1.38
400.00	3.54	3.39	0.15	29.42	0.61	400.00	1.38	1.33	1.31
500.00	3.54	3.42	0.12	25.00	0.40	500.00	1.39	1.27	1.27
600.00	3.57	3.47	0.09	22.36	0.27	600.00	1.39	1.22	1.23
700.00	3.57	3.51	0.06	20.58	0.20	700.00	1.40	1.17	1.18
800.00	3.59	3.55	0.03	19.33	0.21	800.00	1.40	1.14	1.14
900.00	3.61	3.61	0.01	18.42	0.27	900.00	1.41	1.11	1.11
1000.00	3.64	3.67	0.02	17.80	0.41	1000.00	1.41	1.11	1.08
1100.00	3.68	3.73	0.05	17.42	0.60	1100.00	1.41	1.13	1.06
1200.00	3.72	3.79	0.08	17.29	0.88	1200.00	1.41	1.18	1.07
1300.00	3.76	3.86	0.10	17.42	1.22	1300.00	1.41	1.23	1.11
1400.00	3.82	3.93	0.11	17.88	1.64	1400.00	1.40	1.30	1.16
1500.00	3.89	4.01	0.12	18.72	2.14	1500.00	1.39	1.37	1.22
1600.00	3.97	4.08	0.11	20.15	2.68	1600.00	1.39	1.45	1.27
1700.00	4.07	4.16	0.09	22.52	3.30	1700.00	1.38	1.53	1.33
1800.00	4.20	4.25	0.05	26.75	3.94	1800.00	1.39	1.59	1.38
1900.00	4.36	4.36	0.00	31.68	4.59	1900.00	1.42	1.65	1.43
2000.00	4.58	4.51	0.08	25.13	5.20	2000.00	1.49	1.68	1.47
2100.00	4.88	4.71	0.17	19.49	5.71	2100.00	1.61	1.68	1.50
2200.00	5.27	4.99	0.27	15.76	6.07	2200.00	1.79	1.65	1.53
2300.00	5.76	5.36	0.40	13.08	6.21	2300.00	2.04	1.59	1.55
2400.00	6.38	5.83	0.55	11.10	6.05	2400.00	2.35	1.50	1.58
2500.00	7.10	6.38	0.72	9.63	5.46	2500.00	2.71	1.41	1.60
2600.00	7.90	7.01	0.89	8.54	4.32	2600.00	3.09	1.31	1.62
2700.00	8.76	7.69	1.07	7.74	2.54	2700.00	3.45	1.23	1.64
2800.00	9.65	8.40	1.25	7.16	0.08	2800.00	3.74	1.16	1.66
2900.00	10.53	9.13	1.40	6.72	3.74	2900.00	3.92	1.12	1.67
3000.00	11.43	9.88	1.56	6.39	8.74	3000.00	3.95	1.12	1.68

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

2 Way-0° Power Splitter/Combiner

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Typical Performance Curves



REV. X2
SBTC-ED12468/1
100707
Page 1 of 1



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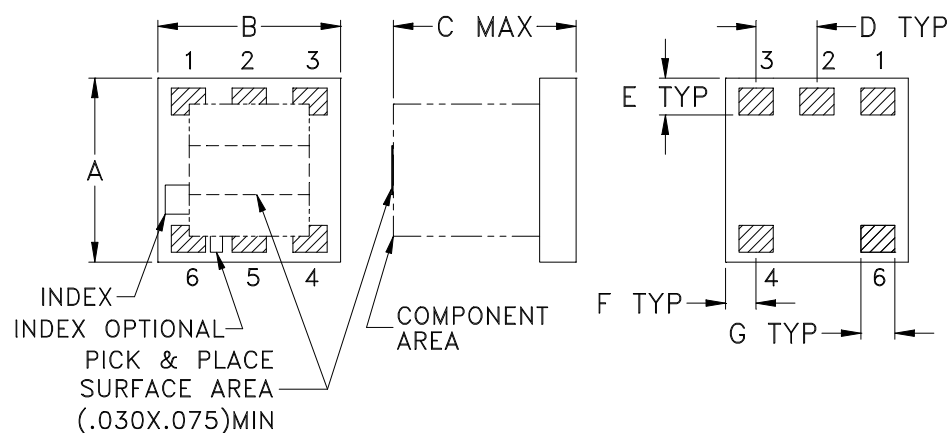
RF/MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661

The Design Engineers Search Engine finds the model you need, instantly • For detailed performance specs & shopping online see

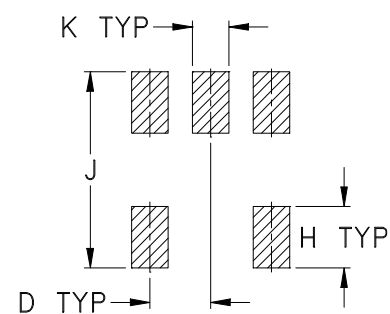


Outline Dimensions

AT790



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
AT790	.150 (3.81)	.150 (3.81)	.150 (3.81)	.050 (1.27)	.030 (0.76)	.025 (0.64)	.028 (0.71)	.050 (1.27)	.160 (4.06)	.030 (0.76)	-- --	.10

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

Notes:

1. Open style, Ceramic base.
2. Termination finish: Silver palladium or gold over nickel based on stock availability.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site

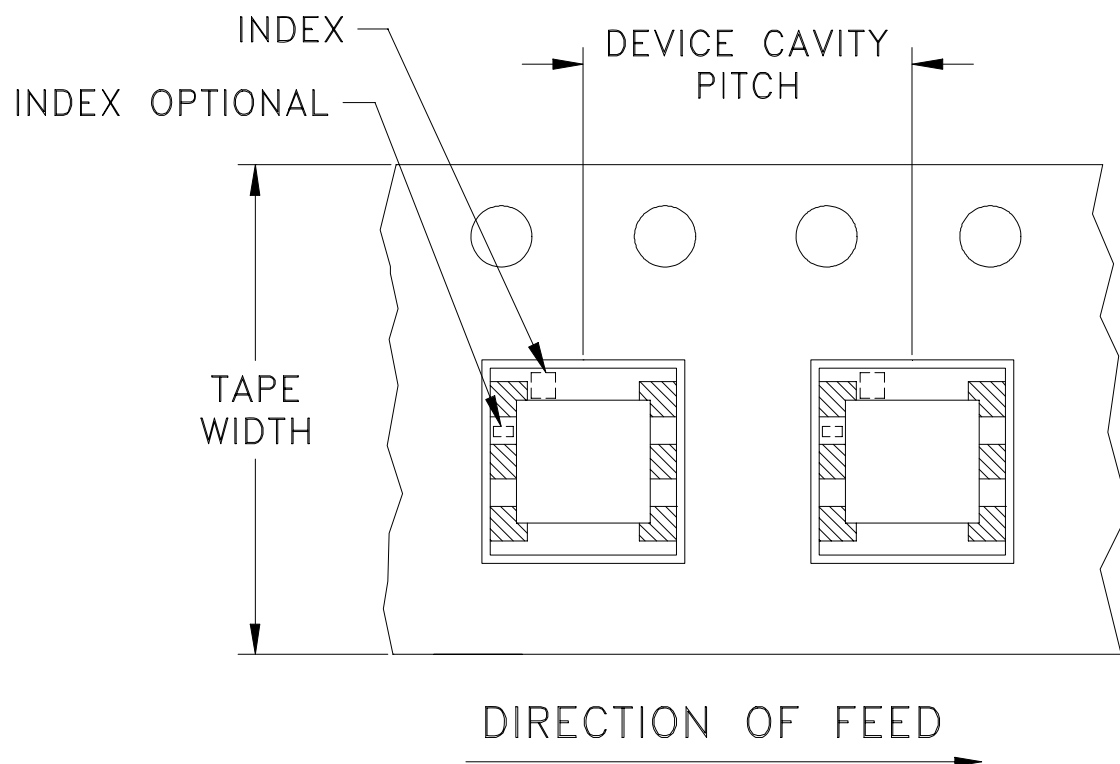


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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F15

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
12	8	7	20
			50
			100
			200
		13	500
			1000
			2000

Note: Please consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf



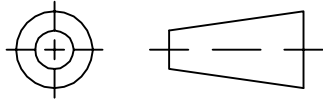
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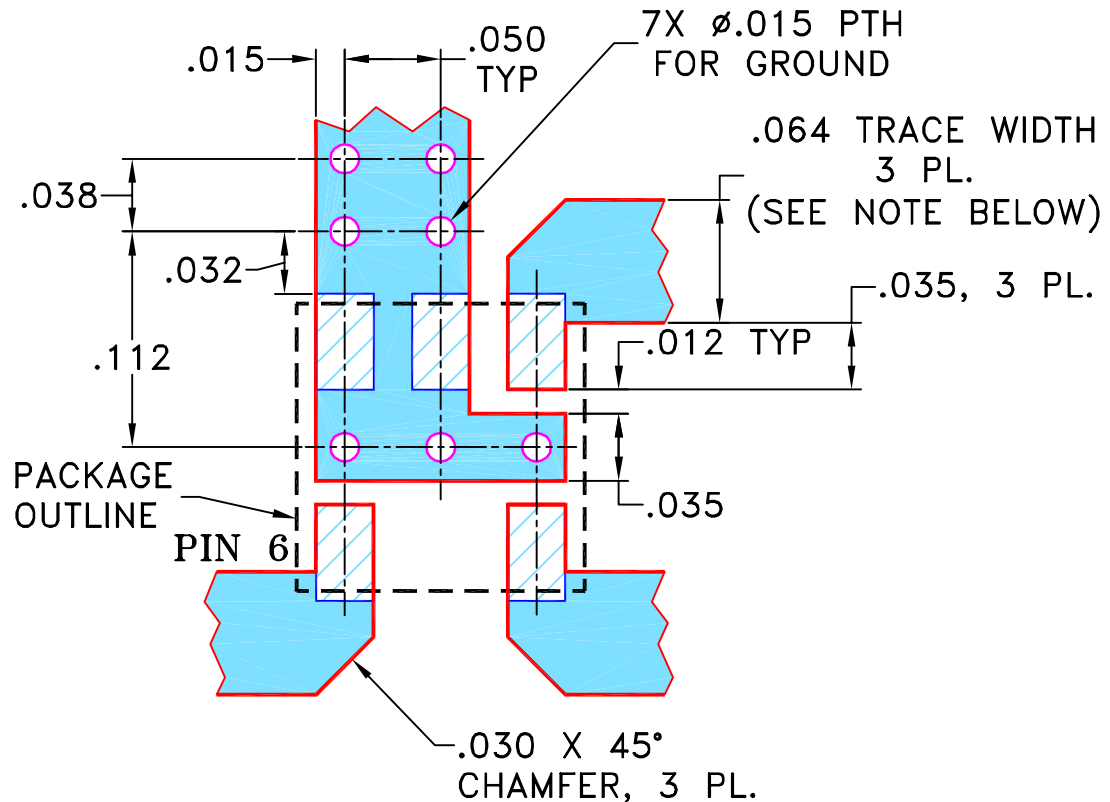
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M76111	NEW RELEASE	04/01	MMG	AD
A	M82377	UPDATED DRAWING	08/06/02	GF	HY
B	M102713	UPDATED DRAWING, DIMENSIONS, NOTES	01/16/06	AV	WP

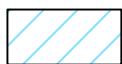
SUGGESTED MOUNTING CONFIGURATION FOR AT790 CASE STYLE, "nc" PIN CONNECTION



- NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS 0.030" $\pm$ 0.002"; 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

MMG

06/06/01

TOLERANCES ON:

CHECKED

CT

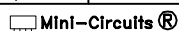
08/16/01

2 PL DECIMALS $\pm$

APPROVED

AD

08/16/01

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

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



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PL, nc, AT790, SBTC, TB-120

SIZE
A

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98-PL-027

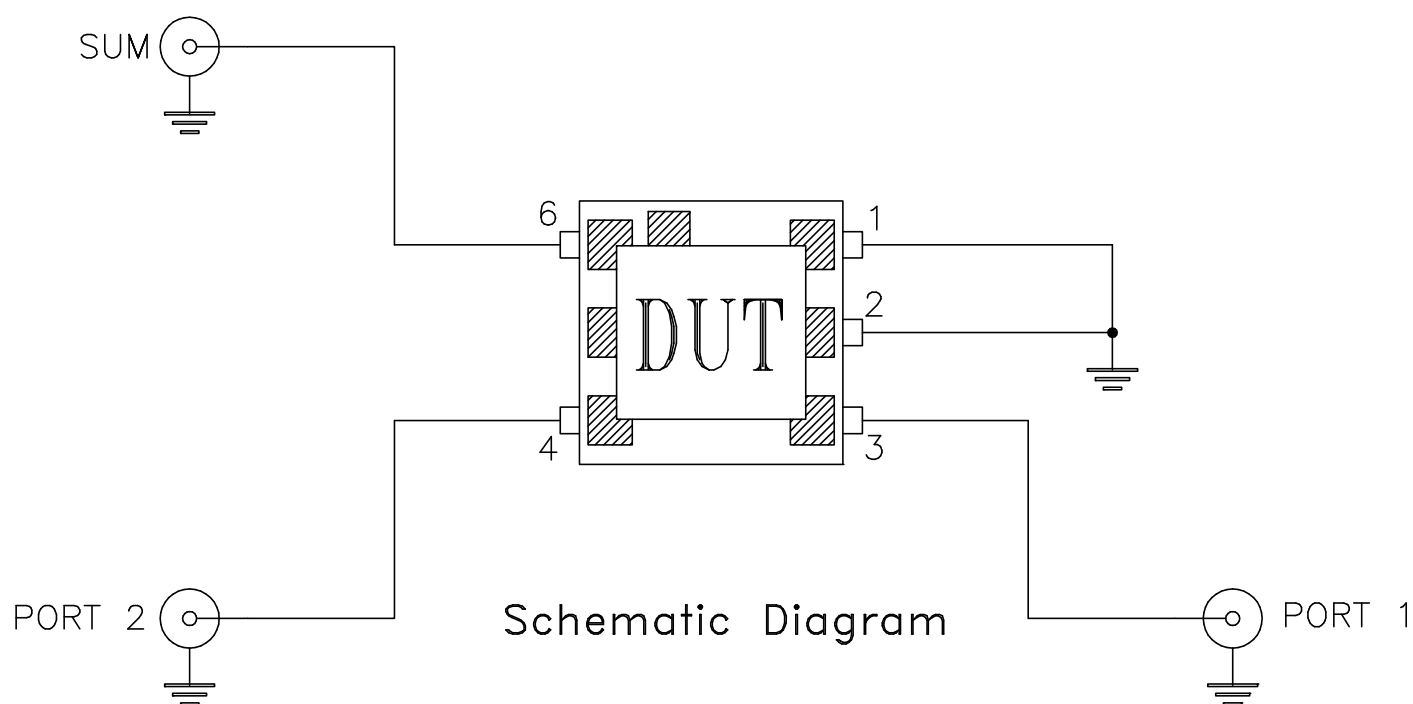
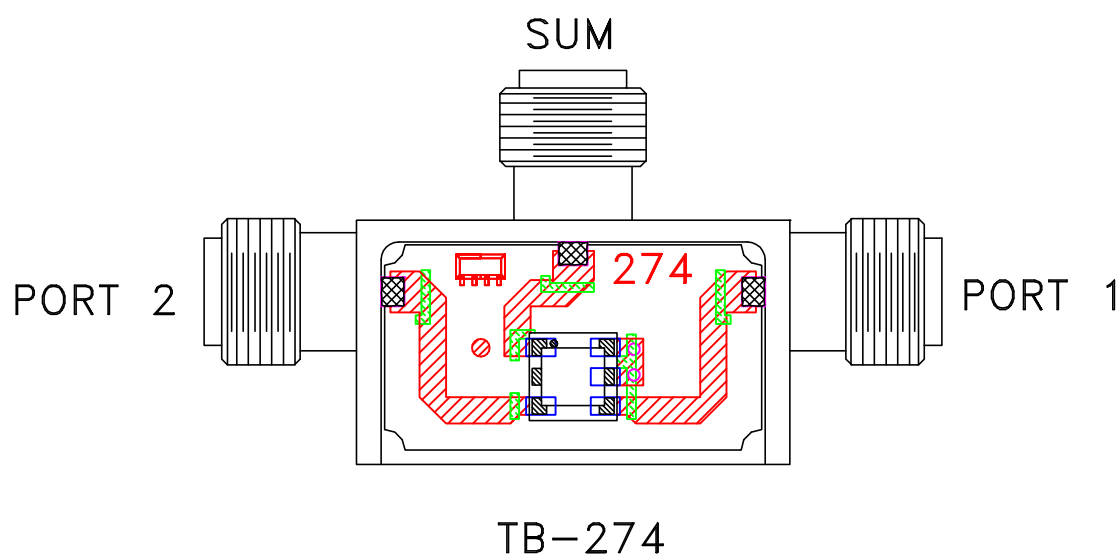
REV:
B

FILE: 98PL027

SCALE: 10:1

SHEET: 1 OF 1

Evaluation Board and Circuit



Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 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