

Engineering Development Model

Power Splitter/Combiner

2 Way-90°

JSPQ-ED11934/1

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.

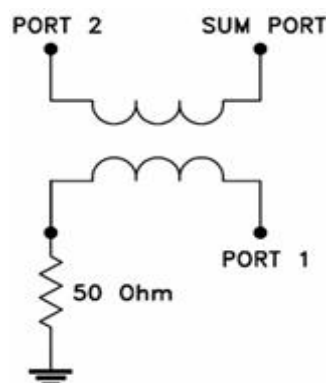


CASE STYLE : 99-01-536

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C				
Parameter		Min.	Typ.	Max. Units
Frequency		40		480 MHz
Isolation	40 - 480 MHz		14	
Insertion Loss				
Average of Coupled Outputs	40 - 480 MHz		0.90	
above 3.0 dB				
Phase Unbalance	40 - 480 MHz		94.754	
				deg.
Amplitude Unbalance	40 - 480 MHz		0.682	
				dB
VSWR	SUM Port		1.25	
	OUT Ports		1.45	
				(:1)
				(:1)

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

Functional Diagram



2 Way-90° Power Splitter/Combiner

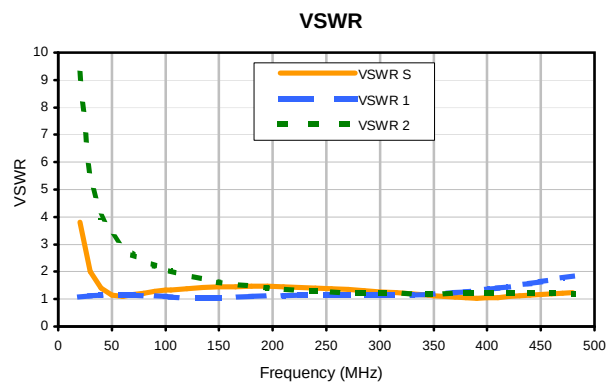
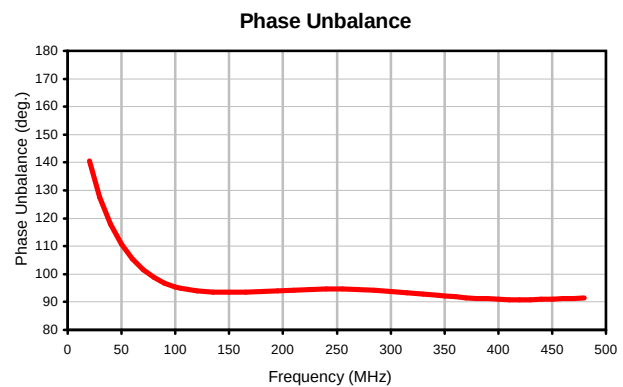
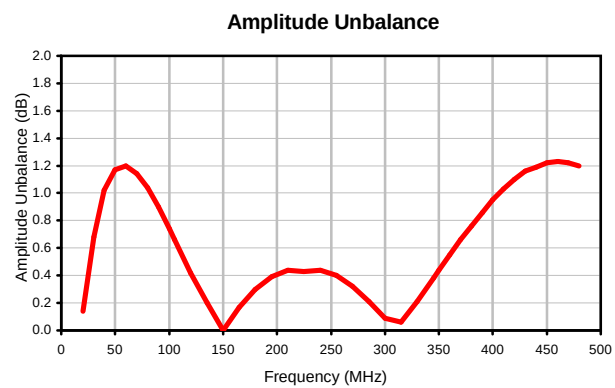
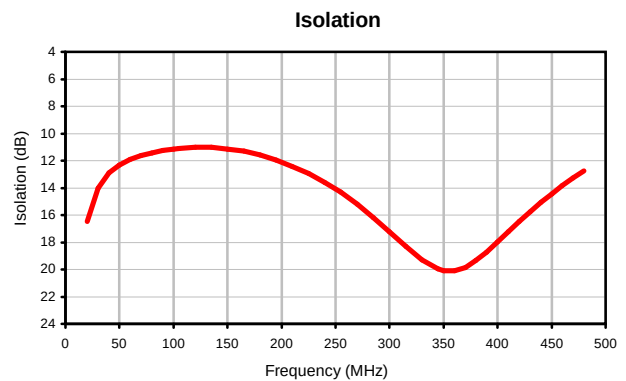
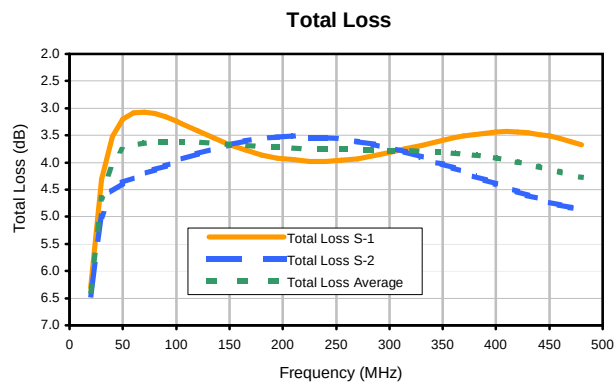
JSPQ-ED11934/1

Typical Performance Data

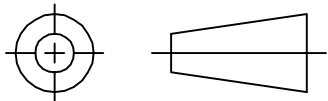
FREQ. (MHz)	TOTAL LOSS ¹ (dB)			AMP. UNBAL. (dB)	ISOLATION (dB)	PHASE UNBAL. (deg.)	FREQ. (MHz)	VSWR (:1)		
	S-1	S-2	AVG.					S	1	2
20.0	6.30	6.44	6.37	0.14	16.48	140.63	20.0	3.82	1.07	9.24
30.0	4.31	4.99	4.65	0.68	14.02	127.38	30.0	2.01	1.11	5.35
40.0	3.52	4.54	4.03	1.02	12.91	117.74	40.0	1.40	1.14	3.99
50.0	3.20	4.37	3.79	1.17	12.31	110.64	50.0	1.15	1.15	3.32
60.0	3.08	4.28	3.68	1.20	11.92	105.40	60.0	1.09	1.15	2.91
70.0	3.07	4.21	3.64	1.14	11.64	101.58	70.0	1.16	1.14	2.62
80.0	3.10	4.13	3.62	1.04	11.43	98.79	80.0	1.22	1.13	2.41
90.0	3.16	4.06	3.61	0.90	11.27	96.81	90.0	1.28	1.11	2.23
100.0	3.24	3.98	3.61	0.74	11.15	95.44	100.0	1.33	1.09	2.09
105.0	3.28	3.94	3.61	0.66	11.10	94.94	105.0	1.34	1.08	2.03
120.0	3.41	3.84	3.63	0.42	11.02	93.94	120.0	1.39	1.06	1.86
135.0	3.55	3.74	3.65	0.20	11.03	93.51	135.0	1.42	1.05	1.73
150.0	3.67	3.67	3.67	0.00	11.13	93.44	150.0	1.45	1.05	1.62
165.0	3.77	3.60	3.69	0.17	11.31	93.56	165.0	1.46	1.07	1.54
180.0	3.86	3.56	3.71	0.30	11.58	93.80	180.0	1.47	1.09	1.47
195.0	3.92	3.53	3.73	0.39	11.95	94.07	195.0	1.47	1.11	1.41
210.0	3.95	3.51	3.73	0.44	12.40	94.30	210.0	1.45	1.13	1.36
225.0	3.98	3.54	3.76	0.43	12.96	94.40	225.0	1.43	1.14	1.32
240.0	3.98	3.54	3.76	0.44	13.58	94.77	240.0	1.41	1.15	1.28
255.0	3.96	3.56	3.76	0.40	14.32	94.67	255.0	1.38	1.15	1.26
270.0	3.93	3.61	3.77	0.32	15.19	94.49	270.0	1.35	1.15	1.24
285.0	3.88	3.66	3.77	0.21	16.17	94.22	285.0	1.31	1.15	1.23
300.0	3.82	3.73	3.78	0.09	17.23	93.83	300.0	1.27	1.15	1.21
315.0	3.75	3.81	3.78	0.06	18.32	93.35	315.0	1.23	1.15	1.21
330.0	3.69	3.90	3.80	0.21	19.30	92.86	330.0	1.19	1.15	1.20
345.0	3.61	4.00	3.81	0.38	19.97	92.35	345.0	1.14	1.17	1.20
350.0	3.59	4.03	3.81	0.44	20.09	92.17	350.0	1.13	1.18	1.20
360.0	3.55	4.10	3.83	0.55	20.11	91.86	360.0	1.10	1.20	1.20
370.0	3.51	4.17	3.84	0.66	19.85	91.58	370.0	1.07	1.23	1.21
380.0	3.48	4.25	3.87	0.76	19.36	91.35	380.0	1.04	1.27	1.21
390.0	3.46	4.32	3.89	0.86	18.72	91.15	390.0	1.03	1.31	1.21
400.0	3.44	4.39	3.92	0.95	17.98	90.99	400.0	1.04	1.35	1.22
410.0	3.43	4.47	3.95	1.03	17.22	90.89	410.0	1.06	1.40	1.22
420.0	3.44	4.54	3.99	1.10	16.47	90.86	420.0	1.09	1.45	1.22
430.0	3.45	4.61	4.03	1.16	15.76	90.88	430.0	1.11	1.51	1.22
440.0	3.48	4.67	4.08	1.19	15.08	90.96	440.0	1.14	1.57	1.22
450.0	3.51	4.73	4.12	1.22	14.44	91.06	450.0	1.16	1.64	1.21
460.0	3.56	4.78	4.17	1.23	13.84	91.18	460.0	1.19	1.71	1.21
470.0	3.62	4.83	4.23	1.22	13.29	91.34	470.0	1.22	1.78	1.20
480.0	3.68	4.88	4.28	1.20	12.77	91.49	480.0	1.24	1.85	1.19

¹ Total Loss = Insertion Loss + 3dB Splitter Loss

Typical Performance Curves



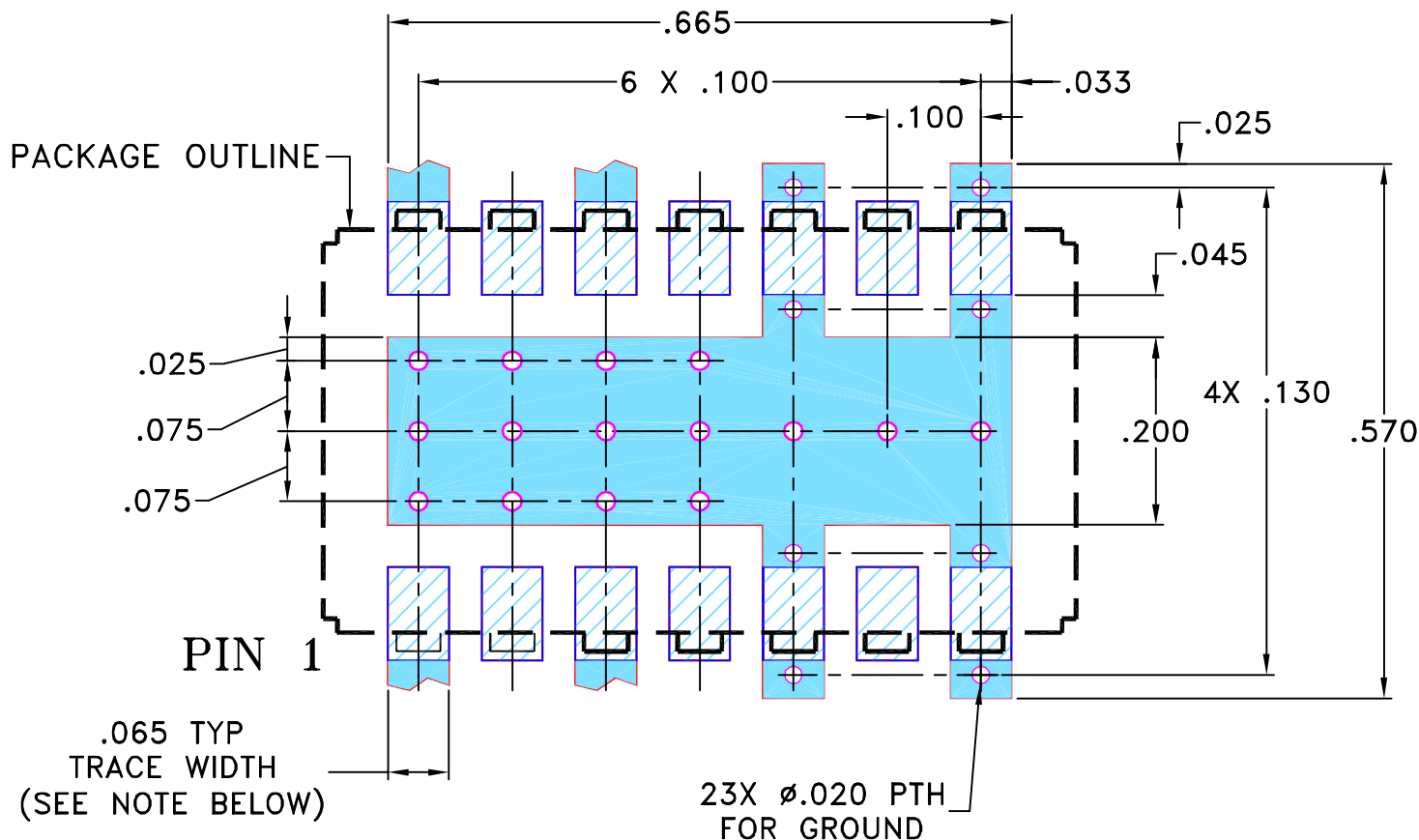
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82272	NEW RELEASE	08/05/02	MMG	DJ
A	M102713	MODIFIED PATTERN, UPDATED DIM, NOTES, ADDED "...WITH SMOBC"	01/16/06	GT	IL

**SUGGESTED MOUNTING CONFIGURATION
FOR BK276 CASE STYLE, "lu" PIN CONNECTION**

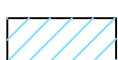
**NOTES:**

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

TOLERANCES ON:

2 PL DECIMALS ±

3 PL DECIMALS ± .005

ANGLES ±

FRACTIONS ±

DRAWN

MMG

07/18/02

CHECKED

HY

08/01/02

APPROVED

DJ

08/05/02



Mini-Circuits® 13 Neptune Avenue
Brooklyn NY 11235

PL, lu, BK276, JSPQ, TB-59

SIZE

A

CODE IDENT

15542

DRAWING NO:

98-PL-061

REV:

A

FILE:

98PL061

SCALE:

5:1

SHEET:

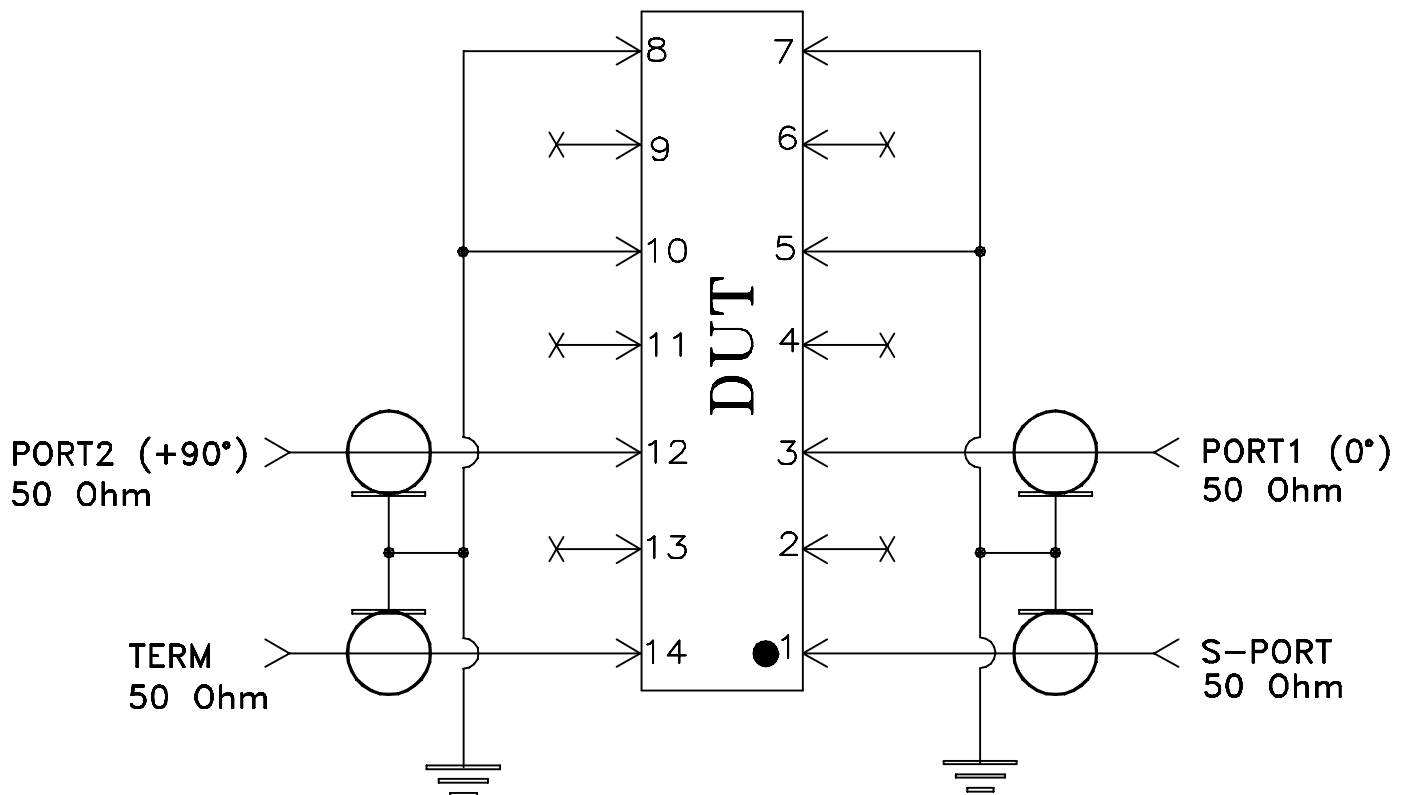
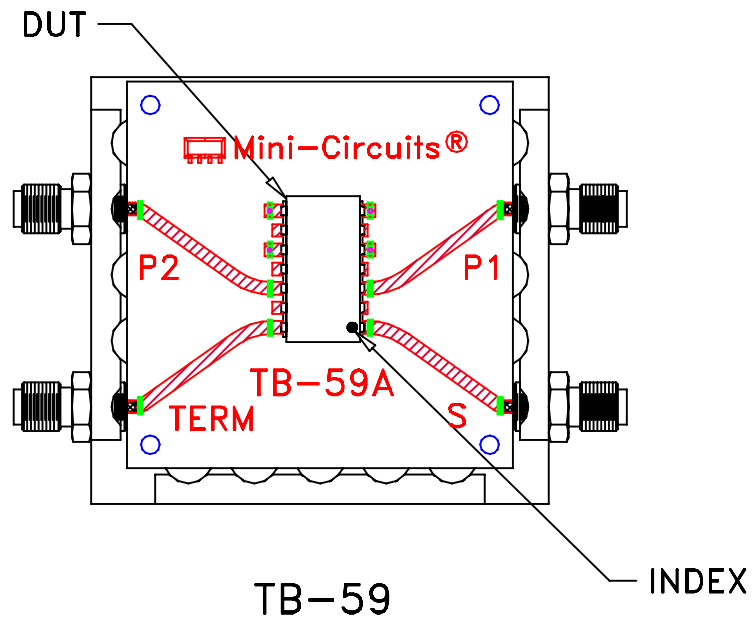
1 OF 1

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

Evaluation Board and Circuit



Schematic Diagram

Notes:

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

 **Mini-Circuits®**



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	-55° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
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
Moisture Resistance	10 cycles, 24 hours per cycle	MIL-STD-202, Method 106, Condition A, except 50°C and end point electrical test done within 12 hours
Solderability	10X Magnification	J-STD-002, 95% Coverage
Resistance to Solder Heat	260°C for 10 seconds	MIL-STD-202, Method 210, Condition B
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
Terminal Strength	4 1/2 Pound Pull	MIL-STD-202, Method 211, Condition A



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Specification	Test/Inspection Condition	Reference/Spec
Gross Leak	125°C Bubble Test	MIL-STD-202, Method 112, Condition D
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D