Engineering Development Model

Power Splitter/Combiner JS4PS-ED14695/1

4 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: BJ360

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		10		700	MHz
Isolation	**10-100 MHz**		26		dB
	100-350 MHz		32		dB
	350-700 MHz		32		dB
Insertion Loss Above 6.0 dB	**10-100 MHz**		0.50		dB
	100-350 MHz		0.50		dB
	350-700 MHz		0.75		dB
Phase Unbalance	**10-100 MHz**		0.10		deg.
	100-350 MHz		0.15		deg.
	350-700 MHz		0.40		deg.
Amplitude Unbalance	**10-100 MHz**		0.01		dB
	100-350 MHz		0.05		dB
	350-700 MHz		0.15		dB
VSWR	**SUM Port**		1.20		(:1)
	OUT Ports		1.25		(:1)

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

electrical schematic

PIN CONNECTIONS	
SUM PORT	2
PORT 1	8
PORT 2	7
PORT 3	6
PORT 4	5
GROUND	1,3,4

4 Way-0° Power Splitter/Combiner JS4PS-ED14695/1

Typical Performance Data

FREQ. (MHz)	TOTAL LOSS[1] (dB)				AMP. UNBAL. (dB)	ISOLATION (dB)			PHASE UNBAL. (deg.)
	S-1	S-2	S-3	S-4		1-2	2-3	3-4	
10.0	6.55	6.54	6.55	6.54	0.01	23.63	30.94	23.39	0.02
20.0	6.53	6.52	6.53	6.52	0.01	25.54	33.52	25.41	0.04
30.0	6.51	6.50	6.51	6.51	0.01	26.36	34.51	26.24	0.05
40.0	6.49	6.49	6.50	6.49	0.01	26.91	35.11	26.77	0.06
50.0	6.48	6.48	6.48	6.48	0.01	27.32	35.55	27.17	0.07
60.0	6.47	6.47	6.48	6.47	0.01	27.62	35.83	27.47	0.08
70.0	6.47	6.47	6.48	6.47	0.01	27.85	36.04	27.70	0.08
80.0	6.47	6.47	6.47	6.47	0.01	28.03	36.16	27.88	0.09
90.0	6.46	6.46	6.47	6.46	0.01	28.17	36.21	28.04	0.10
100.0	6.46	6.46	6.47	6.46	0.01	28.28	36.21	28.16	0.10
125.0	6.47	6.47	6.47	6.47	0.01	28.50	36.08	28.39	0.12
150.0	6.47	6.47	6.48	6.47	0.01	28.67	35.79	28.59	0.13
175.0	6.48	6.48	6.49	6.48	0.01	28.84	35.47	28.76	0.13
200.0	6.49	6.50	6.50	6.48	0.02	29.05	35.13	28.96	0.13
225.0	6.50	6.51	6.51	6.49	0.02	29.29	34.80	29.19	0.13
250.0	6.51	6.52	6.52	6.49	0.02	29.57	34.51	29.45	0.14
275.0	6.52	6.53	6.53	6.50	0.03	29.94	34.25	29.77	0.13
300.0	6.53	6.54	6.54	6.50	0.04	30.38	34.02	30.18	0.13
325.0	6.54	6.56	6.56	6.51	0.05	30.93	33.85	30.65	0.12
350.0	6.55	6.57	6.57	6.52	0.06	31.59	33.74	31.21	0.11
375.0	6.57	6.59	6.58	6.53	0.06	32.41	33.68	31.89	0.13
400.0	6.58	6.61	6.59	6.53	0.07	33.43	33.67	32.69	0.12
425.0	6.60	6.62	6.61	6.54	0.08	34.64	33.74	33.57	0.13
450.0	6.61	6.65	6.63	6.55	0.09	36.03	33.85	34.48	0.15
475.0	6.63	6.67	6.66	6.57	0.10	37.37	34.05	35.19	0.18
490.0	6.64	6.68	6.67	6.57	0.11	37.84	34.19	35.38	0.21
500.0	6.65	6.69	6.68	6.58	0.11	37.93	34.31	35.37	0.23
510.0	6.66	6.71	6.69	6.59	0.12	37.71	34.44	35.20	0.24
520.0	6.67	6.72	6.70	6.59	0.12	37.24	34.57	34.88	0.28
530.0	6.68	6.73	6.72	6.60	0.13	36.55	34.71	34.44	0.29
540.0	6.69	6.75	6.73	6.61	0.14	35.71	34.86	33.89	0.34
550.0	6.70	6.76	6.74	6.62	0.14	34.77	35.04	33.24	0.36
575.0	6.74	6.80	6.78	6.65	0.16	32.36	35.48	31.43	0.44
600.0	6.77	6.85	6.83	6.68	0.17	30.09	35.88	29.56	0.53
625.0	6.82	6.90	6.88	6.72	0.19	28.03	36.14	27.75	0.64
650.0	6.87	6.97	6.95	6.77	0.20	26.18	36.09	26.05	0.76
675.0	6.94	7.05	7.03	6.83	0.22	24.50	35.64	24.48	0.88
700.0	7.01	7.14	7.12	6.90	0.24	22.97	34.72	23.03	1.04

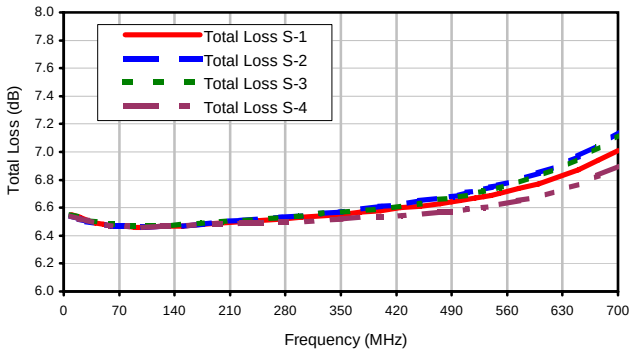
FREQ. (MHz)	VSWR (:1)					
	S	1	2	3	4
10.0	1.22	1.55	1.55	1.55	1.55
20.0	1.15	1.38	1.38	1.38	1.38
30.0	1.13	1.33	1.33	1.33	1.33
40.0	1.11	1.30	1.30	1.30	1.30
50.0	1.10	1.27	1.27	1.27	1.27
60.0	1.09	1.26	1.26	1.26	1.26
70.0	1.09	1.24	1.24	1.25	1.25
80.0	1.08	1.23	1.23	1.23	1.24
90.0	1.08	1.23	1.23	1.23	1.23
100.0	1.07	1.22	1.22	1.22	1.22
125.0	1.06	1.21	1.21	1.20	1.20
150.0	1.06	1.20	1.20	1.20	1.19
175.0	1.05	1.19	1.19	1.19	1.19
200.0	1.04	1.18	1.18	1.18	1.18
225.0	1.04	1.18	1.18	1.18	1.18
250.0	1.04	1.18	1.18	1.18	1.17
275.0	1.04	1.17	1.18	1.17	1.17
300.0	1.04	1.17	1.18	1.17	1.16
325.0	1.06	1.17	1.18	1.17	1.16
350.0	1.07	1.17	1.18	1.17	1.16
375.0	1.09	1.17	1.18	1.17	1.16
400.0	1.11	1.17	1.18	1.18	1.16
425.0	1.14	1.17	1.19	1.18	1.17
450.0	1.16	1.18	1.20	1.19	1.17
475.0	1.20	1.19	1.20	1.20	1.18
490.0	1.22	1.19	1.21	1.20	1.18
500.0	1.23	1.19	1.22	1.21	1.19
510.0	1.25	1.20	1.22	1.21	1.19
520.0	1.26	1.20	1.22	1.22	1.19
530.0	1.28	1.21	1.23	1.22	1.20
540.0	1.30	1.21	1.24	1.23	1.20
550.0	1.31	1.22	1.24	1.24	1.21
575.0	1.36	1.23	1.26	1.25	1.23
600.0	1.42	1.25	1.28	1.27	1.24
625.0	1.48	1.27	1.30	1.29	1.27
650.0	1.55	1.30	1.33	1.32	1.29
675.0	1.63	1.32	1.36	1.35	1.32
700.0	1.72	1.35	1.39	1.38	1.35

[1]Total Loss = Insertion Loss + 6dB Splitter Loss

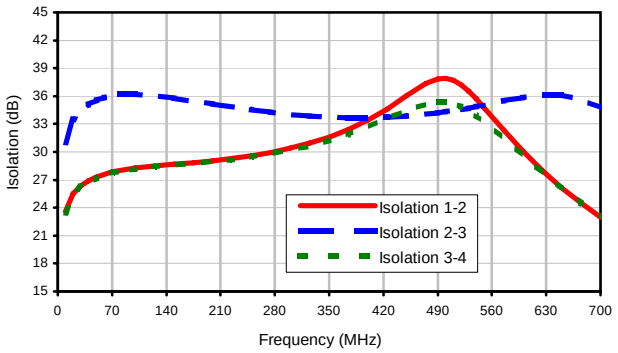
4 Way-0° Power Splitter/Combiner JS4PS-ED14695/1

Typical Performance Curves

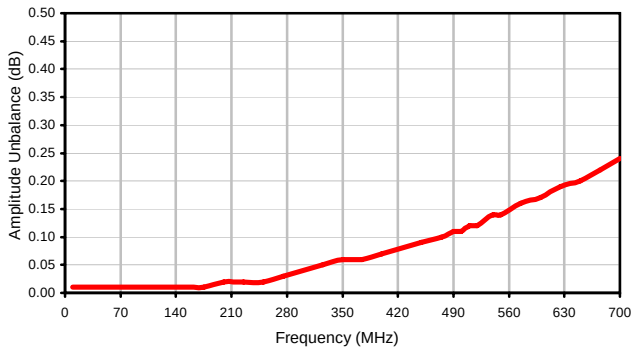
Total Loss



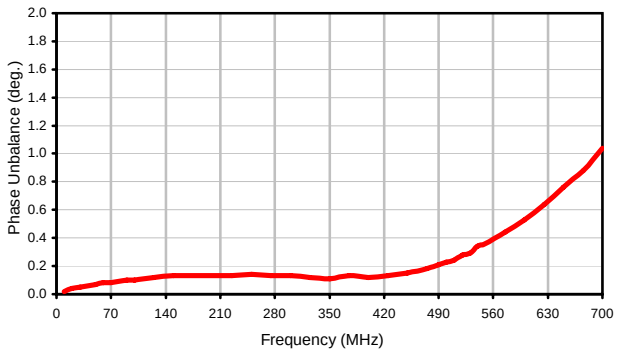
Isolation



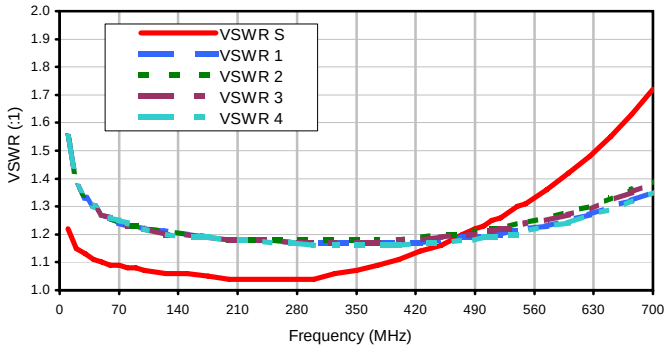
Amplitude Unbalance



Phase Unbalance



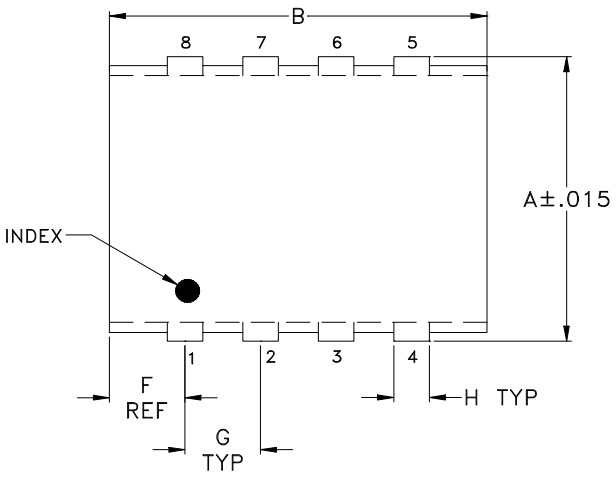
VSWR

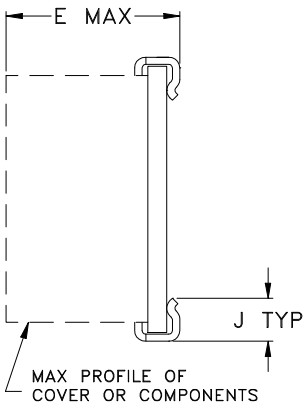


Case Style BJ

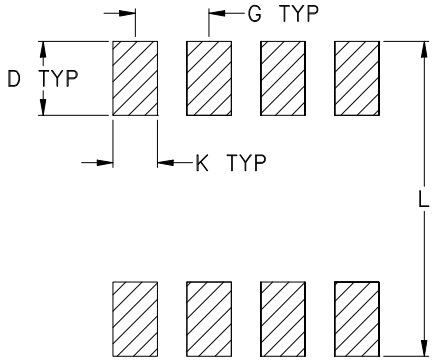
BJ360

Outline Dimensions





PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
BJ360	.450 (11.43)	.800 (20.32)	-- --	.100 (2.54)	.250 (6.35)	.100 (2.54)	.200 (5.08)	.047 (1.19)	.065 (1.65)	.065 (1.65)	.480 (12.19)	1.7

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

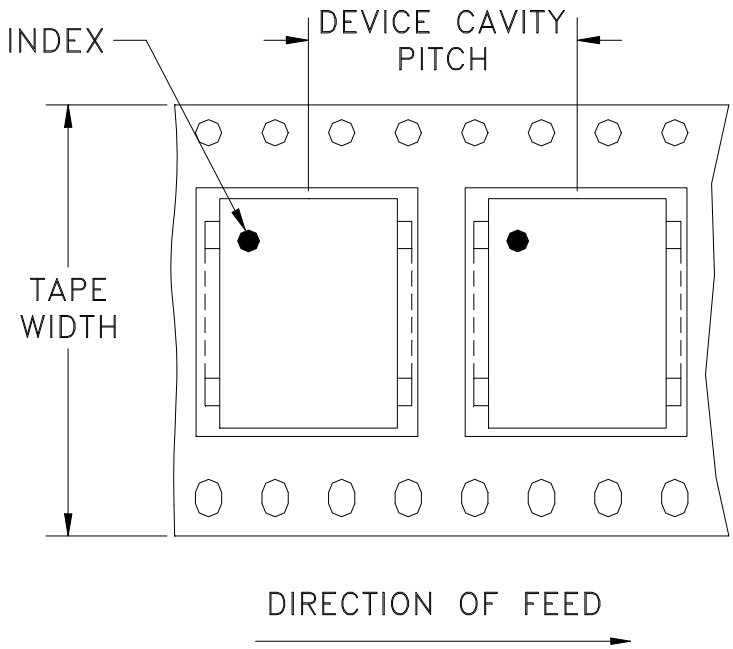
Notes:
1. Case material: Nickel-Silver alloy.
2. Base material: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

Tape & Reel Packaging TR-F5

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
32	16	13	500

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

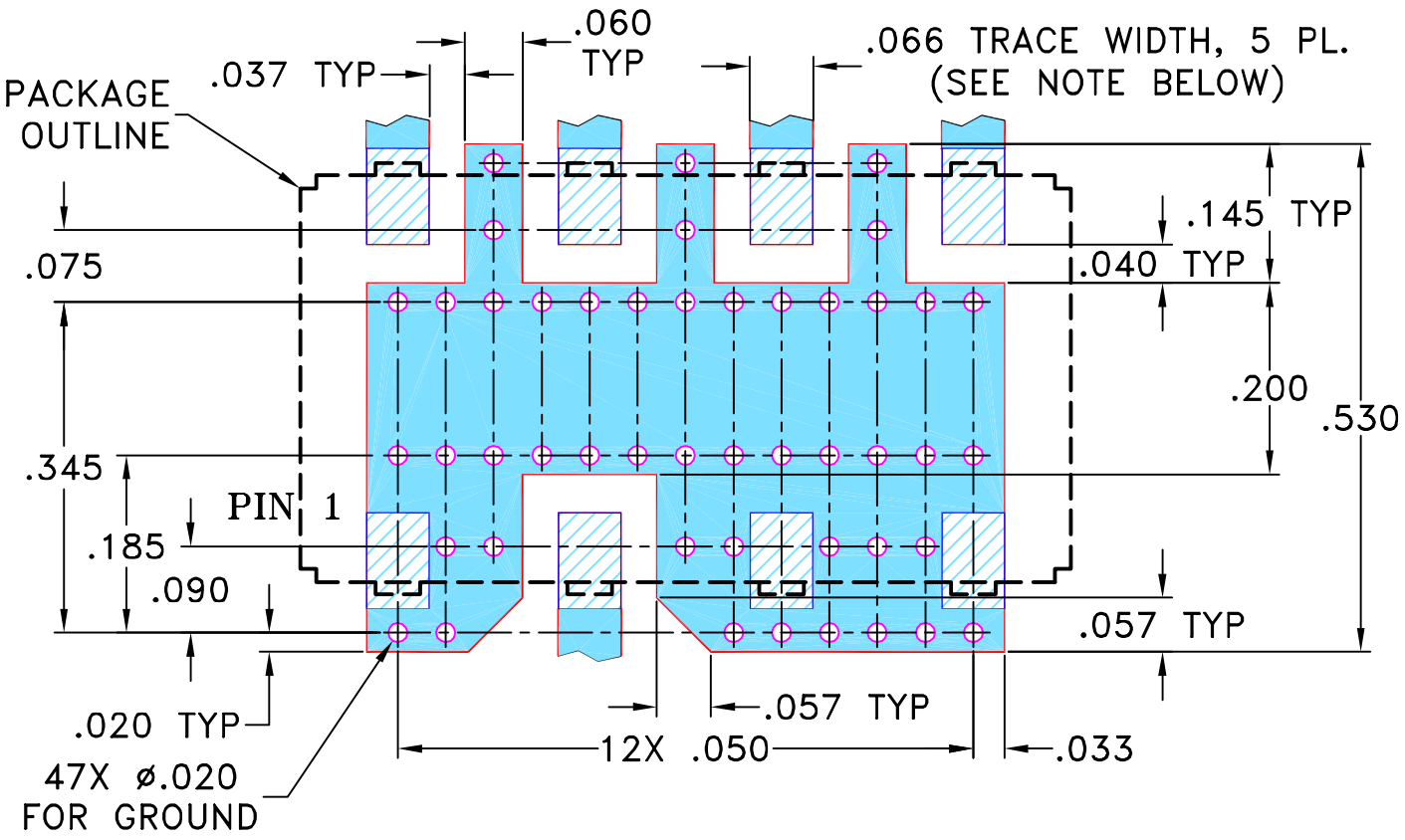
Mini-Circuits®
INTERNET http://www.minicircuits.com
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
Distribution Centers NORTH AMERICA 800-654-7949 • 417-335-5935 • Fax 417-335-5945 • EUROPE 44-1252-832600 • Fax 44-1252-837010
Mini-Circuits ISO 9001 & ISO 14001 Certified

This document and its contents are the property of Mini-Circuits.

THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M82548	NEW RELEASE	11/15/02	MMG	HY
A	M102713	ADDED "...WITH SMOBC"	01/14/06	GF	IL

SUGGESTED MOUNTING CONFIGURATION FOR BJ360 CASE STYLE, "kb" PIN CONNECTION



NOTES: 1.TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" ± 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	09/11/02
TOLERANCES ON:	CHECKED	AV	11/14/02
2 PL DECIMALS ±	APPROVED	HY	11/15/02
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

Mini-Circuits®

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS. EXCEPT FOR USE EXPRESSLY GRANTED, IN WRITING, TO ITS VENDORS, VENDEE AND THE UNITED STATES GOVERNMENT, MINI-CIRCUITS RESERVES ALL PROPRIETARY DESIGN, USE , MANUFACTURING AND REPRODUCTION RIGHTS THERETO. THESE CONTENTS SHALL NOT BE USED, DUPLICATED OR DISCLOSED TO ANY OUTSIDE PARTY, IN WHOLE OR IN PART, WITHOUT WRITTEN PERMISSION OF MINI-CIRCUITS.

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

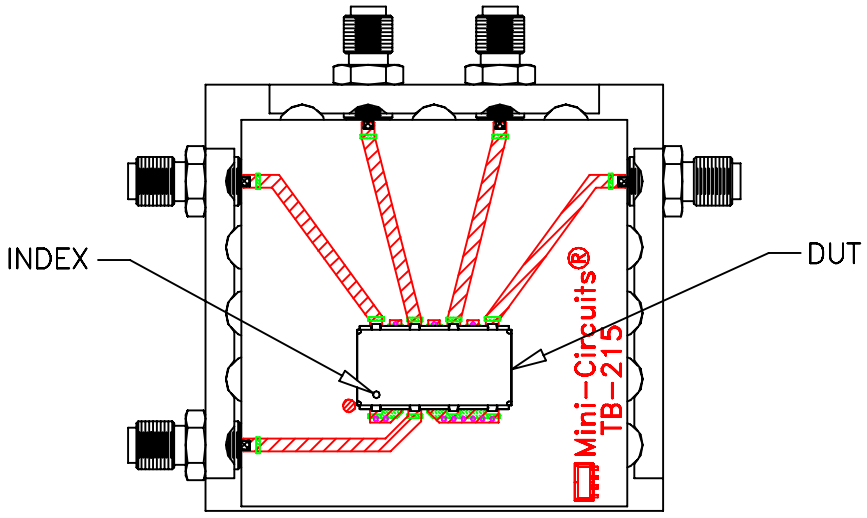
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, kb, BJ360, JS4PS, TB-215

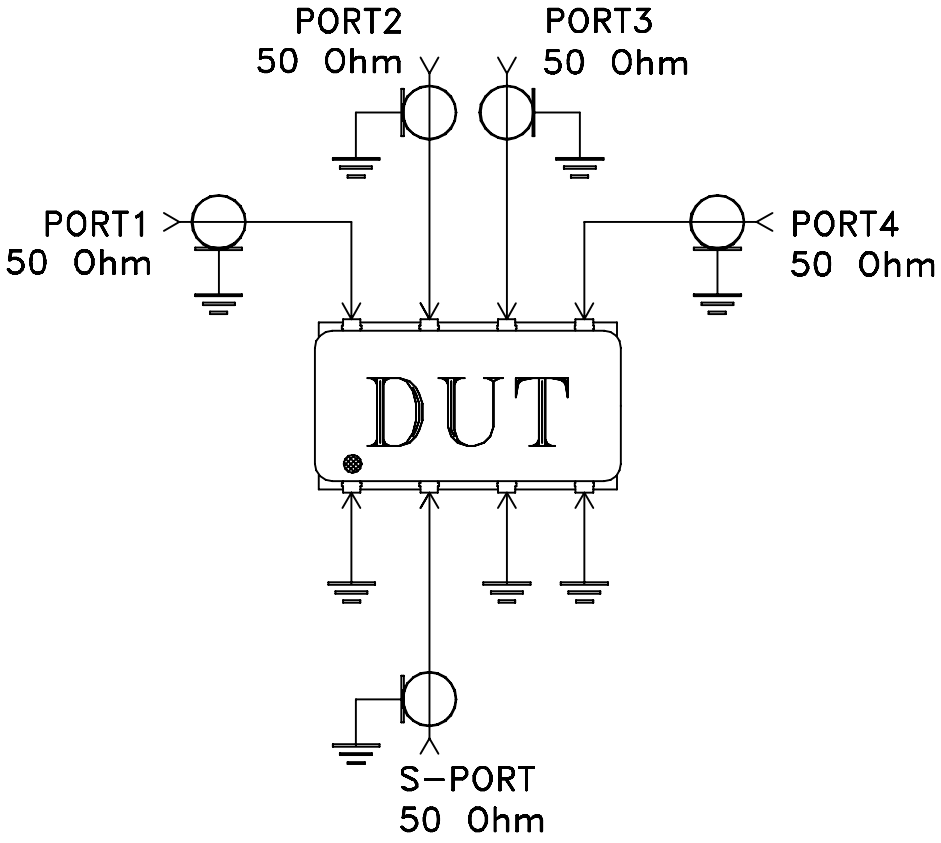
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-101	A

FILE:	SCALE:	SHEET:
98PL101	5:1	1 OF 1

Evaluation Board and Circuit



TB-215



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.

Mini-Circuits®

THIS DOCUMENT AND ITS CONTENTS ARE THE PROPERTY OF MINI-CIRCUITS.

Mini-Circuits

Environmental Specifications ENV02T1

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

This document and its contents are the property of Mini-Circuits.