

2 Way-0° 50Ω 5500 to 6500 MHz

CASE STYLE F·FV1206-1

Operating Temperature -55°C to 100°C

Storage Temperature	-55°C to 100°C
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Power Input (as a splitter)	4W* max.
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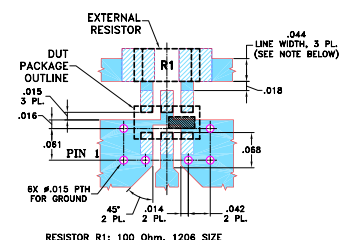
*Derate linearly to 1.3W at 100°C ambient, power input as combiner is limited by rating of external 100Ω Resistor.

Permanent damage may occur if any of these limits are exceeded

SUM PORT	2
PORT 1	6
PORT 2	4
GROUND	1,3,5
PORT 1-2	resistor external 100 OHMS

Figure 1: Suggested Layout. This diagram illustrates the layout of a PCB land pattern. The top section shows a rectangular area with dimensions $A \pm .006$ and $B \pm .006$. It contains six numbered regions (1-6) and an 'INDEX AREA (ONTOP)'. Region 1 is a central square, 2 is a square to its right, 3 is a square below 1, 4 is a square to the right of 3, 5 is a square above 1, and 6 is a square to the left of 1. Dimensions $F \pm .007$ TYP and G TYP are indicated. The bottom section shows a 'PCB Land Pattern' with dimensions H TYP, J TYP, K , and G TYP. It consists of six rectangular pads arranged in two rows of three. The pads are labeled with numbers 1 through 6. The text 'PAD SHAPE MAY VARY' and 'ALPHA-NUMERIC MARKINGS MAY APPEAR (ONTOP)' are also present.

A	B	C	D	E	F
.126	.063	.035	.024	.022	.011
3.20	1.60	0.89	0.61	0.56	0.28
G	H	J	K	wt	
.039	.024	.042	.123	grams	
0.99	0.61	1.07	3.12	.020	



NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS $0.020 \pm 0.0015"$; 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

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.

B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.

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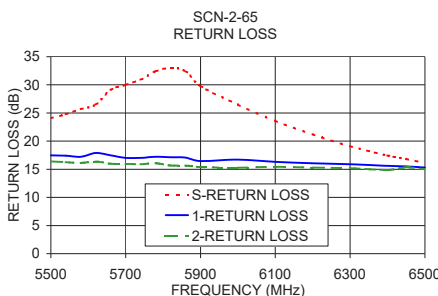
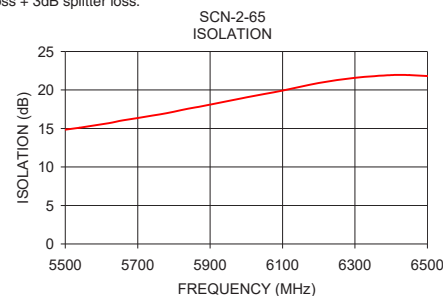
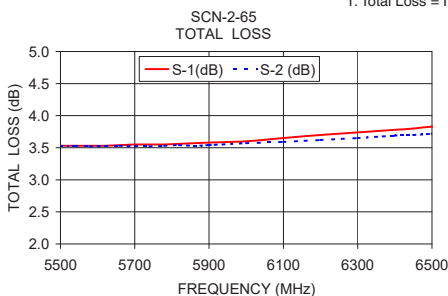
- isolation resistor, external 100 ohms
- low insertion loss, 0.5 dB typ.
- excellent amplitude unbalance, 0.1 dB typ.
- excellent phase unbalance, 2.0 deg. typ.
- high isolation, 17 dB typ.
- excellent power handling, 4W as splitter
- small size, 0.12"X0.06"X0.035"
- ESD non-sensitive
- temperature stable LTCC technology
- wrap around terminations for excellent solderability
- low cost
- protected by US patent 6,967,544

- WLAN
- ISM

FREQUENCY (MHz)	INSERTION LOSS (dB) ABOVE 3.0 dB		ISOLATION (dB)		PHASE UNBALANCE (Degrees)		AMPLITUDE UNBALANCE (dB)		RETURN LOSS (dB)	
	Typ.	Max.	Typ.	Min.	Typ.	Max.	Typ.	Max.	INPUT Typ.	OUTPUT Typ.
	5500-6500	0.8	1.1	17	11	3	5	0.1	0.4	18
5700-5900	0.5	1.0	17	11	2	4	0.1	0.3	22	16

Frequency (MHz)	Total Loss¹ (dB)		Amplitude Unbalance (dB)	Isolation (dB)	Phase Unbalance (deg.)	Return Loss (dB)		
	S-1	S-2				S	1	2
5500.00	3.53	3.52	0.00	14.85	1.24	24.06	17.48	16.39
5540.00	3.53	3.52	0.01	15.10	1.15	24.77	17.41	16.27
5580.00	3.53	3.52	0.01	15.40	1.13	25.71	17.22	16.12
5700.00	3.55	3.52	0.03	16.35	0.93	30.00	17.02	15.95
5740.00	3.55	3.52	0.03	16.68	0.93	30.92	17.03	15.90
5780.00	3.55	3.53	0.03	16.98	0.94	32.42	17.21	16.07
5860.00	3.57	3.53	0.03	17.74	0.83	32.43	17.07	15.68
5900.00	3.58	3.54	0.04	18.11	0.83	29.79	16.46	15.38
6000.00	3.60	3.57	0.04	19.05	0.81	26.48	16.70	15.27
6100.00	3.65	3.59	0.07	19.93	0.70	23.61	16.33	15.44
6200.00	3.70	3.62	0.07	20.91	0.69	21.21	16.06	15.30
6300.00	3.74	3.65	0.08	21.59	0.72	19.11	15.88	15.18
6400.00	3.78	3.69	0.09	21.94	0.67	17.43	15.62	14.88
6450.00	3.80	3.70	0.10	21.93	0.65	16.81	15.51	15.32
6500.00	3.83	3.72	0.11	21.81	0.68	16.15	15.29	15.03

1. Total Loss = Insertion Loss + 3dB splitter loss.

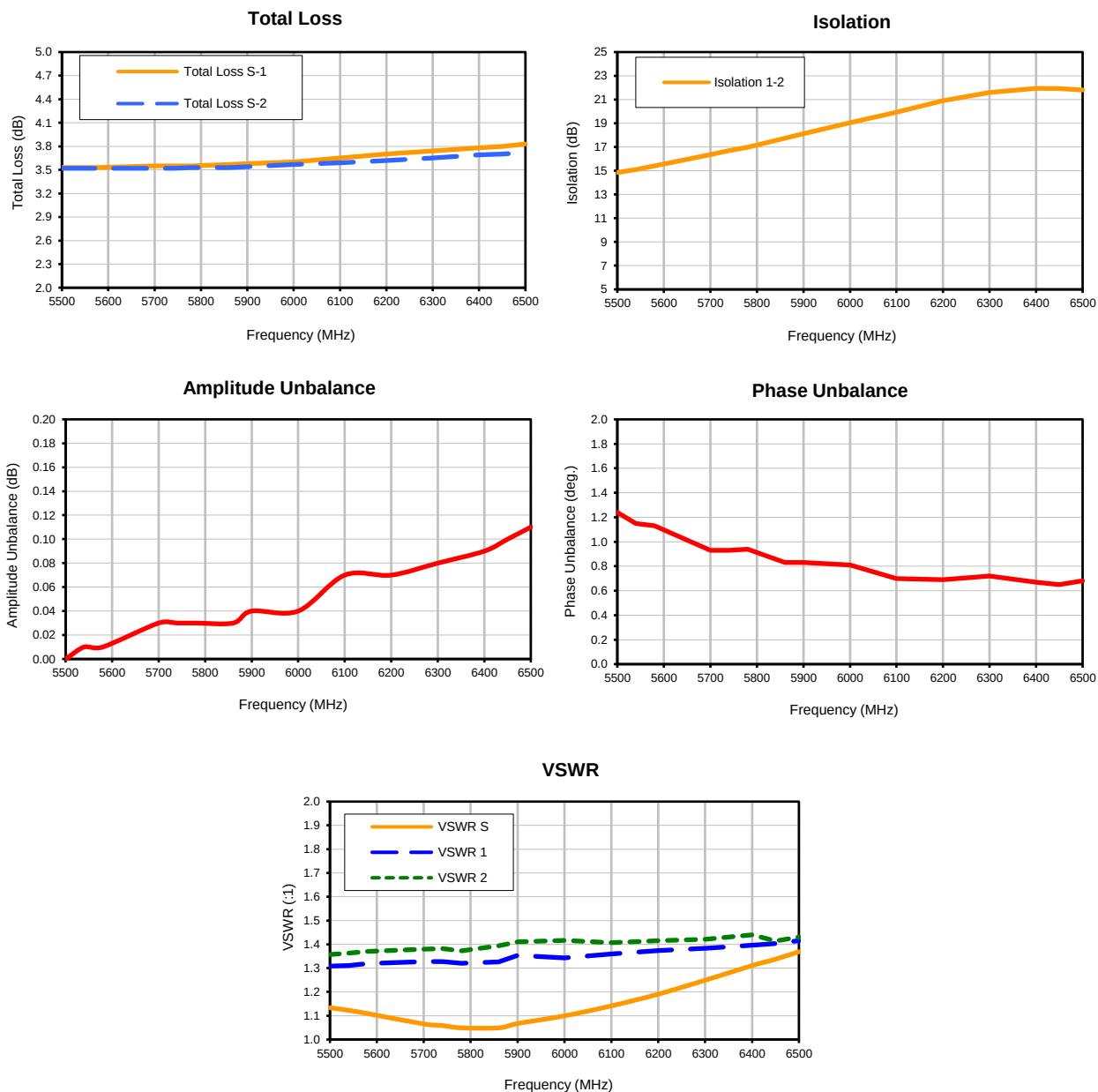


Typical Performance Data

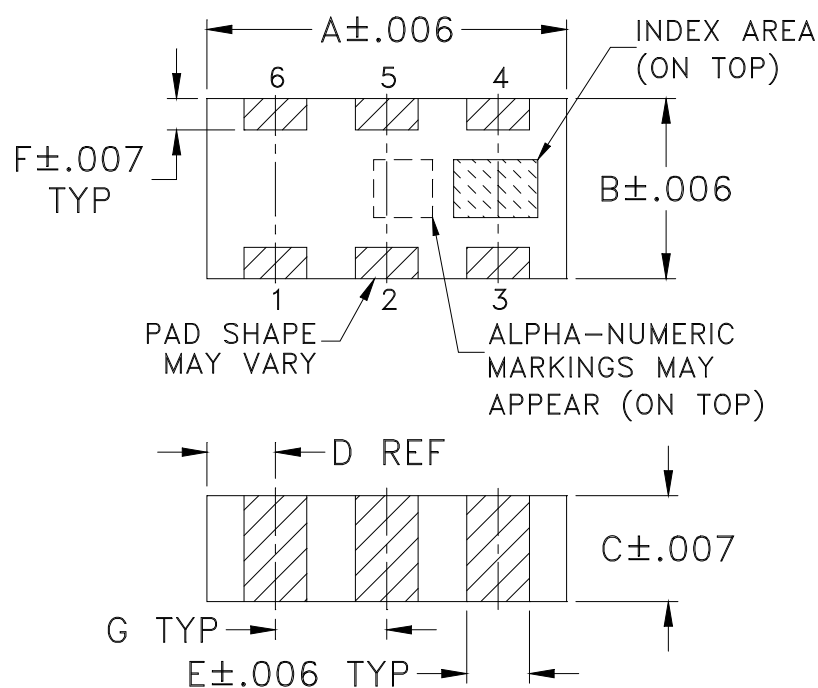
FREQUENCY	TOTAL LOSS ¹		AMPLITUDE UNBALANCE	ISOLATION	PHASE UNBALANCE	FREQUENCY	VSWR		
(MHz)	(dB)		(dB)	(dB)	(deg.)	(MHz)	(:1)		
	S-1	S-2		1-2			S	1	2
5500	3.53	3.52	0.00	14.85	1.24	5500	1.13	1.31	1.36
5540	3.53	3.52	0.01	15.10	1.15	5540	1.12	1.31	1.36
5580	3.53	3.52	0.01	15.40	1.13	5580	1.11	1.32	1.37
5700	3.55	3.52	0.03	16.35	0.93	5700	1.07	1.33	1.38
5740	3.55	3.52	0.03	16.68	0.93	5740	1.06	1.33	1.38
5780	3.55	3.53	0.03	16.98	0.94	5780	1.05	1.32	1.37
5860	3.57	3.53	0.03	17.74	0.83	5860	1.05	1.33	1.39
5900	3.58	3.54	0.04	18.11	0.83	5900	1.07	1.35	1.41
6000	3.60	3.57	0.04	19.05	0.81	6000	1.10	1.34	1.42
6100	3.65	3.59	0.07	19.93	0.70	6100	1.14	1.36	1.41
6200	3.70	3.62	0.07	20.91	0.69	6200	1.19	1.37	1.41
6300	3.74	3.65	0.08	21.59	0.72	6300	1.25	1.38	1.42
6400	3.78	3.69	0.09	21.94	0.67	6400	1.31	1.40	1.44
6450	3.80	3.70	0.10	21.93	0.65	6450	1.34	1.40	1.41
6500	3.83	3.72	0.11	21.81	0.68	6500	1.37	1.42	1.43

¹Total Loss = Insertion Loss + 3dB Splitter Loss

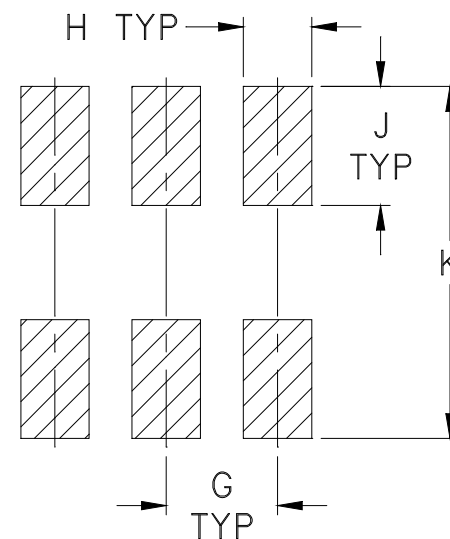
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAM
FV1206-1	.126 (3.20)	.063 (1.60)	.035 (0.89)	.024 (0.61)	.022 (0.56)	.011 (0.28)	.039 (0.99)	.024 (0.61)	.042 (1.07)	.123 (3.12)	--	--	--	--	.020

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

Notes:

- Open style, ceramic base.
- Termination finish: **as shown below or indicated on Data Sheet.**
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.



ISO 9001 ISO 14001 CERTIFIED

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

DEVICE ORIENTATION IN T&R

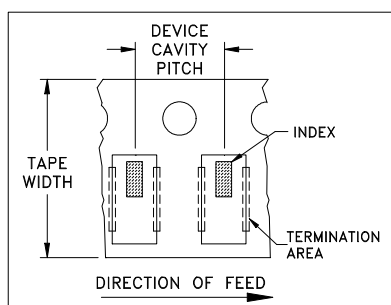


ILLUSTRATION 1

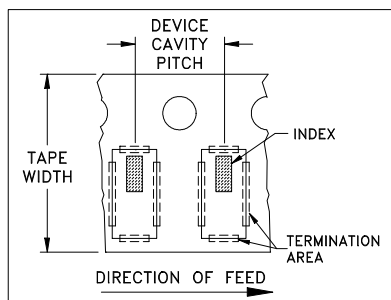


ILLUSTRATION 2

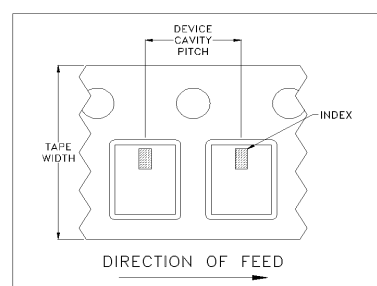


ILLUSTRATION 3

Applicable Case Styles

FV1206-1
FV1206-3

Applicable Case Styles

FV1206-4
FV1206-5
FV1206-6
FV1206-7
FV1206-9

Applicable Case Styles

FV1206-11
FV1206-12
GE0805C-18
NL1008C-6
NL1008C-7
NL1008C-9
NL1008C-10
NL1008C-12

Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	3000

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.

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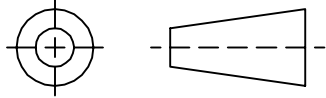


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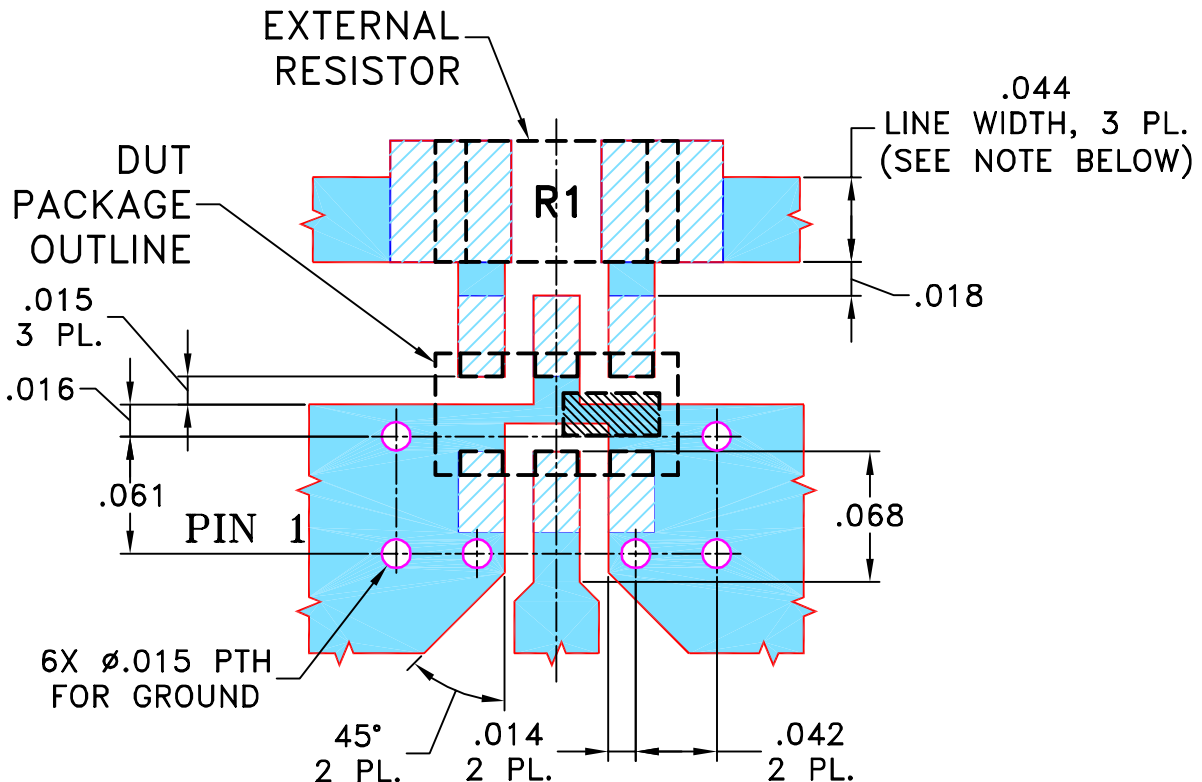
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
A	M86650	UPDATED NOTE 2	04/18/03	GF	DJ
B	M86880	CHANGED APPEARANCE	05/05/03	IL	ABD
C	M91639	REMOVED NOTE 2, UPDATED DIMENSIONS	04/14/04	AV	DJ
D	M102713	ADDED "...WITH SMOBC"	01/16/06	GF	IL

**SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-1 CASE STYLE, "pa" PIN CONNECTION.**



RESISTOR R1: 100 Ohm, 1206 SIZE

NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" $\pm$ 0.0015"; 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

GF

04/11/03

CHECKED

IL

04/15/03

APPROVED

ABD

04/15/03

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



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PL, pa, FV1206-1, SCN, TB-252

SIZE
A

CODE IDENT
15542

DRAWING NO:
98-PL-129

REV:
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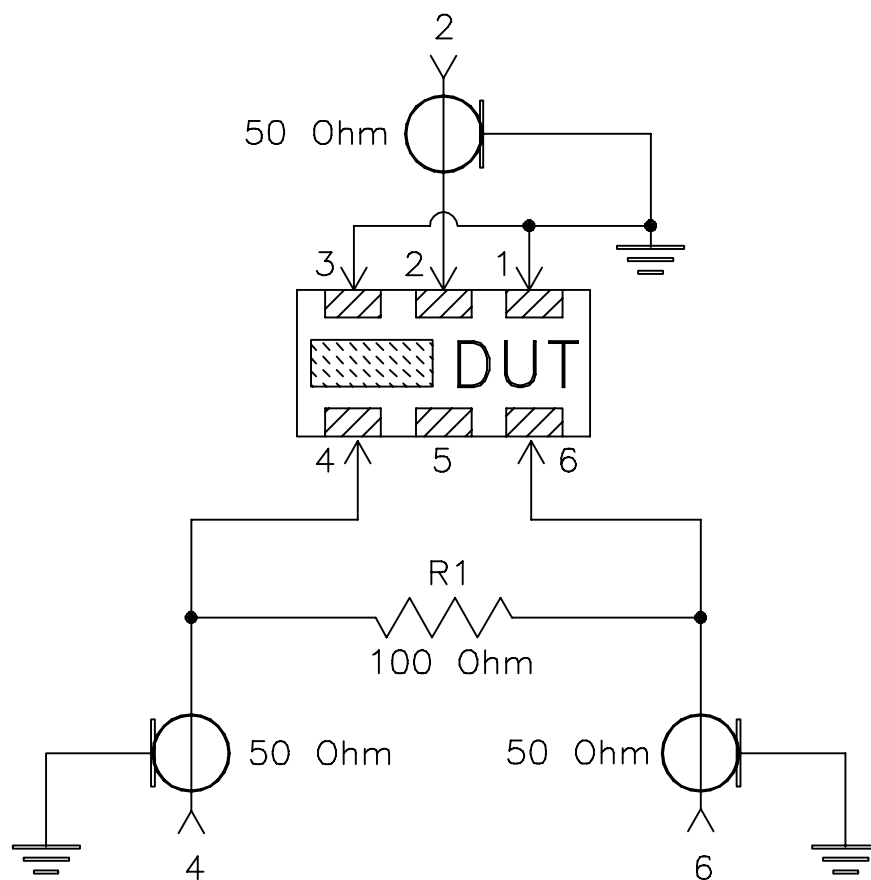
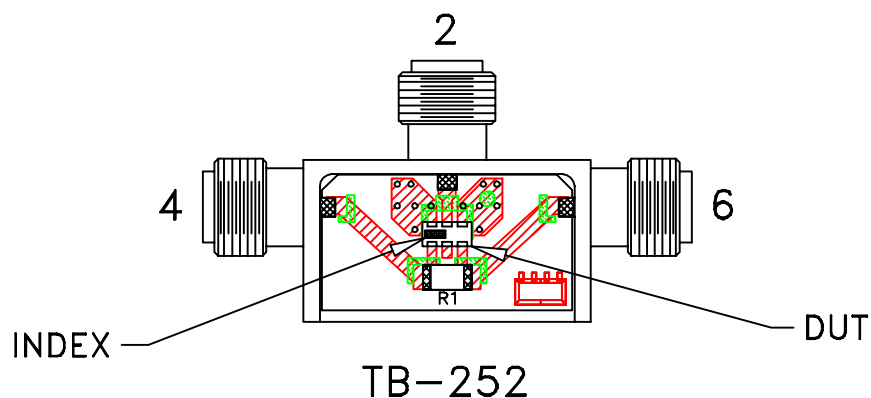
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SCALE: 10:1

SHEET: 1 OF 1

Evaluation Board and Circuit

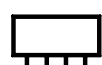
For Pin Connections refer to Data Sheet of the DUT



Schematic Diagram

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	-55° to 100°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
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, Para 4.2.5, Test S, 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