NON-CATALOG

Ceramic

Low Pass Filter

LFCN-2850

50Ω DC[1] to 2800 MHz

Generic photo used for illustration purposes only

CASE STYLE: FV1206

Maximum Ratings

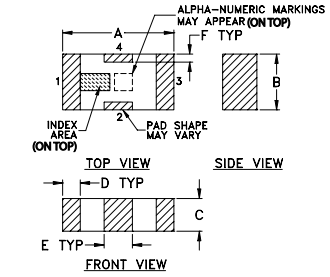
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max. at 25°C

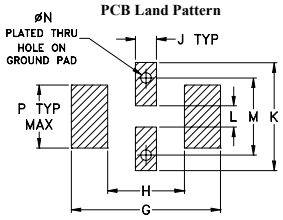
* Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

Pin Connections

RF IN	1
RF OUT	3
GROUND	2,4

Outline Drawing





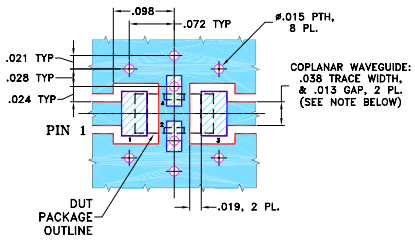
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.126	.063	.037	.020	.032	.009	.169
3.20	1.60	0.94	0.51	0.81	0.23	4.29

H	J	K	L	M	N	P	wt
.087	.024	.122	.024	.087	.012	.071	grams
2.21	0.61	3.10	0.61	2.21	0.30	1.80	.020

Demo Board MCL P/N: TB-270
Suggested PCB Layout (PL-137)



NOTES: 1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP 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

Features

- excellent power handling, 10W
- small size
- 7 sections
- temperature stable
- LTCC construction
- protected by U.S. Patent 6,943,646

Applications

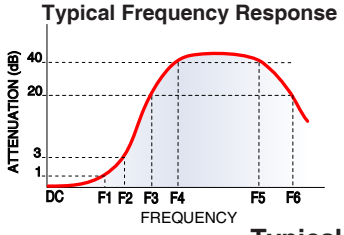
- harmonic rejection
- VHF/UHF transmitters/receivers
- lab use

Electrical Specifications[1,2] at 25°C

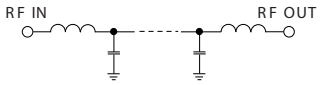
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-2800	—	—	1.5	dB
	Freq. Cut-Off	F2	3300	—	3.0	—	dB
	VSWR	DC-F1	DC-2800	—	1.2	—	:1
Stop Band	Rejection Loss	F3	4000	20	—	—	dB
		F4-F5	4200-7400	—	30	—	dB
		F6	9000	—	20	—	dB
	VSWR	F3-F6	4000-9000	—	20	—	:1

(1) In Applications where DC isolation to ground is required, coupling capacitors are recommended to avoid DC leakage. Alternatively, if DC pass IN-OUT is required, Mini-Circuits' "D" suffix version of this model will support DC IN-OUT, and provide>100 MOhm isolation to ground.
(2) Measured on Mini-Circuits Characterization Test Board TB-270.

Typical Frequency Response

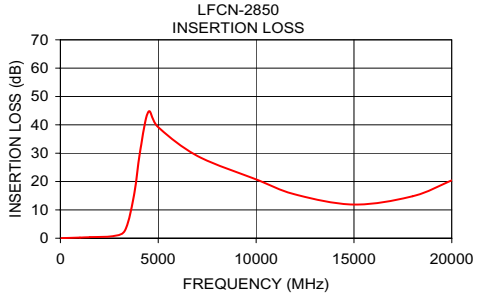


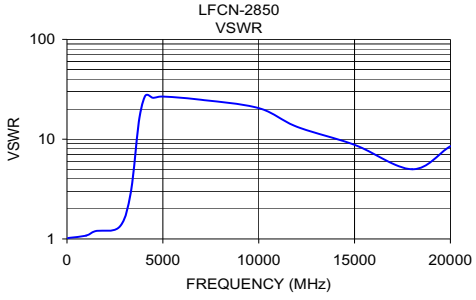
Electrical Schematic



Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
50	0.04	1.02
1000	0.24	1.08
1500	0.36	1.20
2740	0.80	1.32
3320	3.00	2.86
3760	15.16	15.53
4080	31.03	27.16
4500	44.67	25.94
5000	39.17	26.74
7000	29.02	24.83
10000	20.75	20.45
12000	15.45	13.29
15000	11.89	8.77
18000	14.80	5.00
20000	20.40	8.51





Notes
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.
C. The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the Standard Terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at www.minicircuits.com/MCLStore/terms.jsp

REV. P
ECO-006039
LFCN-2850
ED-6783/1
RVN/AD/CP/AM
210204

Ceramic Low Pass Filter LFCN-2850

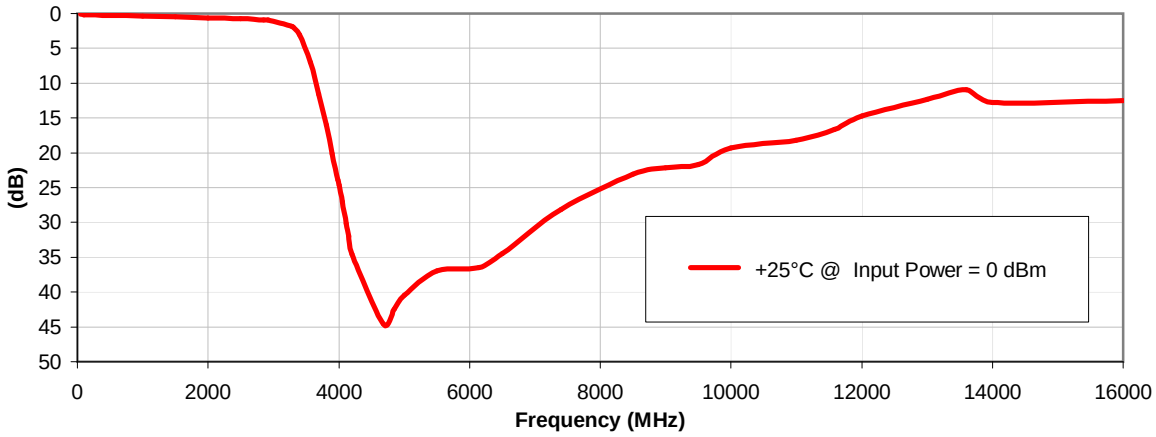
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS @ +25° C (dB)	INPUT RETURN LOSS @ +25° C (dB)	OUTPUT RETURNLOSS @ +25° C (dB)
50	0.12	35.54	36.09
100	0.15	38.21	37.59
500	0.25	36.14	29.50
1000	0.37	24.52	22.20
1500	0.50	18.83	18.84
2000	0.62	17.18	17.83
2500	0.73	21.21	20.79
2850	0.88	29.19	27.06
2920	0.93	33.64	28.75
3285	1.84	12.00	11.78
3300	1.95	11.22	11.06
3395	3.02	7.14	7.11
3565	7.00	2.95	2.99
3695	11.58	1.72	1.76
3805	16.01	1.30	1.33
3900	20.09	1.09	1.18
3985	23.92	1.00	1.09
4000	24.61	0.99	1.07
4050	26.98	0.95	1.03
4115	30.19	0.88	1.03
4150	31.98	0.87	1.01
4200	34.58	0.85	0.97
4680	44.60	0.68	0.89
4850	42.44	0.66	0.85
5000	40.42	0.66	0.82
5500	36.93	0.69	0.73
6140	36.49	0.78	0.67
6500	34.44	0.83	0.65
7400	28.09	0.91	0.71
8500	23.05	0.87	0.86
9000	22.14	0.83	0.93
9500	21.66	0.87	1.01
10000	19.27	1.18	0.93
11000	18.24	1.27	1.09
11580	16.68	1.62	1.20
12000	14.72	1.68	1.24
13000	12.31	1.47	1.24
13600	10.91	1.81	1.42
14000	12.78	3.69	1.44
16000	12.46	3.77	2.11

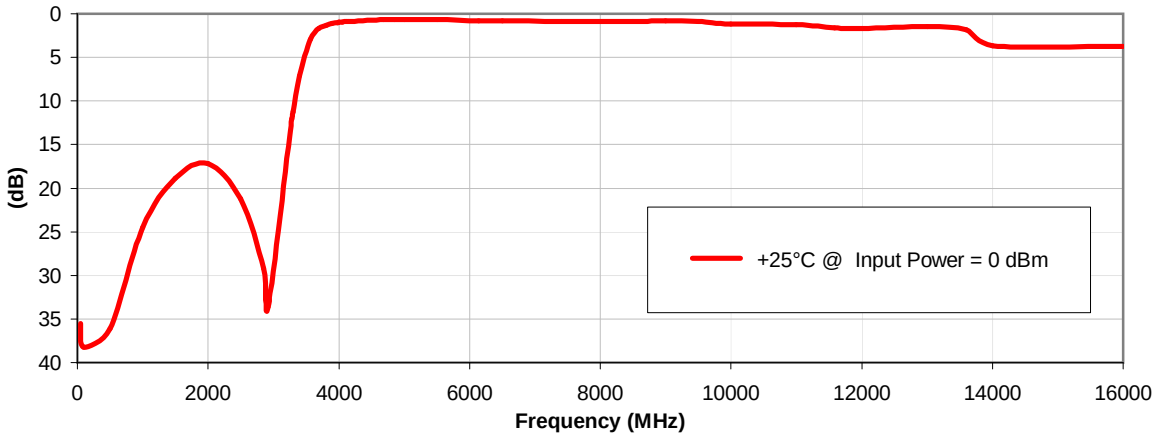
Mini-Circuits®
IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see minicircuits.com

Typical Performance Curves

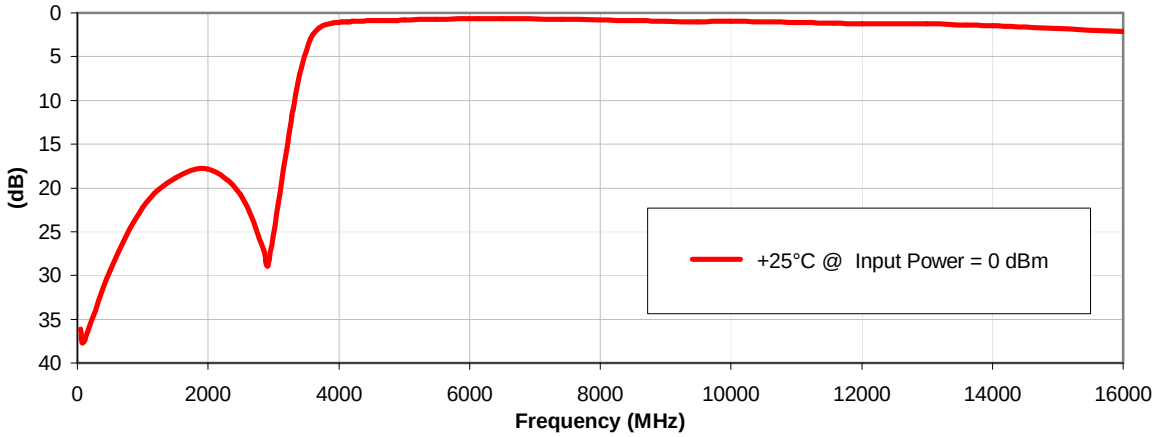
INSERTION LOSS



INPUT RETURN LOSS



OUTPUT RETURN LOSS

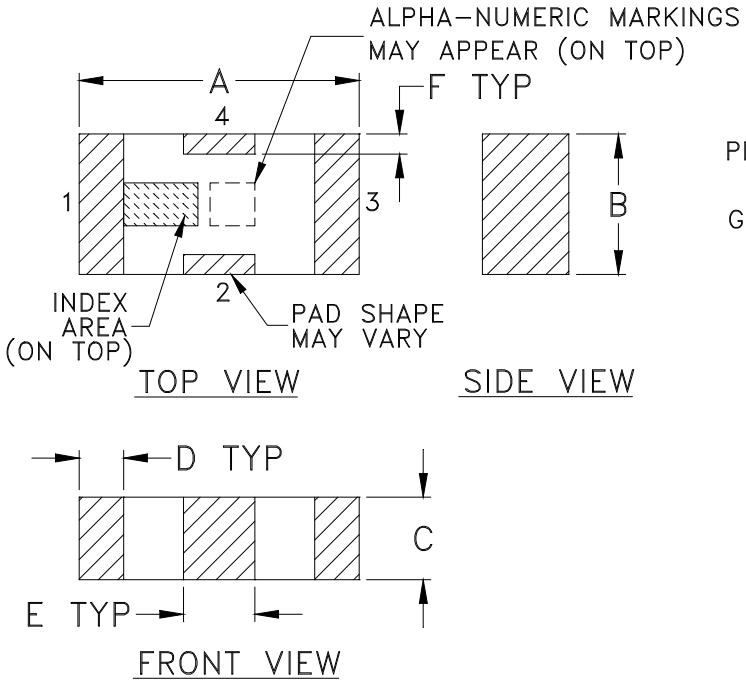


Mini-Circuits®
IF/RF MICROWAVE COMPONENTS • ISO 9001 ISO 14001 AS9100 CERTIFIED RoHS compliant
P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661
The Design Engineers Search Engine finds the model you need, Instantly • For detailed performance specs & shopping online see minicircuits.com

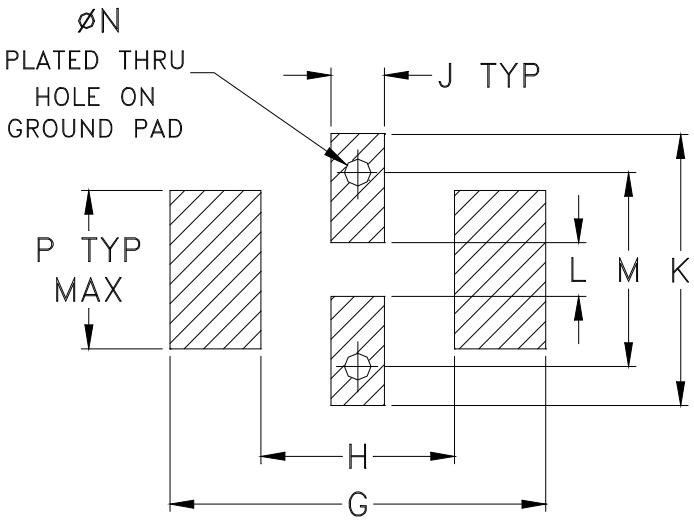
Case Style FV

FV1206

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	N	P	WT. GRAM
FV1206	.126 (3.20)	.063 (1.60)	.037 (0.94)	.020 (0.51)	.032 (0.81)	.009 (0.23)	.169 (4.29)	.087 (2.21)	.024 (0.61)	.122 (3.10)	.024 (0.61)	.087 (2.21)	.012 (0.30)	.071 (1.80)	.020

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

Notes:

1. Open style, ceramic base.
2. 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.

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

Tape & Reel Packaging TR-F71

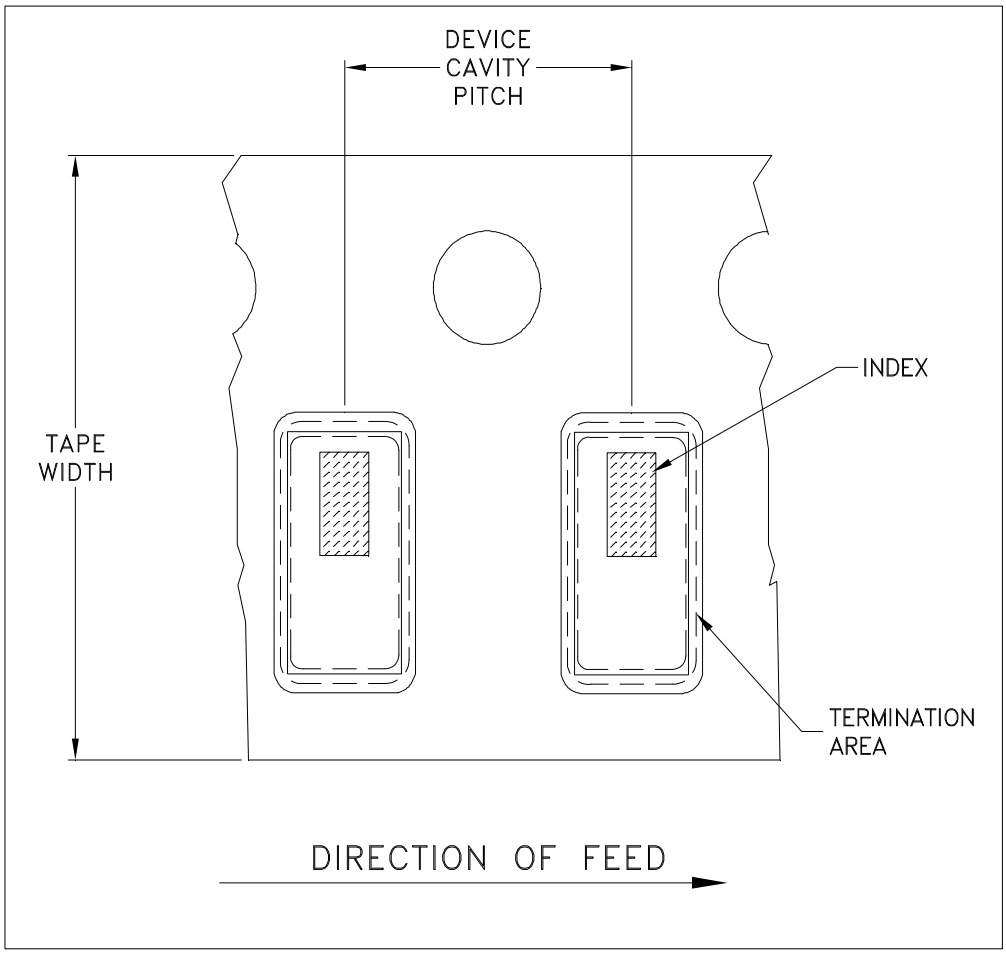


ILLUSTRATION 1

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.

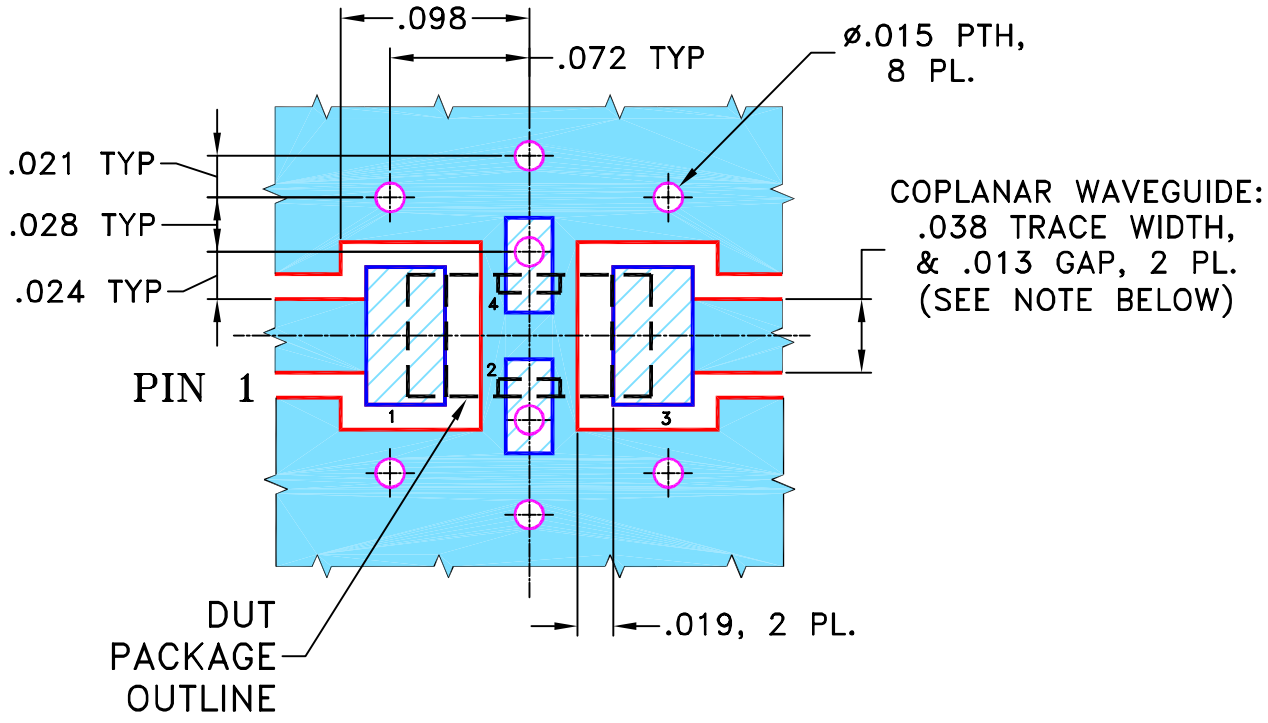
Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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

THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M88634	NEW RELEASE	08/28/03	GF	ABD
A	M102713	ADDED "...WITH SMOBC"	01/17/06	MMG	IL

SUGGESTED MOUNTING CONFIGURATION FOR FV1206 CASE STYLE, "nx" PIN CONNECTION



NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS .020" ± .0015".
   COPPER: 1/2 OZ. EACH SIDE.
   FOR OTHER MATERIALS TRACE WIDTH & GAP 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	GF	08/27/03
TOLERANCES ON:	CHECKED	AV	08/28/03
2 PL DECIMALS ±	APPROVED	ABD	08/28/03
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

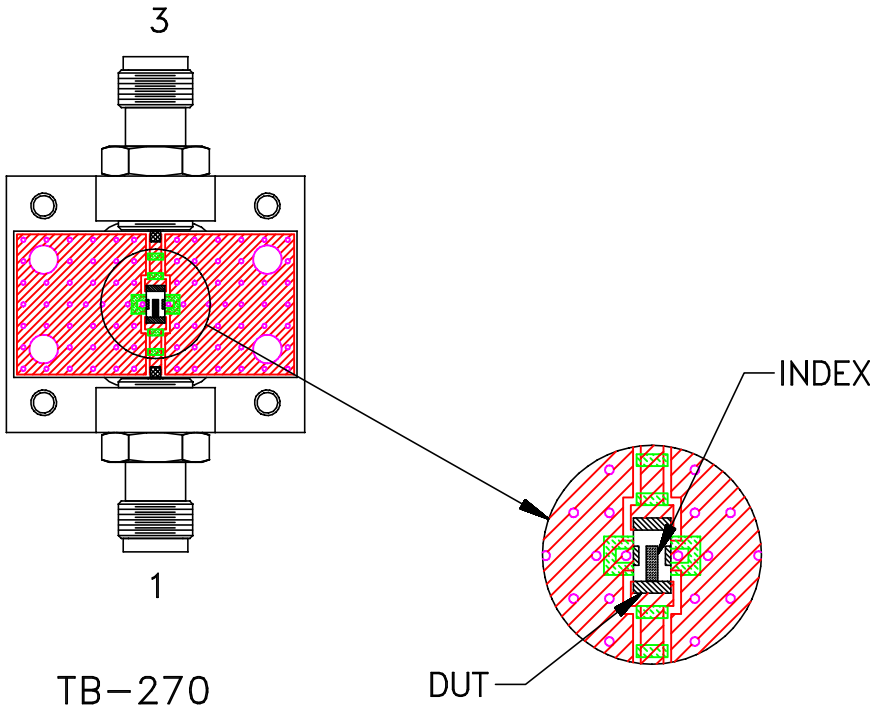
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, nx, FV1206, LFCN/HFCN, TB-270

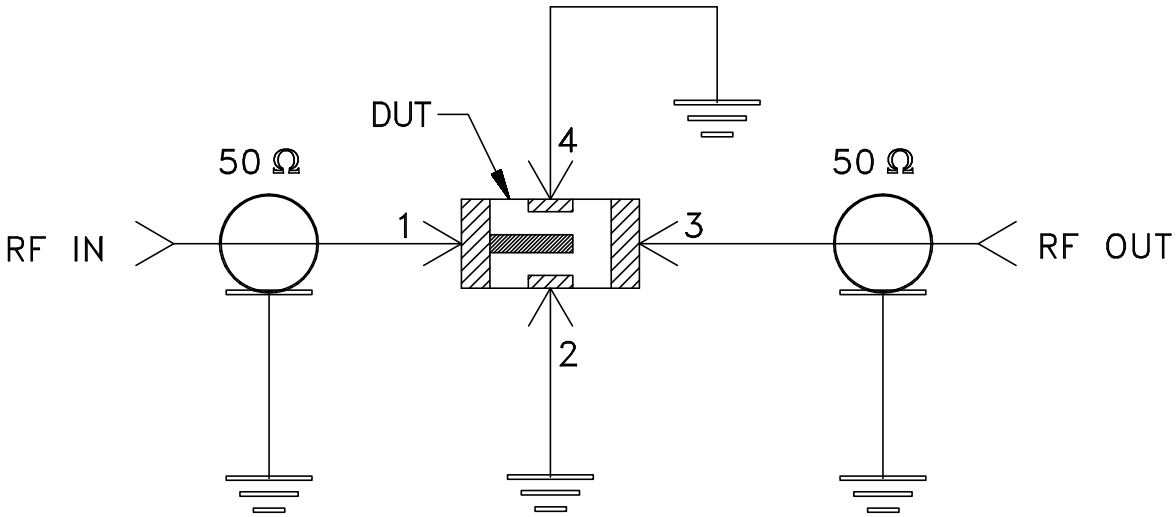
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-137	A

FILE:	SCALE:	SHEET:
98PL137	10:1	1 OF 1

Evaluation Board and Circuit



TB-270



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: ROGERS RO4350 or equivalent, Dielectric Constant=3.5, Thickness=.020 inch.

Mini-Circuits®

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

Mini-Circuits

Environmental Specifications ENV06

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

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