

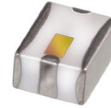
Ceramic Low Pass Filter

LFCV-1450+

50Ω DC to 1450 MHz

Product Features

- Small size (.126" x .098" x .059")
- Temperature stable
- Hermetically sealed



Generic photo used for illustration purposes only
CASE STYLE: JV1210C

+RoHS Compliant

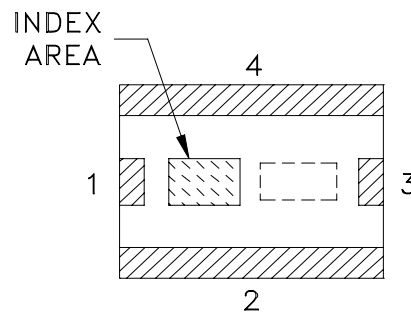
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Typical Applications

- Harmonic rejection
- VHF/UHF transmitters / receivers
- Lab use
- DECT/PACS/PHS/GSM/DCS/WLAN

General Description

The LFCV-1450+ (RoHS compliant) is constructed with new Ferrite material LTCC multi layer. The existing LFCN-1450+ is cut off at frequency 1825 MHz. But LFCV-1450+ is cut off at frequency 1500 MHz with same pass band frequency, DC-1450 MHz. The rejection frequency is much improved.



Pad Description

Function	Pad Number	Description
RF IN	1	RF input
RF-OUT	3	RF output
GND	2,4	Connected to ground

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

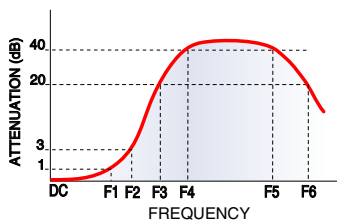


Electrical Specifications¹ at 25°C, 50Ω

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-1450	—	—	2.2	dB
	Freq. Cut-Off	F2	1500	—	3.0	—	dB
	VSWR	DC - F1	DC-1450	—	1.3	—	:1
Stop Band	Rejection Loss	F3	1650	20	—	—	dB
		F4 - F5	1800 - 2300	—	40	—	dB
	VSWR	F6	3000	—	20	—	dB
		F3 - F6	1650-3000	—	20	—	:1

1. Coupling capacitors at input and output are recommended for use in applications that require DC isolation of input to output port or other port to ground.

Typical Frequency Response



Absolute Maximum Ratings

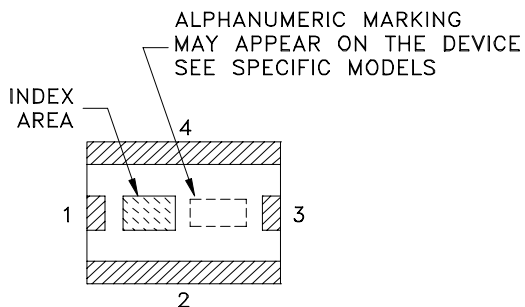
Operating Temperature	-40°C to 85°C
Storage Temperature*	-55°C to 100°C
RF Input Power**	0.5W at 25°C

*12 months in vacuum sealed bag and 1 week after opened.

**Passband rating, derate linearly to 0.125W at 85°C ambient

Permanent damage may occur if any of these limits are exceeded.

Product Marking



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Characterization Test Circuit

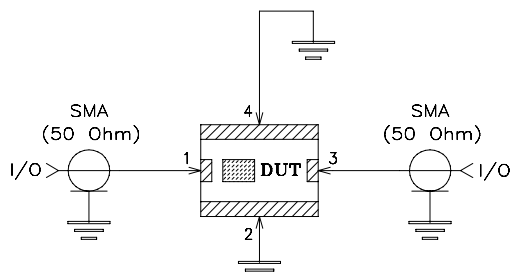
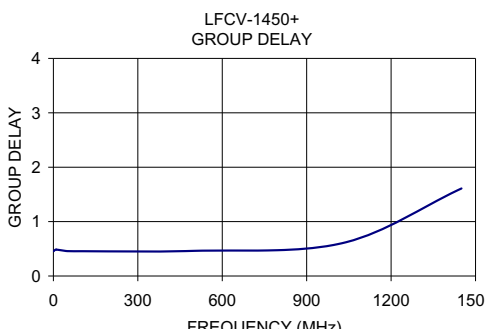
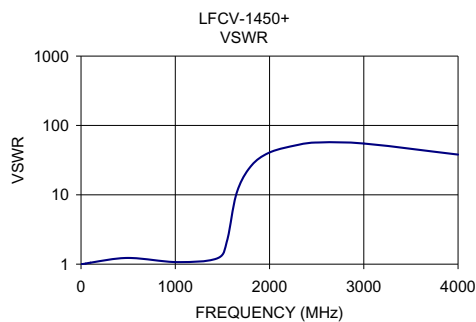
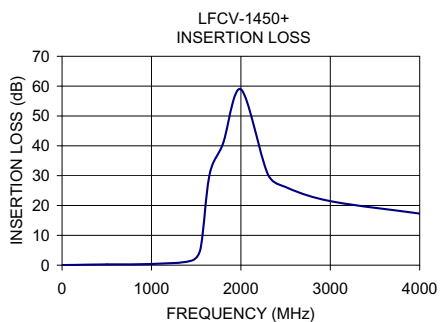


Fig 1. Block diagram of Test Circuit used for characterization, Test board TB-526+
 Conditions:
 Insertion loss, VSWR: Pin= 0 dBm

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Group Delay (ns)
1.00	0.04	1.00	0.46
10.00	0.03	1.00	0.49
50.00	0.06	1.02	0.46
100.00	0.08	1.05	0.46
500.00	0.26	1.23	0.46
1025.00	0.42	1.07	0.60
1450.00	1.54	1.22	1.61
1550.00	5.66	2.19	
1650.00	30.39	10.50	
1800.00	40.74	25.62	
2000.00	58.94	40.77	
2300.00	30.57	52.42	
2500.00	26.20	56.69	
3000.00	21.46	54.87	
4000.00	17.29	38.02	

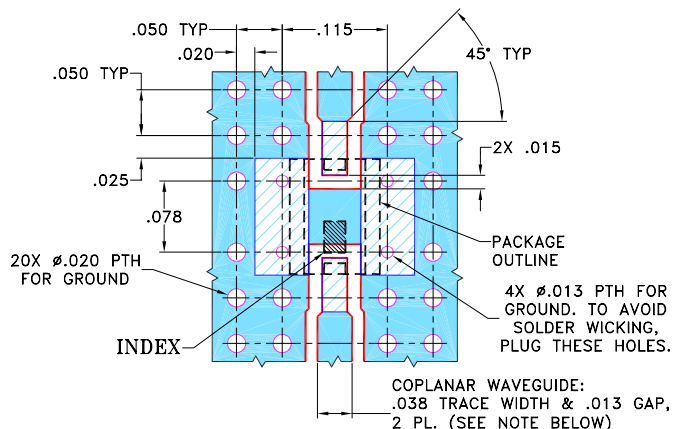


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Suggested PCB Layout (PL-307)



NOTES:

1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.020" ± 0.0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND 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

Additional Detailed Technical Information

additional information is available on our dash board. To access this information [click here](#)

Performance Data	Data Table
	Swept Graphs
Case Style	JV1210C Ceramic package, Terminal finish: Tin plate over Nickel plate
Tape & Reel Packaging	F74
Standard quantities available on reel	7" reels with 20, 50, 100, 200, 500, 1K or 2K devices.
Suggested Layout for PCB Design	PL-307
Evaluation Board	TB-526+
Environmental Ratings	ENV06T2

ESD Rating

Human Body Model (HBM):

Machine Model (MM):

MSL Rating

Moisture Sensitivity: MSL1 in accordance with IPC/JEDEC J-STD-020D

Notes

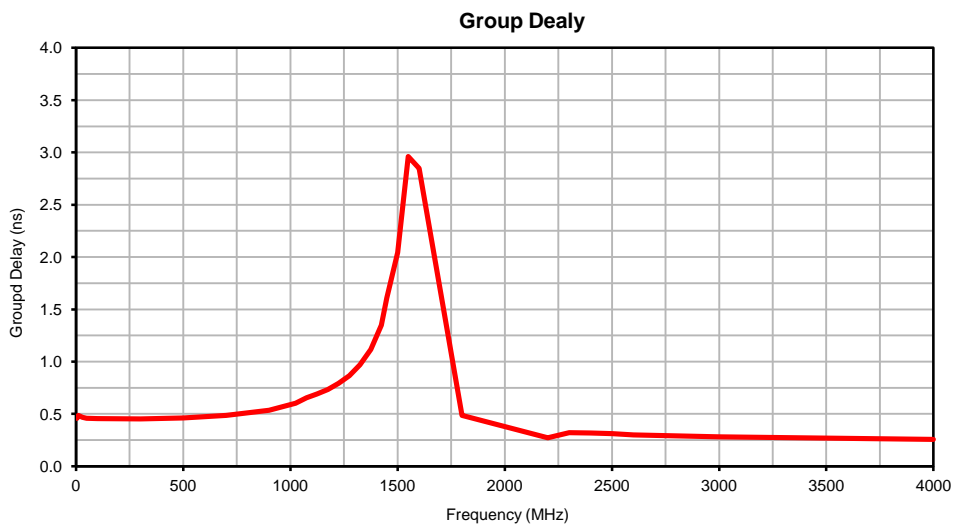
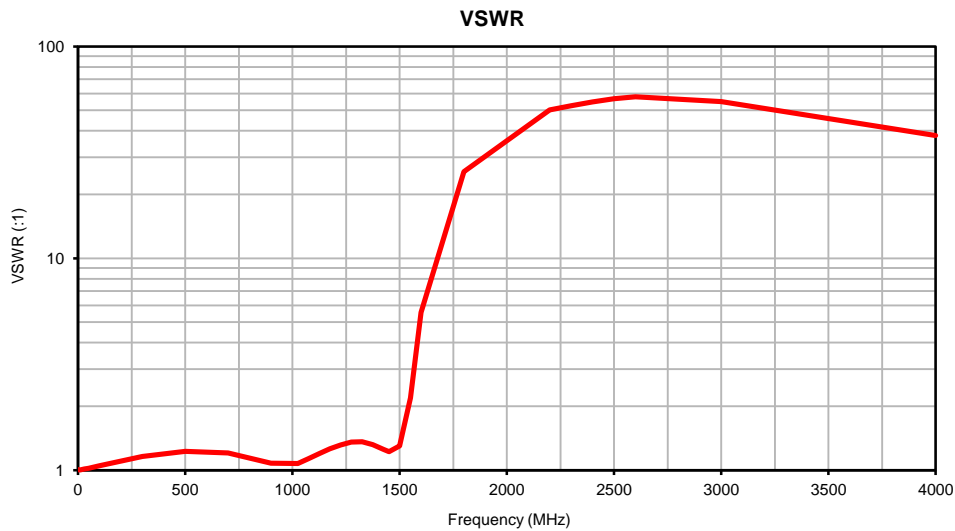
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Typical Performance Data

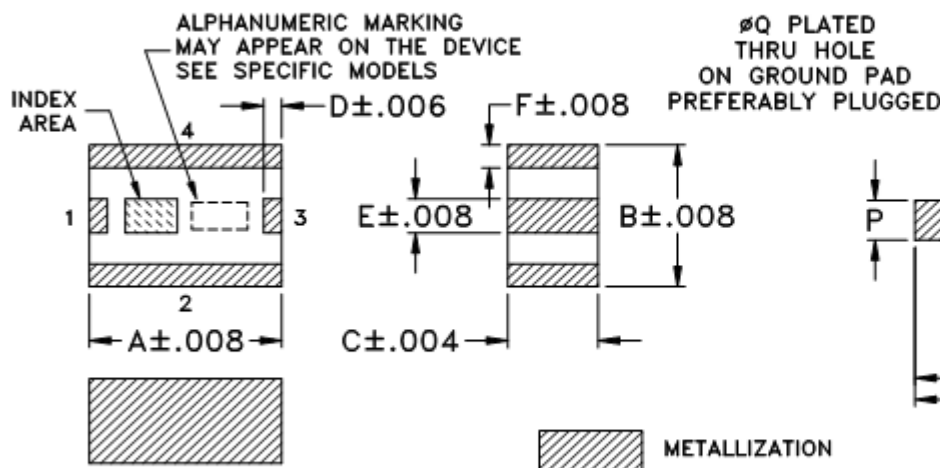
FREQUENCY (MHz)	INSERTION LOSS (dB)	VSWR (:1)	GROUP DELAY (ns)
1.0	0.04	1.00	0.46
5.0	0.04	1.00	0.46
10.0	0.03	1.00	0.49
30.0	0.04	1.01	0.47
50.0	0.06	1.02	0.46
100.0	0.08	1.05	0.46
300.0	0.18	1.16	0.45
500.0	0.26	1.23	0.46
700.0	0.32	1.21	0.49
900.0	0.36	1.08	0.53
1025.0	0.42	1.07	0.60
1075.0	0.47	1.13	0.65
1125.0	0.53	1.19	0.69
1175.0	0.60	1.26	0.74
1225.0	0.69	1.32	0.79
1275.0	0.80	1.35	0.86
1325.0	0.92	1.36	0.97
1375.0	1.08	1.32	1.12
1425.0	1.33	1.25	1.35
1450.0	1.54	1.22	1.61
1500.0	2.41	1.30	2.04
1550.0	5.66	2.19	2.96
1600.0	16.14	5.55	2.85
1800.0	40.74	25.62	0.49
2200.0	34.40	50.17	0.27
2300.0	30.57	52.42	0.32
2400.0	28.03	54.76	0.32
2500.0	26.20	56.69	0.31
2600.0	24.82	57.78	0.30
3000.0	21.46	54.87	0.28
4000.0	17.29	38.02	0.26

Typical Performance Curves

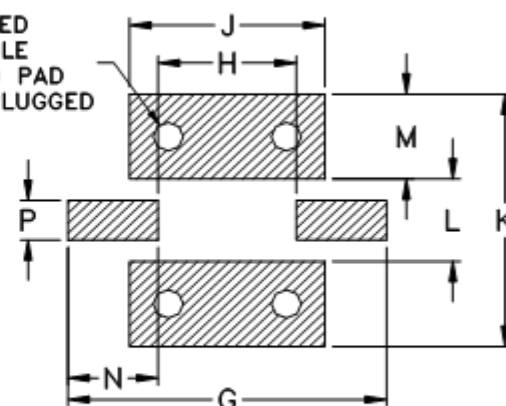


Outline Dimensions

JV1210C



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	Q	WT. GRAM
JV1210C	.126 (3.2)	.098 (2.5)	.059 (1.5)	.012 (.3)	.024 (.6)	.016 (.4)	.209 (5.3)	.091 (2.3)	.128 (3.25)	.175 (4.45)	.057 (1.45)	.059 (1.5)	.059 (1.5)	.028 (.7)	.020 (.5)	.03

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

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.
3. Pad tolerance is non-cumulative. Minimum spacing between each pad is .004.



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



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F74

DEVICE ORIENTATION IN T&R

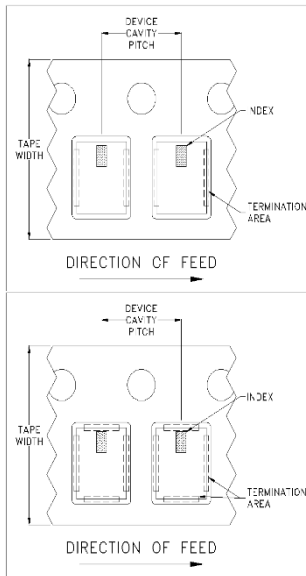


ILLUSTRATION 1

Applicable Case Styles

GE0805C-1
GE0805C-1AP
JV1210C-1
GU2939

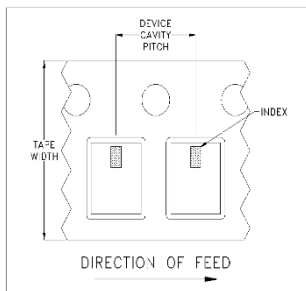


ILLUSTRATION 2

Applicable Case Styles

JV1210C
JV1210C-2
JV1210C-3
JV1210C-4
JV1210C-5
JV1210C-6
JV1210C-11

ILLUSTRATION 3

Applicable Case Styles

JC0603C-8
JC0603C-9
JV1210C-7
JV1210C-8
JV1210C-9
JV1210C-10
JV1210C-13
GE0805C-13
GE0805C-19
GE0805C-20

Tape Width, mm	Device Cavity Pitch, mm	Real Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	2000
				4000

Note: Small reel availability varies by model. Refer to pricing and availability on individual model dashboard.

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

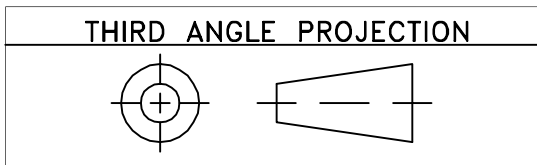


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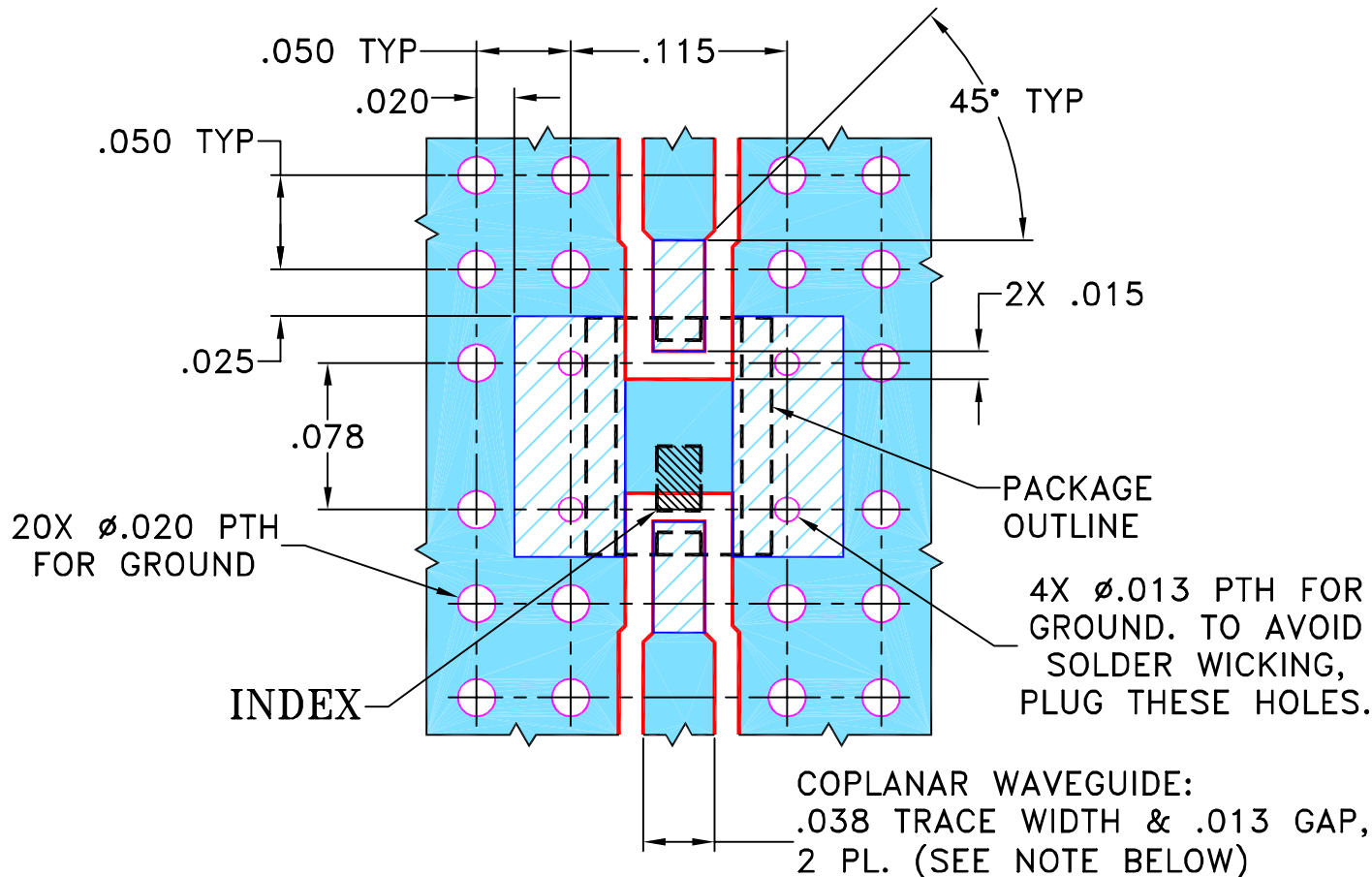
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REVISIONS					
REV OR	ECN No.	DESCRIPTION	DATE	DR	AUTH
	M123026	NEW RELEASE	06/08/09	PW	ABD

**SUGGESTED MOUNTING CONFIGURATION
FOR JV1210C CASE STYLE, "04FL01" PIN CONNECTIONS**



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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 PW	05/27/09
TOLERANCES ON:	CHECKED IL	06/04/09
2 PL DECIMALS ±	APPROVED ABD	06/08/09
3 PL DECIMALS ± .005		
ANGLES ±		
FRACTIONS ±		



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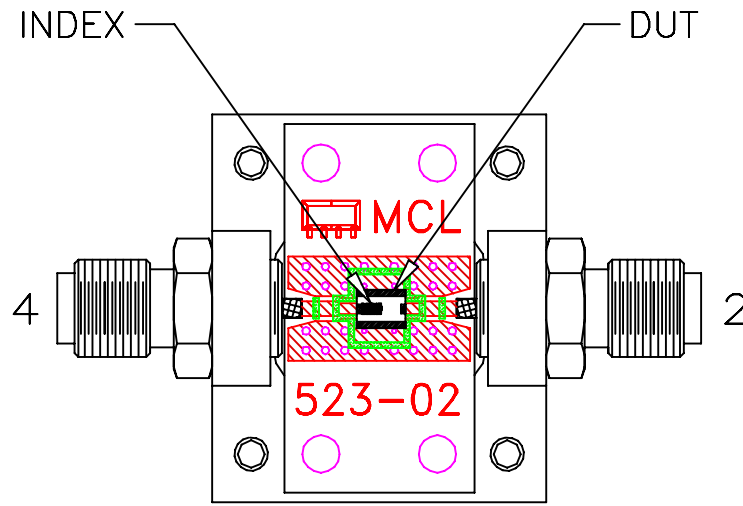
13 Neptune Avenue
Brooklyn NY 11235

PL, 04FL01, JV1210C, LFCF, TB-526+

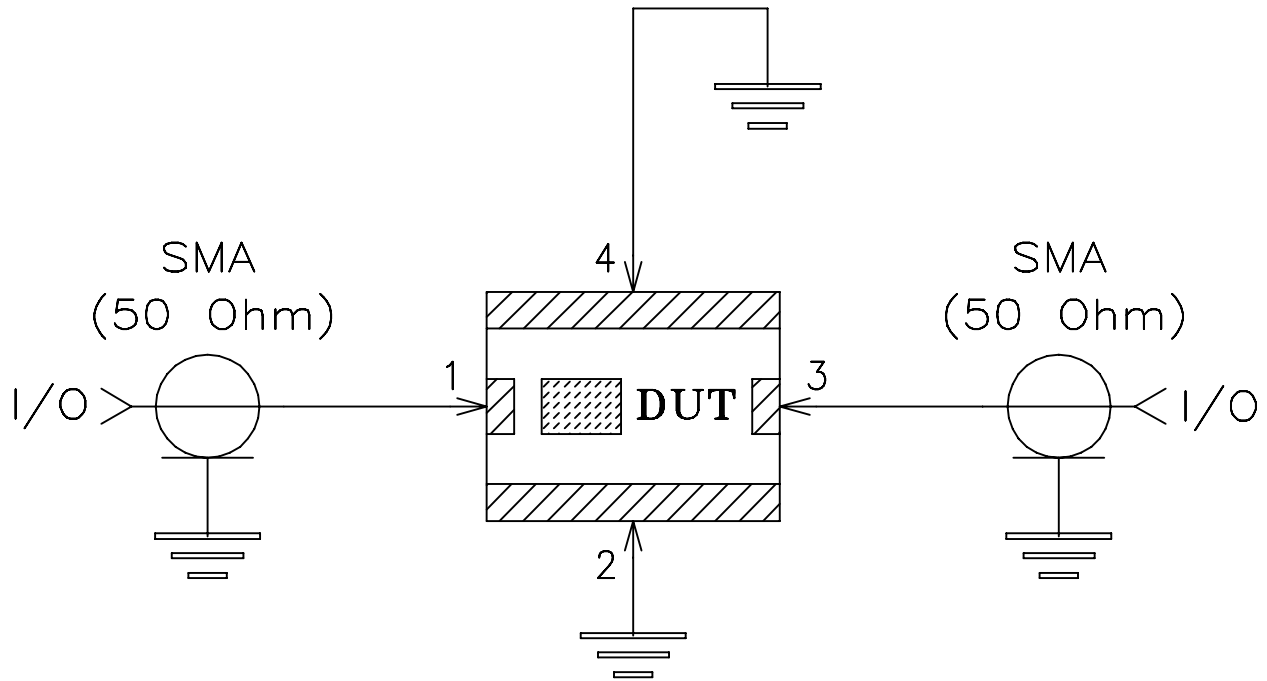
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SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-307	REV: OR
FILE: 98PL307	SCALE: 10:1	SHEET: 1 OF 1	

Evaluation Board and Circuit




TB-526+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.020 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	-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, 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