

Ceramic Low Pass Filter

50Ω DC¹ to 2690 MHz

LFCW-272+



Generic photo used for illustration purposes only

CASE STYLE: JC0603C

Features

- Low loss, 0.8 dB typ.
- Small size 0603 (1.6 x 0.8 mm)
- Temperature stable
- LTCC construction

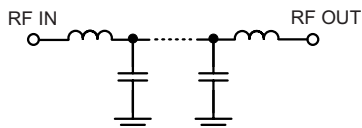
+RoHS Compliant

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

Applications

- Wireless communication
- Harmonic Rejection
- VHF/UHF transmitters / receivers
- Lab use

Functional Schematic



Electrical Specifications^{1,2} at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC - F0	—	0.8	1.2	dB
		F0 - F1	—	0.5	0.8	dB
	Freq. Cut-Off	F2	—	3.0	—	dB
	VSWR	F0 - F1	—	1.6	—	:1
Stop Band	Rejection Loss	F3	—	20	—	dB
		F4 - F5	25	30	—	dB
		F6	—	20	—	dB

1. In Application where DC voltage is present at either input or output port, coupling capacitors are required.

2. Measured on Mini-Circuits Characterization Test Board TB-797+

Maximum Ratings

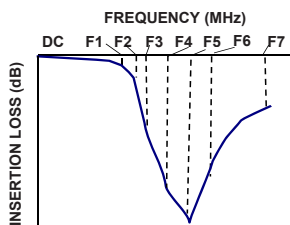
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input ³	3W at 25°C

3. Passband rating, derate linearly to 1.5W at 100°C ambient

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

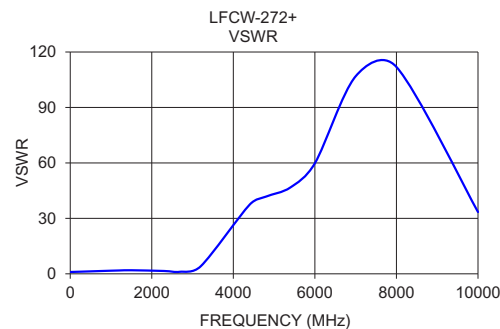
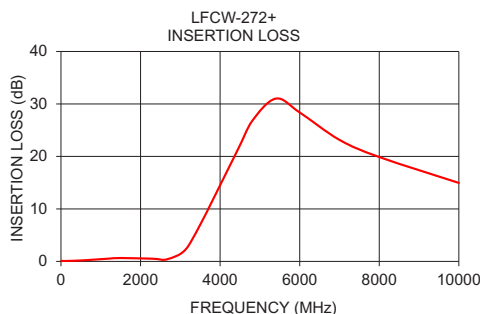
Typical Performance Data⁴ at 25°C

Typical Frequency Response



Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.11	1.01
100	0.07	1.06
500	0.18	1.33
800	0.32	1.55
1200	0.53	1.81
1500	0.64	1.93
2300	0.51	1.54
2690	0.46	1.11
3200	2.93	4.08
4400	20.61	37.43
4800	26.69	41.77
5400	31.02	46.74
6000	28.38	59.83
7000	23.15	106.88
8000	19.89	111.91
10000	14.96	33.43

4. Measured with Agilent E5071B network analyzer using port extension.



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



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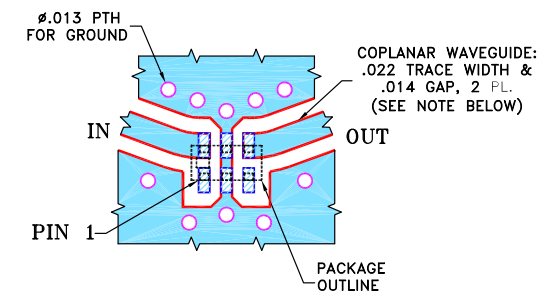
REV. A
M151107
ED-16419/25
LFCW-272+
MY/CP/AM
200513

Pad Connections

INPUT	6
OUTPUT	4
GROUND	2,5
NC	1,3

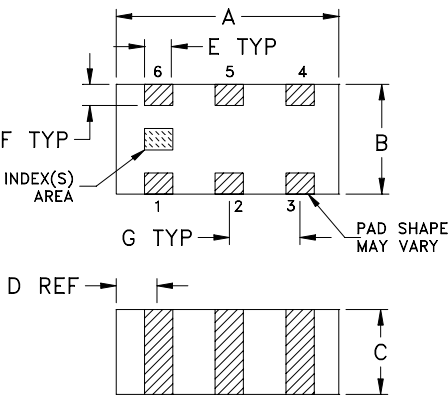
Product Marking: N/A

Evaluation Board MCL P/N: TB-797+
Suggested PCB Layout (PL-426)



- NOTES:
- 1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .010" ± .001". 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.
- Legend:
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
 - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F	G	wt
.063	.031	.024	.012	.008	.006	.020	grams
1.60	0.79	0.61	0.30	0.20	0.15	0.51	0.005

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Ceramic Low Pass Filter

LFCW-272+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	VSWR (:1)
10.0	0.11	1.01
50.0	0.01	1.04
100.0	0.07	1.06
200.0	0.09	1.12
300.0	0.11	1.19
400.0	0.14	1.26
500.0	0.18	1.33
600.0	0.22	1.40
700.0	0.27	1.48
800.0	0.32	1.55
900.0	0.38	1.62
1000.0	0.42	1.69
1200.0	0.53	1.81
1500.0	0.64	1.93
1800.0	0.68	1.93
2000.0	0.65	1.83
2300.0	0.51	1.54
2690.0	0.46	1.11
3000.0	1.38	2.27
3200.0	2.93	4.08
3400.0	5.24	7.49
3600.0	8.01	13.05
3800.0	11.04	20.16
4000.0	14.19	27.58
4200.0	17.39	34.14
4400.0	20.61	37.43
4600.0	23.77	39.03
4800.0	26.69	41.77
5000.0	29.08	42.57
5200.0	30.58	43.12
5400.0	31.02	46.74
5600.0	30.60	50.97
5800.0	29.62	52.98
6000.0	28.38	59.83
6200.0	27.15	66.08
6400.0	25.99	74.22
6600.0	24.88	86.15
6800.0	23.95	91.49
7000.0	23.15	106.88
7200.0	22.37	129.83
7400.0	21.69	126.14
7600.0	21.05	114.74
7800.0	20.45	120.59
8000.0	19.89	111.91
8400.0	18.87	85.76
8800.0	17.88	62.92
9000.0	17.36	57.08
9400.0	16.41	44.85
9800.0	15.42	36.78
10000.0	14.96	33.43



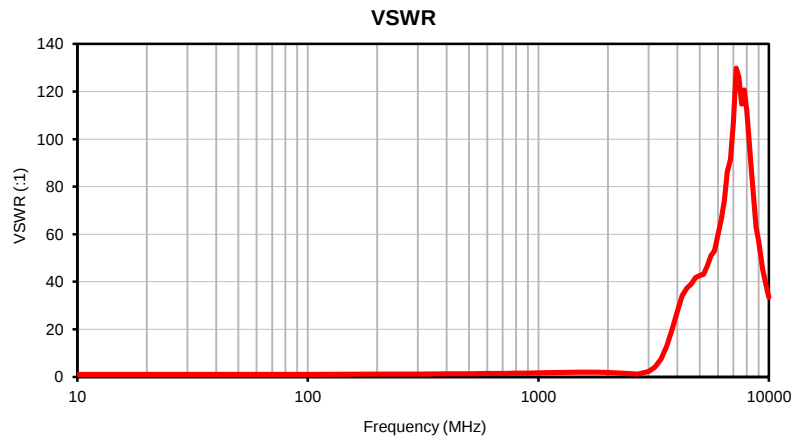
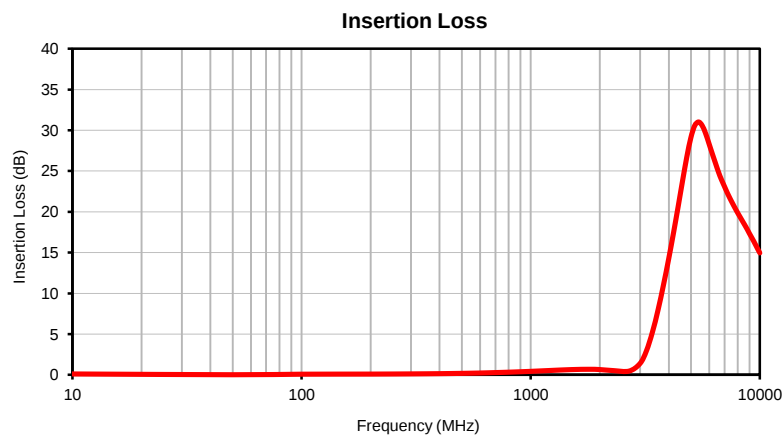
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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com



IF/RF MICROWAVE COMPONENTS

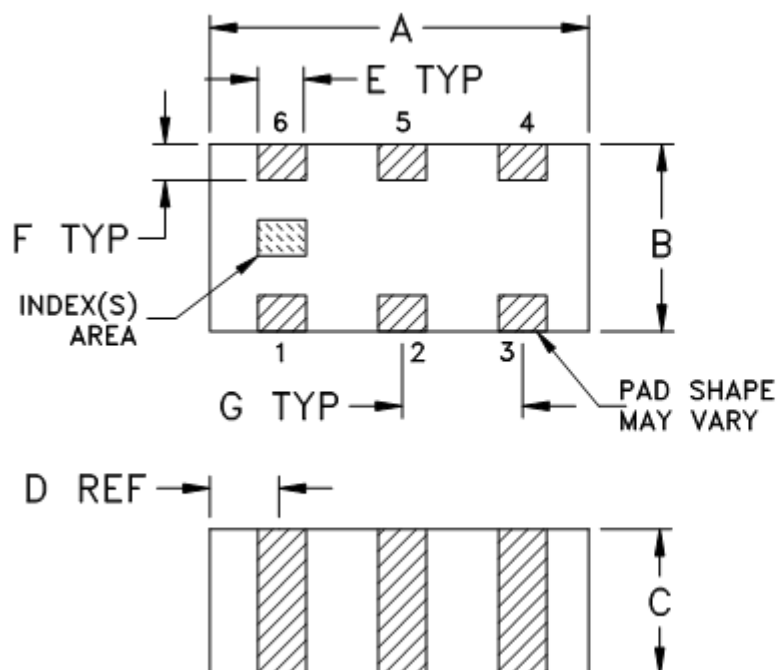
REV. OR
LFCW-272+
10/31/2014
Page 1 of 1

Typical Performance Curves

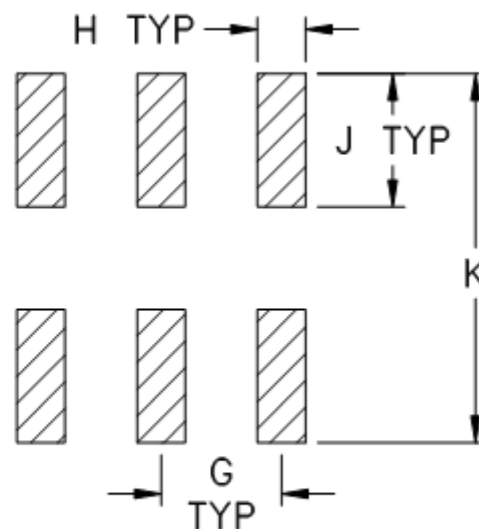


Outline Dimensions

JC0603C



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	WT. GRAM
JC0603C	.063 (1.60)	.031 (0.80)	.024 (0.60)	.012 (0.30)	.008 (0.20)	.006 (0.15)	.020 (0.50)	.010 (0.25)	.022 (0.55)	0.053 (1.35)	.005

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

Notes:

- Open style, ceramic base.
- Termination finish:
For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.



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

RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F114

DEVICE ORIENTATION IN T&R

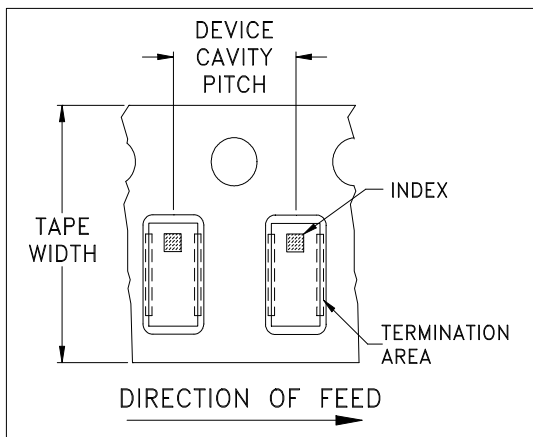


ILLUSTRATION 1

Applicable Case Styles	
GE0805C	JC0603C
GE0805C-1	JC0603C-4
GE0805C-1AP	JC0603C-6
GE0805C-7	
GE0805C-9	
GE0805C-10	
GE0805C-11	
GE0805C-12	

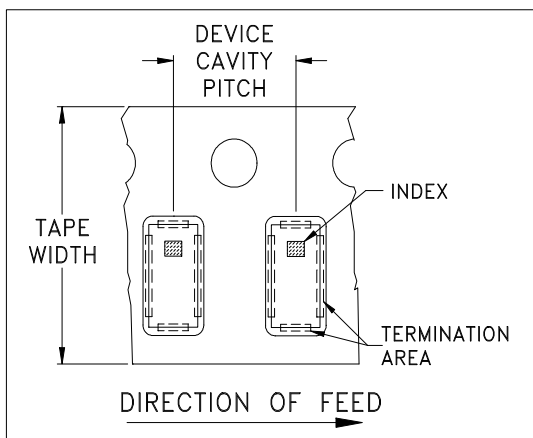


ILLUSTRATION 2

Applicable Case Styles	
GE0805C-2	JC0603C-1
GE0805C-3	JC0603C-2
GE0805C-4	JC0603C-3
GE0805C-5	JC0603C-5
GE0805C-6	JC0603C-7
GE0805C-8	JV1210C-1
GE0805C-15	

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	4000

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



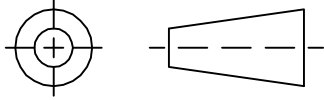
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THIRD ANGLE PROJECTION

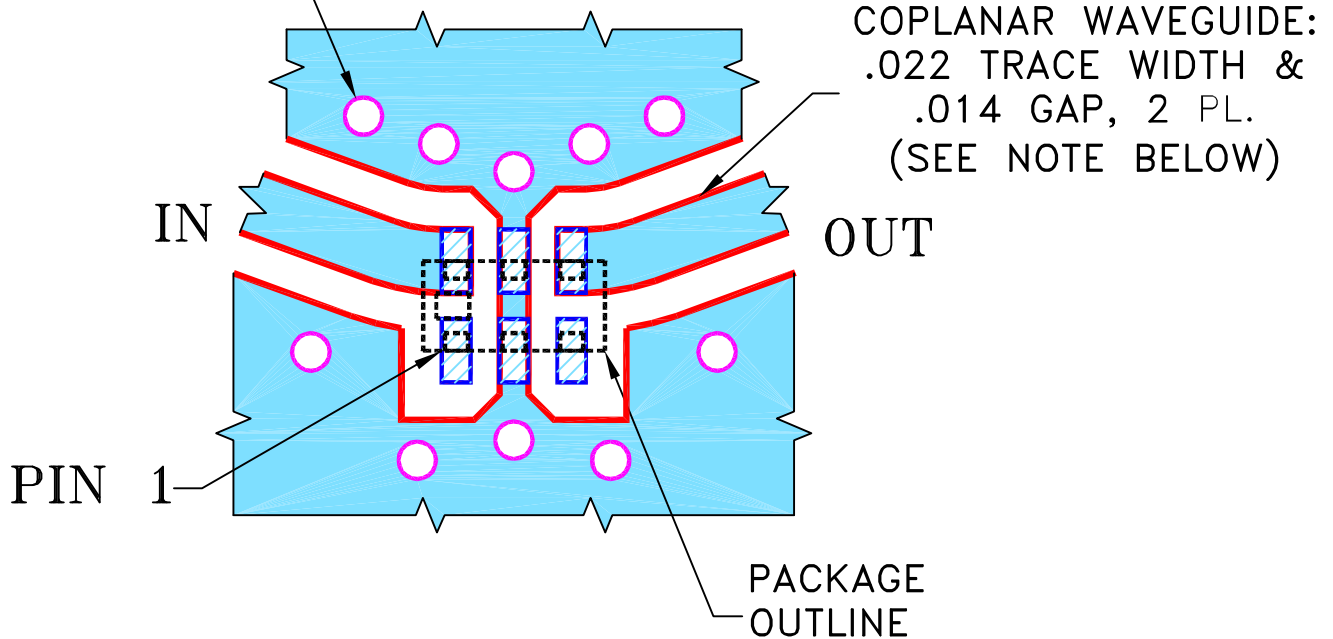


REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M148461	NEW RELEASE	10/02/14	GF	MY

SUGGESTED MOUNTING CONFIGURATION
FOR JC0603C CASE STYLE, "06FL07" PIN CODE

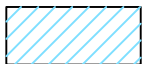
Ø.013 PTH
FOR GROUND

NOTES:

1. COPLANAR WAVEGUIDE IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .010" ± .001". 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.

UNLESS OTHERWISE SPECIFIED

INITIALS

DATE

DIMENSIONS ARE IN INCHES

TOLERANCES ON:

2 PL DECIMALS ±

3 PL DECIMALS ± .005

ANGLES ±

FRACTIONS ±

DRAWN

GF

10/01/14

CHECKED

IL

10/02/14

APPROVED

MY

10/02/14



Mini-Circuits®

13 Neptune Avenue
Brooklyn NY 11235

PL, 06FL07, JC0603C, TB-797+

SIZE
ACODE IDENT
15542

DRAWING NO:

98-PL-426

REV:

OR

FILE: 98PL426

SCALE:

15:1

SHEET:

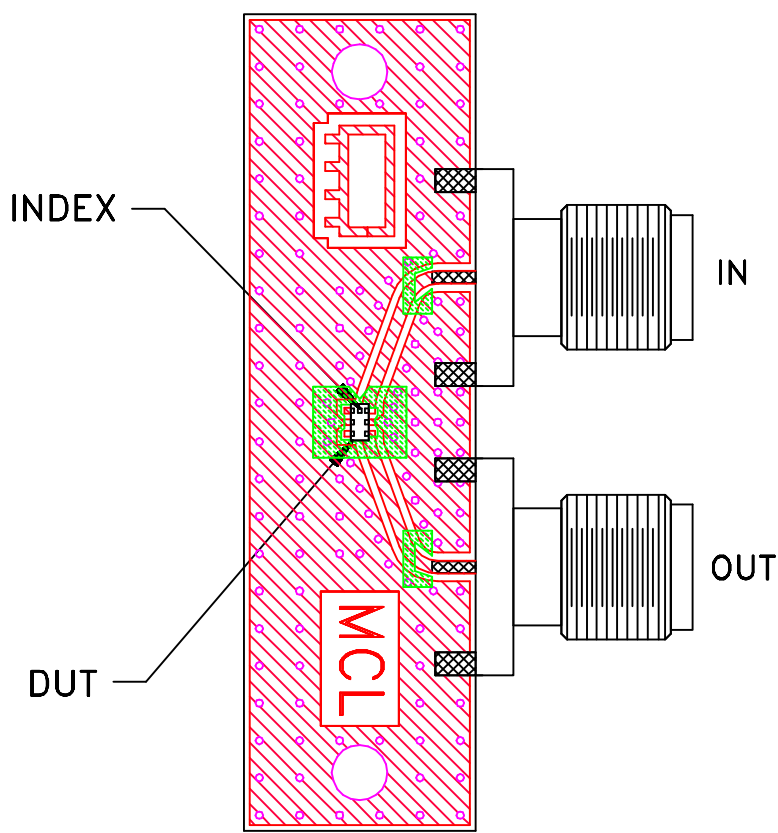
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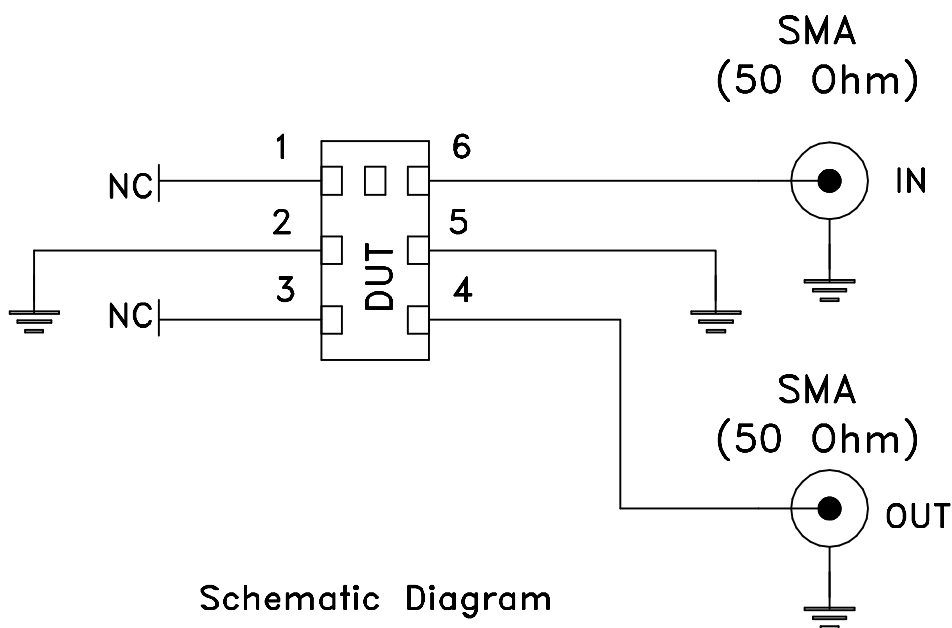
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ASHEETA1.DWG REV:A DATE:01/12/95

Evaluation Board and Circuit



TB-797+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: R04350 or equivalent,
Dielectric Constant=3.5, Thickness=.010 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