



CERAMIC

Low Pass Filter

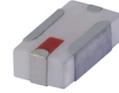
LFCN-722+

Mini-Circuits

50Ω DC¹ to 7200 MHz

FEATURES

- Excellent power handling, 12 W
- Small size 1206 (3.2 x 1.6 mm)
- Temperature stable
- LTCC construction



Generic photo used for illustration purposes only

CASE STYLE: FV1206-4

APPLICATIONS

- Harmonic rejection
- Transmitters/receivers
- Lab use

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS^{1,2} AT +25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units	
Passband	Insertion Loss	DC-F1	DC-7200	—	1.9	3.2	dB
	Freq. Cut-Off	F2	7940	—	3.0	—	dB
	VSWR	DC-F1	DC-7200	—	2.0	—	:1
Stopband	Rejection Loss	F3	8980	—	20	—	dB
		F4-F5	9270-10060	25	35	—	
		F6	15000	—	30	—	

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

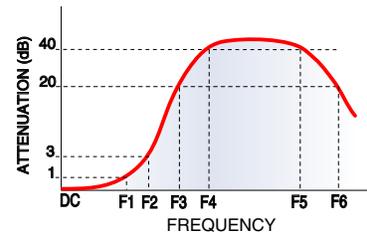
2. Measured on Mini-Circuits Characterization Test Board TB-LFCN-722+.

ABSOLUTE MAXIMUM RATINGS

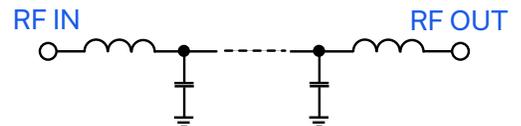
Parameter	Ratings
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input ³	12 W max. at +25°C

3. Passband rating, derate linearly to 6 W at +100°C ambient. Permanent damage may occur if any of these limits are exceeded.

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC



REV. B
ECO-011891
LFCN-722+
MCL NY
250611





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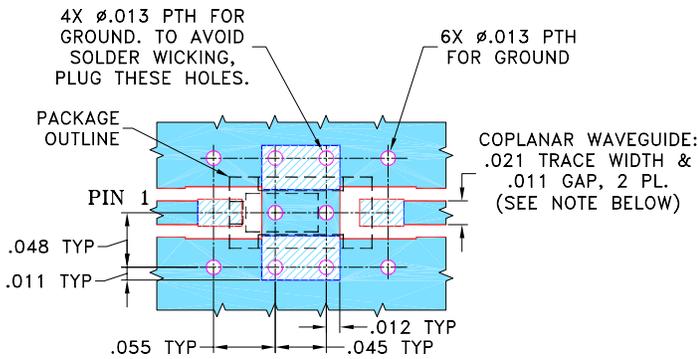
50Ω DC¹ to 7200 MHz

PIN CONNECTIONS

RF IN	1
RF OUT	3
GROUND	2,4

PRODUCT MARKING: N/A

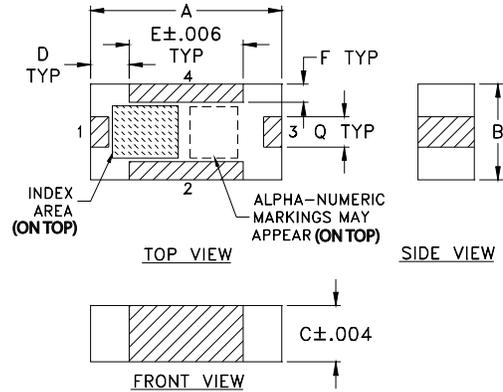
DEMO BOARD MCL P/N: TB-LFCN-722+
SUGGESTED PCB LAYOUT (PL-363)



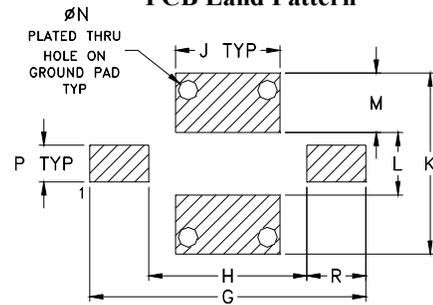
- NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .010" \pm .001". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within \pm .002

OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F	G	H	J
.126	.063	.037	.026	.075	.012	.182	.104	.069
3.20	1.60	0.94	0.66	1.91	0.30	4.62	2.64	1.75
K	L	M	N	P	Q	R	wt	
.119	.041	.039	.013	.024	.020	.039	grams	
3.02	1.04	0.99	0.33	0.61	0.51	0.99	.020	

TAPE & REEL INFORMATION: F75



CERAMIC

Low Pass Filter

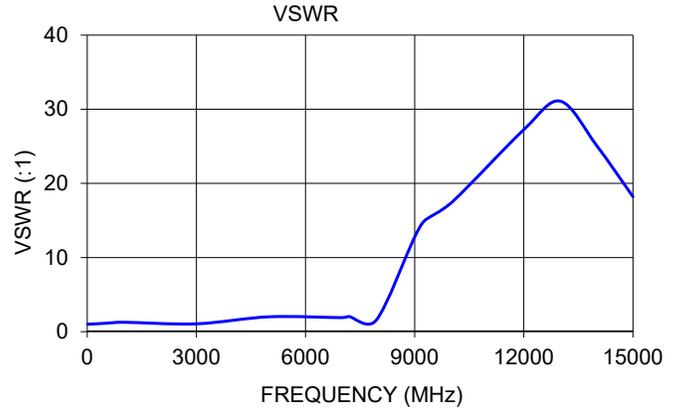
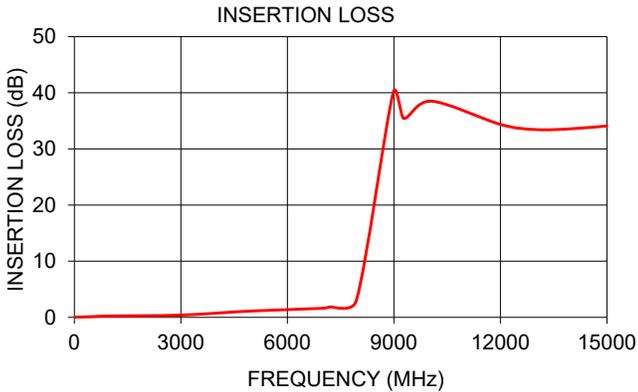
LFCN-722+

Mini-Circuits

50Ω DC¹ to 7200 MHz

TYPICAL PERFORMANCE DATA AT +25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.03	1.01
20	0.03	1.01
100	0.04	1.02
500	0.13	1.13
1000	0.24	1.27
3000	0.40	1.06
5000	1.13	2.01
7000	1.61	1.90
7200	1.86	2.04
7940	2.97	1.53
8980	40.03	12.57
9270	35.44	14.95
10060	38.50	17.62
12000	34.37	27.25
13000	33.44	31.09
14000	33.59	25.12
15000	34.09	18.20



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/terms/viewterm.html



Ceramic Low Pass Filter

LFCN-722+

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	VSWR (:1)
10.0	0.03	1.01
50.0	0.03	1.01
100.0	0.04	1.02
500.0	0.13	1.13
1000.0	0.24	1.27
1400.0	0.32	1.34
1800.0	0.38	1.36
2000.0	0.39	1.35
2400.0	0.39	1.27
2800.0	0.39	1.13
3000.0	0.40	1.06
3400.0	0.46	1.17
3800.0	0.61	1.42
4000.0	0.71	1.56
4400.0	0.92	1.84
4800.0	1.10	2.00
5000.0	1.13	2.01
5400.0	1.08	1.86
5800.0	0.93	1.51
6000.0	0.86	1.30
6400.0	0.92	1.17
6800.0	1.33	1.65
7000.0	1.61	1.90
7200.0	1.86	2.04
7400.0	2.01	2.00
7940.0	2.97	1.53
8000.0	3.59	1.93
8400.0	12.36	7.56
8980.0	40.03	12.57
9000.0	39.85	12.88
9270.0	35.44	14.95
9400.0	34.55	15.32
9800.0	35.63	16.72
10060.0	38.50	17.62
10400.0	43.69	19.16
10800.0	42.95	20.91
11000.0	40.11	21.50
11400.0	36.72	23.75
11800.0	34.92	25.93
12000.0	34.37	27.25
12400.0	33.72	29.97
12800.0	33.50	30.49
13000.0	33.44	31.09
13400.0	33.36	29.75
13800.0	33.46	26.84
14000.0	33.59	25.12
14400.0	33.83	21.63
14800.0	34.04	19.25
15000.0	34.09	18.20



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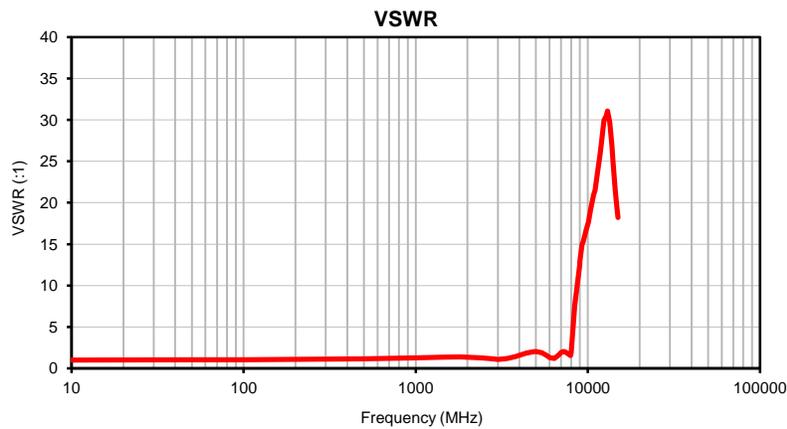
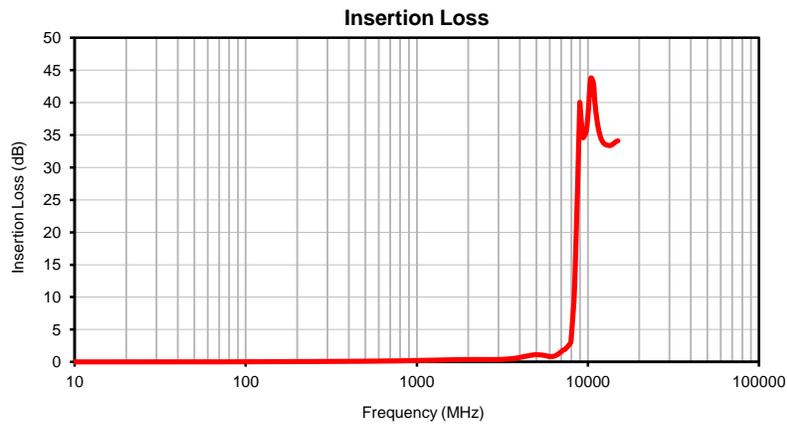
IF/RF MICROWAVE COMPONENTS

REV. OR
LFCN-722+
10/31/2014
Page 1 of 1

Ceramic Low Pass Filter

LFCN-722+

Typical Performance Curves



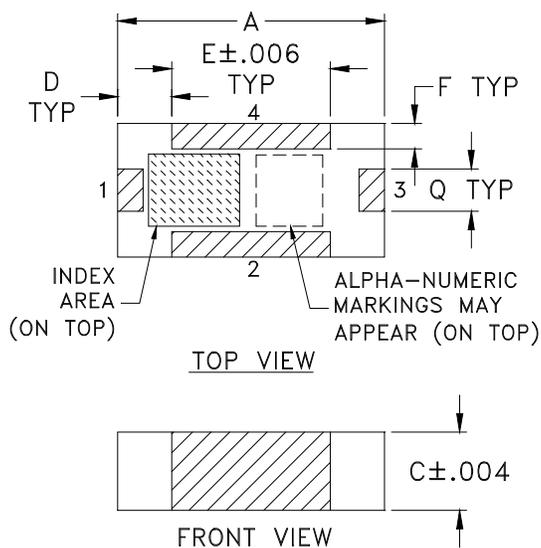
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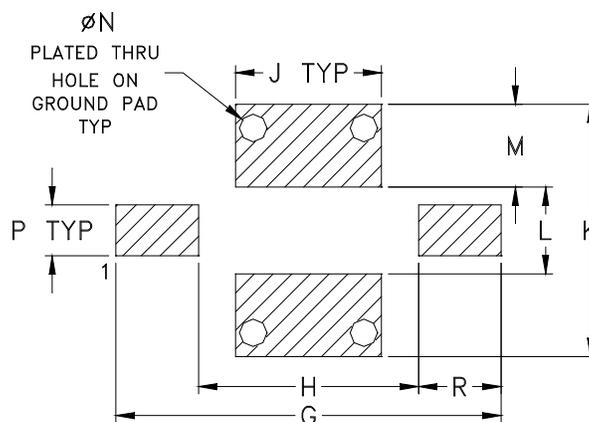
IF/RF MICROWAVE COMPONENTS

REV. OR
LFCN-722+
10/31/2014
Page 1 of 1

Outline Dimensions



PCB Land Pattern



CASE #	A	B	C	D	E	F	G	H	J	K	L	M
FV1206-4	.126 (3.20)	.063 (1.60)	.037 (0.94)	.026 (0.66)	.075 (1.91)	.012 (0.30)	.182 (4.62)	.104 (2.64)	.069 (1.75)	.119 (3.02)	.041 (1.04)	.039 (0.99)

CASE #	N	P	Q	R	WT. GRAM
FV1206-4	.013 (0.33)	.024 (0.61)	.020 (0.51)	.039 (0.99)	.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.



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RF/IF MICROWAVE COMPONENTS

DEVICE ORIENTATION IN T&R

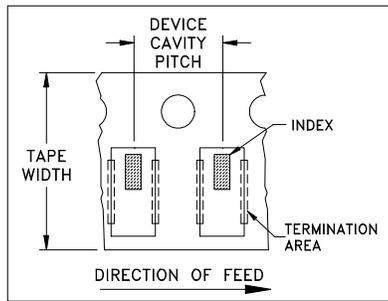


ILLUSTRATION 1

Applicable Case Styles
FV1206-1 FV1206-3

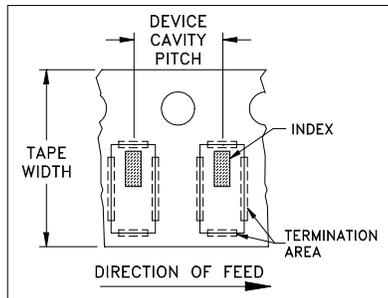


ILLUSTRATION 2

Applicable Case Styles
FV1206-4 FV1206-5 FV1206-6 FV1206-7 FV1206-9

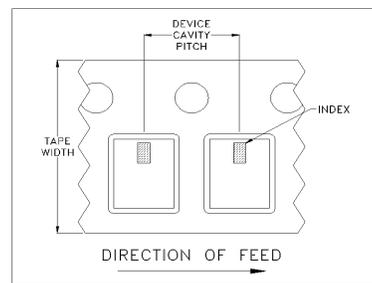


ILLUSTRATION 3

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.

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

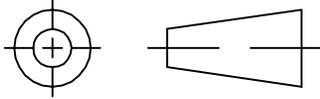


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THIRD ANGLE PROJECTION



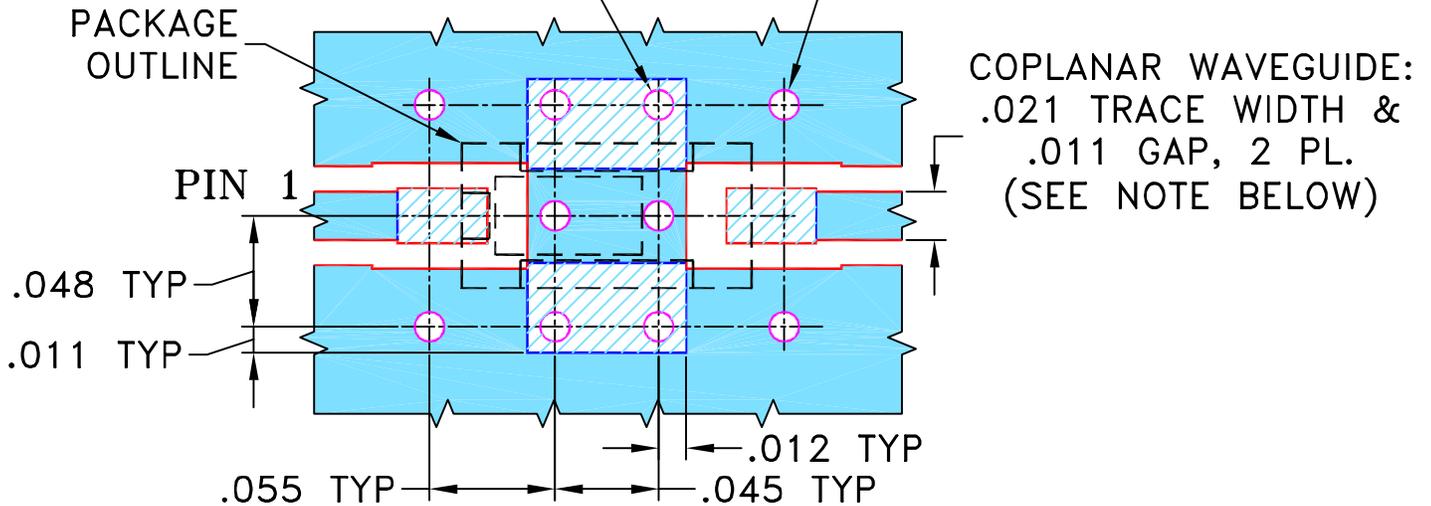
REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M136022	NEW RELEASE	03/07/12	GF	ABD

**SUGGESTED MOUNTING CONFIGURATION
FOR FV1206-4 CASE STYLE, "04FL01" PIN CODE**

4X ϕ .013 PTH FOR GROUND. TO AVOID SOLDER WICKING, PLUG THESE HOLES.

6X ϕ .013 PTH FOR GROUND



- NOTE:** 1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .010" \pm .001".
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
DRAWN	GF	02/17/12
CHECKED	IL	03/07/12
APPROVED	ABD	03/07/12

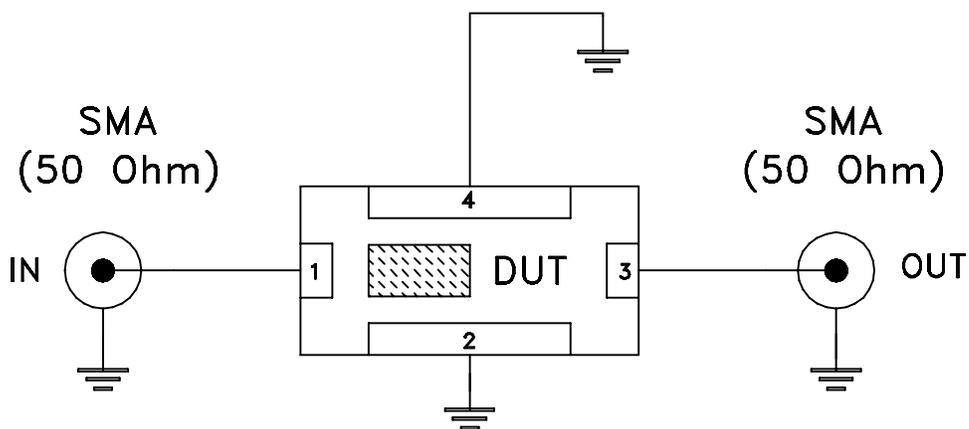
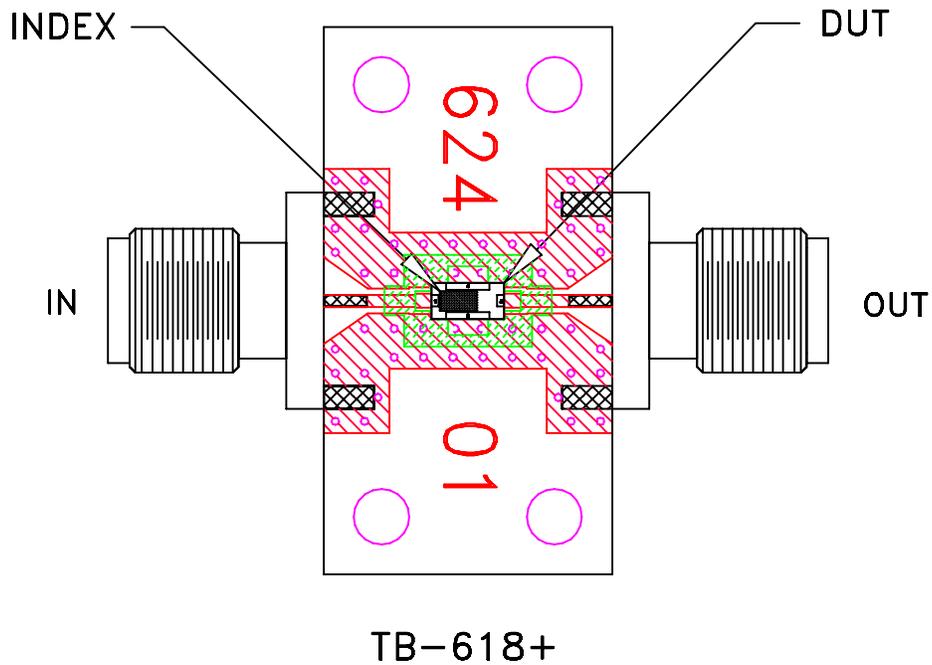
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PL, 04FL01, FV1206-4, TB-618+

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SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-363	REV: OR
FILE: 98PL363	SCALE: 12:1	SHEET: 1 OF 1	

Evaluation Board and Circuit



Schematic Diagram

Notes:

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