Ceramic

Bandpass Filter

50Ω 950 to 2200 MHz

BFCG-162W+

Generic photo used for illustration purposes only

CASE STYLE: GE0805C-3

+RoHS Compliant

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

Features

- Extremely wide passband, 950-2200 MHz
- Small size 0805(2.0 x 1.25 mm)
- Temperature stable
- LTCC construction

Applications

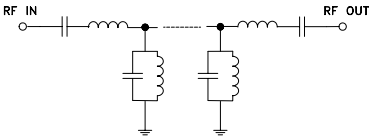
- Wireless communication
- Harmonic Rejection
- Transmitters / receivers

Electrical Specifications[1,2] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—			1575		dB
	Insertion Loss	F1 - F2	950 - 2200	—	1.8	3.0	dB
	VSWR	F1 - F2	950 - 2200	—	2.0	—	:1
Stop Band, Lower	Insertion Loss	DC - F3	DC - 770	20	25	—	dB
Stop Band, Upper	Insertion Loss	F4 - F5	3000 - 5000	20	30	—	dB

1. Measured on Mini-Circuits Characterization Test Board TB-703+.
2. This filter is not intended for use as a DC Blocking circuit element. In Application where DC voltage is present at either input or output ports, blocking capacitors are required at the corresponding RF port.

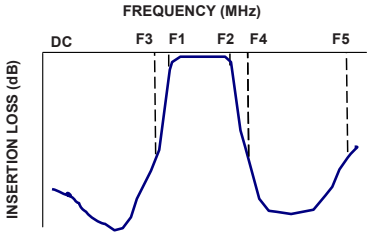
Functional Schematic



Maximum Ratings	
Operating Temperature	-55°C to 125°C
Storage Temperature[3]	-55°C to 125°C
RF Power Input[4]	0.5W at 25°C

3. 12 months max.
4. Passband rating, derate linearly to 0.25W at 100°C ambient
Permanent damage may occur if any of these limits are exceeded.

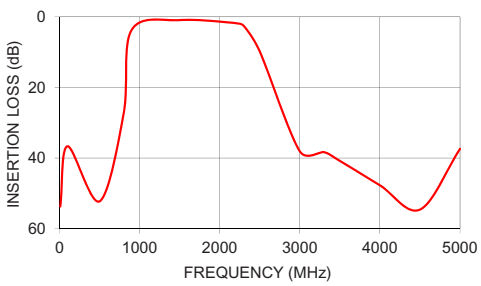
Typical Frequency Response



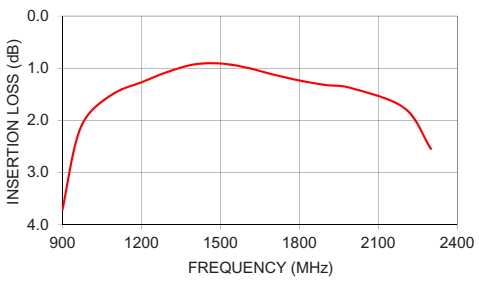
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	53.73	168.77
100	36.66	233.22
500	52.27	29.38
800	27.55	4.05
900	3.72	1.20
1500	0.91	1.20
2200	1.77	1.37
2300	2.55	1.64
2500	9.79	6.26
3000	38.08	42.51
3300	38.31	60.19
3500	40.81	68.65
4000	47.71	72.79
4500	54.61	66.32
5000	37.41	30.84

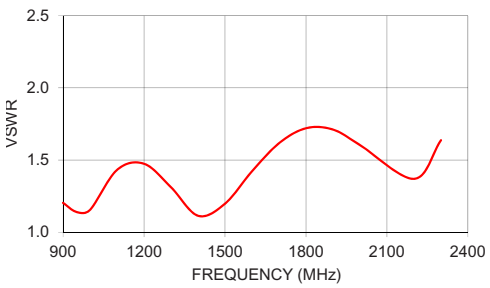
BFCG-162W+
INSERTION LOSS (Full Band)



BFCG-162W+
INSERTION LOSS (Pass Band)



BFCN-162W+
VSWR



Notes

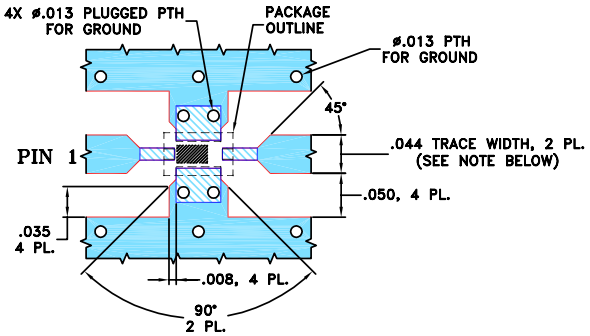
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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

Pad Connections

INPUT	1
OUTPUT	3
GROUND	2,4

Product Marking: N/A

Evaluation Board MCL P/N: TB-703+
Suggested PCB Layout (PL-397)



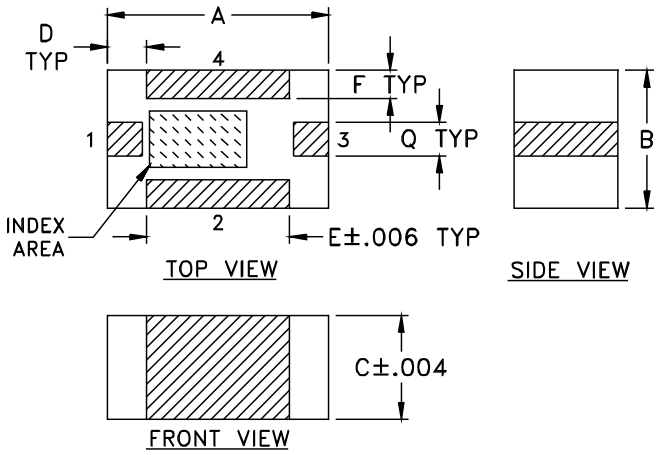
NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .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.

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E	F	Q	wt
.079	.049	.037	.014	.051	.010	.012	grams
2.01	1.24	0.94	0.36	1.30	0.25	0.30	.020

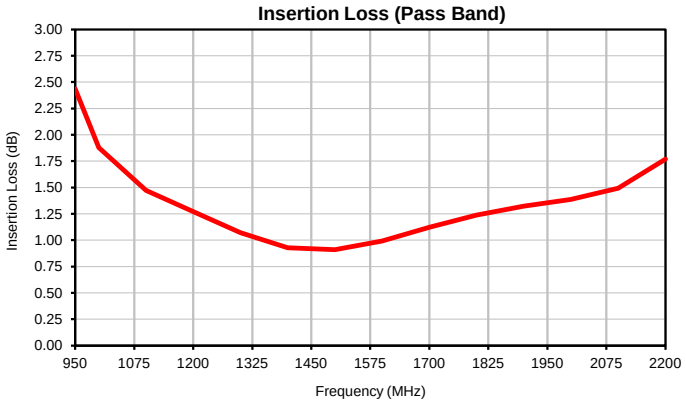
Ceramic Bandpass Filter BFCG-162W+

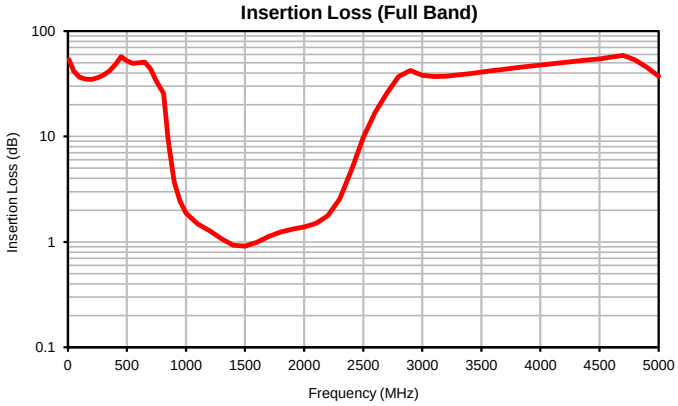
Typical Performance Data

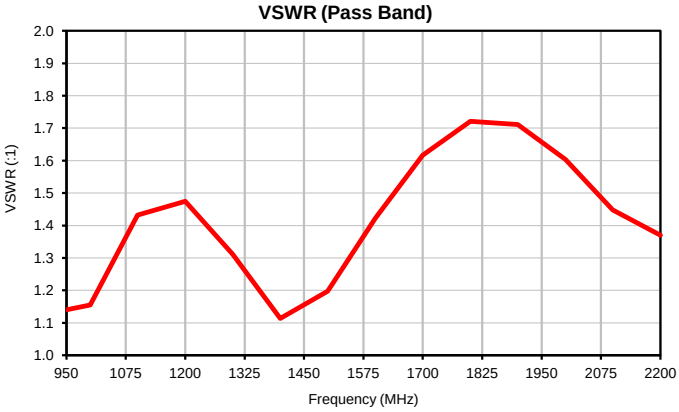
FREQUENCY (MHz)	INSERTION LOSS (dB)	VSWR (:1)
10.0	53.73	168.77
50.0	41.60	185.95
100.0	36.66	233.22
150.0	34.92	141.35
200.0	34.87	105.71
250.0	35.97	80.35
300.0	38.23	62.12
350.0	41.83	49.72
400.0	47.72	41.96
450.0	57.18	34.97
500.0	52.27	29.38
550.0	49.51	24.68
600.0	50.01	20.21
650.0	50.72	15.88
700.0	43.94	11.80
750.0	33.64	7.76
810.0	25.59	3.40
850.0	9.35	1.55
900.0	3.72	1.20
950.0	2.44	1.14
1000.0	1.88	1.15
1100.0	1.47	1.43
1200.0	1.27	1.47
1300.0	1.07	1.31
1400.0	0.93	1.11
1500.0	0.91	1.20
1600.0	0.99	1.42
1700.0	1.12	1.62
1800.0	1.24	1.72
1900.0	1.32	1.71
2000.0	1.39	1.60
2100.0	1.49	1.45
2200.0	1.77	1.37
2300.0	2.55	1.64
2400.0	4.82	2.85
2500.0	9.79	6.26
2600.0	16.92	12.37
2700.0	25.54	19.76
2800.0	37.08	27.59
2900.0	42.30	35.27
3000.0	38.08	42.51
3100.0	37.13	49.25
3200.0	37.44	55.89
3300.0	38.31	60.19
3400.0	39.47	64.52
3500.0	40.81	68.65
3600.0	42.19	70.77
3700.0	43.64	72.19
3800.0	45.04	74.10
3900.0	46.45	72.82
4000.0	47.71	72.79
4100.0	49.12	71.98
4200.0	50.40	70.12
4300.0	51.81	70.00
4400.0	53.22	67.27
4500.0	54.61	66.32
4600.0	56.94	63.92
4700.0	58.74	60.99
4800.0	53.12	56.13
4900.0	45.37	46.93
5000.0	37.41	30.84

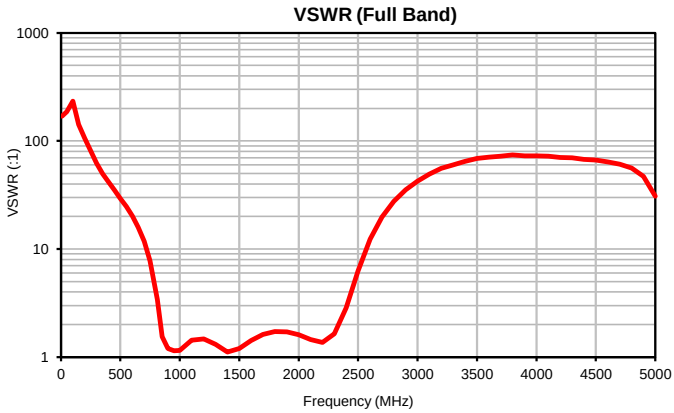
Ceramic Bandpass Filter BFCG-162W+

Typical Performance Curves



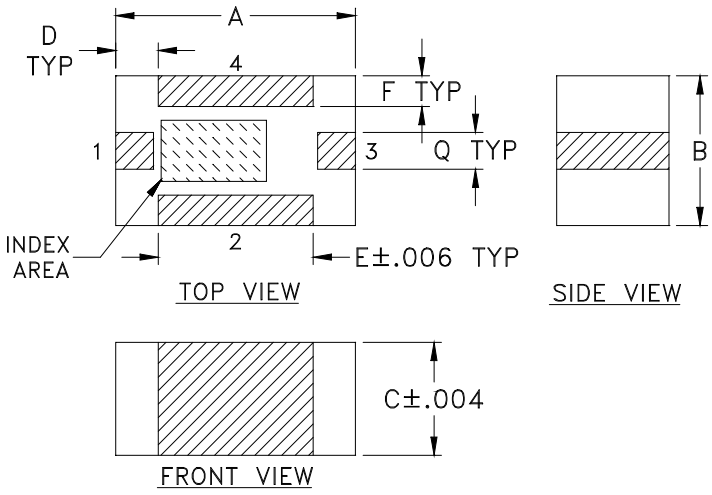




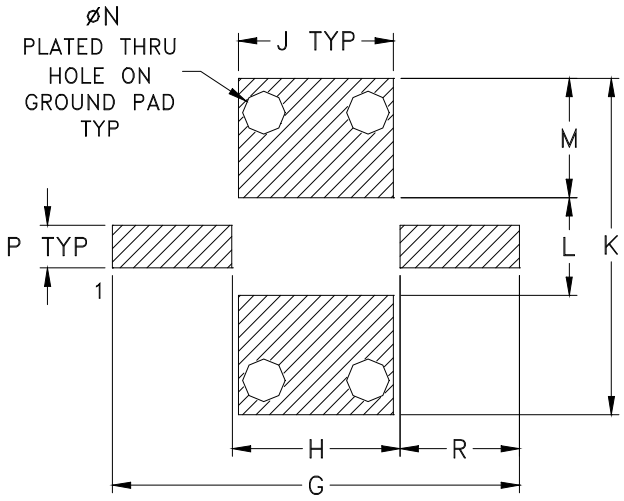


GE0805C-3

Outline Dimensions



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L
GE0805C-3	.079 (2.00)	.049 (1.25)	.037 (0.95)	.014 (0.35)	.051 (1.30)	.010 (0.25)	.134 (3.40)	.055 (1.40)	.051 (1.30)	.110 (2.80)	.032 (0.80)

CASE #	M	N	P	Q	R	WT. GRAM
GE0805C-3	.039 (1.00)	.014 (0.35)	.014 (0.35)	.012 (0.30)	.039 (1.00)	.020

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

Notes:

1. Open style, ceramic base.
2. Termination finish: For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
   For RoHS-5 Case Styles: Tin-Lead plate over Nickel plate. All models, no (+) suffix.

Tape & Reel Packaging TR-F114

DEVICE ORIENTATION IN T&R

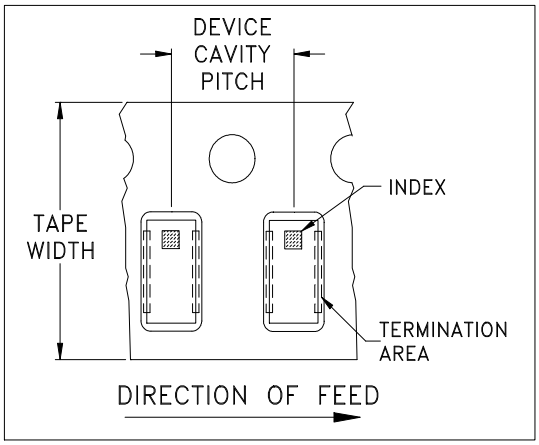


ILLUSTRATION 1

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

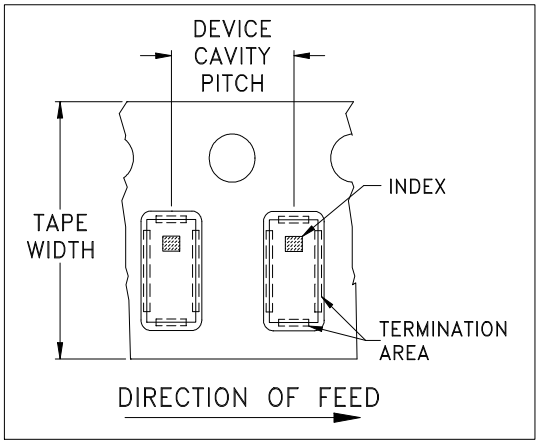


ILLUSTRATION 2

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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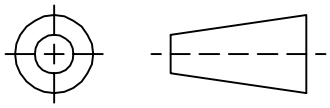
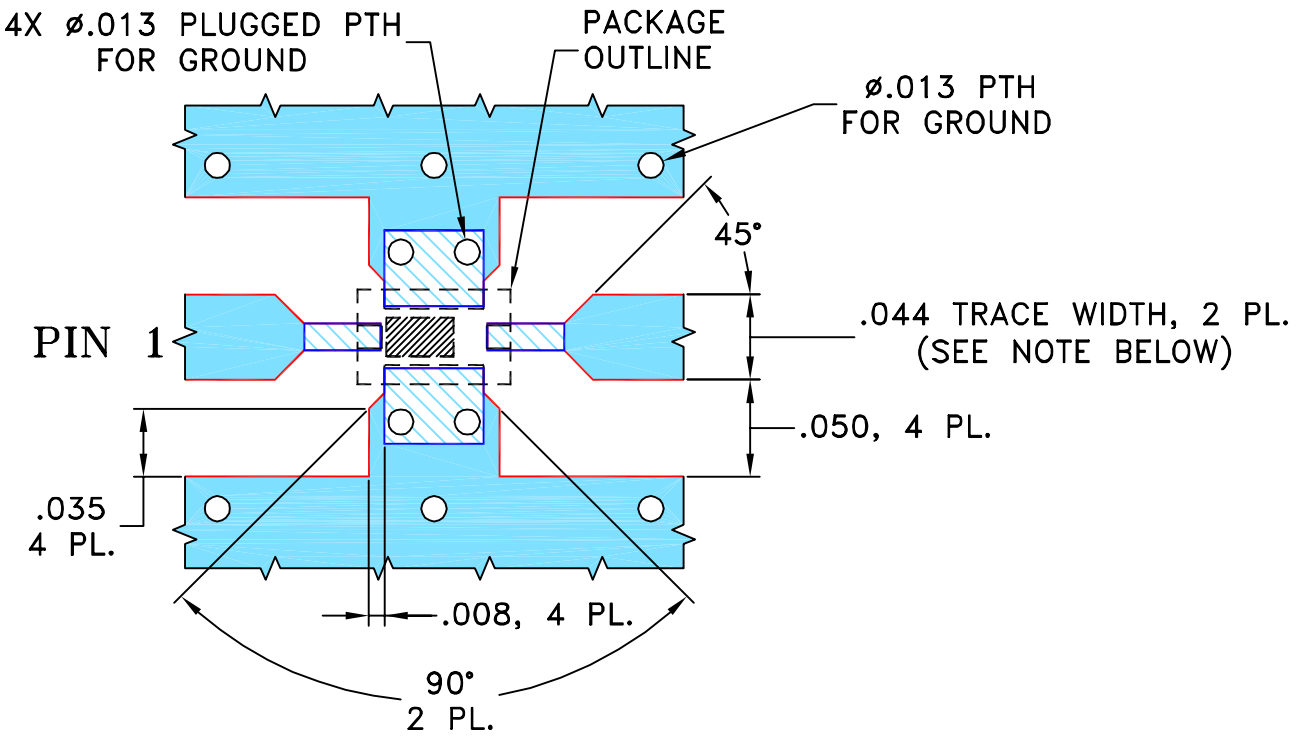
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M143028	NEW RELEASE	09/03/13	AV	CH

SUGGESTED MOUNTING CONFIGURATION FOR GE0805C-3 CASE STYLE, "04FL01" PIN CODE



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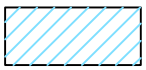


DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

UNLESS OTHERWISE SPECIFIED		INITIALS	DATE
DIMENSIONS ARE IN INCHES	DRAWN	AV	08/21/13
TOLERANCES ON:	CHECKED	IL	09/03/13
2 PL DECIMALS ±	APPROVED	CH	09/03/13
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

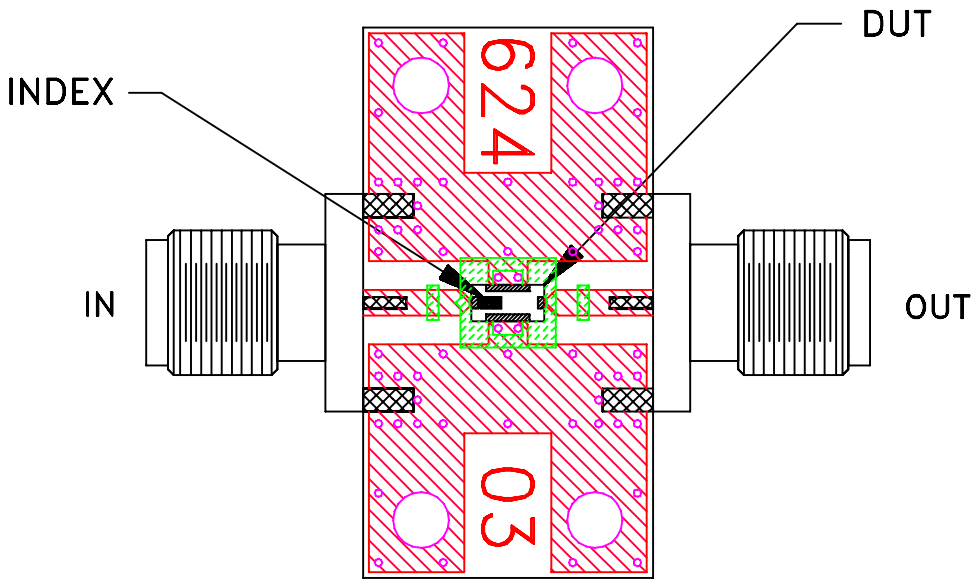
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 04FL01, GE0805C-3, TB-703+

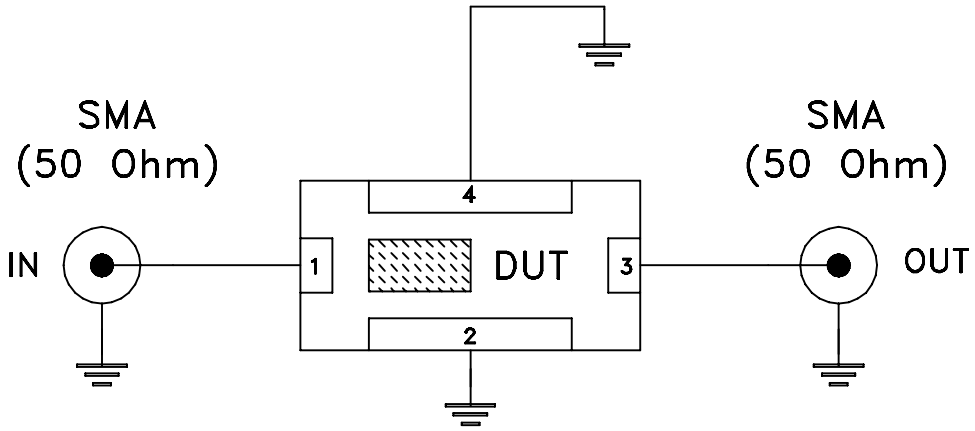
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-397	OR

FILE:	SCALE:	SHEET:
98PL397	10:1	1 OF 1

Evaluation Board and Circuit



TB-703+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4350 or equivalent,
   Dielectric Constant=3.5, Thickness=.020 inch.

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