

LTCC

Low Pass Filter

50Ω 2400 to 2500 MHz

Features

- Miniature size 0805 (0.079"[2.0mm] x 0.049"[1.25mm] x 0.037"[0.95mm])
- Low Insertion Loss, 0.3 dB typ. and High rejection.
- Replaces two inductors and five capacitors
- Low cost
- Aqueous washable

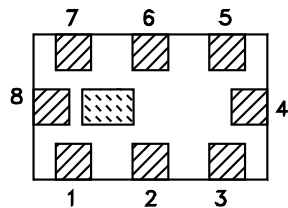
Applications

- ISM Band
- WLAN
- Bluetooth
- Zigbee

Block Diagram



Top View



Pad Connections

Input	8
Output	4
Ground	1,3,5,7
No Connection	2,6

LPGE-252R+



CASE STYLE: GE0805C-2

+RoHS Compliant

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



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss ¹	2400 - 2500	—	0.3	0.6	dB
	VSWR	2400 - 2500	—	1.1	1.8	:1
Stop Band	Rejection Loss	4800-5000	32	44	—	dB
		7200-7500	30	40	—	dB
		9600-10000	30	37	—	dB

1. Tested on Evaluation Board TB-1019+

Maximum Ratings

Operating Temperature	-40°C to +85°C
Storage Temperature ²	-40°C to +85°C
RF Power Input ³	3W at 25°C

2. Refer to product storage temperature after installation

Suggestion for T&R unused product storage condition:

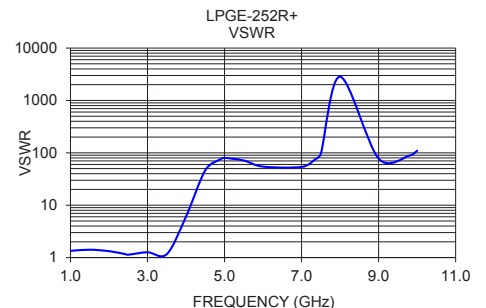
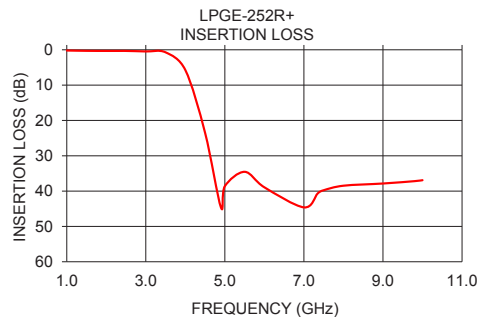
+5 ~ +35 °C, Humidity 45~75%RH, 12 month Max

3. Derate linearly to 1.5W at 85°C

Typical Performance Data at 25°C⁴

Frequency (GHz)	Insertion Loss (dB)	VSWR (:1)
1.00	0.20	1.34
1.50	0.29	1.41
2.00	0.32	1.33
2.40	0.31	1.17
2.50	0.32	1.14
3.00	0.47	1.26
3.50	0.72	1.16
4.00	5.74	6.07
4.80	45.95	76.25
4.90	44.62	75.62
5.00	38.59	79.94
5.50	34.54	71.31
6.00	38.93	54.50
7.20	41.95	62.46
7.35	40.64	74.78
7.50	39.75	96.20
8.00	38.47	2843.65
9.60	37.85	77.75
9.80	37.39	76.84
10.00	36.91	110.04

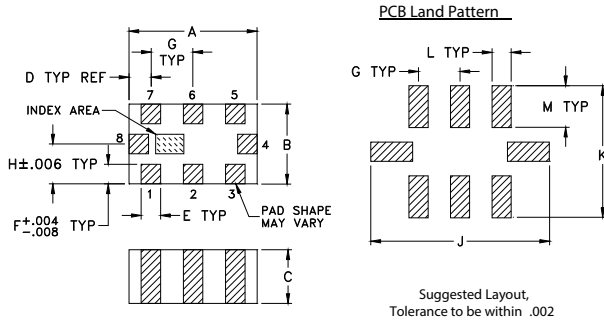
4. Measured with Agilent E5071B network analyzer using port extension.



Low Pass Filter

LPGE-252R+

Outline Drawing



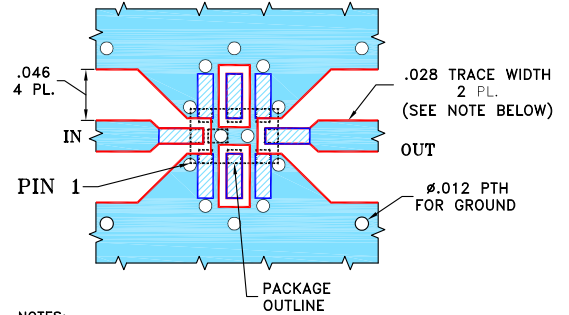
Pad Connections

Input	8
Output	4
Ground	1,3,5,7
No Connection	2,6

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.079	.049	.037	.014	.012	.012	.026
2.01	1.24	0.94	0.36	0.30	0.30	0.66
H	J	K	L	M		wt
.025	.134	.104	0.014	.039		grams
0.64	3.40	2.64	0.36	0.99		.008

Evaluation Board MCL P/N: TB-1019+ Suggested PCB Layout (PL-555)



NOTES:

- TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS .016±.0015. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 - 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 Notes

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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

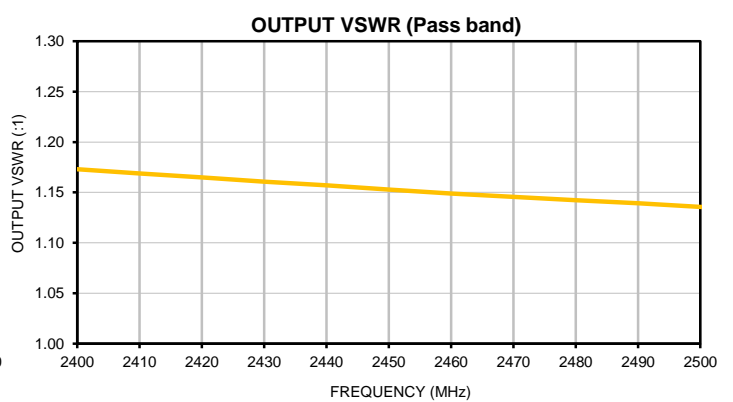
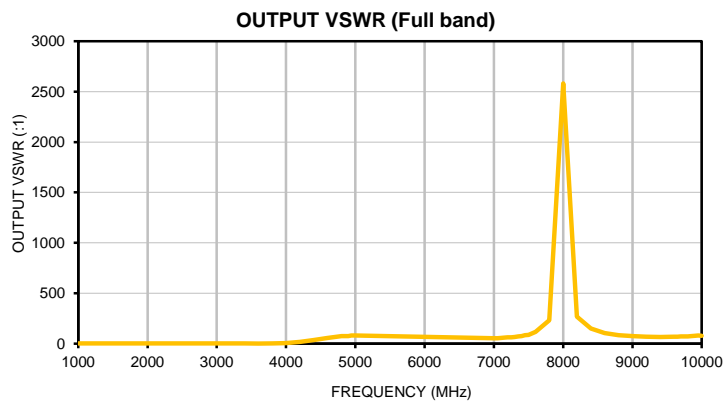
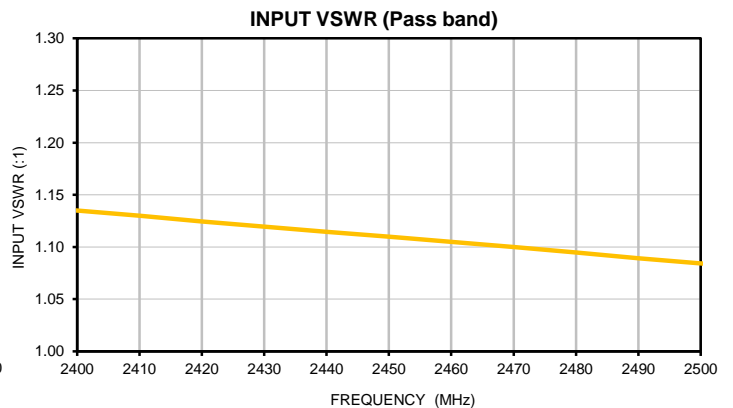
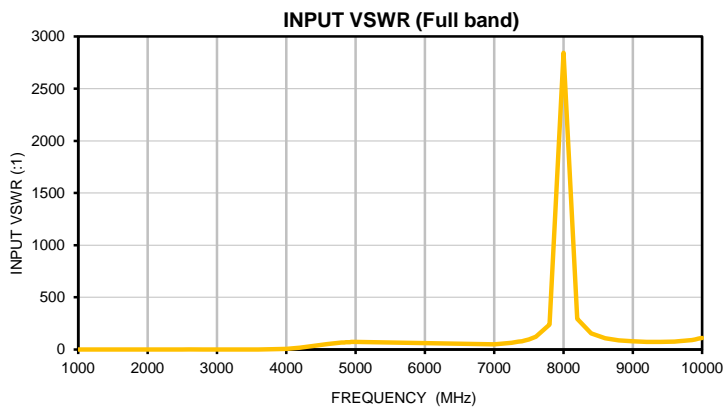
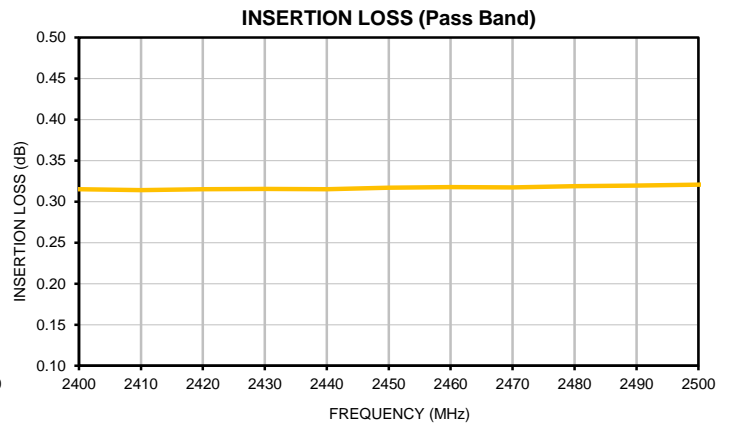
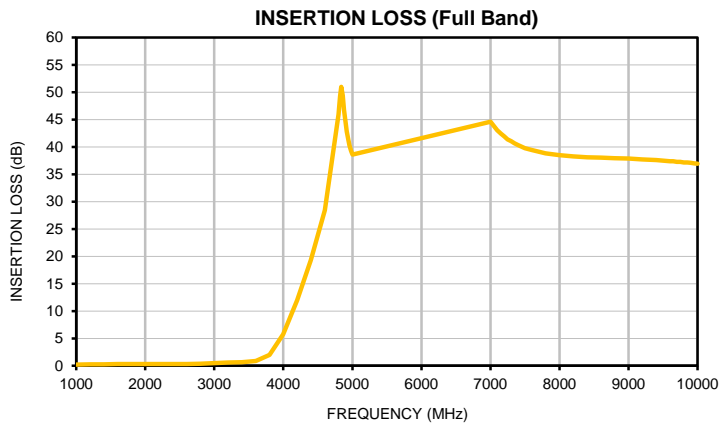


Typical Performance Data

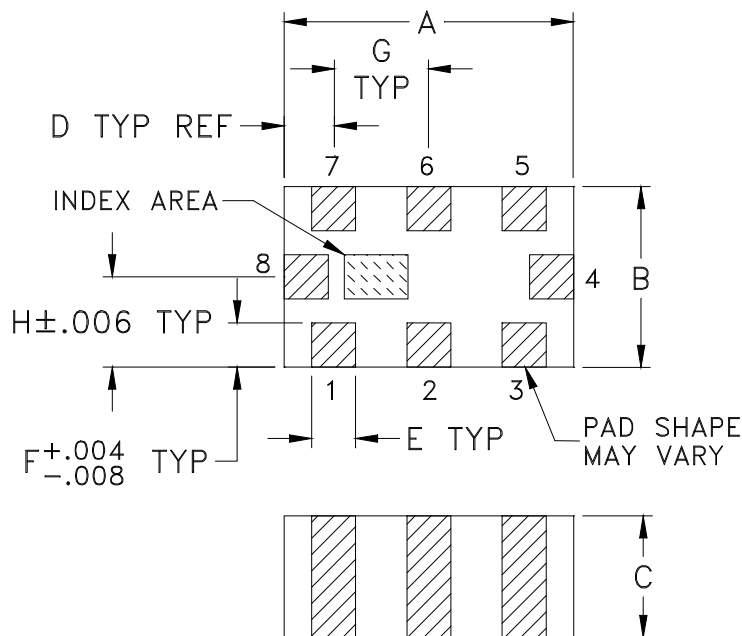
FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT VSWR (:1)	OUTPUT VSWR (:1)
1000	0.20	1.32	1.34
1200	0.25	1.36	1.39
1400	0.28	1.39	1.41
1600	0.31	1.39	1.41
1800	0.32	1.37	1.38
2000	0.32	1.32	1.33
2200	0.32	1.24	1.26
2400	0.31	1.13	1.17
2410	0.31	1.13	1.17
2420	0.31	1.12	1.16
2430	0.32	1.12	1.16
2440	0.31	1.11	1.16
2450	0.32	1.11	1.15
2460	0.32	1.10	1.15
2470	0.32	1.10	1.15
2480	0.32	1.09	1.14
2490	0.32	1.09	1.14
2500	0.32	1.08	1.14
2600	0.33	1.05	1.11
2800	0.38	1.12	1.16
3000	0.47	1.24	1.26
3200	0.57	1.32	1.34
3400	0.66	1.27	1.28
3600	0.85	1.08	1.09
3800	1.96	2.06	2.09
4000	5.74	5.94	6.07
4200	11.97	16.59	17.28
4400	19.34	33.97	35.71
4600	28.44	51.71	58.02
4800	45.95	66.16	76.25
4820	49.21	66.61	75.48
4840	50.98	67.70	75.00
4860	49.40	69.28	75.33
4880	46.77	69.71	74.52
4900	44.62	70.01	75.62
4920	42.83	71.21	77.97
4940	41.36	71.83	79.77
4960	40.28	72.02	81.14
4980	39.34	73.26	80.57
5000	38.59	72.76	79.94
7000	44.61	49.94	53.84
7050	43.83	52.23	53.89
7100	43.05	54.48	56.85
7150	42.45	57.73	60.26
7200	41.95	60.18	62.46
7250	41.38	64.54	63.81
7300	41.04	69.18	66.60
7350	40.64	74.78	72.87
7400	40.30	80.31	74.77
7450	40.06	88.36	83.02
7500	39.75	96.20	87.34
7600	39.41	122.29	117.55
7800	38.84	237.99	232.07
8000	38.47	2843.64	2581.25
8200	38.26	293.33	267.23
8400	38.12	154.67	150.68
8600	38.03	107.43	105.86
8800	37.94	88.60	82.62
9000	37.85	77.75	75.28
9200	37.74	72.68	70.30
9400	37.57	72.91	66.98
9600	37.39	76.84	67.45
9650	37.36	79.50	69.95
9700	37.28	80.62	71.96
9750	37.25	83.99	70.47
9800	37.18	88.46	71.99
9850	37.15	92.02	76.15
9900	37.09	97.64	78.04
9950	36.99	104.44	81.20
10000	36.91	110.04	79.41



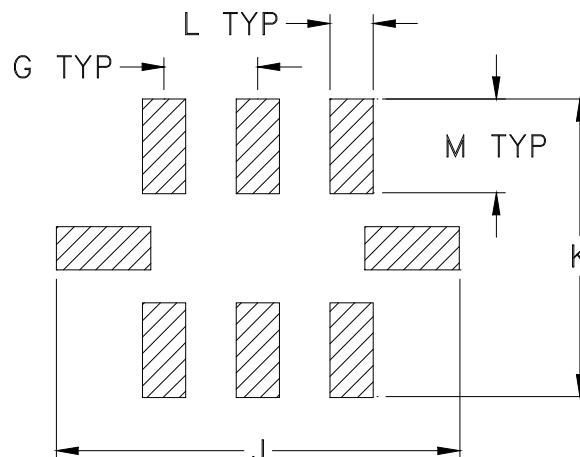
Typical Performance Curves



Outline Dimensions



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	L
GE0805C-2	.079 (2.00)	.049 (1.25)	.037 (0.95)	.014 (0.35)	.012 (0.30)	.012 (0.30)	.026 (0.65)	.025 (0.63)	.134 (3.40)	.110 (2.80)	.014 (0.35)

CASE #	M	WT. GRAM
GE0805C-2	.039 (1.00)	.008

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

Notes:

- Open style, ceramic base.
- Termination finish: For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate over Nickel plate. All models, no (+) suffix.
- Pad tolerance to be non-cumulative. Minimum spacing between each pad is .004 (0.1).



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



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	

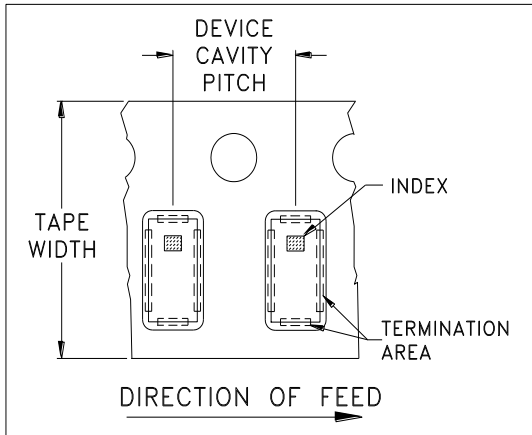


ILLUSTRATION 2

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	
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
			Standard	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



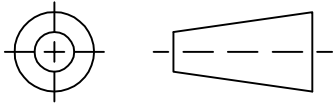
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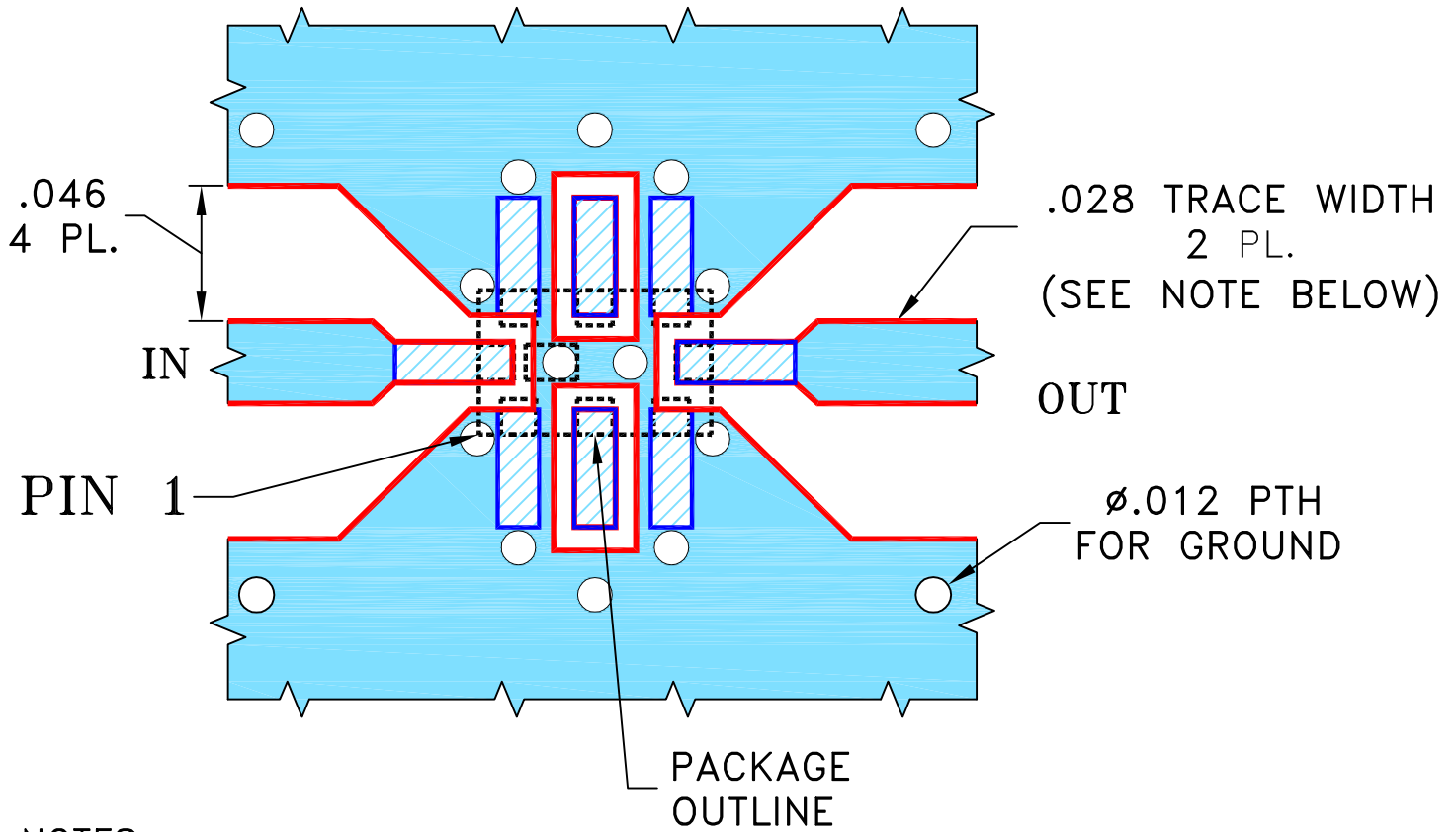
THIRD ANGLE PROJECTION



REVISIONS

REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M168200	NEW RELEASE	05/31/18	NP	SL

SUGGESTED MOUNTING CONFIGURATION
FOR GE0805C-2 CASE STYLE, "08FL07" PIN CODE



NOTES:

1. TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS $.016 \pm .0015$. 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 NP	05/30/18
TOLERANCES ON:	CHECKED GF	05/30/18
2 PL DECIMALS ±	APPROVED SL	05/31/18
3 PL DECIMALS ± .005		
ANGLES ±		
FRACTIONS ±		

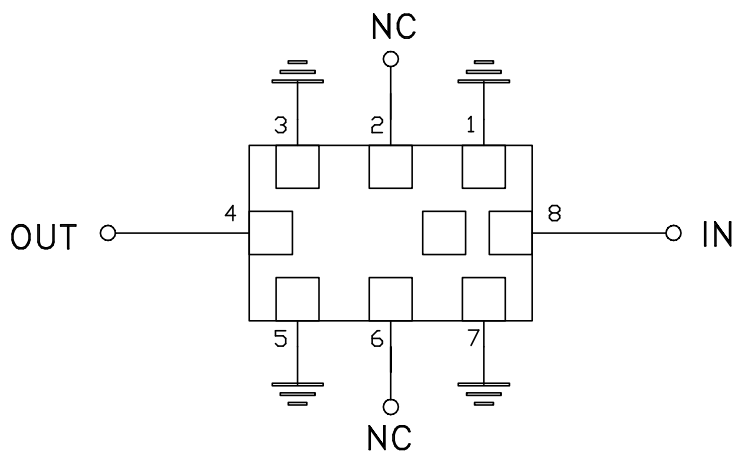
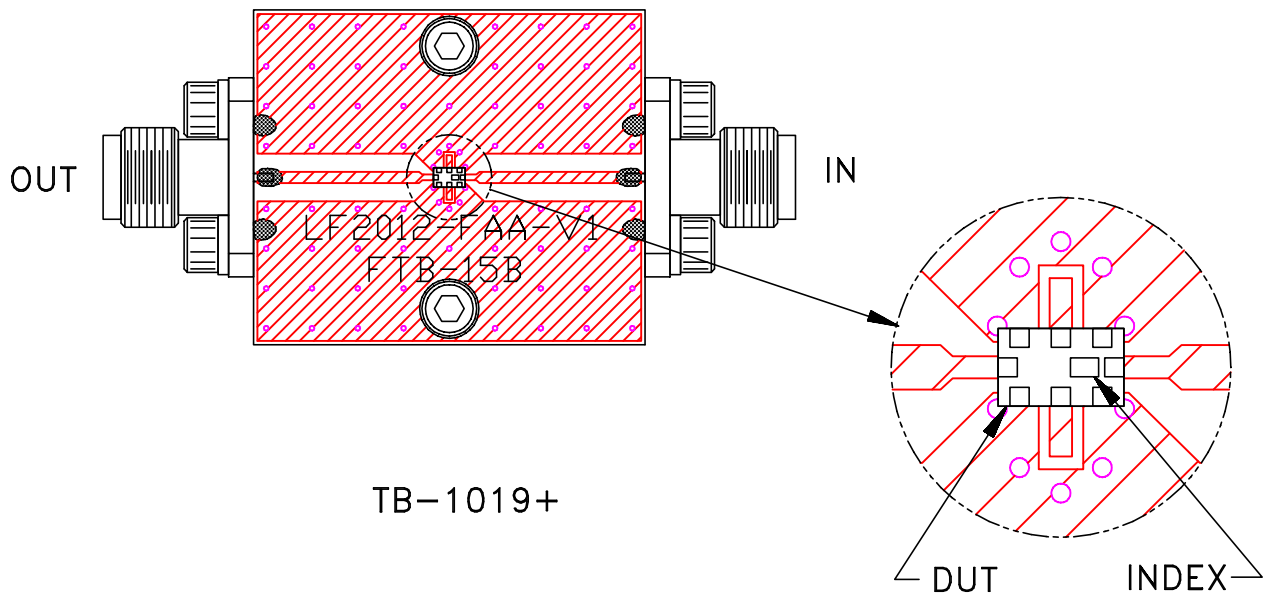
Mini-Circuits® 13 Neptune Avenue
 Brooklyn NY 11235

PL, 08FL07, GE0805C-2, TB-1019+

SIZE A	CODE IDENT 15542	DRAWING NO: 98-PL-555	REV: OR
FILE: 98PL555	SCALE: 15:1	SHEET: 1 OF 1	

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


Evaluation Board and Circuit



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: FR4 or equivalent, Dielectric Constant=4.5, Thickness=.016 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	-40° to 85° 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 Eutectic Process: 225°C peak Pb-Free Process: 250°C peak	J-STD-020C, 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