LTCC

Bandpass Filter & Balun

BFGE2-552R+

50Ω 4900 to 5875 MHz

Generic photo used for illustration purposes only

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

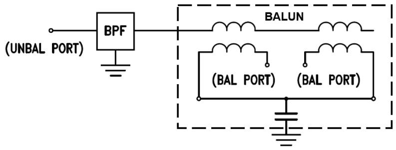
Features

- Low amplitude unbalance 0.6 dB typ.
- Small size (0.079”x0.049”x0.037”)
- Temperature stable
- Hermetically sealed

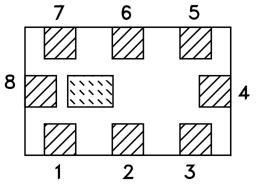
Applications

- ISM Band
- Bluetooth
- Zigbee
- WiFi / WLAN

Pad Connections



Top View



Pad Connections

Unbalanced Port	1
Balanced Port	5, 7
GND	4,6,8
NC	3
NC or DC Feed	2

Electrical Specifications at 25°C

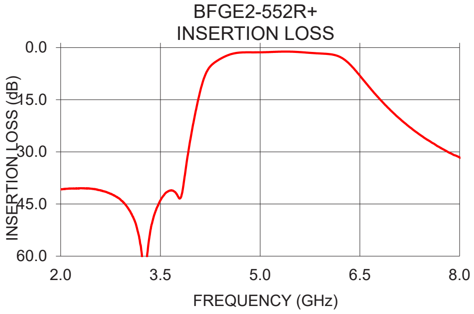
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio					2		
Pass Band	Insertion Loss[1]	F1-F2	4900 - 5875	—	1.3	2.2	dB
	Return Loss	F1-F2	4900 - 5875	8.5	17	—	dB
Stop Band, Lower	Rejection		3500	30	49	—	dB
Amplitude Unbalance			4900 - 5875	—	1.7	—	dB
Phase Unbalance			4900 - 5875	—	4	—	degree

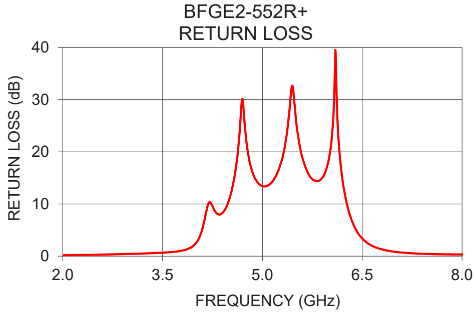
1. Tested on Evaluation Board TB-1034-2552+ .

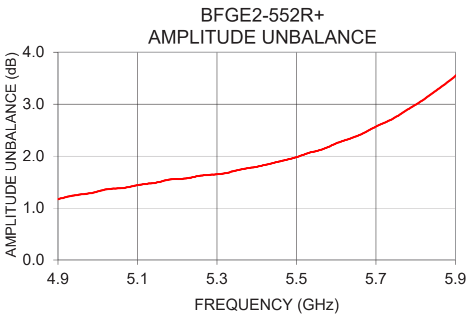
Maximum Ratings

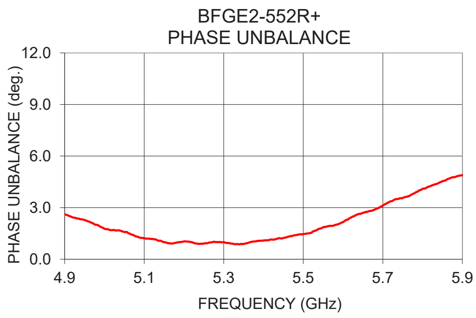
Operating Temperature	-40°C to +85°C
Storage Temperature[1]	-40°C to +85°C
RF Power Input[2]	2W @25°C

1. 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
2. Derate linearly to 1W at 85°C.





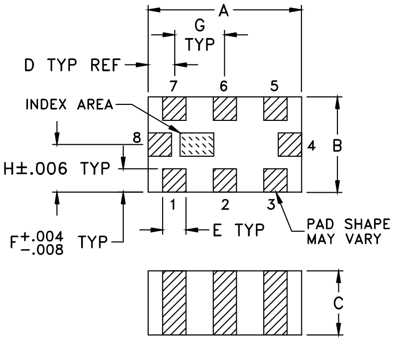


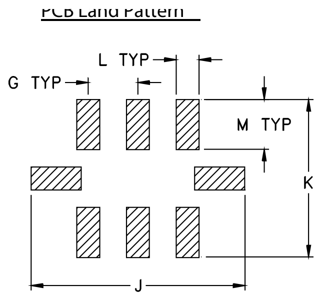


Typical Performance Data

Frequency (GHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg,)
0.50	51.50	0.05	3.65	142.87
0.70	48.63	0.06	3.84	152.54
1.00	45.77	0.09	3.88	160.55
1.50	42.50	0.13	3.75	166.92
2.00	40.77	0.18	3.43	170.40
2.50	40.68	0.28	2.75	173.27
3.00	45.82	0.43	1.29	177.15
3.50	43.92	0.66	1.40	176.01
4.00	21.29	2.47	3.24	63.58
4.50	2.32	10.82	0.08	6.72
4.90	1.37	14.65	1.17	2.62
5.40	1.15	27.20	1.79	1.08
5.876	1.67	14.71	3.40	4.77
6.50	8.08	3.39	23.69	27.07
7.00	18.73	0.82	8.50	166.50
8.50	35.32	0.41	1.68	178.29

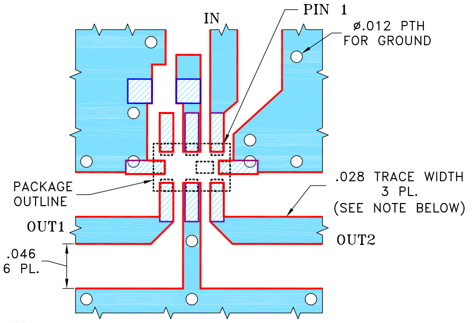
Outline Drawing





Suggested Layout,
Tolerance to be within .002

Demo Board MCL P/N: TB-1034-2552+
Suggested PCB Layout (PL-551)



NOTES:

1. 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.
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 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

Additional 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

LTCC Bandpass Filter + Balun BFGE2-552R+

Typical Performance Data

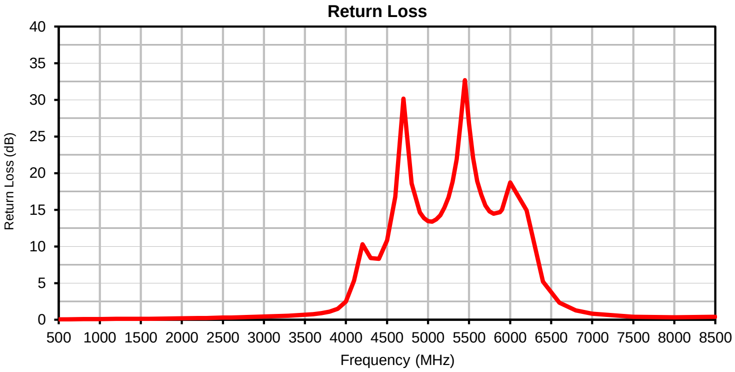
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	AMPLITUDE UNBAL (dB)	PHASE UNBAL(1) (Deg)
500	51.50	0.05	3.65	142.87
600	49.91	0.06	3.78	148.18
800	47.53	0.07	3.85	156.03
1000	45.77	0.09	3.88	160.55
1200	44.31	0.11	3.83	163.80
1400	43.07	0.12	3.82	166.04
1600	42.10	0.14	3.72	167.84
1800	41.34	0.16	3.59	169.22
2000	40.77	0.18	3.43	170.40
2200	40.51	0.22	3.21	171.53
2300	40.47	0.24	3.09	172.24
2400	40.52	0.26	2.93	172.72
2500	40.68	0.28	2.75	173.27
2600	41.09	0.31	2.53	173.90
2700	41.66	0.34	2.28	174.61
2800	42.54	0.37	1.99	175.45
2900	43.73	0.40	1.67	176.25
3000	45.82	0.43	1.29	177.15
3100	49.25	0.46	0.86	178.40
3200	56.73	0.51	0.37	179.67
3300	59.77	0.55	0.19	178.98
3400	48.60	0.60	0.81	177.45
3500	43.92	0.66	1.40	176.01
3600	41.51	0.75	1.88	175.39
3700	41.30	0.88	2.04	177.64
3800	43.31	1.09	1.29	172.90
3900	32.40	1.50	1.60	141.27
4000	21.29	2.47	3.24	63.58
4100	12.46	5.34	0.18	15.30
4200	6.83	10.31	0.93	0.71
4300	4.51	8.41	0.92	5.85
4400	3.26	8.29	0.54	6.97
4500	2.32	10.82	0.08	6.72
4600	1.70	16.78	0.33	5.80
4700	1.43	30.15	0.68	4.64
4800	1.36	18.59	0.97	3.43
4900	1.37	14.65	1.17	2.62
4950	1.36	13.87	1.25	2.29
5000	1.36	13.44	1.32	1.78
5050	1.34	13.39	1.38	1.60
5100	1.31	13.68	1.44	1.22
5150	1.28	14.24	1.49	1.00
5200	1.24	15.31	1.56	1.04
5250	1.20	16.71	1.61	0.90
5300	1.17	18.82	1.65	0.99
5350	1.16	21.90	1.72	0.88
5400	1.15	27.20	1.79	1.08
5450	1.17	32.69	1.88	1.22
5500	1.20	26.73	1.98	1.46
5550	1.24	22.09	2.09	1.84
5600	1.31	18.91	2.25	2.16
5650	1.37	17.05	2.38	2.69
5700	1.45	15.58	2.57	3.12
5750	1.51	14.77	2.75	3.54
5800	1.58	14.45	2.99	4.10
5875	1.66	14.66	3.37	4.74
5900	1.69	15.01	3.54	4.88
6000	1.81	18.72	4.28	5.32
6200	2.68	14.91	7.04	2.06
6400	5.84	5.20	14.85	2.01
6600	10.40	2.33	23.03	131.63
6800	14.84	1.29	12.52	160.11
7000	18.73	0.82	8.50	166.50
7500	26.34	0.42	4.22	173.21
8000	31.60	0.34	2.55	176.45
8500	35.32	0.41	1.68	178.29

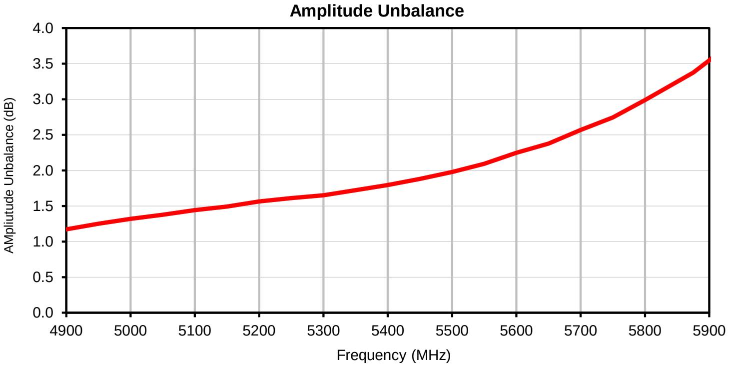
(1) Relative to 180°

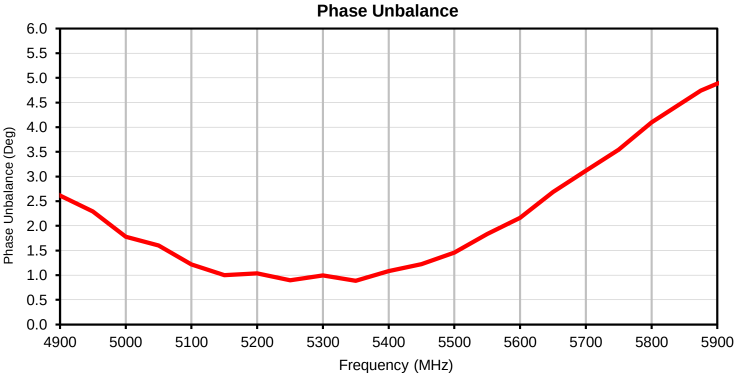
LTCC Bandpass Filter + Balun

BFGE2-552R+

Typical Performance Curves



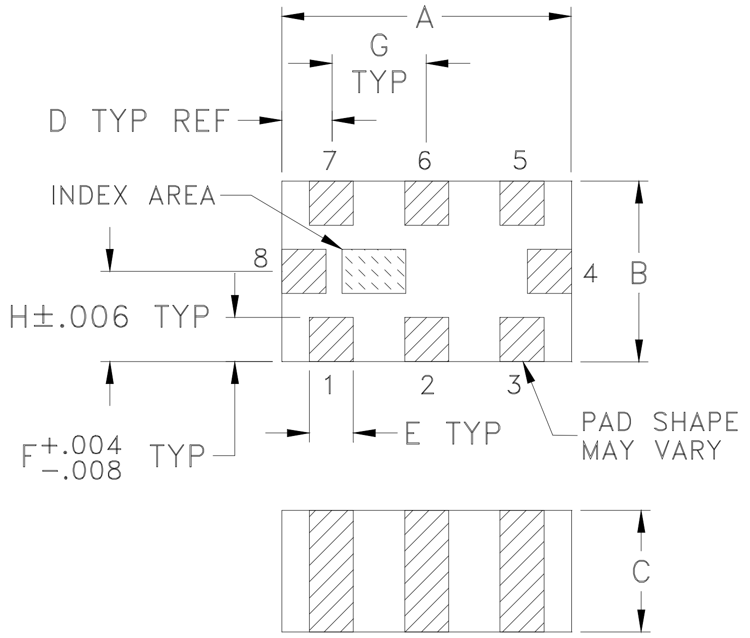




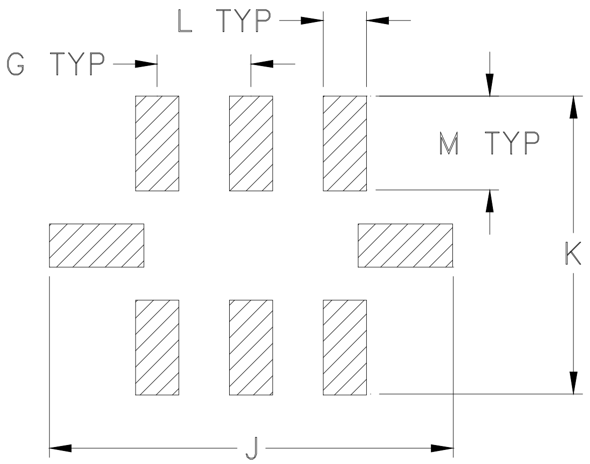
Case Style GE

GE0805C-2

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-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. ± .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.
3. Pad tolerance to be non-cumulative. Minimum spacing between each pad is .004 (0.1).

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RF/IF MICROWAVE COMPONENTS
98-GE Rev.: Q (03/30/18) M167078 File: 98-GE.docx Sheet 4 of 14

Tape & Reel Packaging TR-F114

DEVICE ORIENTATION IN T&R

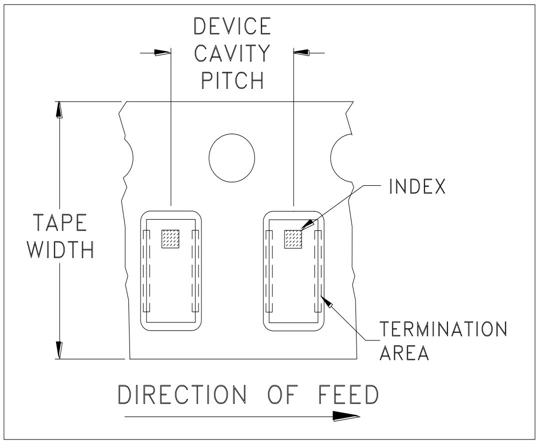


ILLUSTRATION 1

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

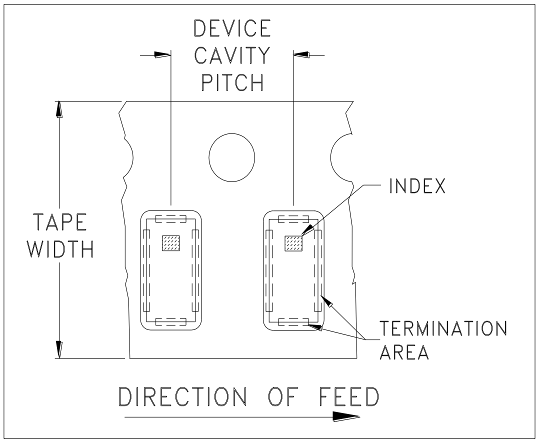


ILLUSTRATION 2

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

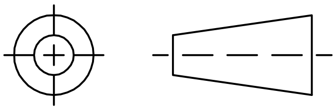
Tape Width, mm	**Device Cavity Pitch, mm**	**Reel Size, inches**	**Devices per Reel**	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	4000

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.

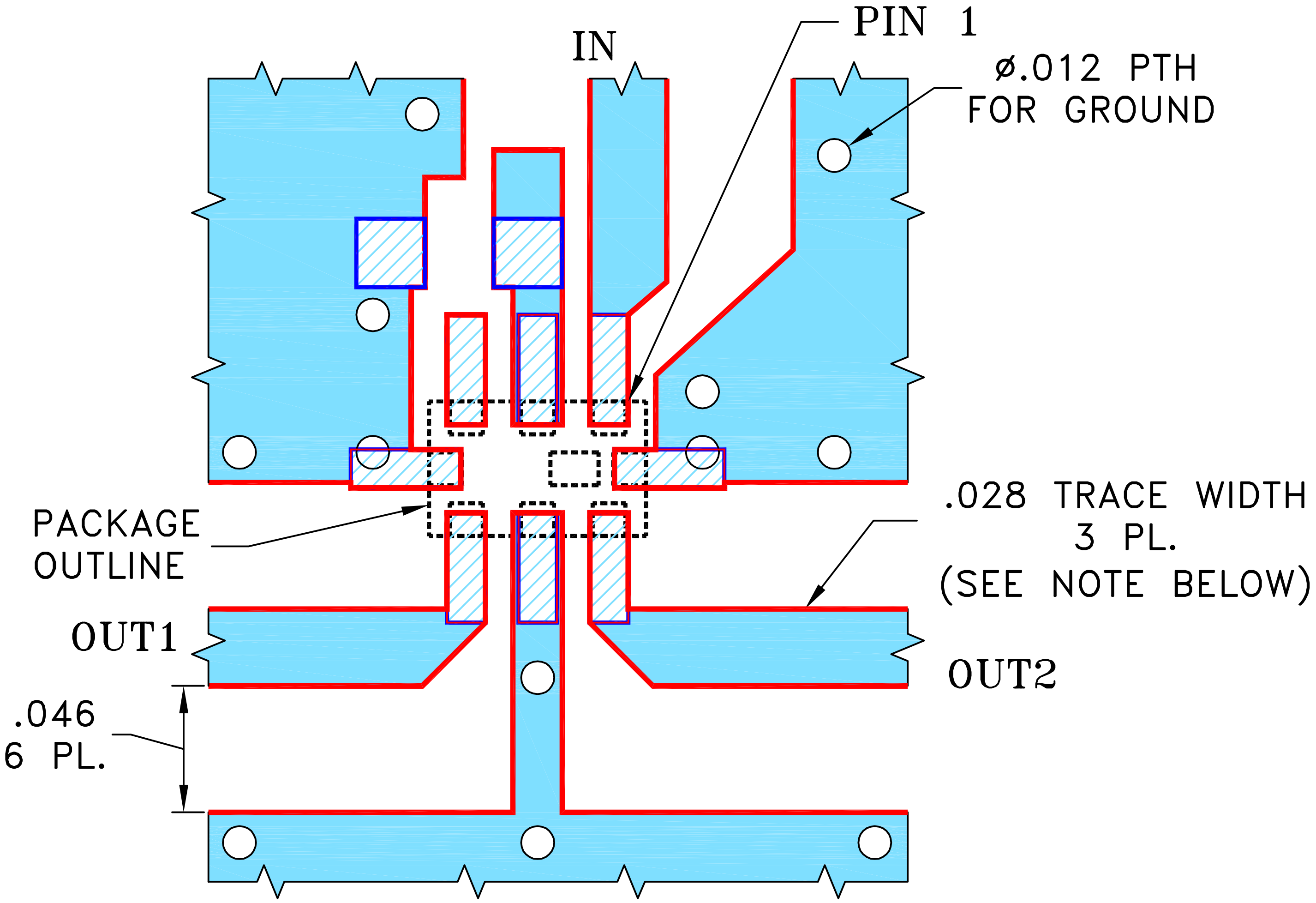
Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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, "08TJ01" PIN CODE



NOTES:

1. 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.
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: 2 PL DECIMALS ± 3 PL DECIMALS ± .005 ANGLES ± FRACTIONS ±	CHECKED	GF	05/30/18
	APPROVED	SL	05/31/18

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

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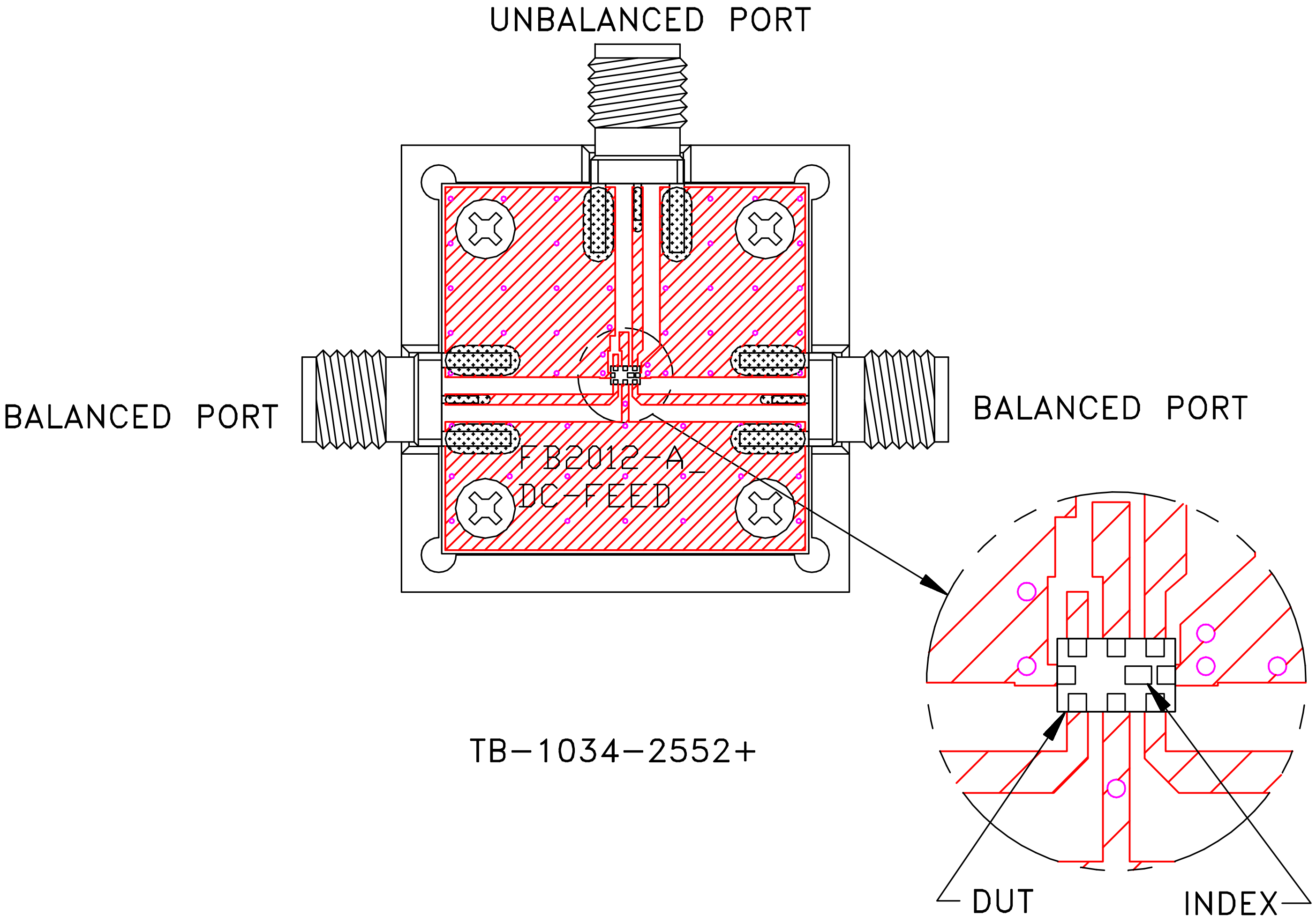
13 Neptune Avenue
Brooklyn NY 11235

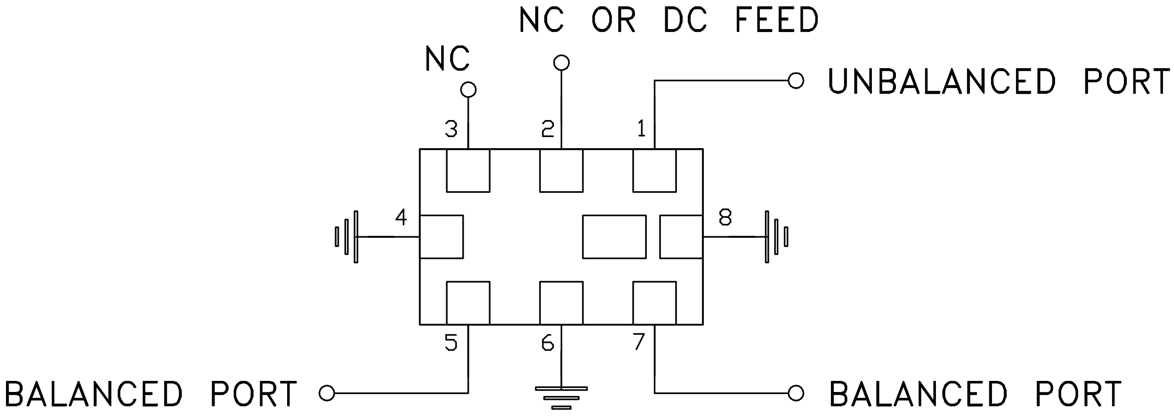
PL, 08TJ01, GE0805C-2, TB-1034+

SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-551	OR

FILE:	SCALE:	SHEET:
98PL551	15:1	1 OF 1

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.

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Environmental Specifications ENV06T4

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