Ceramic

Low Pass Filter

LPGE-592R+

50 4900 to 5900 MHz

CASE STYLE: GE0805C-4

+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

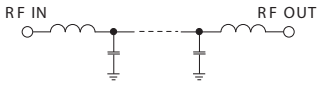
Features

- Low loss, 0.7 dB typ.
- Small size 0805 (2.0 x 1.25 mm)
- Temperature stable
- LTCC construction

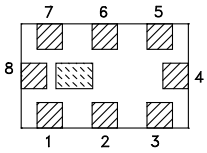
Applications

- ISM Bond
- WLAN
- Bluetooth
- Zigbee

Functional Schematic



Top View



Pad Connections

Input	8
Output	4
Ground	1,2,3,5,6,7

Electrical Specifications[1,2] at 25°C

Parameter		Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	4900-5900	—	0.7	1.0	dB
	VSWR	4900-5900	—	—	2	:1
Stop Band	Rejection Loss	9800-11800	40	42	—	dB
		14700-17700	34	54	—	dB

1. In Application where DC voltage is present at either input or output port, coupling capacitors are required.
2. Measured on Mini-Circuits Evaluation Board TB-LPGE-592R+

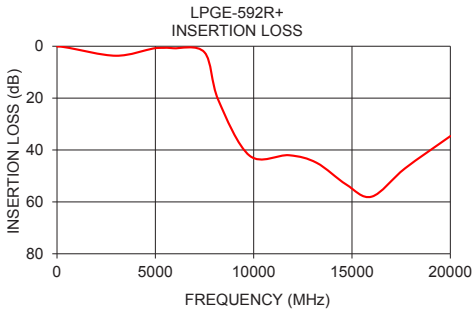
Maximum Ratings

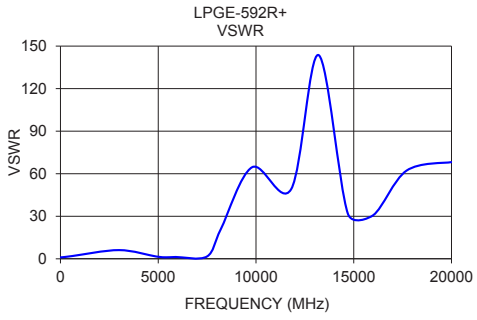
Operating Temperature	-55°C to +100°C
Storage Temperature	-55°C to +100°C
RF Power Input*	1W

*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

Typical Performance Data at 25°C

Frequency (GHz)	Insertion Loss (dB)	VSWR (:1)
10	0.14	1.04
200	0.16	1.26
600	0.62	1.95
3000	3.66	6.15
4900	0.85	1.62
5400	0.62	1.07
5900	0.76	1.29
7500	2.35	1.69
8200	20.70	20.88
9800	42.24	64.57
11800	42.01	49.11
13200	44.92	143.69
14700	53.27	31.82
16000	57.98	30.79
17700	47.05	62.18
20000	34.65	68.20





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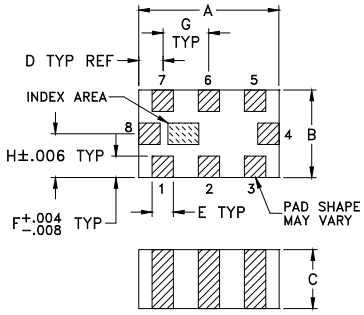
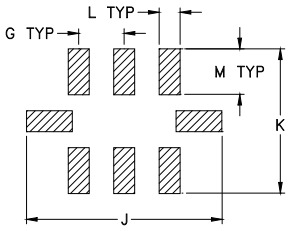
Outline Drawing



PCB Land Pattern

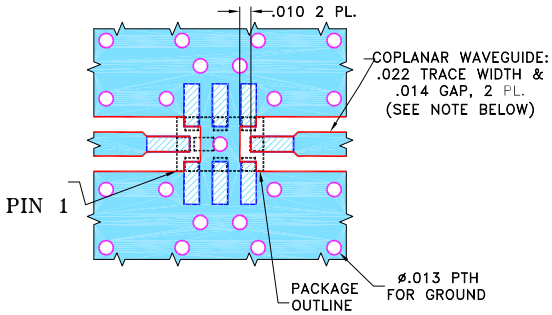


Suggested Layout,
Tolerance to be within±.002

Pad Connections

Input	8
Output	4
Ground	1,2,3,5,6,7

Evaluation Board MCL P/N: TB-LPGE-592R+
Suggested PCB Layout (PL-429)



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.

Outline Dimensions (inch / mm)

A	B	C	D	E	F	G
.079	.049	.027	.014	.012	.012	.026
2.01	1.24	0.69	0.36	0.30	0.30	0.66

H	J	K	L	M		wt
.025	.134	.110	.014	.039		grams
0.64	3.40	2.80	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

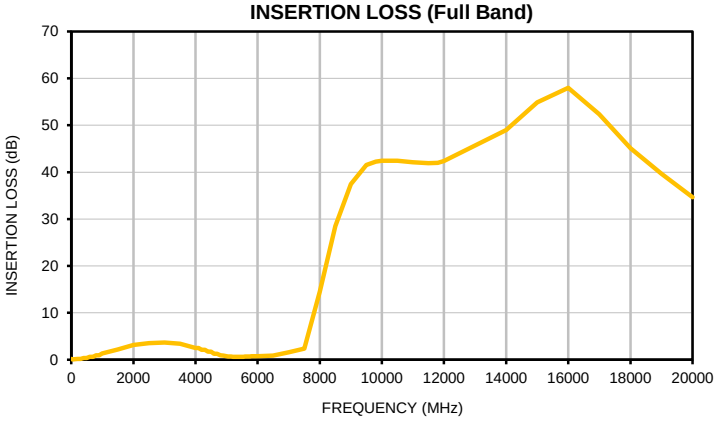
Ceramic Low Pass Filter LPGE-592R+

Typical Performance Data

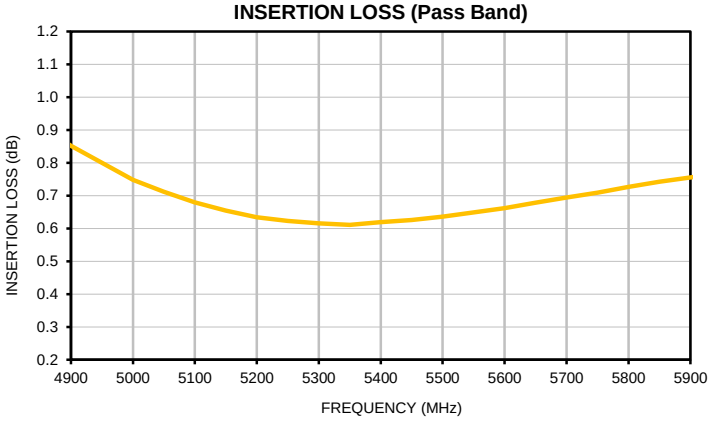
FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT VSWR (:1)	OUTPUT VSWR (:1)
10	0.14	1.03	1.04
50	0.05	1.08	1.07
100	0.11	1.12	1.12
200	0.16	1.26	1.26
300	0.16	1.26	1.26
400	0.34	1.57	1.57
500	0.34	1.57	1.57
600	0.62	1.94	1.95
700	0.62	1.94	1.95
800	0.97	2.37	2.38
900	0.97	2.37	2.38
1000	1.36	2.85	2.87
1500	2.16	3.89	3.94
2000	3.14	5.34	5.41
2500	3.54	6.00	6.09
3000	3.66	6.11	6.15
3500	3.39	5.47	5.46
4000	2.49	3.89	3.85
4100	2.49	3.89	3.85
4200	2.09	3.31	3.27
4300	2.09	3.31	3.27
4400	1.69	2.76	2.72
4500	1.69	2.76	2.72
4600	1.30	2.24	2.20
4700	1.30	2.24	2.20
4800	0.98	1.80	1.77
4900	0.85	1.62	1.59
5000	0.75	1.45	1.42
5050	0.71	1.38	1.35
5100	0.68	1.31	1.28
5150	0.65	1.24	1.21
5200	0.63	1.19	1.16
5250	0.62	1.14	1.11
5300	0.62	1.10	1.06
5350	0.61	1.07	1.01
5400	0.62	1.07	1.02
5450	0.63	1.08	1.06
5500	0.64	1.11	1.11
5550	0.65	1.15	1.14
5600	0.66	1.17	1.17
5650	0.68	1.21	1.20
5700	0.69	1.24	1.23
5750	0.71	1.25	1.24
5800	0.73	1.26	1.26
5850	0.74	1.28	1.28
5900	0.76	1.29	1.28
6000	0.78	1.29	1.28
6500	0.91	1.07	1.05
7000	1.61	1.75	1.79
7500	2.35	1.04	1.69
8000	14.59	12.76	14.20
8500	28.52	29.73	27.94
9000	37.42	45.55	38.15
9500	41.52	62.07	44.06
9800	42.24	64.57	41.81
10000	42.44	60.67	37.96
10500	42.43	50.06	32.39
11000	42.14	46.22	29.47
11500	41.91	45.73	30.36
11800	42.01	49.11	33.19
12000	42.38	53.36	38.08
14000	48.96	75.65	44.32
15000	54.88	27.07	18.67
16000	57.98	30.79	23.91
17000	52.33	123.49	60.16
18000	45.13	36.95	25.71
19000	39.63	25.02	24.81
20000	34.65	68.20	63.32

Typical Performance Curves

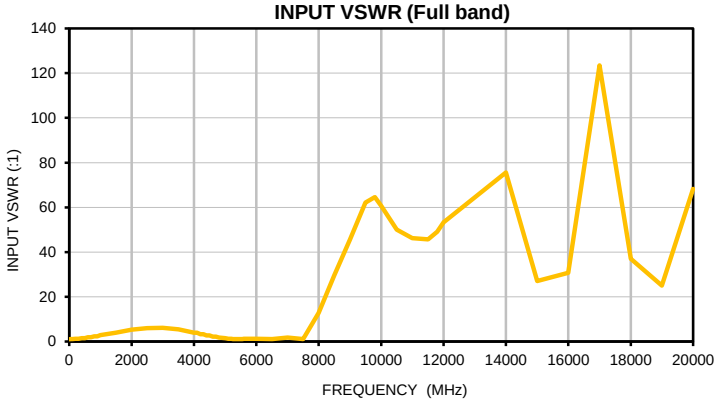
INSERTION LOSS (Full Band)



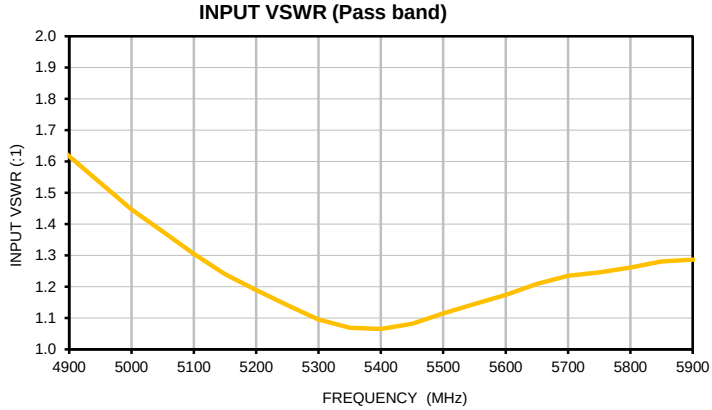
INSERTION LOSS (Pass Band)



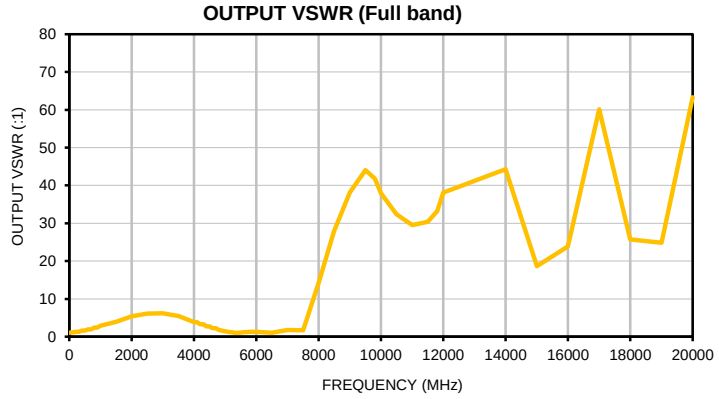
INPUT VSWR (Full band)



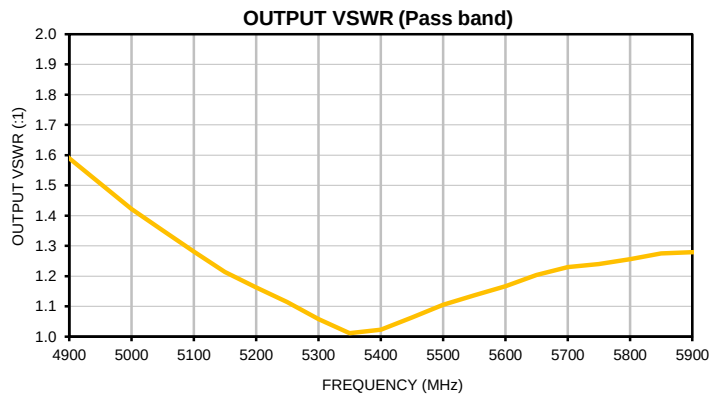
INPUT VSWR (Pass band)



OUTPUT VSWR (Full band)

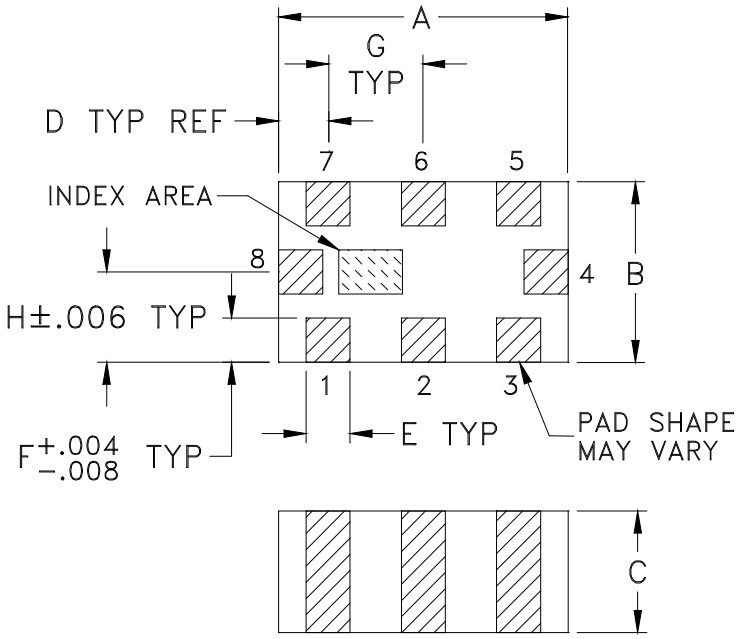


OUTPUT VSWR (Pass band)

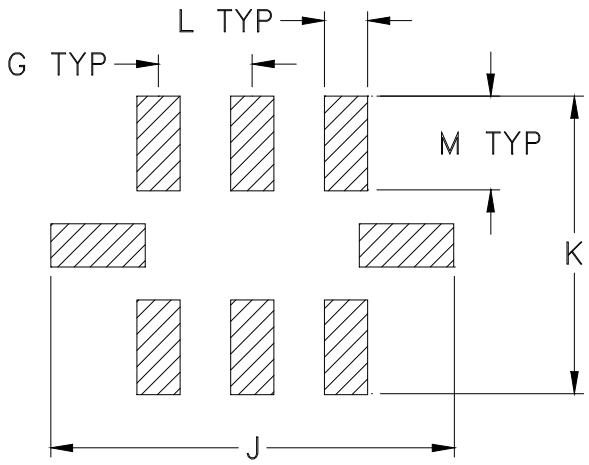


GE0805C-4

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-4	.079 (2.00)	.049 (1.25)	.027 (0.70)	.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-4	.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-comulative. Minimum spacing between each pad is .004 (0.1).

Tape & Reel Packaging TR-F114

DEVICE ORIENTATION IN T&R

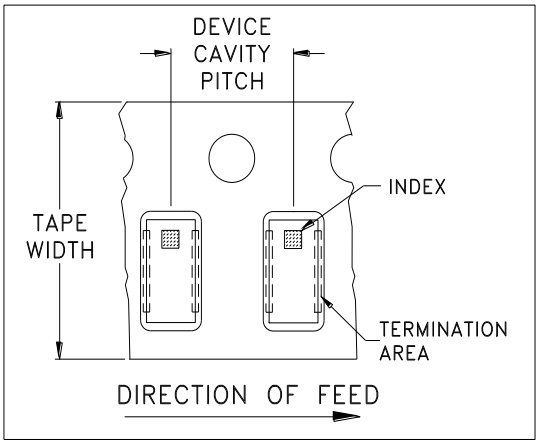


ILLUSTRATION 1

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

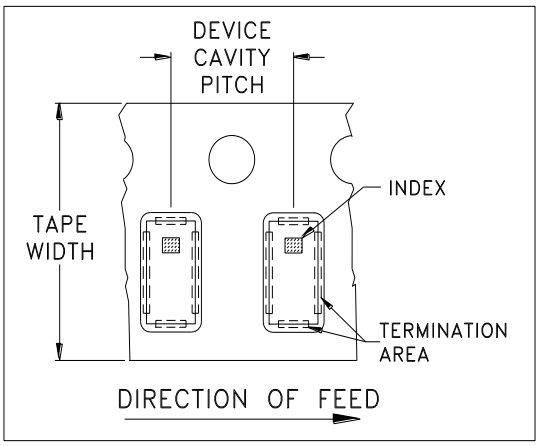


ILLUSTRATION 2

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
				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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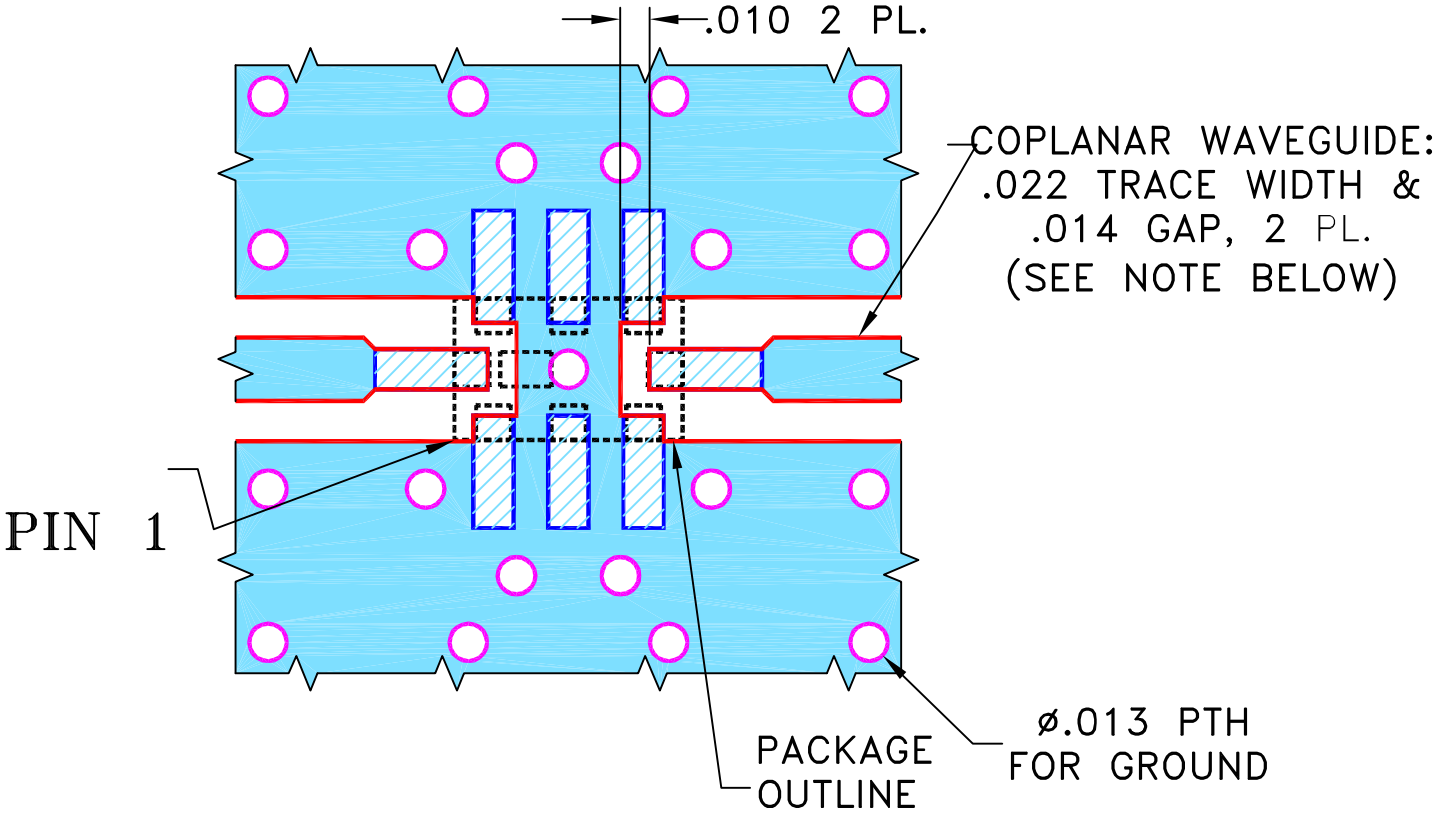
THIRD ANGLE PROJECTION

REVISIONS					
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M148457	NEW RELEASE	10/14/14	GF	MY

SUGGESTED MOUNTING CONFIGURATION
FOR GE0805C-4 CASE STYLE, "08FL07" PIN CODE



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	DRAWN	GF	10/01/14
TOLERANCES ON:	CHECKED	IL	10/14/14
2 PL DECIMALS ±	APPROVED	MY	10/14/14
3 PL DECIMALS ± .005			
ANGLES ±			
FRACTIONS ±			

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

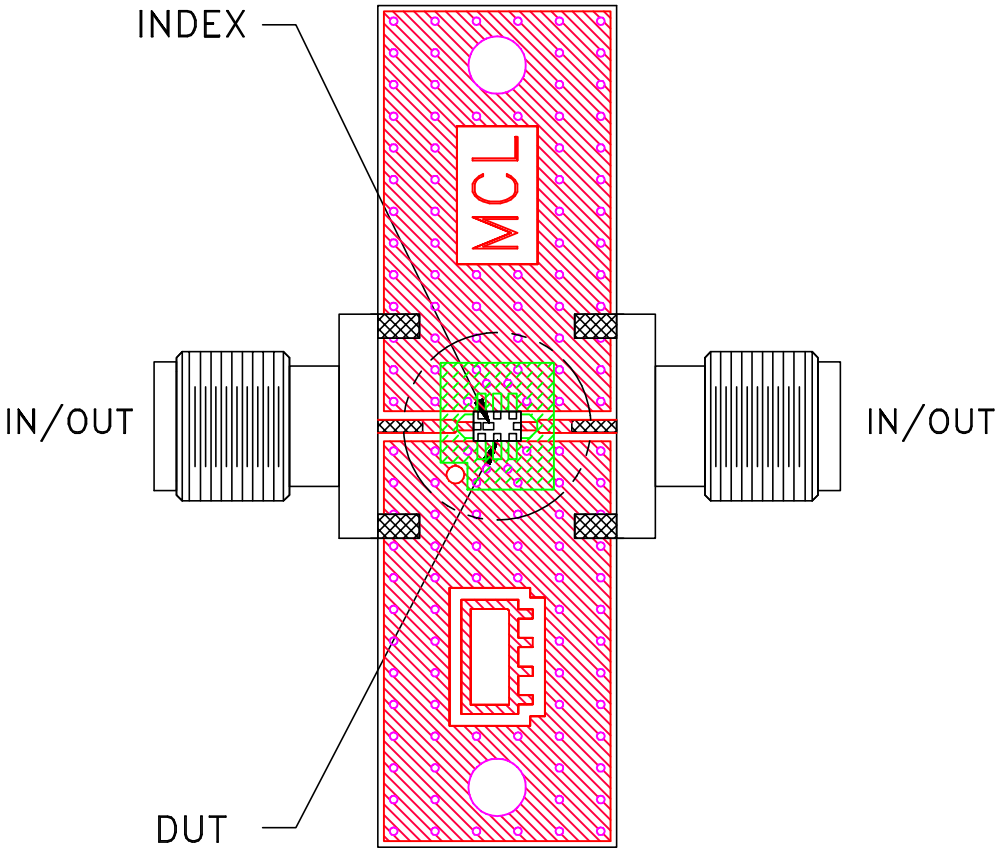
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 08FL07, GE0805C-4, TB-799+

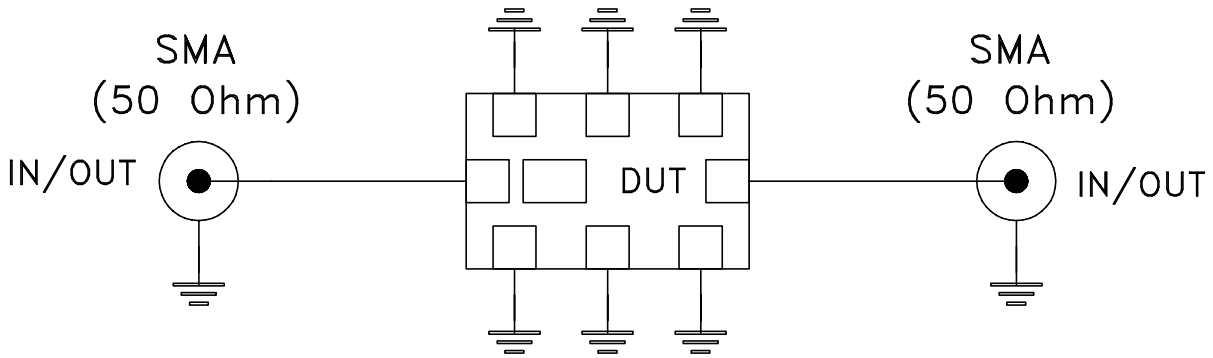
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-429	OR

FILE:	SCALE:	SHEET:
98PL429	15:1	1 OF 1

Evaluation Board and Circuit



TB-LPGE-592R+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4350 or equivalent,
   Dielectric Constant=3.5, Thickness=.010 inch.

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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