Ceramic

Bandpass Filter

50Ω 4900 to 5920 MHz

BPGE-542R+

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

- Miniature size 0805 (0.079"[2.0mm] x 0.049"[1.25mm] x 0.037"[0.95mm])
- Low cost
- Aqueous washable

Applications

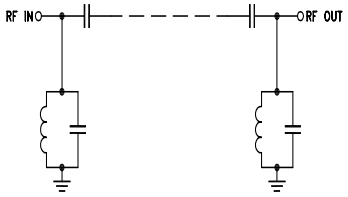
- ISM Band
- WLAN
- Bluetooth
- Zigbee

Electrical Specifications[1] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	—		—	5400	—	dB
	Insertion Loss	F1-F2	4900 - 5920	—	0.9	1.9	dB
	VSWR	F1-F2	4900 - 5920	—	1.2	2.0	:1
Stop Band, Lower	Insertion Loss	DC-F3	3500	30	49	—	dB
Stop Band, Upper	Insertion Loss	F4-F5	9800 - 11840	25	32	—	dB
		F6-F7	14700 - 17760	5	30	—	

1. Tested on Evaluation Board TB-1028+.

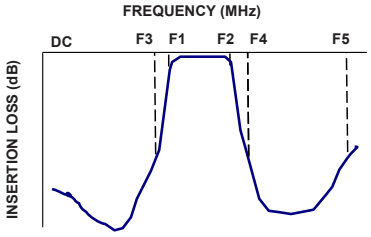
Functional Schematic



Maximum Ratings	
Operating Temperature	-40°C to 85°C
Storage Temperature[2]	-40°C to 85°C
RF Power Input[3]	2W 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 1W at 85°C
Permanent damage may occur if any of these limits exceeded.

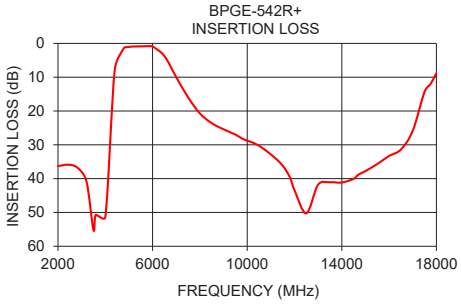
Typical Frequency Response

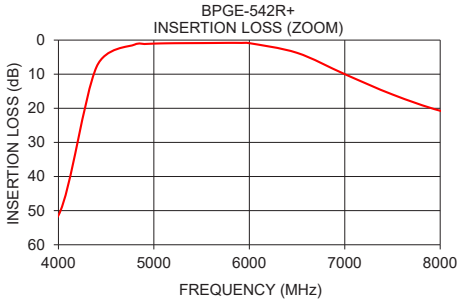


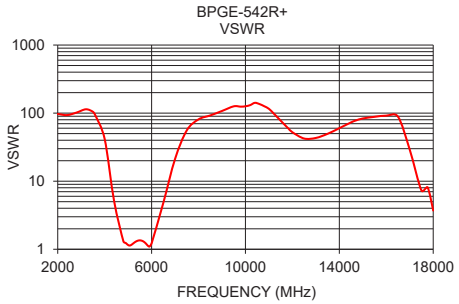
Typical Performance Data[4] at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
2000	36.30	97.37
3500	55.21	104.57
4000	51.38	41.74
4900	1.15	1.24
5920	0.83	1.10
7000	9.99	21.26
8000	20.71	80.91
9800	28.19	124.41
10000	28.76	126.10
11000	32.84	115.63
11840	40.13	59.03
13000	41.76	43.18
14000	41.14	60.10
14700	38.82	77.89
16000	33.28	91.79
17760	11.93	8.14
18000	8.81	3.71

4. Measured with Agilent E5071B network analyzer using impedance conversion and port extension.







Notes

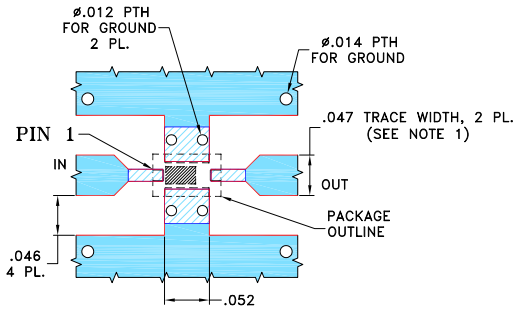
A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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-BPGE-542R+
Suggested PCB Layout (PL-566)



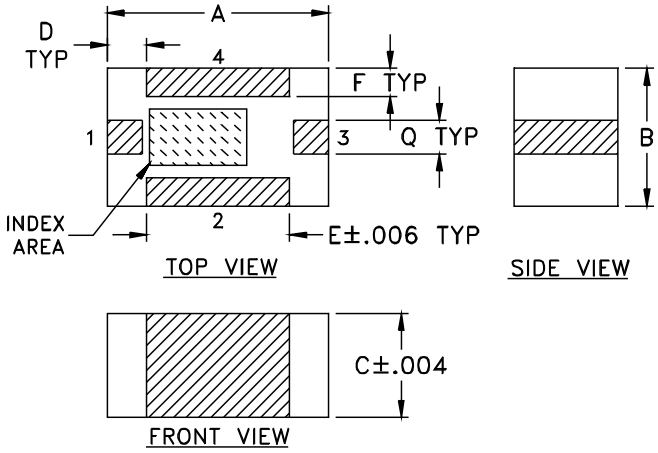
NOTES:

1. TRACE WIDTH IS SHOWN FOR ROGERS RO4233 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

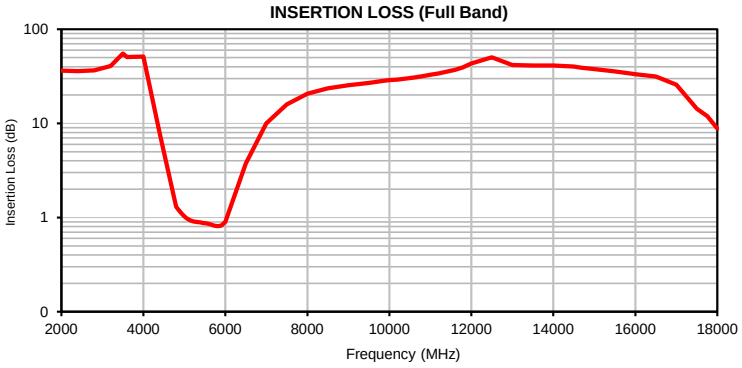
Ceramic Bandpass Filter BPGE-542R+

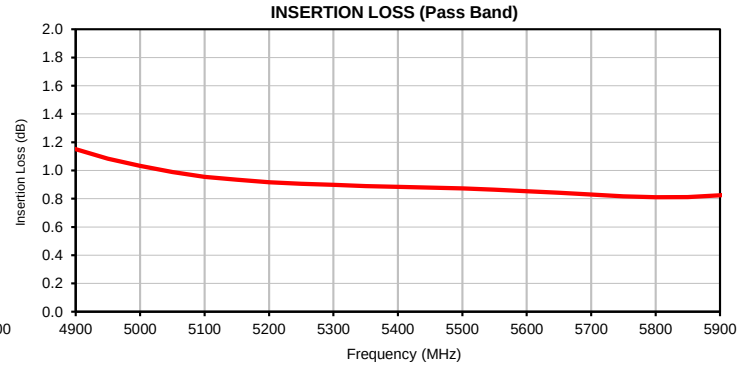
Typical Performance Data

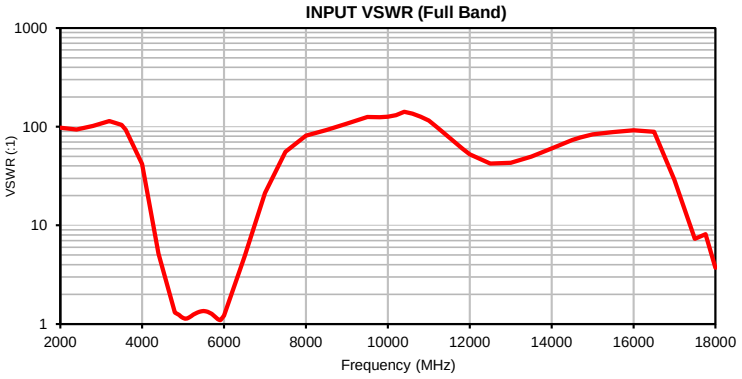
FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT VSWR (:1)	OUTPUT VSWR (:1)
2000	36.30	97.37	53.38
2400	35.88	93.53	62.82
2800	36.64	101.80	72.51
3200	40.67	113.86	66.77
3500	55.21	104.57	60.58
3600	50.65	93.06	58.74
4000	51.38	41.74	34.86
4400	7.81	5.15	4.92
4800	1.30	1.30	1.28
4900	1.15	1.24	1.19
4950	1.08	1.19	1.13
5000	1.03	1.15	1.07
5050	0.99	1.14	1.03
5100	0.96	1.14	1.06
5150	0.93	1.17	1.11
5200	0.92	1.21	1.16
5250	0.91	1.24	1.21
5300	0.90	1.28	1.25
5350	0.89	1.31	1.29
5400	0.88	1.33	1.32
5450	0.88	1.35	1.33
5500	0.87	1.35	1.34
5550	0.86	1.34	1.34
5600	0.85	1.33	1.32
5650	0.84	1.30	1.29
5700	0.83	1.27	1.26
5750	0.82	1.22	1.21
5800	0.81	1.17	1.16
5850	0.81	1.12	1.11
5900	0.82	1.09	1.08
5920	0.83	1.10	1.09
6000	0.90	1.22	1.21
6500	3.74	4.81	4.59
7000	9.99	21.26	17.48
7500	15.95	55.80	37.03
8000	20.71	80.91	49.22
8500	23.59	92.44	54.22
9000	25.41	107.53	57.37
9500	26.95	125.87	66.92
9800	28.19	124.41	69.37
10000	28.76	126.10	74.37
10200	29.25	131.03	68.57
10400	29.89	141.70	68.26
10600	30.74	135.76	65.28
10800	31.74	126.23	60.17
11000	32.84	115.63	56.35
11200	34.01	99.01	52.58
11400	35.36	84.21	48.87
11600	37.07	71.43	42.94
11800	39.51	60.76	37.99
11840	40.13	59.03	37.40
12000	43.38	52.34	33.89
12500	50.27	42.33	27.30
13000	41.76	43.18	27.25
13500	41.07	49.68	30.40
14000	41.14	60.10	33.69
14500	40.05	73.12	36.50
14700	38.82	77.89	37.27
15000	37.77	83.42	38.54
15500	35.66	88.24	42.81
16000	33.28	91.79	46.35
16500	31.38	88.56	54.95
17000	25.82	29.04	39.29
17500	14.27	7.28	10.77
17760	11.93	8.14	4.13
18000	8.81	3.71	2.58

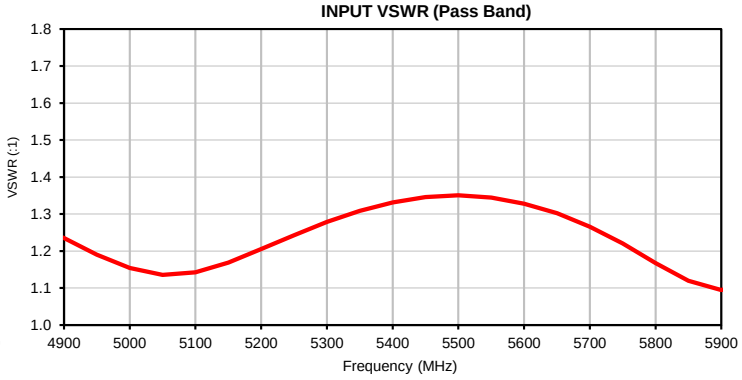
Ceramic Bandpass Filter BPGE-542R+

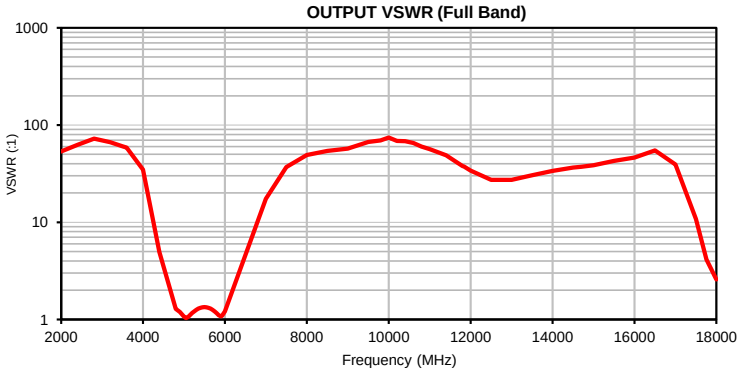
Typical Performance Curves

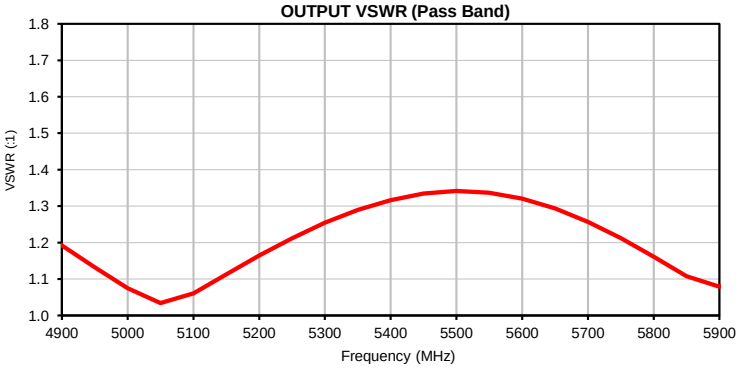






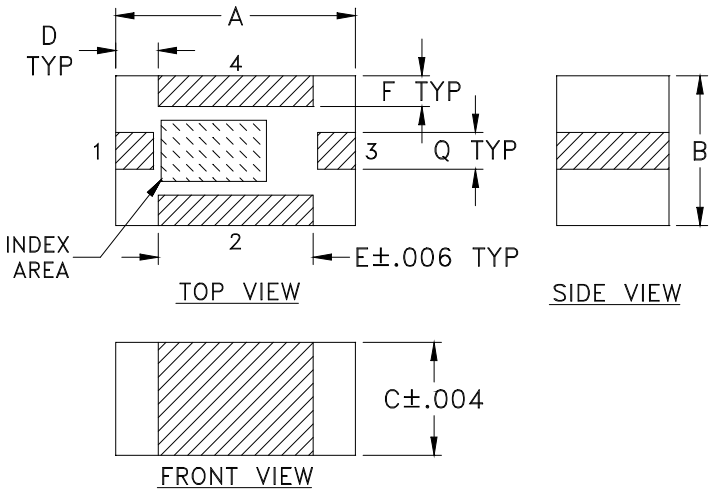




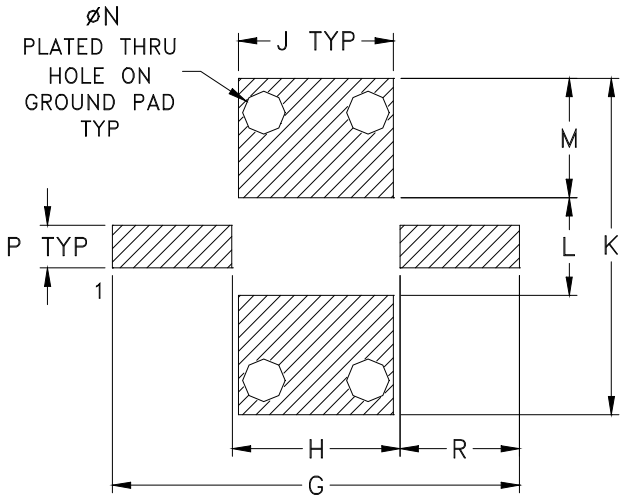


GE0805C-3

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

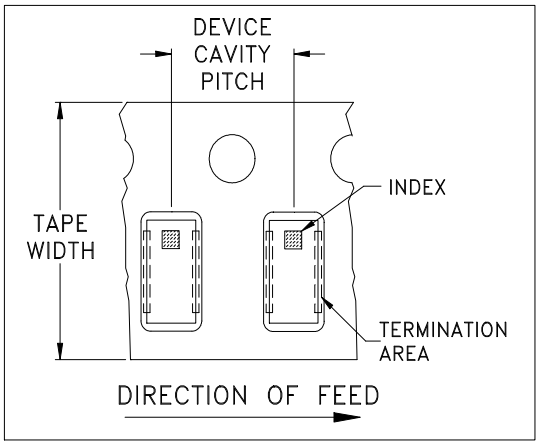


ILLUSTRATION 1

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

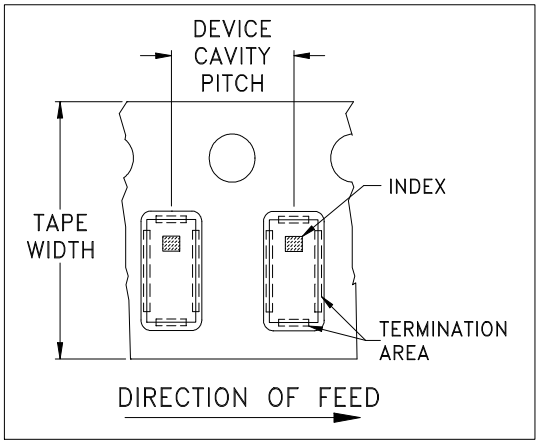


ILLUSTRATION 2

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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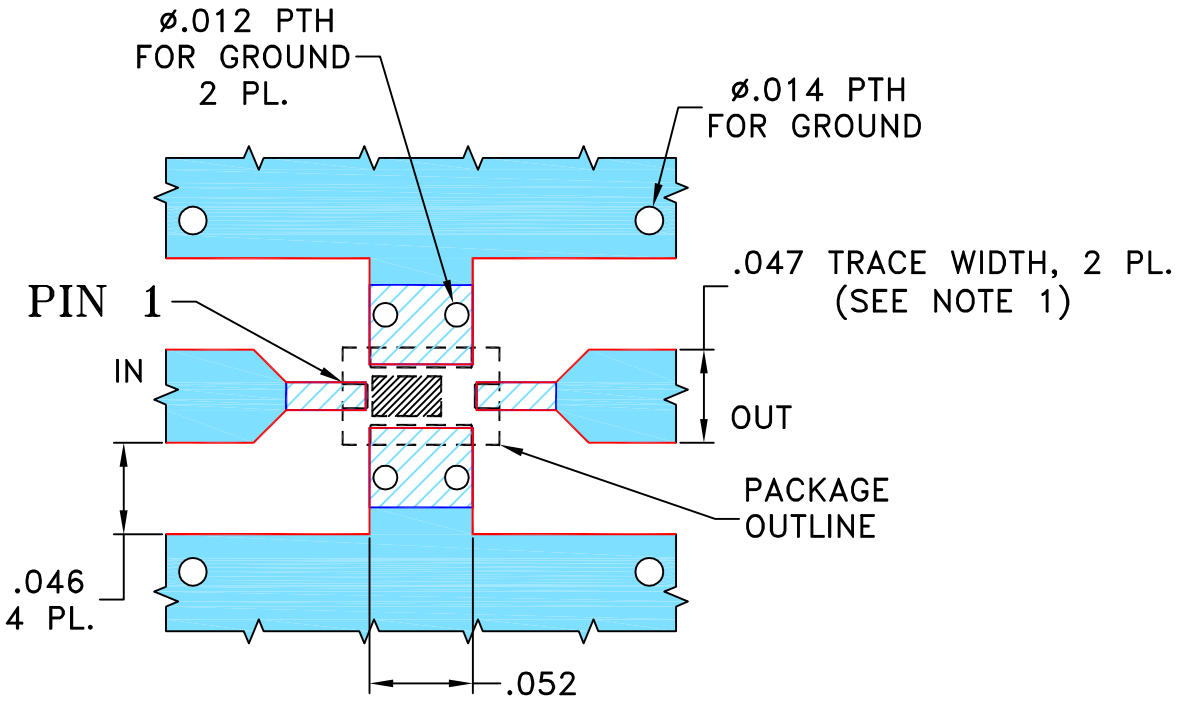
THIRD ANGLE PROJECTION

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

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



NOTES:

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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 ±			

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

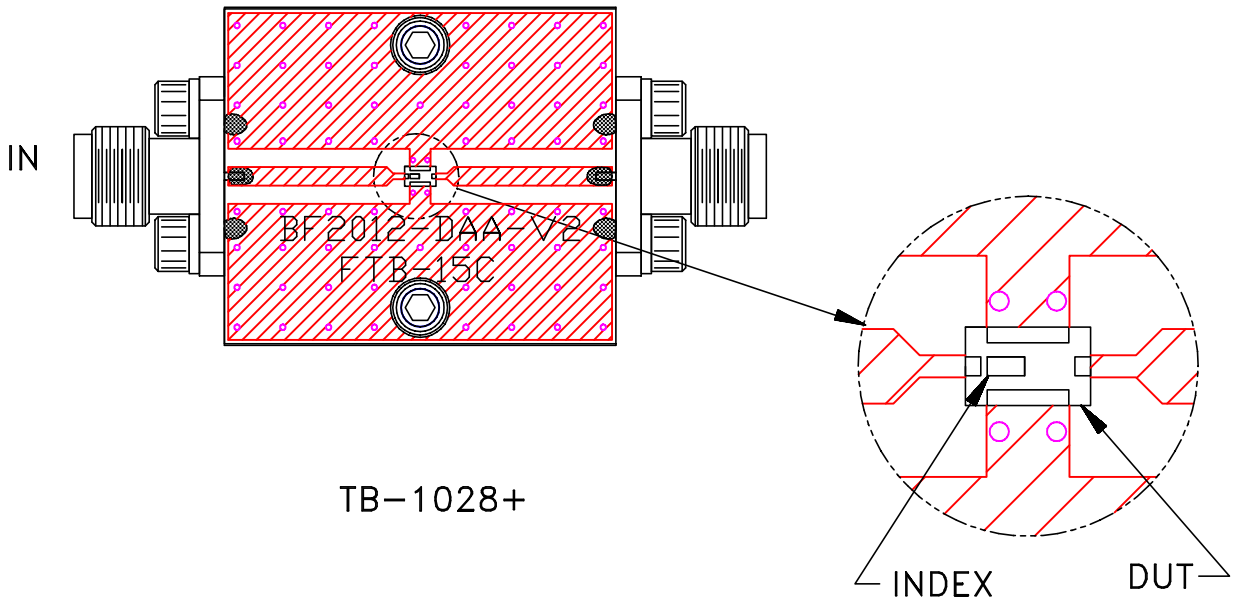
Mini-Circuits® 13 Neptune Avenue Brooklyn NY 11235

PL, 04FL01, GE0805C-3, TB-1028+

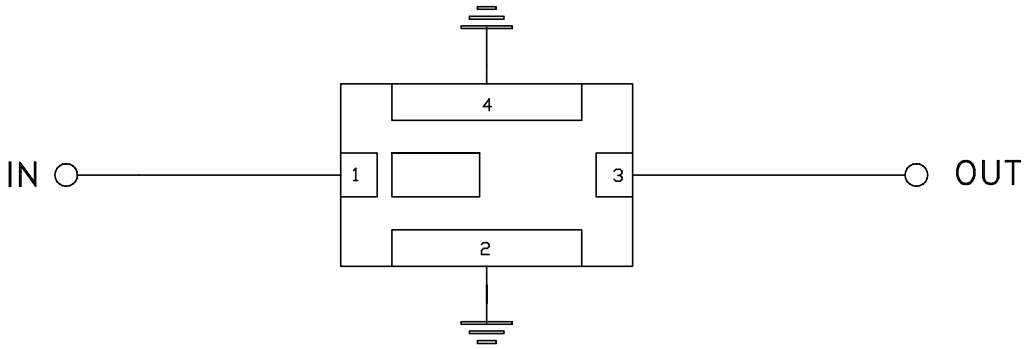
SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-566	OR

FILE:	SCALE:	SHEET:
98PL566	10:1	1 OF 1

Evaluation Board and Circuit



TB-1028+



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: RO4233 or equivalent, Dielectric Constant=3.5, Thickness=.020 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