

Ceramic Balance Filter

50Ω 1710 to 2610 MHz

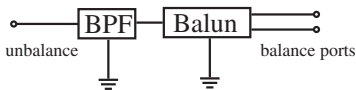
Features

- Small size (0.126"x0.098"x0.039")
- Temperature stable
- Hermetically sealed

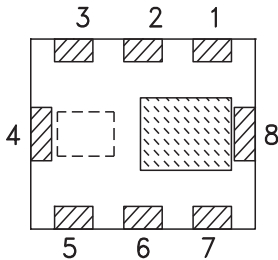
Applications

- ISM
- Cellular

Simplified Schematic



Top View



Pad Connections

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

BBFCV-2250+



Generic photo used for illustration purposes only

CASE STYLE: JV1210C-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

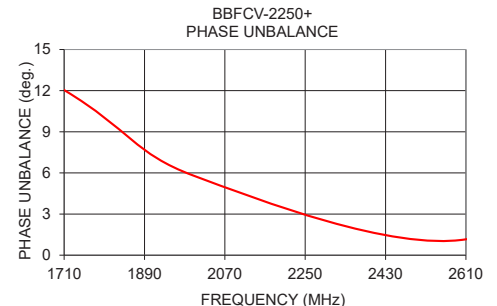
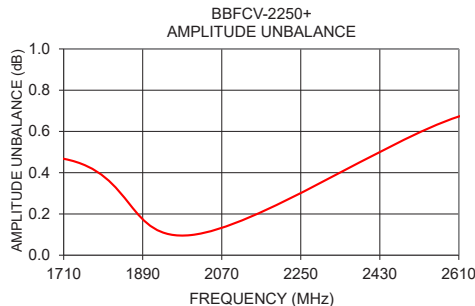
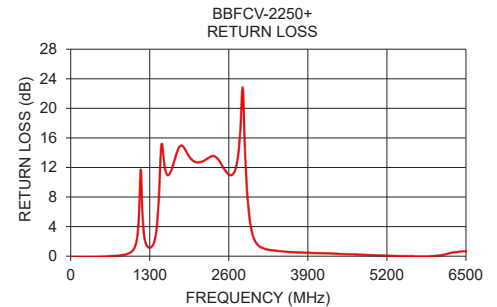
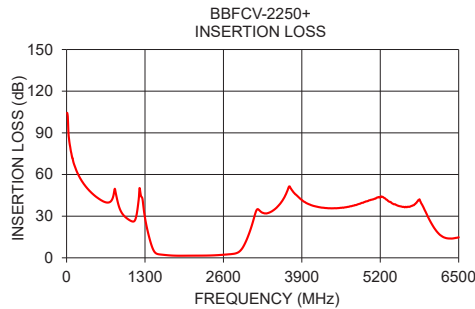
Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			2:1			
Insertion Loss	F1-F2	1710 - 2610	—	—	3.2	dB
Attenuation		10-670	35	—	—	dB
		670-1240	17	—	—	
		3390-5400	27	—	—	
		5400-6000	17	—	—	
Amplitude Unbalance		1710 - 2610	—	—	1.5	dB
Phase Unbalance		1710 - 2610	—	—	15	degree
Input VSWR		1710 - 2610	—	1.8	—	:1

Maximum Ratings

Operating Temperature	-55°C to +105°C
Storage Temperature	-55°C to +105°C
RF Power Input*	1W @25°C

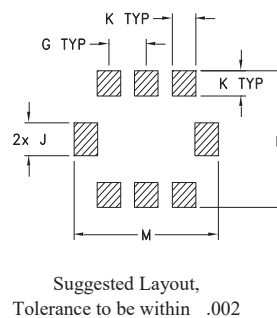
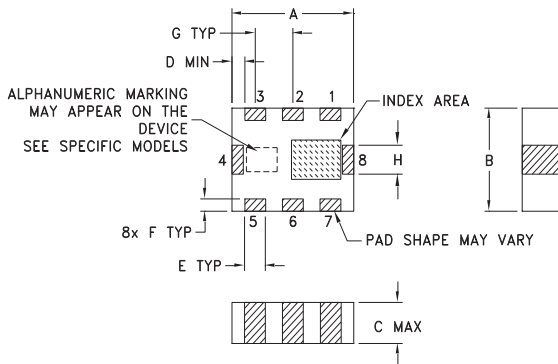
* Refer to product storage temperature after installation
Suggestion for T&R unused product storage condition: +5 ~ +35 °C,
Humidity 45-75%RH, 12 month Max



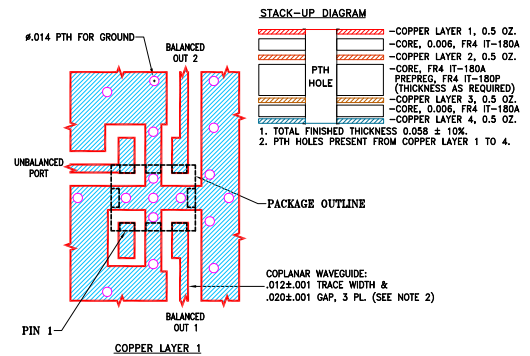
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
10	104.41	0.04	0.32	92.40
50	82.29	0.03	3.87	5.15
100	71.51	0.03	4.02	4.76
500	43.62	0.07	2.66	12.67
1000	28.43	0.75	0.50	25.45
1710	1.75	13.21	0.47	12.04
2000	1.54	13.03	0.10	5.80
2610	2.26	11.05	0.67	1.16
3000	14.60	2.64	0.79	10.88
3500	36.99	0.77	4.27	33.06
4000	38.92	0.55	0.48	14.44
4500	35.81	0.41	4.14	7.47
5000	40.97	0.26	3.86	58.46
5500	37.46	0.13	0.47	16.56
6000	28.71	0.20	0.12	33.44
6500	14.78	0.83	3.10	13.19

Outline Drawing



Demo Board MCL P/N: TB-1053+ Suggested PCB Layout (PL-632)



Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.126	.098	.039	.004	.022	.012	.039
3.2	2.5	1.0	0.1	0.56	0.3	1.0
H	J	K	L	M	wt	
.028	.031	.024	.130	0.15	grams	
0.7	0.8	0.6	3.30	3.81	0.030	

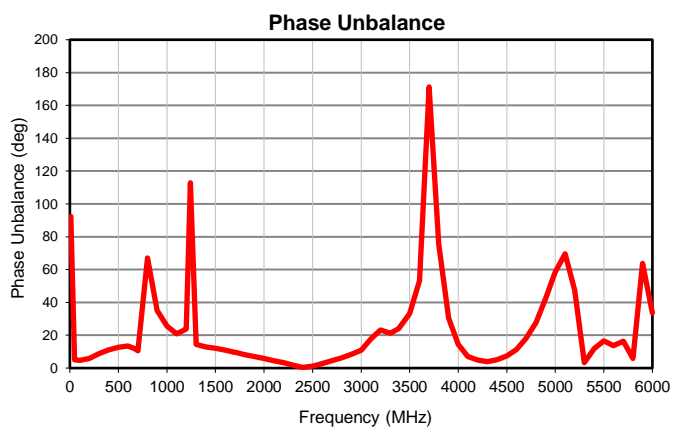
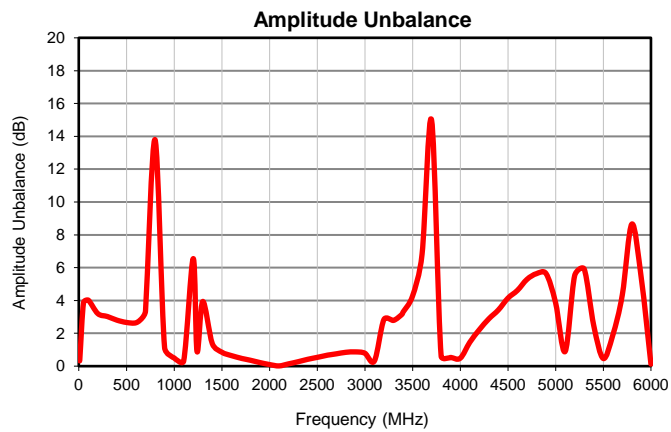
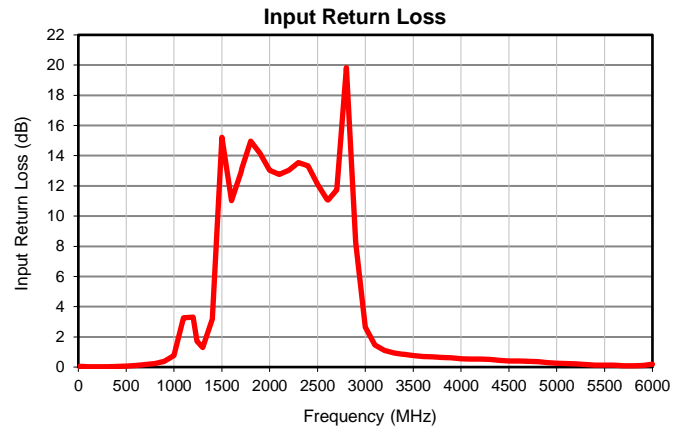
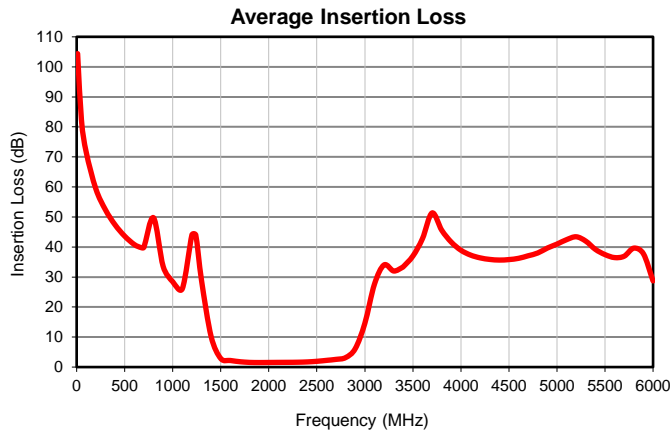
Additional Notes

- 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

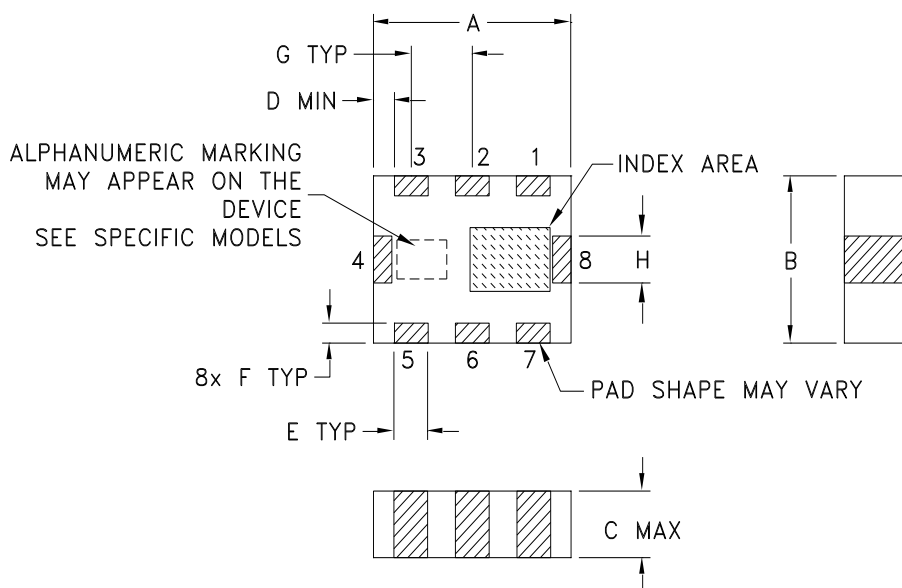
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (deg.)
10	104.41	0.04	0.32	92.40
50	82.29	0.03	3.87	5.15
100	71.51	0.03	4.02	4.76
200	59.33	0.02	3.20	5.88
300	52.37	0.03	3.03	8.82
400	47.38	0.04	2.80	11.11
500	43.62	0.07	2.66	12.67
600	40.82	0.11	2.64	13.44
670	39.81	0.14	2.97	11.69
700	39.89	0.16	3.37	10.49
800	49.75	0.24	13.79	66.98
900	33.56	0.38	1.13	34.99
1000	28.43	0.75	0.50	25.45
1100	26.11	3.27	0.31	20.81
1200	44.04	3.32	6.55	23.86
1240	43.98	1.71	0.90	112.91
1300	28.78	1.30	3.94	14.38
1400	10.13	3.19	1.38	12.92
1500	2.85	15.23	0.85	12.04
1600	2.19	11.03	0.64	11.00
1700	1.78	12.93	0.48	9.61
1710	1.75	13.21	0.47	9.51
1800	1.56	14.97	0.36	8.27
1900	1.51	14.16	0.22	6.94
2000	1.54	13.03	0.10	5.80
2100	1.56	12.75	0.02	4.53
2200	1.58	13.03	0.14	3.23
2300	1.61	13.54	0.27	1.79
2400	1.72	13.33	0.42	0.37
2500	1.92	12.10	0.53	1.16
2600	2.23	11.09	0.66	2.78
2610	2.26	11.05	0.67	2.90
2700	2.57	11.74	0.75	4.55
2800	3.16	19.84	0.84	6.31
2900	6.13	8.26	0.87	8.35
3000	14.60	2.64	0.79	10.88
3100	27.62	1.45	0.32	17.77
3200	34.03	1.09	2.84	23.23
3300	32.00	0.94	2.79	21.29
3390	33.19	0.86	3.16	24.20
3400	33.42	0.85	3.29	25.12
3500	36.99	0.77	4.27	33.06
3600	42.80	0.71	6.82	53.18
3700	51.34	0.67	14.98	171.26
3800	45.59	0.64	0.61	75.72
3900	41.60	0.61	0.53	30.39
4000	38.92	0.55	0.48	14.44
4100	37.32	0.53	1.45	6.99
4200	36.37	0.52	2.22	4.79
4300	35.86	0.50	2.88	3.89
4400	35.64	0.46	3.42	5.15
4500	35.81	0.41	4.14	7.47
4600	36.22	0.40	4.62	11.33
4700	37.07	0.38	5.29	18.14
4800	38.01	0.35	5.64	27.62
4900	39.65	0.29	5.64	42.25
5000	40.97	0.26	3.86	58.46
5100	42.44	0.24	0.89	69.63
5200	43.40	0.21	5.51	47.35
5300	41.95	0.17	5.91	3.38
5400	39.20	0.13	2.48	11.96
5500	37.46	0.13	0.47	16.56
5600	36.47	0.12	1.89	13.58
5700	36.93	0.09	4.35	16.36
5800	39.63	0.09	8.66	5.76
5900	37.73	0.11	5.29	63.73
6000	28.71	0.20	0.12	33.44

Typical Performance Data

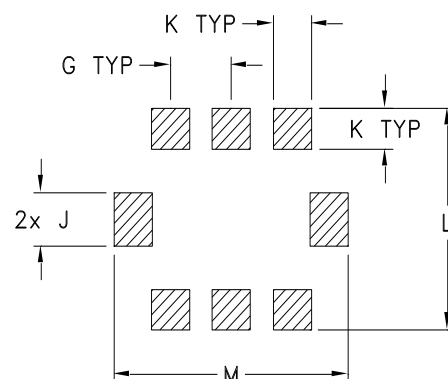


Outline Dimensions

JV1210C-4



PCB Land Pattern



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

CASE #	A	B	C	D	E	F	G	H	J	K	L	M	WT. GRAM
JV1210C-4	.126 (3.2)	.098 (2.5)	.039 (1.00)	.004 (.1)	.022 (.56)	.012 (.3)	.039 (1.0)	.028 (.71)	.031 (.79)	.024 (.61)	.130 (3.30)	.150 (3.81)	.03

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

Notes:

- Open style, ceramic base.
- Termination finish: **as shown below or indicated on Data Sheet.**
For RoHS Case Styles: Matte-Tin. All models, (+) suffix.
For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.
- Pad tolerance is non-cumulative. Minimum spacing between each pad is .004.



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



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RF/IF MICROWAVE COMPONENTS

Tape & Reel Packaging TR-F74

DEVICE ORIENTATION IN T&R

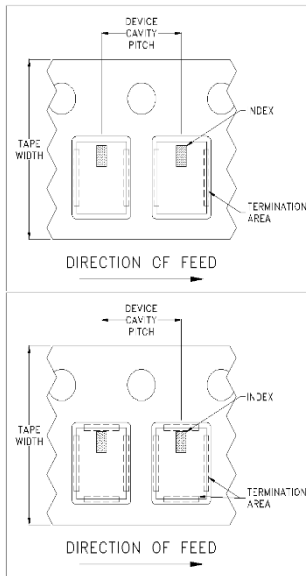


ILLUSTRATION 1

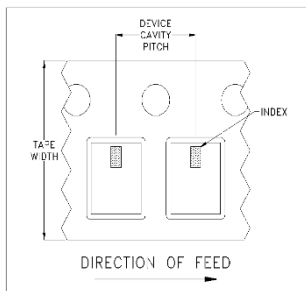


ILLUSTRATION 2

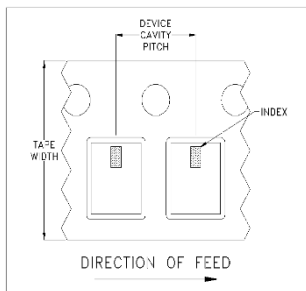


ILLUSTRATION 3

Applicable Case Styles

GE0805C-1
GE0805C-1AP
JV1210C-1
GU2939

Applicable Case Styles

JV1210C
JV1210C-2
JV1210C-3
JV1210C-4
JV1210C-5
JV1210C-6
JV1210C-11

Applicable Case Styles

JC0603C-8
JC0603C-9
JV1210C-7
JV1210C-8
JV1210C-9
JV1210C-10
JV1210C-13
GE0805C-13
GE0805C-19
GE0805C-20

Tape Width, mm	Device Cavity Pitch, mm	Real Size, inches	Devices per Reel	
8	4	7	Small quantity standards (see note)	20
				50
				100
				200
				500
				1000
			Standard	2000
				4000

Note: Small reel availability varies by model. Refer to pricing and availability on individual model dashboard.

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



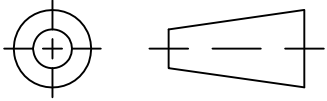
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THIRD ANGLE PROJECTION

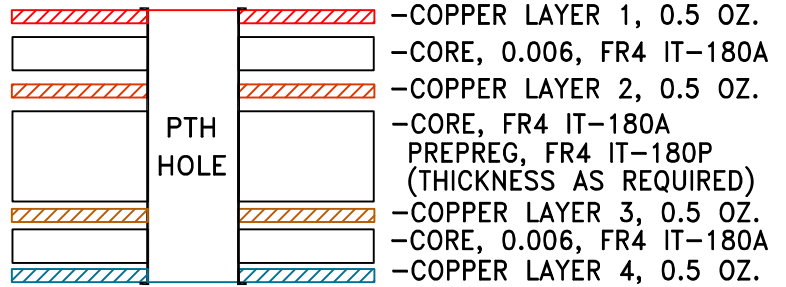


REVISIONS

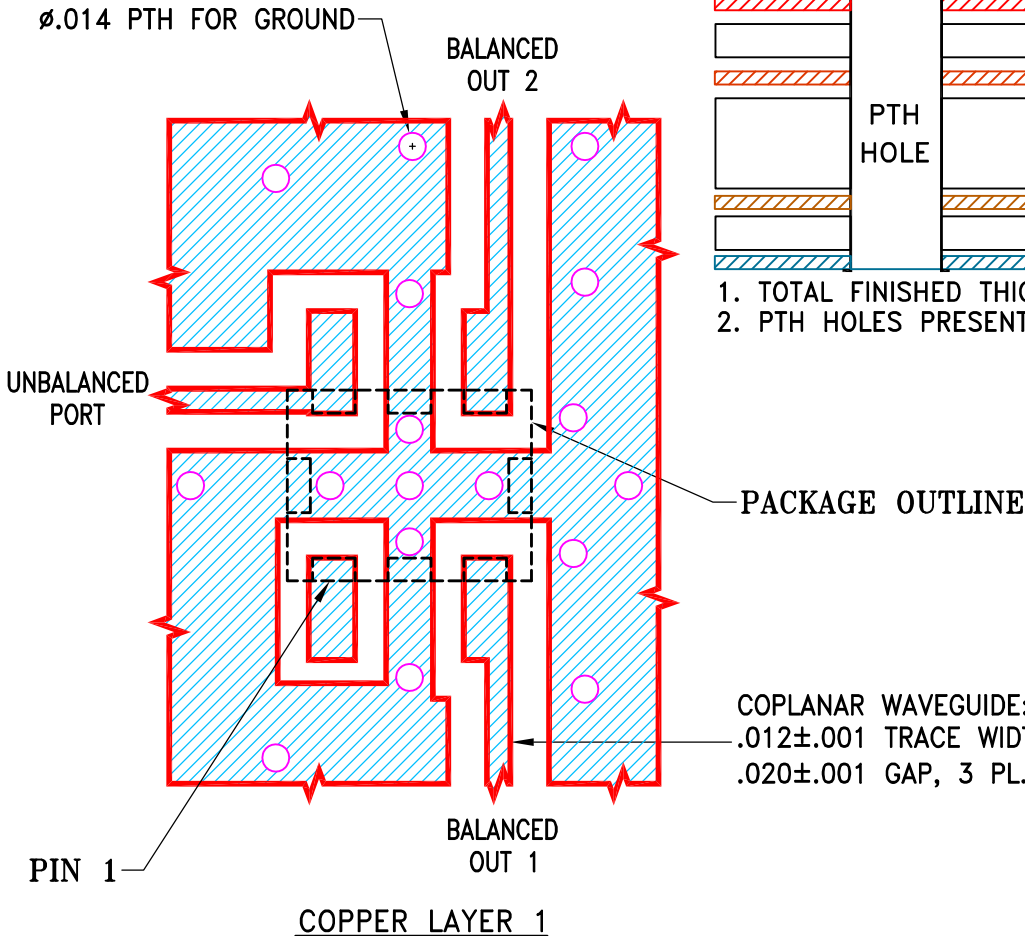
REV	ECN No.	DESCRIPTION	DATE	DR	AUTH
OR	M174716	NEW RELEASE	06/10/19	ITG	SL

SUGGESTED MOUNTING CONFIGURATION FOR JV1210C-4 CASE STYLE

STACK-UP DIAGRAM

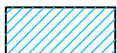


- TOTAL FINISHED THICKNESS 0.058 ± 10%.
- PTH HOLES PRESENT FROM COPPER LAYER 1 TO 4.



NOTES:

- PCB IS MULTILAYER PCB, SEE STACK-UP DIAGRAM.
- TRACE WIDTH & GAP PARAMETERS ARE SHOWN FOR FR4 IT-180A WITH DIELECTRIC THICKNESS .006"±.0007"; COPPER: 1/2 OZ. FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
- LAYERS 2,3,4 OF THE PCB ARE CONTINUOUS GROUND PLANE.



DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

UNLESS OTHERWISE SPECIFIED	INITIALS	DATE
DRAWN	ITG	06/04/19
CHECKED	GF	06/10/19
APPROVED	SL	06/10/19



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Brooklyn NY 11235

PL, JV1210C-4, TB-BLFCV/BBFCV

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SIZE	CODE IDENT	DRAWING NO:	REV:
A	15542	98-PL-632	OR
FILE:	98PL632	SCALE: 10:1	SHEET: 1 OF 1

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 105°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 105°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 Eutectic Process 225°C peak Pb-Free Process 245° - 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