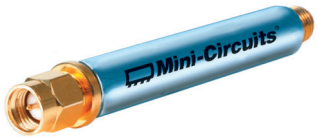
Coaxial

Low Pass Filter

VLFX-1300+

50Ω DC to 1300 MHz (40 dB Typ. Isolation up to 20 GHz)



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-1300+

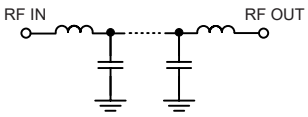
Features

- Very good isolation, 40 dB typ. up to 20 GHz
- Excellent power handling, 10W
- Temperature stable LTCC internal structure
- Re-entry frequency > 20 GHz
- Protected by US patent 6,943,646
- Rugged unibody construction

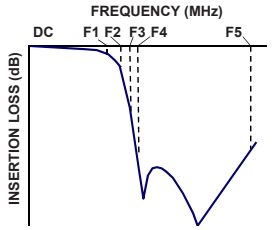
Applications

- Harmonic rejection
- Transmitters/receivers
- Lab use
- Test instrumentation

Functional Schematic



Typical Frequency Response



+RoHS Compliant

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

Electrical Specifications[(1)] at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-1300	—	1.1	1.6	dB
	Freq. Cut-Off	F2	1925	—	3.0	—	dB
	VSWR	DC-F1	DC-1300	—	1.2	—	:1
Stop Band	Insertion Loss	F3	2300	20	26	—	dB
		F4-F5	2500-20000	—	40	—	dB
	VSWR	F3-F5	2300-20000	—	10	—	:1

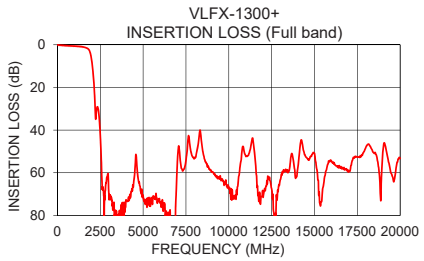
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

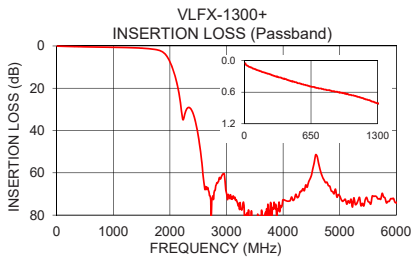
Maximum Ratings	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max.

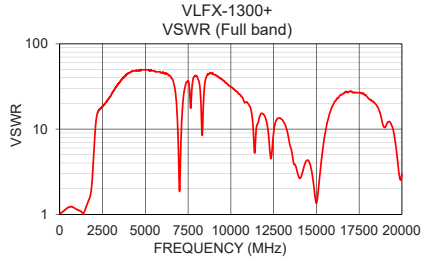
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

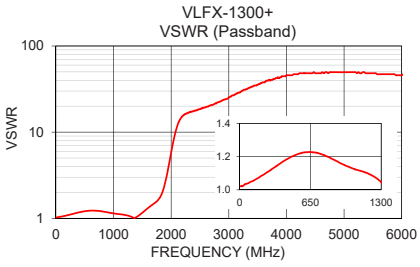
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.05	1.02
500	0.41	1.21
1000	0.64	1.14
1300	0.81	1.05
1890	3.18	2.49
1900	3.41	2.65
1925	4.11	3.16
2050	10.77	8.51
2150	20.89	13.92
2250	33.74	16.26
2300	29.69	16.89
2500	42.46	18.50
5000	70.84	49.64
7500	54.28	36.97
10000	67.56	31.03
12500	67.50	9.08
15000	50.86	1.35
17500	52.58	26.74
19000	49.57	10.43
20000	53.29	2.98









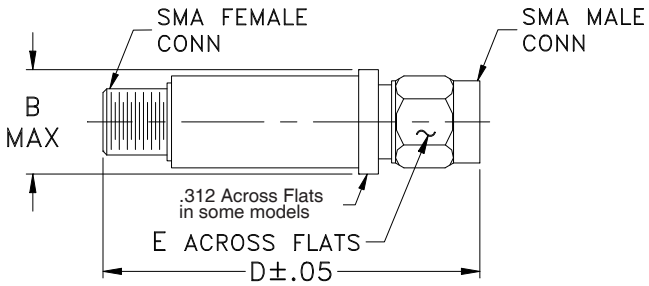
Notes

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

Coaxial Connections

INPUT	SMA-Male
OUTPUT	SMA-Female

Outline Drawing



Outline Dimensions (inch / mm)

B	D	E	wt.
.410	**2.67**	**.312**	**grams**
10.41	67.82	7.92	17.0

Note: Please refer to case style drawing for details

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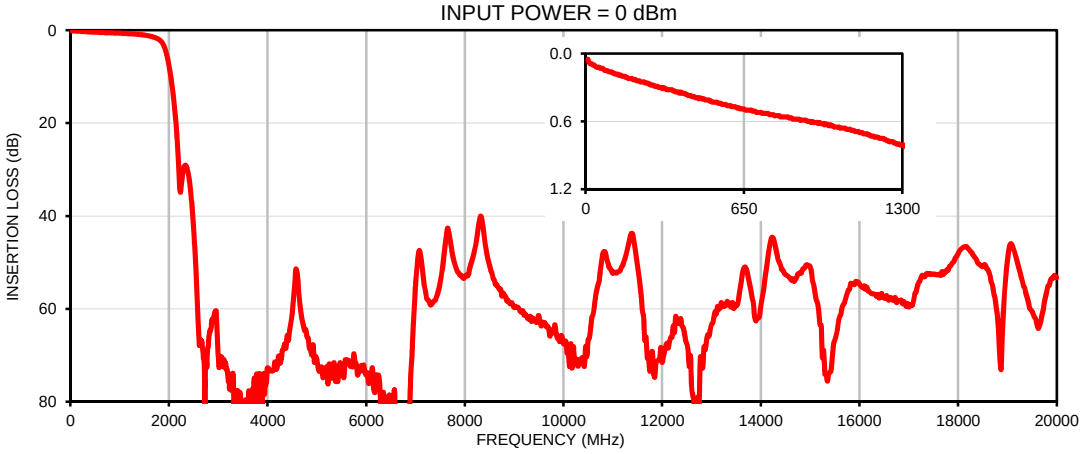
Coaxial Low Pass Filter VLFX-1300+

Typical Performance Data

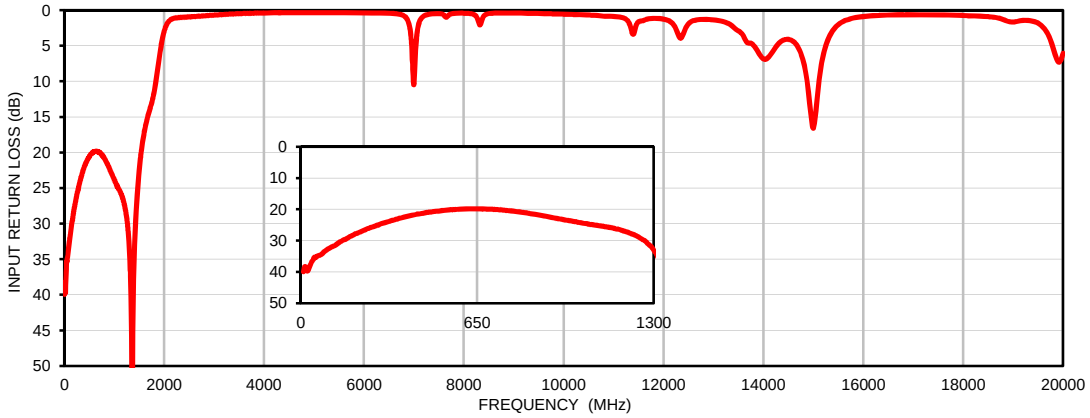
FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.05	39.93	39.50
50	0.12	35.30	36.54
75	0.14	34.44	36.87
100	0.16	32.68	36.69
250	0.26	26.08	36.50
500	0.41	20.61	22.24
750	0.53	20.27	19.62
1000	0.64	23.79	23.15
1250	0.78	29.09	29.08
1300	0.81	32.96	31.04
1500	1.04	22.62	23.59
1885	3.08	7.65	10.64
1925	4.11	5.70	8.53
2000	7.45	3.02	5.37
2100	15.08	1.52	3.72
2200	29.68	1.13	3.99
2210	31.90	1.11	4.07
2300	29.69	1.03	4.91
2400	31.27	0.99	6.02
2450	35.66	0.96	5.99
2500	42.46	0.94	5.31
2600	64.33	0.89	3.98
2750	72.01	0.82	2.89
3000	69.61	0.69	1.76
4000	72.71	0.38	1.35
5000	70.84	0.35	1.61
6000	74.23	0.38	1.23
7000	54.86	10.47	0.68
8000	53.16	0.42	0.59
8500	50.60	0.47	0.57
9000	59.72	0.40	0.59
9500	61.45	0.46	0.56
10000	67.56	0.56	0.56
10500	66.78	0.68	0.51
11000	52.36	0.87	0.54
11500	50.66	1.63	0.53
12000	71.46	1.26	0.61
12500	67.50	1.92	1.68
13000	63.42	1.35	5.60
13500	59.36	2.91	1.01
14000	59.32	6.83	0.43
14500	52.61	4.09	0.34
15000	50.86	16.59	0.31
15500	66.85	2.02	0.34
15750	56.72	1.18	0.42
16000	54.62	0.88	0.44
16250	56.72	0.76	0.44
16500	57.55	0.68	0.55
16750	58.63	0.63	0.63
17000	59.60	0.62	0.68
17250	53.25	0.65	0.80
17500	52.58	0.65	0.81
17750	52.10	0.66	0.92
18000	48.08	0.74	1.04
18250	47.64	0.82	1.05
18500	50.91	0.90	1.05
18750	57.78	1.18	1.32
19000	49.57	1.67	2.02
19250	51.84	1.42	1.92
20000	53.29	6.07	3.42

Typical Performance Curves

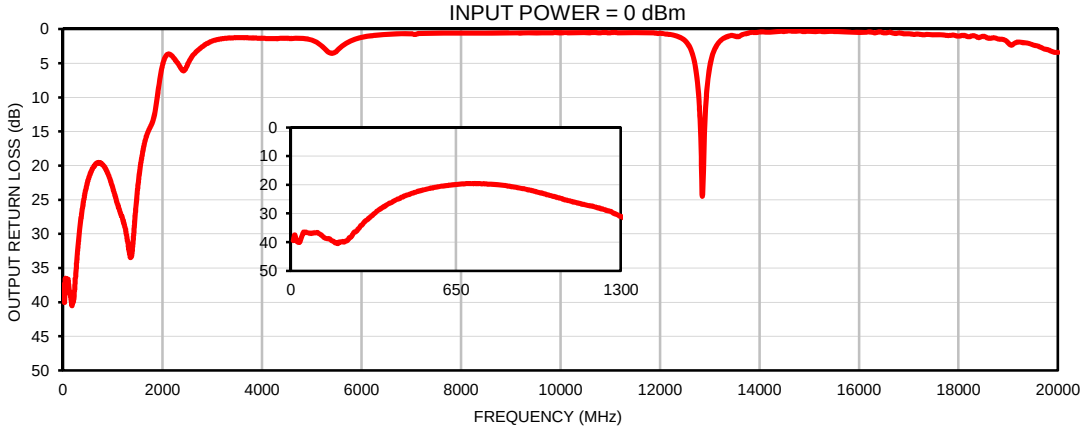
INSERTION LOSS
INPUT POWER = 0 dBm



INPUT RETURN LOSS
INPUT POWER = 0 dBm



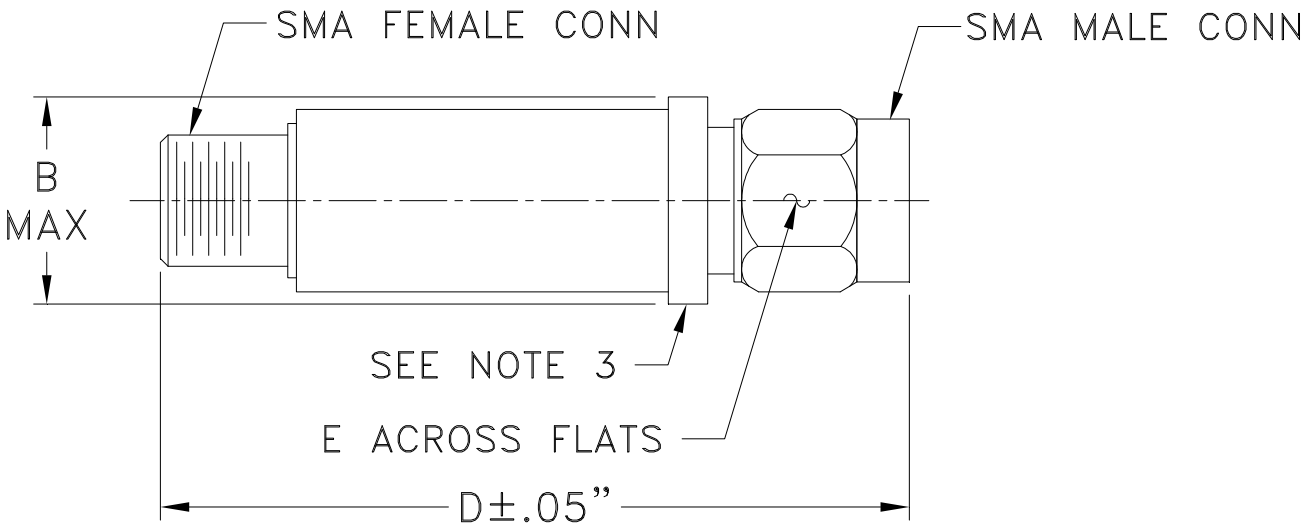
OUTPUT RETURN LOSS
INPUT POWER = 0 dBm



Case Style FF

FF1118

Outline Dimensions



CASE #.	A	B	C	D	E	WT GRAMS
FF1118	-- --	.410 (10.41)	-- --	2.67 (67.82)	.312 (7.92)	17.0

Dimensions are in inches (mm). Tolerances: 2Pl. ± .04; 3Pl. ± .030

Notes:

1. Case material: Stainless steel.
2. Case finish: Gold plated.
3. Round Flange may have .312 Across Flats in some models.

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Mini-Circuits

Environmental Specifications ENV28

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
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
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	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I

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