

Coaxial

Low Pass Filter

VLFX-225+

50Ω DC to 225 MHz (40 dB Typ. Isolation up to 20 GHz)

The Big Deal

- Very good rejection, 40 dB typ. up to 20 GHz
- Excellent power handling, 10W
- Rugged unibody construction



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Product Overview

VLFX-225+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-225 MHz bandwidth, these units offer good matching within the passband and high rejection in stopband, 40 dB typ. up to 20 GHz. This will find its applications in harmonic rejection, transmitters / receivers and test instrumentation.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application
Fast roll-off	Provides very good adjacent band rejection
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups

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



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Connectors	Model
SMA	VLFX-225+

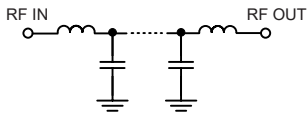
Features

- 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

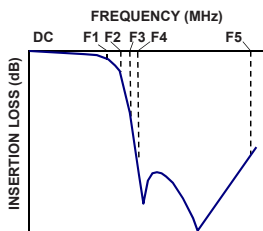
Applications

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

Functional Schematic



Typical Frequency Response



Electrical Specifications⁽¹⁾ at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-225	—	1.0	1.6 dB
	Freq. Cut-Off	F2	350	—	3.0	dB
	VSWR	DC-F1	DC-225	—	1.15	:1
Stop Band	Insertion Loss	F3	460	20	27	dB
		F4-F5	520-20000	—	40	dB
	VSWR	F3-F5	460-20000	—	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.

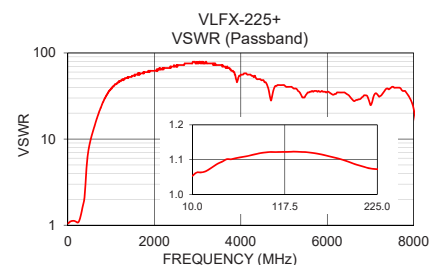
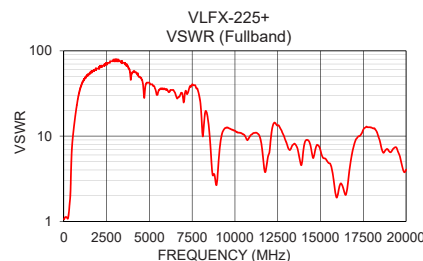
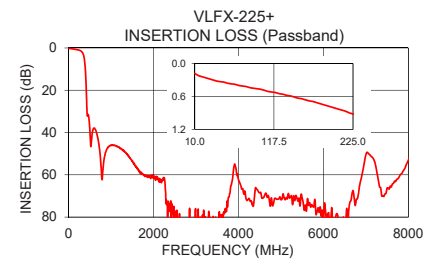
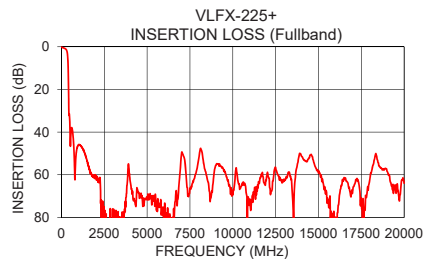
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.18	1.05
100	0.47	1.12
125	0.55	1.12
200	0.81	1.09
225	0.92	1.07
350	3.37	1.71
400	12.72	2.66
415	19.86	3.54
430	29.10	4.57
460	31.51	6.51
500	39.12	8.60
520	46.47	9.53
1000	45.89	38.61
3830	64.86	59.91
5000	71.78	42.38
10000	69.45	11.53
12500	56.61	13.29
15000	59.14	6.78
17500	70.90	11.93
20000	63.93	4.04

+RoHS Compliant

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



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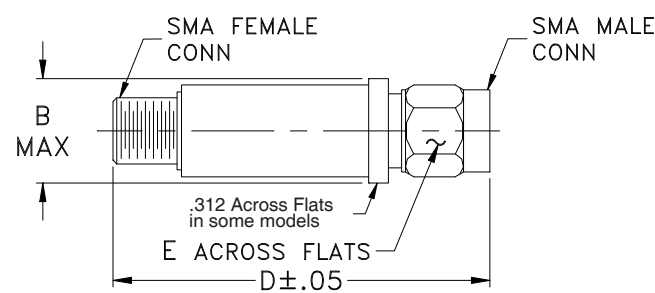


www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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

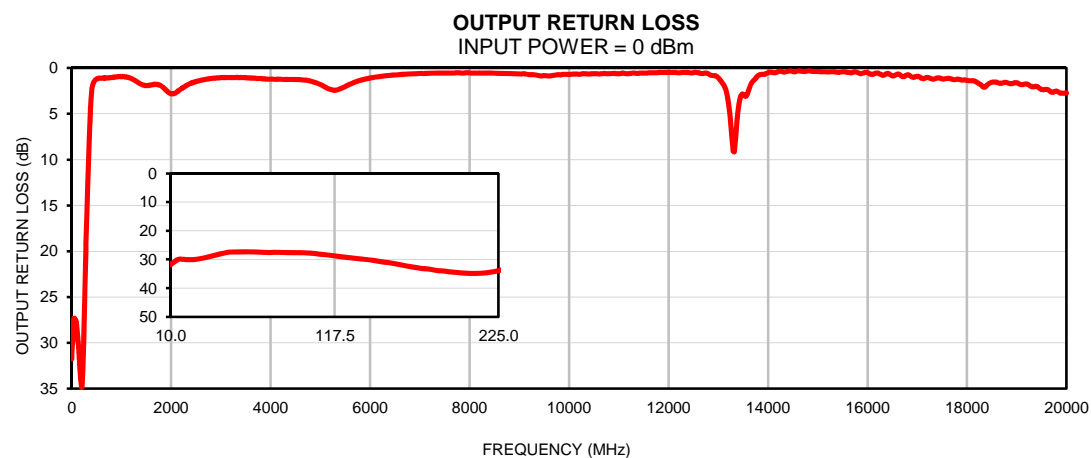
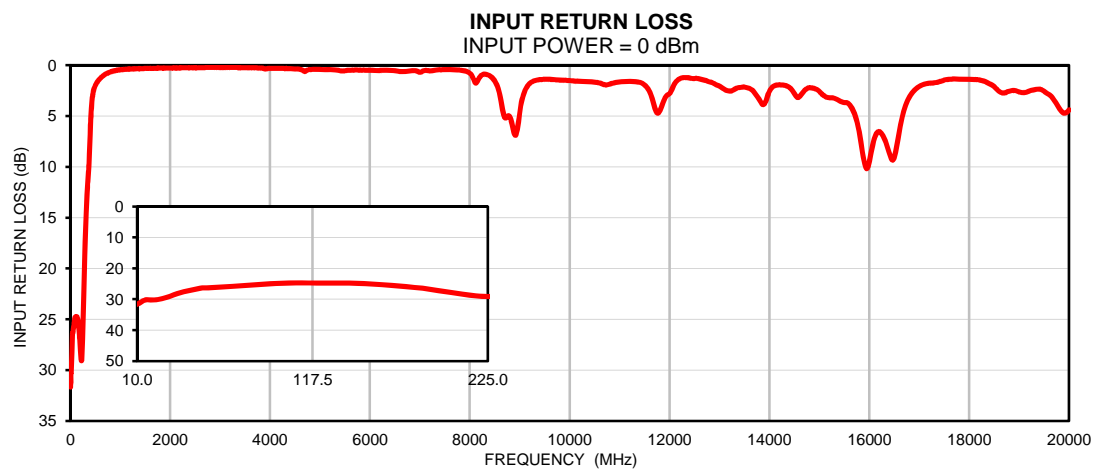
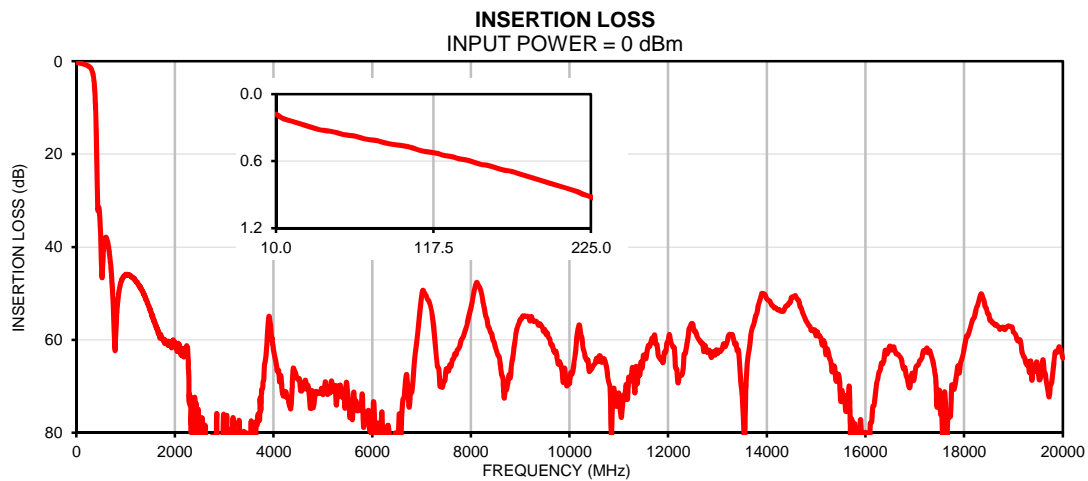
Note: Please refer to case style drawing for details

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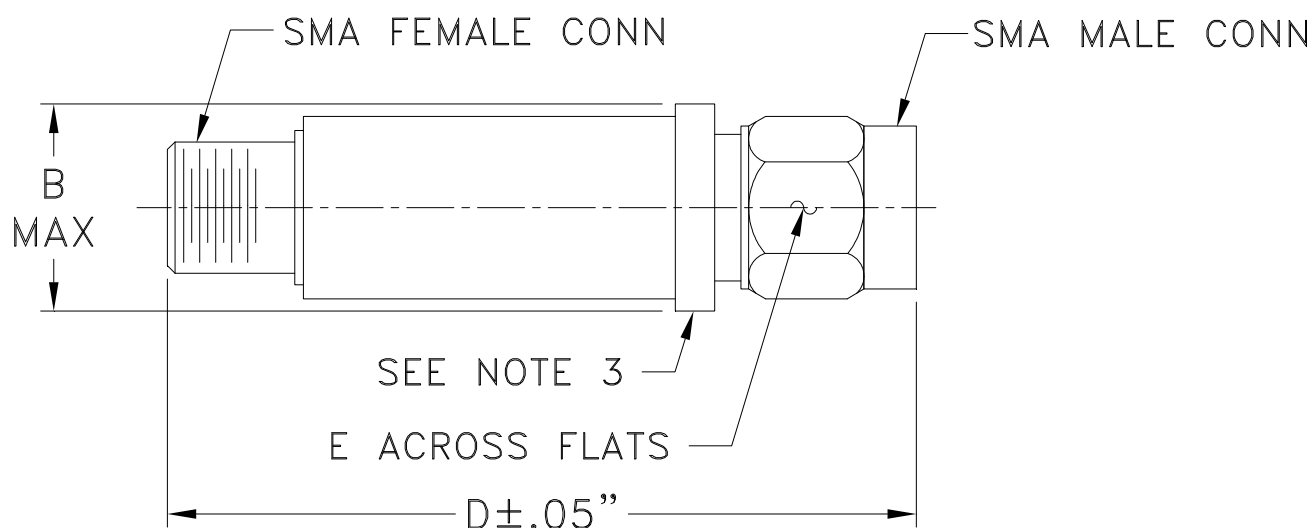
Typical Performance Data

FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.18	31.67	31.74
50	0.34	26.32	27.35
75	0.41	25.59	27.55
100	0.47	24.80	27.74
200	0.81	27.65	34.61
210	0.85	28.37	34.85
225	0.92	29.09	33.95
230	0.95	29.06	33.11
250	1.07	26.88	29.09
300	1.61	17.53	18.07
350	3.37	11.65	9.22
400	12.72	6.86	2.97
410	17.18	5.58	2.39
415	19.86	5.05	2.18
420	22.82	4.58	2.02
425	26.02	4.19	1.90
430	29.10	3.86	1.80
435	31.34	3.58	1.72
450	31.64	2.96	1.53
460	31.51	2.69	1.44
500	39.12	2.03	1.22
510	42.96	1.92	1.19
520	46.47	1.83	1.16
550	41.10	1.59	1.12
600	37.93	1.31	1.09
700	44.09	0.91	1.08
750	52.24	0.77	1.06
1000	45.89	0.45	0.93
1500	53.43	0.32	1.92
2000	60.56	0.28	2.79
2500	80.66	0.25	1.49
3000	83.46	0.22	1.05
3500	81.60	0.24	1.05
4000	62.29	0.31	1.20
4500	68.57	0.36	1.24
5000	71.78	0.41	1.79
5500	70.98	0.54	2.02
6000	83.82	0.49	1.09
6500	92.44	0.54	0.74
7000	50.54	0.70	0.59
8000	53.12	0.78	0.53
9000	55.63	4.69	0.64
10000	69.45	1.51	0.67
11000	71.46	1.66	0.63
11500	63.30	1.93	0.54
12000	60.36	2.79	0.47
12500	56.61	1.31	0.50
13000	62.95	2.06	1.06
13500	72.06	2.15	2.85
14000	51.16	2.57	0.50
14500	50.86	2.79	0.38
15000	59.14	2.58	0.36
15500	73.25	3.67	0.40
16000	79.92	9.50	0.49
16500	61.35	9.07	0.86
17000	67.53	2.08	0.89
18500	54.47	2.12	1.54
19000	58.30	2.63	1.60
19500	66.44	2.57	2.34
20000	63.93	4.39	2.71

Typical Performance Curves



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.



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



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



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