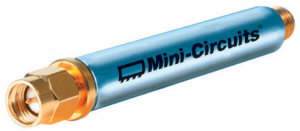
Coaxial

Low Pass Filter

VLFX-80+

50Ω DC to 80 MHz (40 dB Typ. Isolation up to 20 GHz)



Generic photo used for illustration purposes only
CASE STYLE: FF1118

The Big Deal

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

Product Overview

VLFX-80+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-80 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

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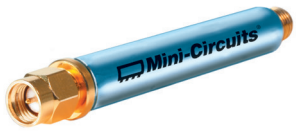


Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-80+

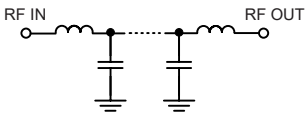
Features

- 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

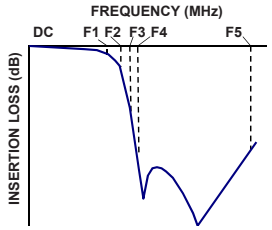
Applications

- 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-80	—	1.0	1.6	dB
	Freq. Cut-Off	F2	145	—	3.0	—	dB
	VSWR	DC-F1	DC-80	—	1.2	—	:1
Stop Band	Insertion Loss	F3	200	20	27	—	dB
		F4-F5	220-20000	—	40	—	dB
	VSWR	F3-F5	220-20000	—	10	—	:1

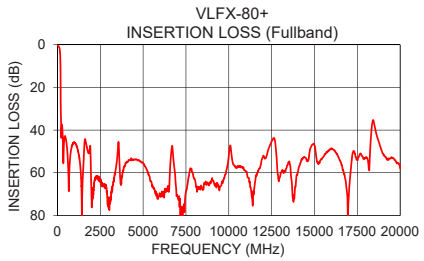
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

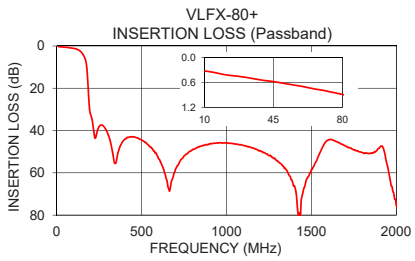
Maximum Ratings	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max.

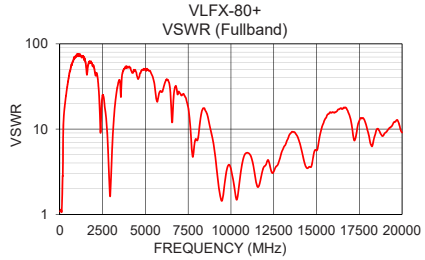
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

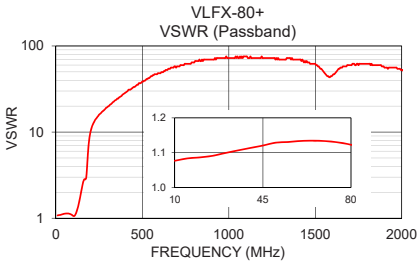
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.32	1.08
50	0.62	1.13
80	0.89	1.12
100	1.14	1.06
145	2.95	1.97
180	12.84	3.86
185	19.19	5.59
190	26.28	7.38
195	30.92	8.86
200	32.41	10.02
220	41.22	12.99
500	44.46	38.61
1000	45.97	72.39
2500	63.56	25.19
5000	55.49	51.10
10000	52.09	3.41
15000	47.08	5.59
17500	54.07	12.44
18400	35.61	8.27
20000	57.88	9.13









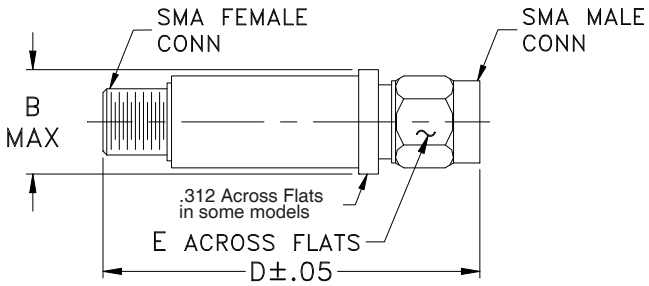
Notes

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

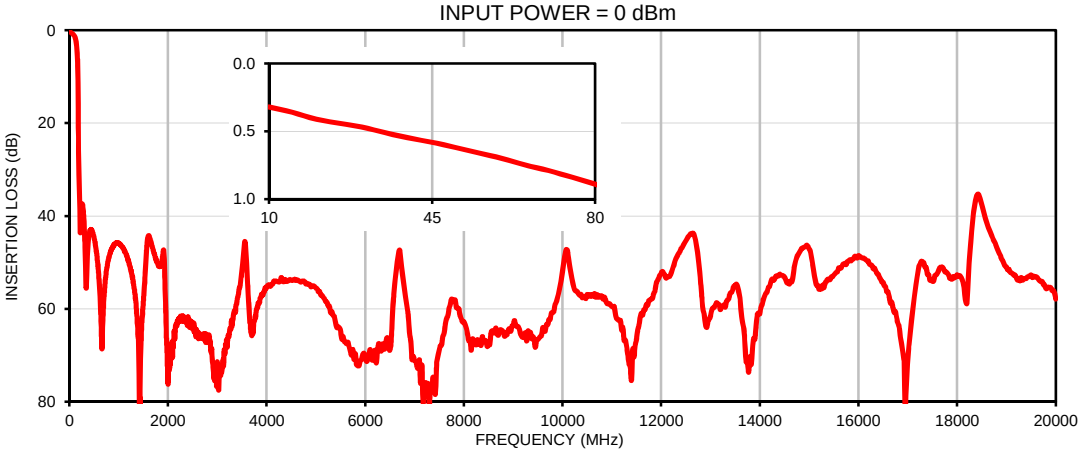
Coaxial Low Pass Filter VLFX-80+

Typical Performance Data

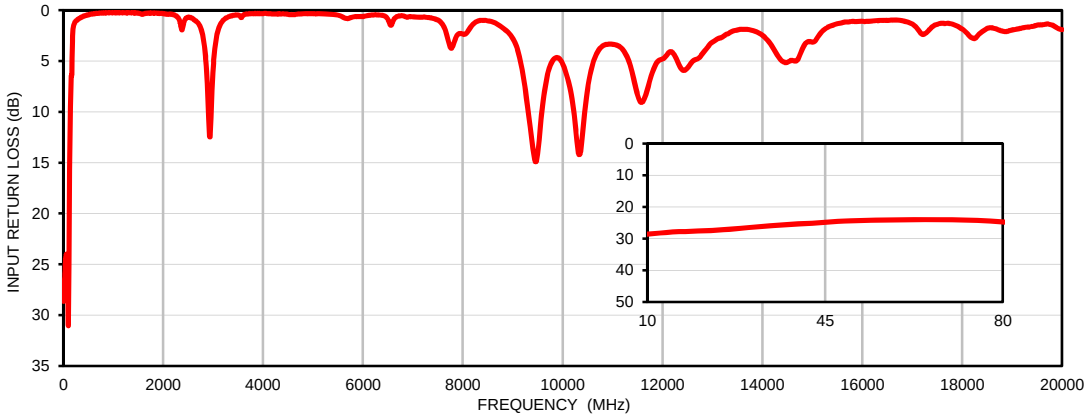
FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.32	28.64	28.71
50	0.62	24.37	25.16
60	0.70	24.06	24.71
70	0.79	24.08	24.60
80	0.89	24.74	24.71
90	1.01	26.50	25.02
100	1.14	30.07	25.07
120	1.55	20.95	19.65
140	2.53	11.33	12.01
145	2.95	9.72	10.59
150	3.46	8.41	9.43
160	4.73	6.71	8.13
170	6.62	6.44	9.42
180	12.84	4.61	7.89
190	26.28	2.37	3.77
195	30.92	1.97	3.11
200	32.41	1.74	2.75
220	41.22	1.34	2.10
250	38.12	1.09	1.74
300	41.20	0.88	1.47
350	55.07	0.73	1.38
400	44.12	0.61	1.31
450	42.93	0.52	1.22
500	44.46	0.45	1.12
750	52.02	0.28	0.83
1000	45.97	0.24	1.17
1250	51.83	0.24	1.17
1500	58.62	0.28	2.76
2000	75.46	0.33	1.07
2500	63.56	0.69	0.92
3000	71.54	5.98	0.81
3500	51.79	0.47	0.86
4000	55.24	0.33	0.98
4500	53.83	0.41	1.09
5000	55.49	0.34	1.76
5500	64.61	0.48	1.85
6000	70.42	0.63	1.01
6500	68.93	0.88	0.70
7000	71.07	0.65	0.57
7500	69.03	0.96	0.51
8000	62.77	2.35	0.49
8500	67.40	1.05	0.47
9000	63.65	2.75	0.50
9500	66.58	14.22	0.50
10000	52.09	5.25	0.54
10500	56.92	7.72	0.57
11000	59.47	3.35	0.69
11500	66.61	8.33	0.48
12000	52.35	4.80	0.48
12500	45.35	5.67	1.43
13000	61.61	3.14	2.15
13500	55.09	1.94	0.58
14000	61.07	2.47	0.39
15000	47.08	3.14	0.42
16000	48.55	1.11	0.45
17000	71.64	1.35	0.64
18000	52.68	1.86	1.11
18400	35.61	2.11	2.19
19000	51.01	1.94	1.97
20000	57.88	1.91	1.86

Typical Performance Curves

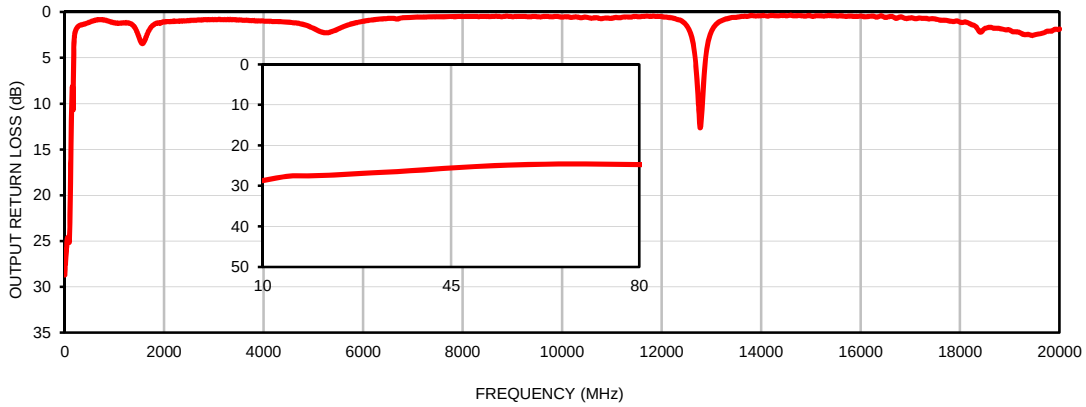
INSERTION LOSS
INPUT POWER = 0 dBm



INPUT RETURN LOSS
INPUT POWER = 0 dBm



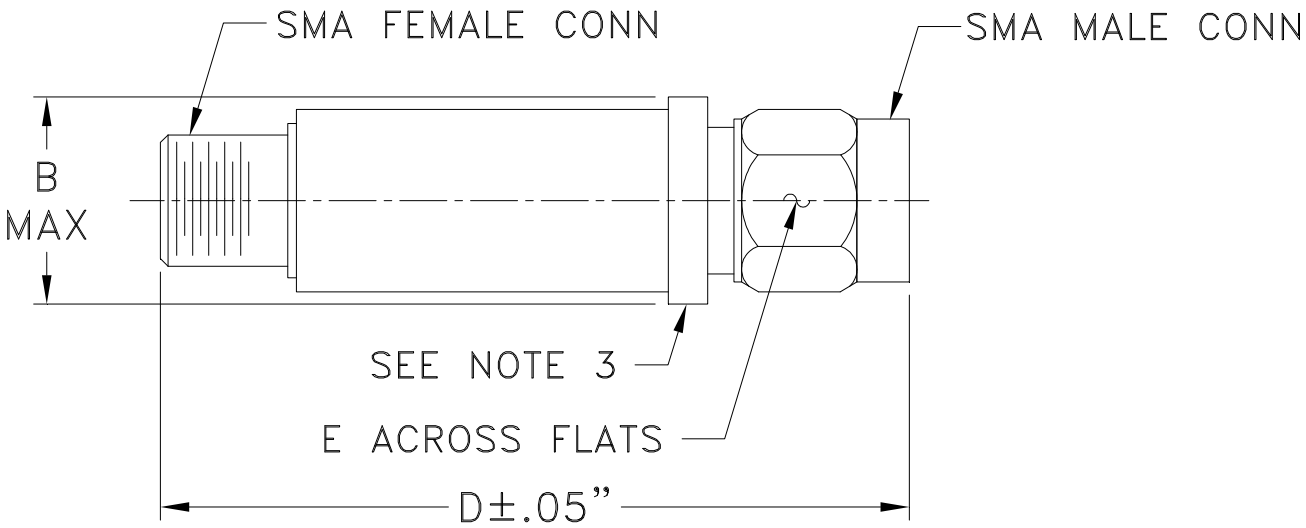
OUTPUT RETURN LOSS
INPUT POWER = 0 dBm



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.

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