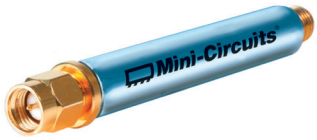
Coaxial

Low Pass Filter

VLFX-950+

50Ω DC to 950 MHz (40 dB Typ. Isolation up to 20 GHz)



Generic photo used for illustration purposes only

CASE STYLE: FF1118

Connectors	Model
SMA	VLFX-950+

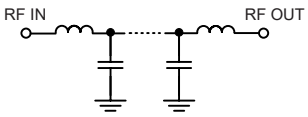
Features

- 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

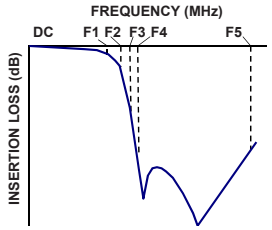
Applications

- 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-950	—	1.1	1.6	dB
	Freq. Cut-Off	F2	1400	—	3.0	—	dB
	VSWR	DC-F1	DC-950	—	1.4	—	:1
Stop Band	Insertion Loss	F3	1865	20	30	—	dB
		F4-F5	2250-20000	—	40	—	dB
	VSWR	F3-F5	1865-20000	—	10	—	:1

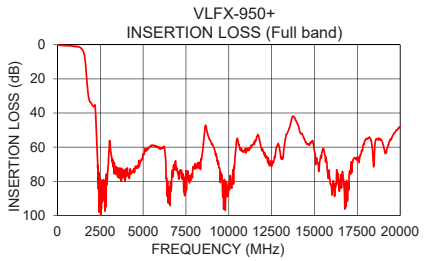
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

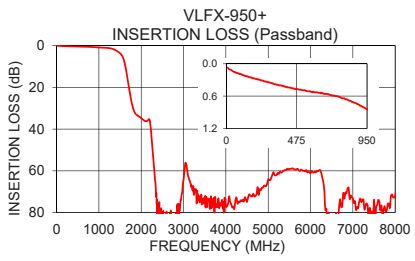
Maximum Ratings	
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max.

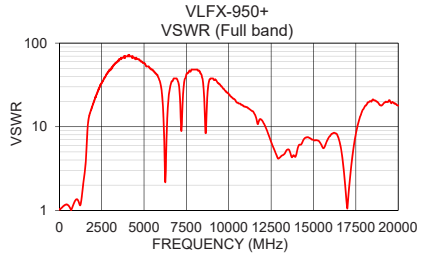
*Passband rating, derate linearly to 3.5W at 100°C ambient.
Permanent damage may occur if any of these limits are exceeded.

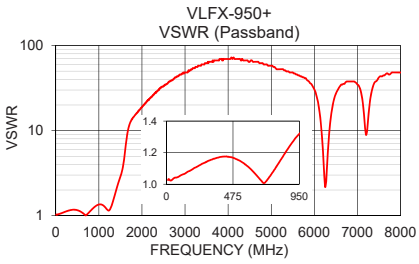
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.07	1.03
500	0.48	1.16
950	0.84	1.32
1400	2.28	1.98
1500	3.70	2.88
1650	12.65	8.43
1710	20.09	11.77
1750	24.84	13.09
1810	30.23	14.50
1865	32.65	15.81
2500	93.97	33.42
5000	64.02	57.91
7500	73.79	42.38
10000	80.21	24.48
12500	71.37	6.63
15000	62.48	6.97
17500	66.61	8.12
18000	55.44	17.05
19000	58.39	17.93
20000	47.94	17.93









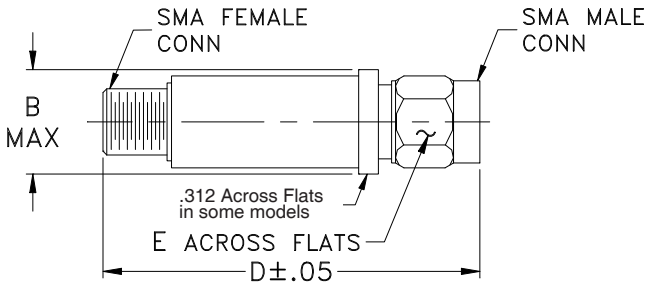
Notes

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

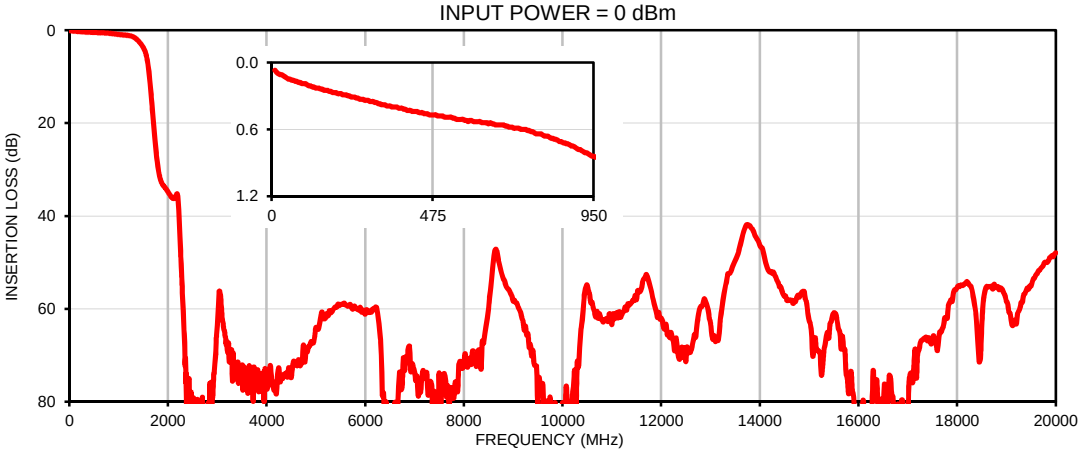
Coaxial Low Pass Filter VLFX-950+

Typical Performance Data

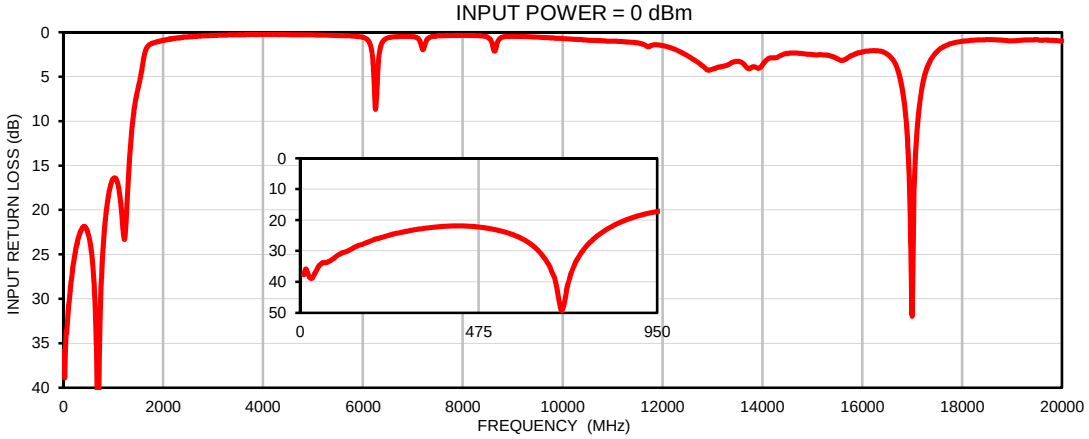
FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
(MHz)	(dB)	(dB)	(dB)
10	0.07	37.70	37.97
50	0.15	34.84	37.04
75	0.17	33.51	36.72
100	0.19	31.38	37.34
200	0.28	26.14	34.77
300	0.35	23.24	28.23
400	0.43	21.92	24.41
500	0.48	22.69	23.45
600	0.53	26.68	25.54
700	0.58	48.35	35.54
800	0.65	24.23	27.65
900	0.77	18.62	19.87
950	0.84	17.22	18.02
1000	0.91	16.51	16.88
1100	1.01	17.21	16.63
1200	1.13	22.28	18.56
1300	1.45	16.92	14.88
1400	2.28	9.65	9.50
1450	2.92	7.66	8.24
1500	3.70	6.30	8.20
1600	7.64	3.33	7.57
1700	18.84	1.54	2.98
1710	20.09	1.48	2.86
1750	24.84	1.33	2.70
1775	27.40	1.26	2.75
1800	29.53	1.21	2.87
1810	30.23	1.20	2.94
1850	32.19	1.13	3.18
1900	33.34	1.06	3.30
1950	34.00	0.99	3.10
2000	34.73	0.92	2.72
2250	45.62	0.67	3.27
2500	93.97	0.52	1.25
2750	89.00	0.42	1.10
3000	64.29	0.36	1.02
3500	75.05	0.28	1.00
4000	77.28	0.25	1.15
4500	74.83	0.27	1.17
5000	64.02	0.30	1.52
7500	73.79	0.41	0.49
8000	71.99	0.36	0.48
9000	58.35	0.46	0.50
10000	80.21	0.71	0.46
11000	63.38	1.01	0.51
11500	58.04	1.20	0.48
12000	61.98	1.50	0.64
12500	71.37	2.64	1.71
13000	62.93	4.16	4.03
13500	49.64	3.28	0.80
14000	46.24	3.69	0.49
14500	57.31	2.38	0.44
15000	62.48	2.51	0.41
15500	60.87	2.99	0.36
16000	83.81	2.22	0.46
16500	83.90	2.48	0.58
17000	84.94	31.87	0.49
18500	64.21	0.82	1.75
19000	58.39	0.97	1.22
19500	55.08	0.84	1.93
20000	47.94	0.97	2.34

Typical Performance Curves

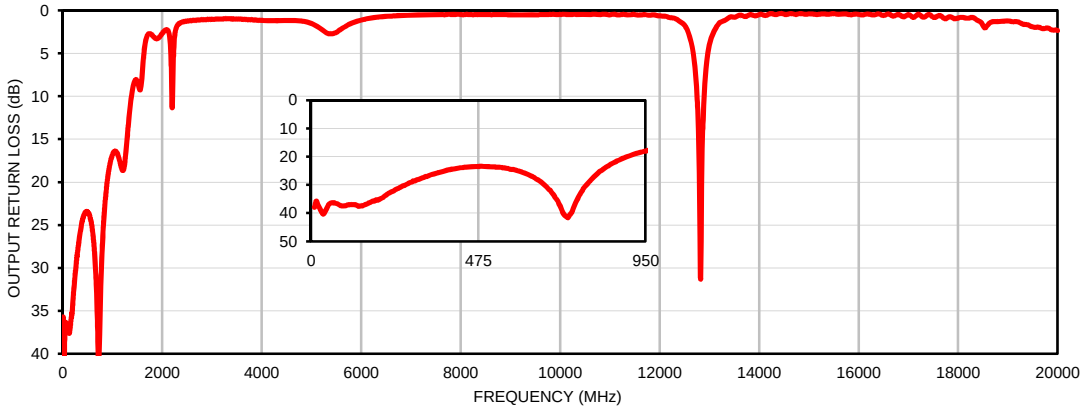
INSERTION LOSS
INPUT POWER = 0 dBm



INPUT RETURN LOSS
INPUT POWER = 0 dBm



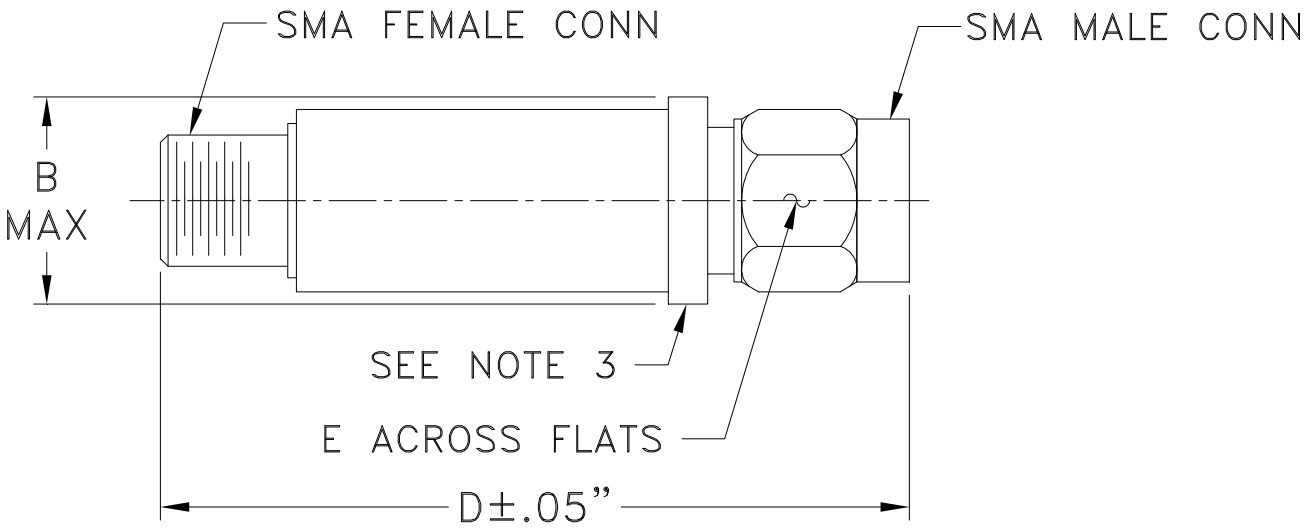
OUTPUT RETURN LOSS
INPUT POWER = 0 dBm



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