Coaxial

Low Pass Filter

VLFX-1350+

50Ω DC to 1350 MHz (30 dB Typ.Isolation up to 20 GHz)

Generic photo used for illustration purposes only

CASE STYLE: FF1118

The Big Deal

- Very good rejection, 30 dB typ. up to 20 GHz
- Excellent power handling, 10W
- Rugged unibody construction

Product Overview

VLFX-1350+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-1350 MHz bandwidth, these units offer good matching within the passband and high rejection in stopband, 30 dB typical 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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Connectors	Model
SMA	VLFX-1350+

Features

- Very good isolation, 30 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

Electrical Specifications[1] at 25°C

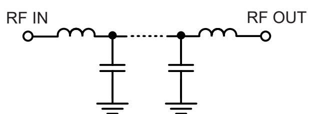
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-1350	—	1.3	2.0	dB
	Freq. Cut-Off	F2	2050	—	3.0	—	dB
	VSWR	DC-F1	DC-1350	—	1.4	—	:1
Stop Band	Insertion Loss	F3	2425	20	30	—	dB
		F4-F5	2600-20000	—	30	—	dB
	VSWR	F3-F5	2425-20000	—	10	—	:1

(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.

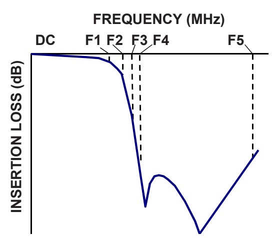
Functional Schematic

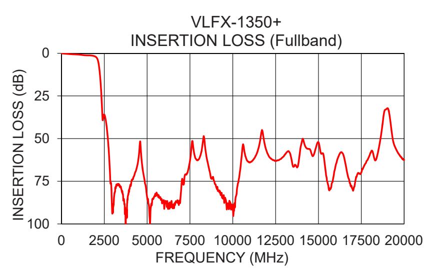


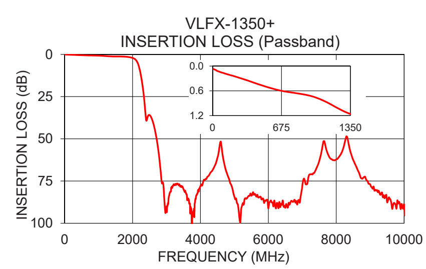
Typical Performance Data at 25°C

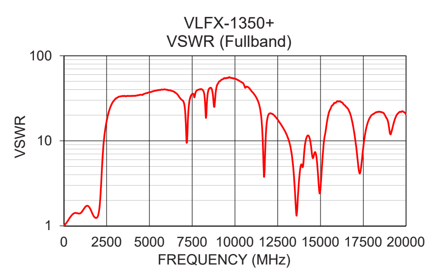
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.07	1.02
100	0.16	1.05
1000	0.75	1.42
1350	1.16	1.72
2050	2.53	1.46
2100	3.37	1.77
2125	4.07	2.04
2200	8.10	3.74
2300	19.29	8.20
2345	27.00	10.36
2395	38.13	12.61
2425	38.49	13.92
2600	40.05	20.90
5000	84.21	37.21
7500	63.06	35.46
10000	88.83	54.12
12500	63.02	17.76
15000	52.14	2.80
19000	32.39	14.56
20000	62.42	20.41

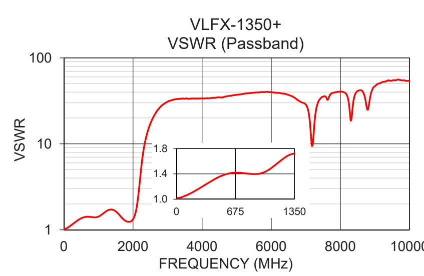
Typical Frequency Response











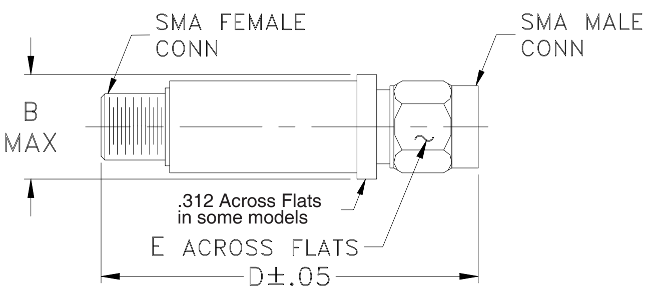
+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

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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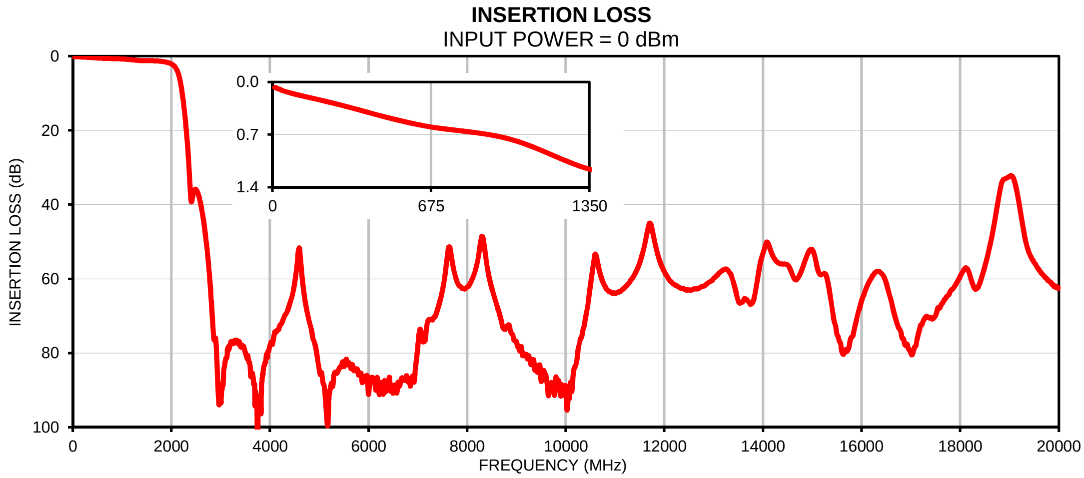
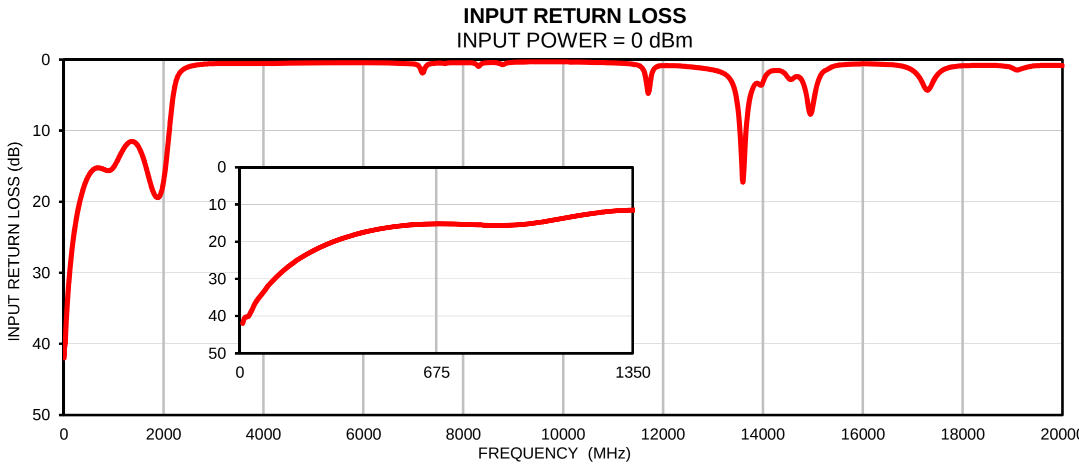
Coaxial Low Pass Filter VLFX-1350+

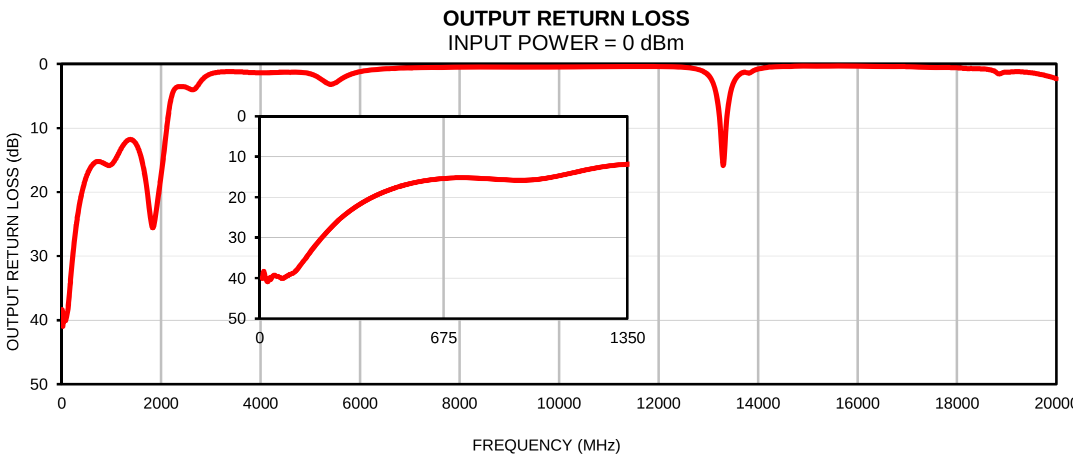
Typical Performance Data

FREQ. (MHz)	INSERTION LOSS (dB)	INPUT RETURN LOSS (dB)	OUTPUT RETURN LOSS (dB)
10	0.07	41.97	40.07
50	0.12	36.96	39.43
150	0.20	27.77	36.78
250	0.28	22.55	28.38
750	0.63	15.30	15.21
800	0.65	15.43	15.31
900	0.69	15.62	15.71
1000	0.75	15.13	15.73
1100	0.86	13.87	14.71
1200	0.99	12.55	13.21
1300	1.11	11.69	12.13
1350	1.16	11.53	11.84
1400	1.20	11.56	11.79
1500	1.23	12.29	12.48
1600	1.24	13.99	14.50
1700	1.28	16.48	18.48
1800	1.40	18.73	24.60
1850	1.50	19.32	25.42
1900	1.63	19.37	23.25
1950	1.81	18.75	20.46
2000	2.08	17.16	17.61
2050	2.53	14.53	14.50
2100	3.37	11.13	11.13
2200	8.10	4.76	5.56
2300	19.29	2.13	3.72
2350	28.02	1.64	3.54
2360	30.18	1.58	3.53
2400	38.81	1.36	3.51
2425	38.49	1.25	3.51
2500	35.92	1.02	3.62
2750	55.40	0.68	3.28
3000	92.69	0.56	1.55
3250	77.03	0.52	1.22
3500	79.82	0.52	1.21
4000	78.06	0.51	1.37
4500	61.32	0.50	1.27
5000	84.21	0.47	1.54
6000	91.13	0.44	1.20
7000	78.04	0.61	0.61
7500	63.06	0.49	0.53
8000	62.24	0.43	0.50
8500	62.52	0.42	0.50
9000	76.96	0.37	0.50
10000	88.83	0.32	0.46
11100	63.51	0.49	0.41
12000	58.04	0.83	0.39
13000	59.89	1.44	1.72
14000	53.25	3.20	0.78
15000	52.14	6.50	0.33
16000	65.95	0.60	0.34
17000	80.01	1.53	0.42
18000	59.38	0.86	0.60
18500	56.73	0.80	0.78
18700	44.62	0.83	0.98
18800	36.61	0.90	1.39
18850	33.86	0.93	1.56
18890	33.14	0.96	1.45
19000	32.39	1.20	1.28
19500	55.58	0.84	1.39
20000	62.42	0.85	2.30

Typical Performance Curves



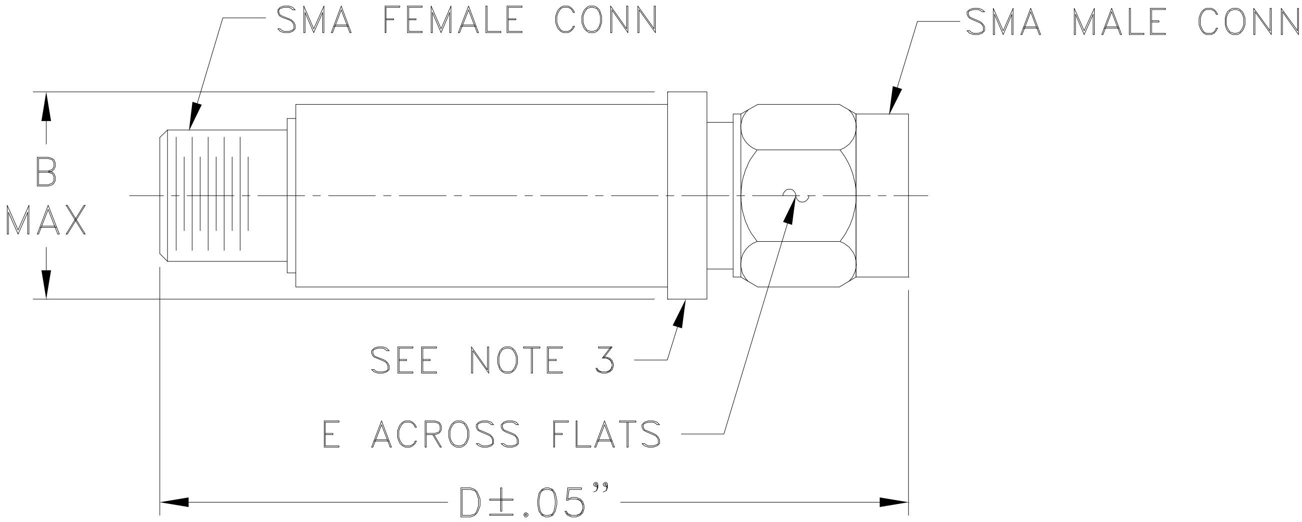




Case Style FF

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