Coaxial **Low Pass Filter**

VLFX-500+

DC to 500 MHz (40 dB Typ. Isolation up to 20 GHz) 50Ω

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-500+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-500 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

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. G. The parts covered by this specification document are subject to Mini-Circuits trandard 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 Low Pass Filter

DC to 500 MHz (40 dB Typ. Isolation up to 20 GHz) 50Ω



CASE STYLE: FF1118

Model

VLFX-500+

Unit

10

Connectors

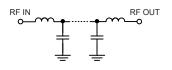
Features

- 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

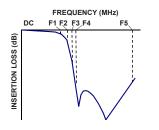
Applications

- · 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

			SM	Α	VLFX-500-
E	ectrical S	Specifications ⁽	¹⁾ at 25°(0	
ameter	F#	Frequency (MHz)	Min.	Тур.	Max.
Insertion Loss	DC-F1	DC-500	_	1.1	1.6
Freq Cut-Off	F2	750	_	3.0	_

	Insertion Loss		DC-500	_	1.1	1.0	aв	Ĺ
Pass Band	Freq. Cut-Off	F2	750	—	3.0	—	dB	Ĺ
	VSWR	DC-F1	DC-500	—	1.15	—	:1	
	Insertion Loss	F3	900	20	33	—	dB	
Stop Band	Insention Loss	F4-F5	1100-20000	—	40	—	dB	L
	VSWR	F3-F5	900-20000	_	10	_	:1	Ĺ

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

Maximum Ratings

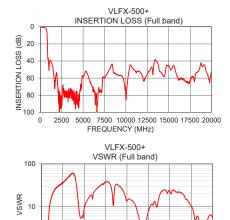
Para

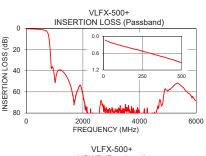
Operating Temperature	-55°C to 100°C		
Storage Temperature	-55°C to 100°C		
RF Power Input*	10W max.		
Deach and action, downto line and to 0.5W at 10000 ambient			

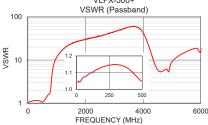
*Passband rating, derate linearly to 3.5W at 100°C ambient. Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.13	1.04
250	0.53	1.15
500	0.94	1.05
730	2.99	1.62
750	3.73	1.65
840	19.87	4.87
865	30.17	6.37
900	37.15	8.08
1100	40.78	14.50
1500	49.60	23.81
2000	63.15	30.49
4000	82.68	42.38
5000	59.06	9.13
8000	51.44	34.07
10000	83.79	13.49
12500	55.46	7.66
15000	45.93	23.18
17500	63.27	10.56
18500	51.77	4.08
20000	52.75	5.61







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∭Mini-Circuits

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FREQUENCY (MHz)

5000 7500 10000 12500 15000 17500 20000

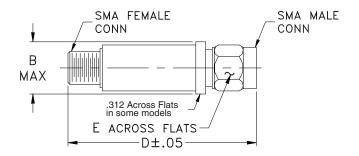
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Coaxial Connections

INPUT SMA-Male OUTPUT SMA-Female

Outline Drawing



Outline Dimensions (inch)

В	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

Notes
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Mini-Circuits

Coaxial Low Pass Filter

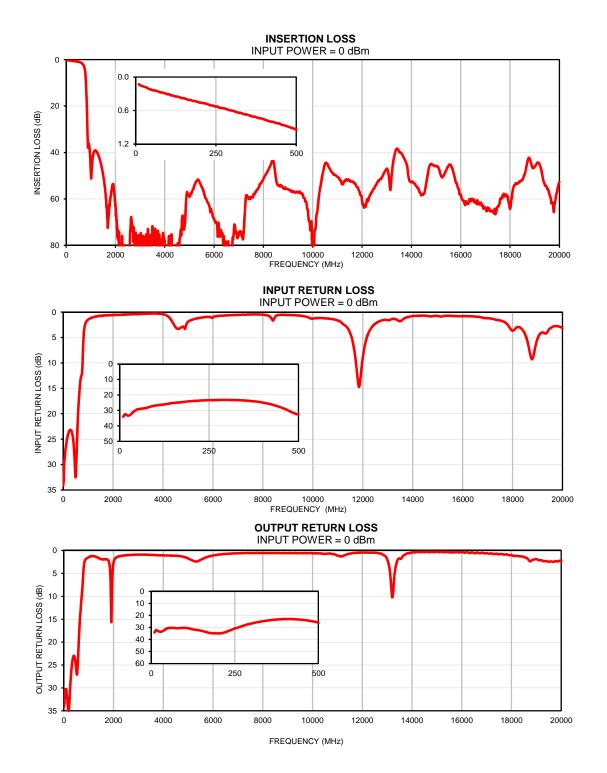
Typical Performance Data

(MHz)(dB)(dB)(dB)100.13 34.12 34.17 500.23 2921 30.47 750.27 22.37 30.60 1000.31 26.82 30.28 2000.46 24.00 34.90 3000.60 23.19 26.66 5000.944 32.52 25.57 5251.00 30.44 26.99 5751.17 22.94 23.69 6001.29 20.05 20.48 6251.45 17.72 17.66 6501.6615.83 15.29 6751.9414.33 13.27 7002.31 13.25 11.53 7252.8512.63 9.92 750 3.73 12.23 8.18 8009.00 7.11 3.99 82515.06 4.51 2.74 85023.61 3.20 2.22 875 34.90 2.54 1.98 900 37.15 2.16 1.83 900 37.99 1.73 1.62 975 41.75 1.60 1.53 1000 47.97 1.49 1.46 1100 40.787 1.29 1.28 950 39.90 0.94 1.28 950 37.99 1.73 1.62 1200 39.23 1.01 1.23 1200 39.24 0.94 1.28 1500 49.60 0.73 1.88	FREQ.	INSERTION LOSS	INPUT RETURN LOSS	OUTPUT RETURN LOSS
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IF/RF MICROWAVE COMPONENTS

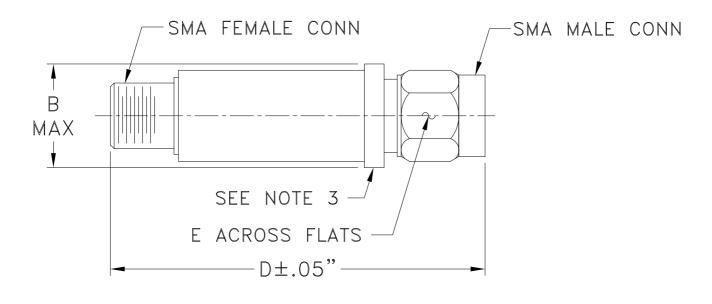
REV. OR VLFX-500+ 170720 Page 1 of 1

Case Style

FF1118

FF

Outline Dimensions



CASE #.	А	В	С	D	Е	WT GRAMS
FF1118		.410		2.67	.312	17.0
111110		(10.41)		(67.82)	(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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RF/IF MICROWAVE COMPONENTS

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Sheet 1 of 1

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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