

Coaxial

# Low Pass Filter

VLFX-105+

50Ω DC to 105 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-105+ is a 50Ω low pass filter built in rugged unibody construction. Covering DC-105 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.  
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Connectors	Model
SMA	VLFX-105+

### 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

### Electrical Specifications<sup>(1)</sup> at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	DC-F1	DC-105	—	1.0	1.6	dB
	Freq. Cut-Off	F2	165	—	3.0	—	dB
	VSWR	DC-F1	DC-105	—	1.2	—	:1
Stop Band	Insertion Loss	F3	250	20	27	—	dB
		F4-F5	400-20000	—	40	—	dB
	VSWR	F3-F5	400-20000	—	10	—	:1

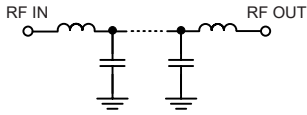
(1) In Application where DC voltage is present at either input or output ports, coupling capacitors are required.

### Maximum Ratings

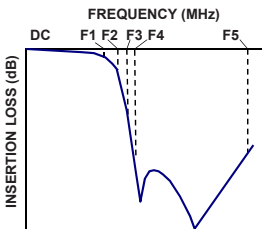
Operating Temperature	-55°C to 100°C
Storage Temperature	-55°C to 100°C
RF Power Input*	10W max.

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

### Functional Schematic



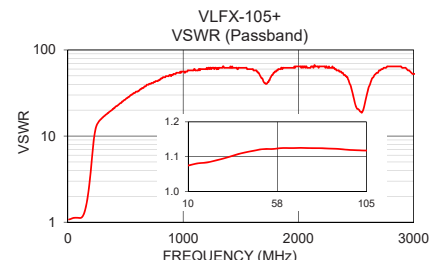
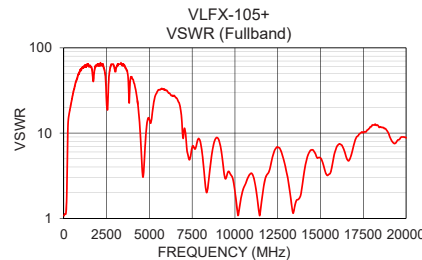
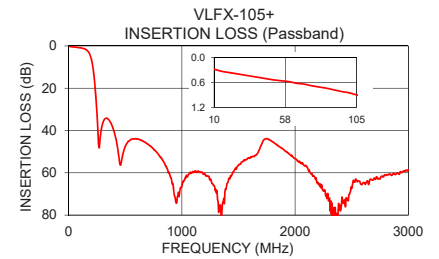
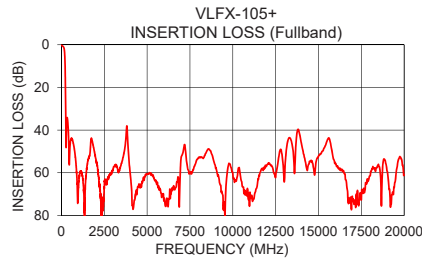
### Typical Frequency Response



### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
10	0.28	1.07
50	0.54	1.12
105	0.90	1.12
140	1.36	1.26
165	2.17	1.73
180	3.23	2.35
200	6.15	4.13
225	14.76	9.08
235	20.54	11.17
245	27.80	12.80
250	32.02	13.39
400	40.31	21.20
1000	66.46	56.04
3830	38.88	24.48
5000	60.40	14.50
10000	60.32	2.08
13800	39.71	1.77
17500	72.74	10.07
18400	57.52	11.93
20000	61.17	8.81

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



#### Notes

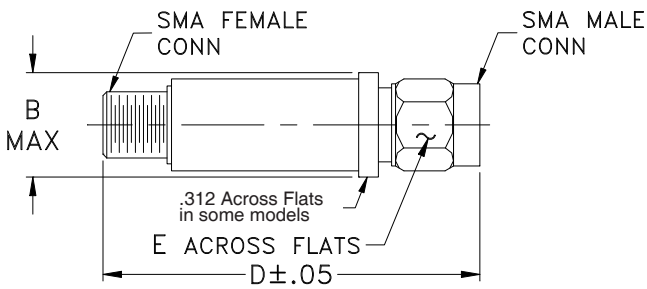
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## Coaxial Connections

INPUT	SMA-Male
OUTPUT	SMA-Female

## Outline Drawing



## Outline Dimensions ( $\frac{\text{inch}}{\text{mm}}$ )

B	D	E	wt.
$\frac{\text{inch}}$	$\frac{\text{inch}}$	$\frac{\text{inch}}$	$\frac{\text{grams}}$
.410	2.67	.312	17.0
10.41	67.82	7.92	

Note: Please refer to case style drawing for details

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