

Coaxial

# Low Pass Filter

VLF-52+

50Ω

DC to 52 MHz

## The Big Deal

- Low Insertion Loss (1.2 dB typical)
- Good close-in rejection
- Versatile small size, coaxial, 1.43" length



CASE STYLE: FF704

## Product Overview

The VLF-52+ Low Pass Filter is constructed using internal LTCC Low Pass Filter structure to achieve repeatable performance. The Pass Band frequency range DC-52 MHz is ideal for rejecting down converted harmonics of base band signals. Built using Mini-Circuits proven unibody construction which integrates the RF connectors with the case body, the VLF-52+ takes very little space and meets rugged test lab and system environment.

## Key Features

| Feature                              | Advantages   |
|--------------------------------------|--|
| High Rejection                       | Achieving 50dB rejection at 180 MHz; The VLF-52 is ideal for test setups.  |
| Compact Versatile Case (1.43"x0.41") | Enables use in a variety of applications including space constrained connectorized systems. Connectors: SMA Female (1), SMA Male (1) |
| Rugged Unibody Construction          | Mini-Circuits Unibody construction allows survivability in critical applications including militarized or industrial systems.        |

### 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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## VLF-52+

50Ω \*DC to 52 MHz



Generic photo used for illustration purposes only

CASE STYLE: FF704

| Connectors | Model   |
|------------|---------|
| SMA        | VLF-52+ |

**+RoHS Compliant**

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

### Maximum Ratings

|                       |                   |
|-----------------------|-------------------|
| Operating Temperature | -55°C to 100°C    |
| Storage Temperature   | -55°C to 100°C    |
| RF Power Input*       | 8.5W max. at 25°C |

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

### Features

- rugged uni-body construction, small size
- 7 sections
- excellent power handling, 8.5W
- temperature stable
- low cost
- protected by U.S. Patent 6,943,646

### Applications

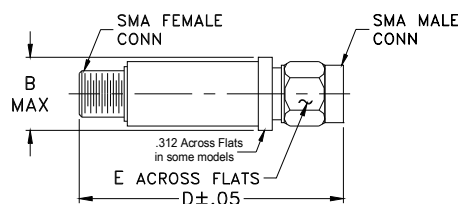
- harmonic rejection
- transmitters/receivers
- lab use

### Electrical Specifications at 25°C

| Parameter | F#             | Frequency (MHz) | Min.     | Typ. | Max. | Unit |    |
|-----------|----------------|-----------------|----------|------|------|------|----|
| Pass Band | Insertion Loss | DC-F1           | *DC-52   | —    | 1.0  | 1.2  | dB |
|           | Freq. Cut-Off  | F2              | 93       | —    | 3.0  | —    | dB |
|           | VSWR           | DC-F1           | *DC-52   | —    | 1.4  | 1.5  | :1 |
| Stop Band | Rejection Loss | F3              | 140      | 20   | 28   | —    | dB |
|           |                | F4-F5           | 170-1100 | —    | 33   | —    | dB |
|           | F6             | 1200            | —        | 23   | —    | dB   |    |
|           | VSWR           | F3-F6           | 140-1200 | —    | 18   | —    | :1 |

\* Not for use with DC voltage at input and output ports

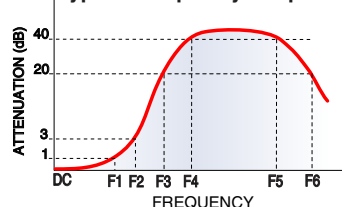
### Outline Drawing



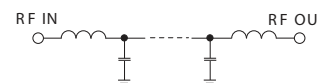
### Outline Dimensions (inch/mm)

| B     | D     | E    | gra |
|-------|-------|------|-----|
| .410  | 1.43  | .312 | gra |
| 10.41 | 36.32 | 7.92 | 1   |

### Typical Frequency Response

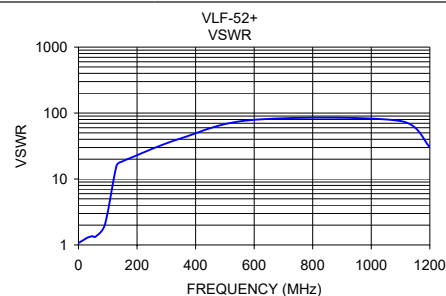
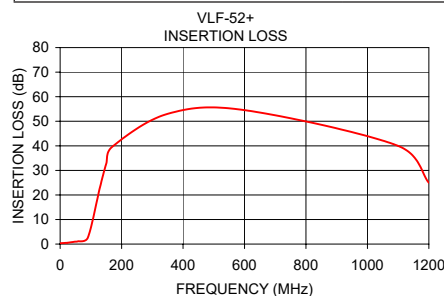


### Electrical Schematic



### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 0.30            | 0.33                | 1.07      |
| 23.00           | 0.54                | 1.23      |
| 31.00           | 0.67                | 1.29      |
| 45.00           | 0.91                | 1.35      |
| 49.00           | 0.97                | 1.35      |
| 50.00           | 0.98                | 1.35      |
| 58.00           | 1.10                | 1.33      |
| 90.00           | 2.59                | 2.01      |
| 130.00          | 23.25               | 15.81     |
| 150.00          | 32.73               | 18.50     |
| 170.00          | 39.67               | 20.22     |
| 350.00          | 53.02               | 41.37     |
| 600.00          | 54.54               | 78.97     |
| 1100.00         | 39.99               | 75.53     |
| 1200.00         | 24.93               | 30.49     |



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