

# Coaxial Bandpass Filter

## ZABP-510+

50Ω 20 to 1000 MHz

### The Big Deal

- Sharp roll-off
- Wide bandwidth
- Good VSWR



CASE STYLE: UU1842

### Product Overview

ZABP-510+ is a 50Ω bandpass filter with a rugged connectorized package covering the passband of 20 to 1000 MHz. The bandpass filter offers good matching within the passband and provides high rejection. This filter has miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across lots and consistent performance across temperature.

### Key Features

| Feature               | Advantages                                                                                                                                                                                       |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fast roll-off         | ZABP-550+ has sharper transition and rejects spurious signals in the stopband.                                                                                                                   |
| Good VSWR             | This filter maintains typical VSWR over passband frequency range making this filter easier to integrate into receiver and transmitter RF chains with less concerns for in band frequency ripple. |
| Connectorized package | 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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# Bandpass Filter

50Ω 20 to 1000 MHz

## ZABP-510+



CASE STYLE: UU1842  
Connectors Model  
SMA-MF ZABP-510-S+

### Features

- Sharp roll-off
- Wide bandwidth
- Good VSWR
- Connectorized package

### Applications

- Test equipment
- Receiver front end applications
- Harmonic rejection

### Electrical Specifications at 25°C

| Parameter        | F#               | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|------------------|-----------------|------|------|------|------|
| Pass Band        | Center Frequency | -               | -    | 510  | -    | MHz  |
|                  | Insertion Loss   | F1-F2           | -    | 1.5  | 2.7  | dB   |
|                  | VSWR             | F1-F2           | -    | 1.6  | 2.0  | :1   |
| Stop Band, Lower | Insertion Loss   | DC-F3           | 20   | 29   | -    | dB   |
|                  | VSWR             | DC-F3           | -    | 20   | -    | :1   |
| Stop Band, Upper | Insertion Loss   | F4-F5           | 25   | 38   | -    | dB   |
|                  |                  | F5-F6           | -    | 40   | -    | dB   |
|                  |                  | F6-F7           | -    | 20   | -    | dB   |
|                  |                  | VSWR            | -    | 20   | -    | :1   |

### Maximum Ratings

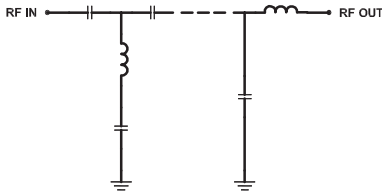
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 1 W max.       |

Permanent damage may occur if any of these limits are exceeded.

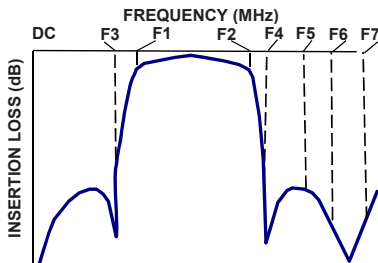
### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) | Frequency (MHz) | Group Delay (nsec) |
|-----------------|---------------------|-----------|-----------------|--------------------|
| 1.0             | 63.48               | 1858.20   | 20              | 170.85             |
| 10.0            | 72.13               | 509.03    | 22              | 80.79              |
| 17.0            | 50.27               | 50.66     | 25              | 39.25              |
| 17.5            | 32.11               | 35.61     | 28              | 32.53              |
| 18.0            | 18.75               | 19.41     | 30              | 27.67              |
| 18.5            | 7.15                | 5.33      | 40              | 13.33              |
| 19.0            | 1.83                | 1.23      | 50              | 8.04               |
| 20.0            | 0.90                | 1.28      | 100             | 2.71               |
| 200.0           | 0.24                | 1.10      | 250             | 1.31               |
| 510.0           | 0.46                | 1.22      | 300             | 1.26               |
| 1000.0          | 1.44                | 1.39      | 400             | 1.23               |
| 1050.0          | 2.98                | 1.81      | 500             | 1.25               |
| 1076.0          | 8.16                | 4.19      | 510             | 1.25               |
| 1112.0          | 20.31               | 7.90      | 600             | 1.32               |
| 1136.0          | 30.50               | 9.23      | 700             | 1.44               |
| 1150.0          | 38.39               | 9.74      | 750             | 1.53               |
| 1600.0          | 43.84               | 3.51      | 800             | 1.65               |
| 1800.0          | 53.59               | 3.69      | 900             | 2.10               |
| 2000.0          | 58.66               | 3.00      | 950             | 2.50               |
| 2500.0          | 42.82               | 2.45      | 1000            | 3.34               |

### Functional Schematic

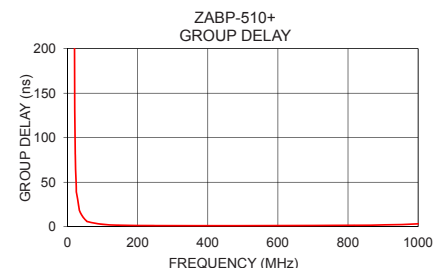
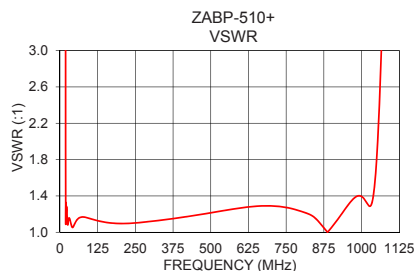
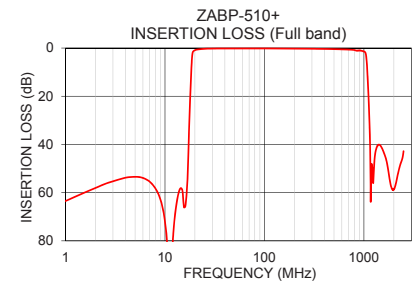
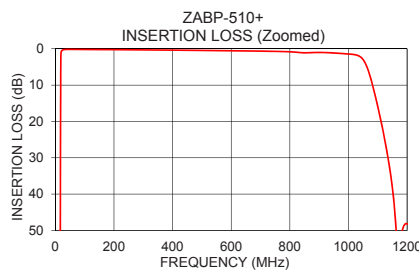


### Typical Frequency Response



### +RoHS Compliant

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



### Notes

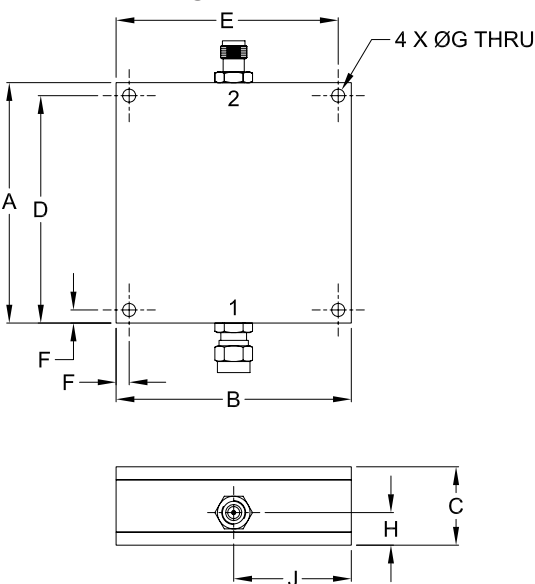
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Coaxial Connections

|        |            |
|--------|------------|
| INPUT  | SMA-MALE   |
| OUTPUT | SMA-FEMALE |

Outline Drawing



Outline Dimensions ( inch mm )

| A     | B     | C     | D     | E     |
|-------|-------|-------|-------|-------|
| 2.300 | 2.250 | .750  | 2.175 | 2.125 |
| 58.42 | 57.15 | 19.05 | 55.25 | 53.98 |
| F     | G     | H     | J     | wt.   |
| .125  | .125  | .312  | 1.125 | grams |
| 3.18  | 3.18  | 7.93  | 28.58 | 124   |

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