*Cavity*

# Bandpass Filters

## ZVBP Model Series

50Ω 24.25 to 43.5 GHz

## The Big Deal

- Very low insertion loss with excellent power handling
- Sharp roll-off with wide stopband
- Passbands from 24.25 to 43.5 GHz covering 5G bands*.
- Stopbands up to 57 GHz

## Product Overview

Mini-Circuits' cavity filters are designed by implementing resonant structures with very high Q and are ideal for narrow-band, high-selectivity applications. These designs can provide bandwidths as narrow as 3% with very high selectivity and excellent low noise floor. Low insertion loss combined with excellent power handling makes them well-suited for transmitter and receiver front end. Advanced filter design and construction enables stopband width greater than 3x the center frequency.

## Key Features

| Feature | Advantages |
|---|---|
| 5G bands | Use in various 5G applications, covering n257, n258, n259, n260, and n261 bands. |
| Low insertion loss | Low signal loss results in better SNR in receiver front end and better power delivery to antenna in transmitter |
| Sharp roll-off | Higher selectivity results in better adjacent channel rejection and dynamic range |
| Wide stopband | Wide spur free band results in better receiver sensitivity |
| High power handling | Well suited for transmitter application |
| Protective assembly | Prevents accidental de-tuning of precisely tuned resonant circuit |

*High frequency models operating above 40 GHz are available with 2.4mm connectors.

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# Bandpass Filter

## ZVBP-25875-K+

50Ω 24250 to 27500 MHz

*Generic photo used for illustration purposes only*

CASE STYLE: UH3126

| Connectors | Model |
|---|---|
| **2.92mm-F** | ZVBP-25875-K+ |

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

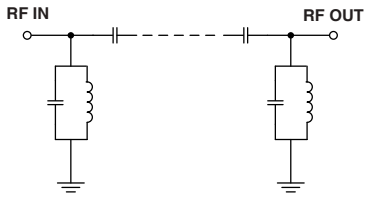
### Features

- Low insertion loss, 1.0 dB typical
- Good return loss, 24 dB typical
- High rejection
- Broad stopband performance up to 44 GHz
- Sharp roll-off

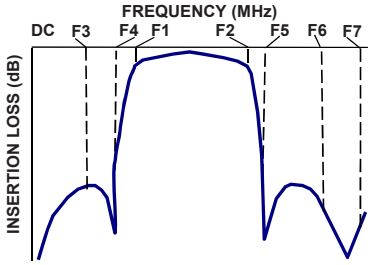
### Applications

- 5G band n258

### Simplified Functional Schematic




### Typical Frequency Response




### Electrical Specifications[1] at 25°C

| Parameter | | F# | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| **Pass Band** | Center Frequency | - | - | - | 25875 | - | MHz |
| | Insertion Loss | F1-F2 | 24250 - 27500 | - | 1.0 | 3.0 | dB |
| | Return Loss | F1-F2 | 24250 - 27500 | 15 | 27 | - | dB |
| **Stop Band, Lower** | Insertion Loss | DC-F3 | DC - 23875 | 60 | 126 | - | dB |
| | Return Loss | DC-F3 | DC - 23875 | - | 0.18 | - | dB |
| **Stop Band, Upper** | Insertion Loss | F4-F5 | 27875 - 44000 | 60 | 114 | - | dB |
| | Return Loss | F4-F5 | 27875 - 44000 | - | 0.23 | - | dB |

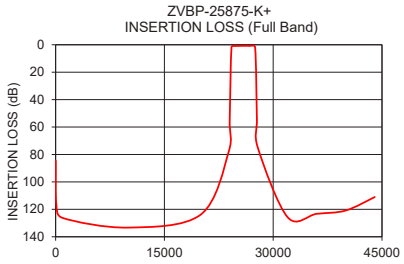
1. Data measured after calibrating using 2.92mm cal kit.

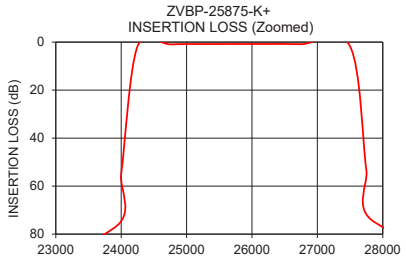
| Maximum Ratings | |
|---|---|
| Operating Temperature | -30°C to 70°C |
| Storage Temperature | -30°C to 70°C |
| RF Power Input | 2.5W Max. |

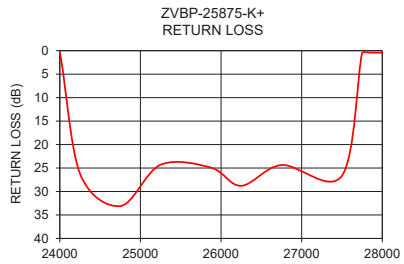
Permanent damage may occur if any of these limits are exceeded.

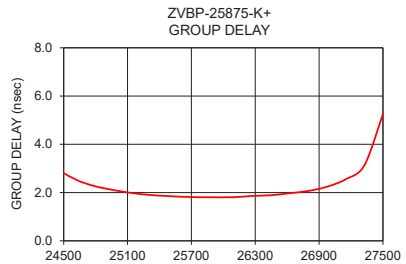
### Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) | Frequency (MHz) | Group Delay (nsec) |
|---|---|---|---|---|
| 10 | 84.41 | 0.01 | 24250 | 4.69 |
| 100 | 116.58 | 0.01 | 24425 | 3.12 |
| 1000 | 126.33 | 0.08 | 24600 | 2.57 |
| 10000 | 133.31 | 0.18 | 24775 | 2.29 |
| 20000 | 123.86 | 0.23 | 24950 | 2.12 |
| 23875 | 77.73 | 0.43 | 25125 | 1.99 |
| 24000 | 54.92 | 0.51 | 25300 | 1.90 |
| 24250 | 1.71 | 26.18 | 25450 | 1.86 |
| 24750 | 0.93 | 33.09 | 25600 | 1.83 |
| 25250 | 0.82 | 24.30 | 25775 | 1.81 |
| 25875 | 0.79 | 24.91 | 25875 | 1.81 |
| 26250 | 0.78 | 28.78 | 26100 | 1.81 |
| 26750 | 0.88 | 24.36 | 26275 | 1.86 |
| 27500 | 1.77 | 26.63 | 26450 | 1.89 |
| 27750 | 53.63 | 0.50 | 26625 | 1.98 |
| 27875 | 75.00 | 0.42 | 26800 | 2.07 |
| 32000 | 125.80 | 0.04 | 26975 | 2.24 |
| 36000 | 123.27 | 0.21 | 27150 | 2.55 |
| 40000 | 120.86 | 0.19 | 27325 | 3.12 |
| 44000 | 111.01 | 0.06 | 27500 | 5.26 |



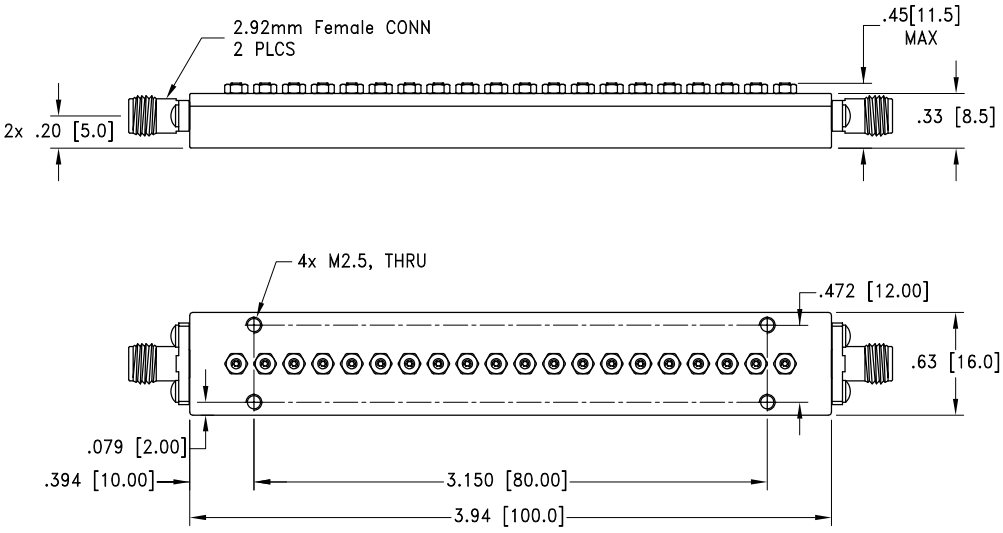



## Coaxial Connections

| | |
|---|---|
| PORT 1 | 2.92mm-FEMALE |
| PORT 2 | 2.92mm-FEMALE |

## Outline Drawing




Weight: 95 grams ± 5 grams;
Dimensions are in inches (mm). Tolerances: 2 Pl.±.03; 3 Pl. ± .015

## Additional 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