



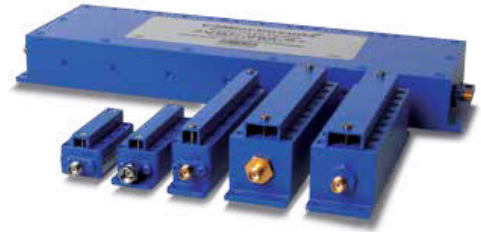
CAVITY

# Bandpass Filter ZVBP MODEL SERIES

50Ω DC to 57 GHz

## THE BIG DEAL

- Very Low Insertion Loss with Excellent Power Handling
- Fast Roll-Off with Wide Stopband
- Passbands Up to 36 GHz
- Stopband Up to 57 GHz



## PRODUCT OVERVIEW

Mini-Circuits' coaxial 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 0.5% 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.

Mini-Circuits' coaxial cavity filters feature a special protective assembly to prevent accidental de-tuning that would otherwise require expensive replacement or return to factory for re-tuning. Precise machining allows realization of cavity filters with small form factors for applications where size is critical.

## KEY FEATURES

Feature	Advantages
Low insertion loss	Low signal loss results in better SNR in receiver front end and better power delivery to antenna in transmitter.
Fast 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





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# Bandpass Filter

## ZVBP-3100A-S+

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50Ω 3020 to 3180 MHz SMA-Female

### FEATURES

- Low Insertion Loss of 1.0dB Typ.
- Good Return Loss of 20dB Typ.
- High Rejection
- Sharp Roll-Off



Generic photo used for illustration purposes only

Model No.	ZVBP-3100A-S+
Case Style	YK3431
Connectors	SMA-FEMALE

### APPLICATIONS

- Test & Measurement Equipment
- R&D Lab, Production, and OTA Test Systems

**+RoHS Compliant**

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

### ELECTRICAL SPECIFICATIONS AT 25°C

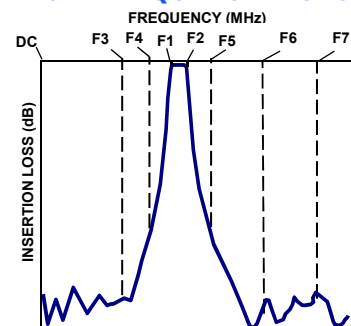
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Center Frequency	Fc	—	—	3100	—	MHz
Passband	Insertion Loss	F1-F2	3020 - 3180	1.0	1.5	dB
	Return Loss	F1-F2	3020 - 3180	14	20	dB
Stop Band, Lower	Rejection	DC-F3	DC - 2900	58	65	dB
		F3-F4	2900 - 2960	30	39	dB
Stop Band, Upper	Rejection	F5-F6	3198 - 3210	30	39	dB
		F6-F7	3210 - 6500	58	64	dB

### ABSOLUTE MAXIMUM RATINGS

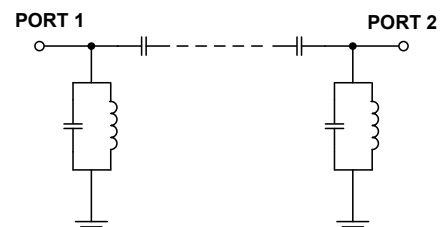
Parameter	Ratings
Operating temperature	-40°C to +85°C
Storage temperature	-55°C to +100°C
RF Power Input	30W at 25°C

Permanent damage may occur if any of these limits are exceeded  
Input and output ports are DC short to ground.

### TYPICAL FREQUENCY RESPONSE



### FUNCTIONAL DIAGRAM



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# Bandpass Filter

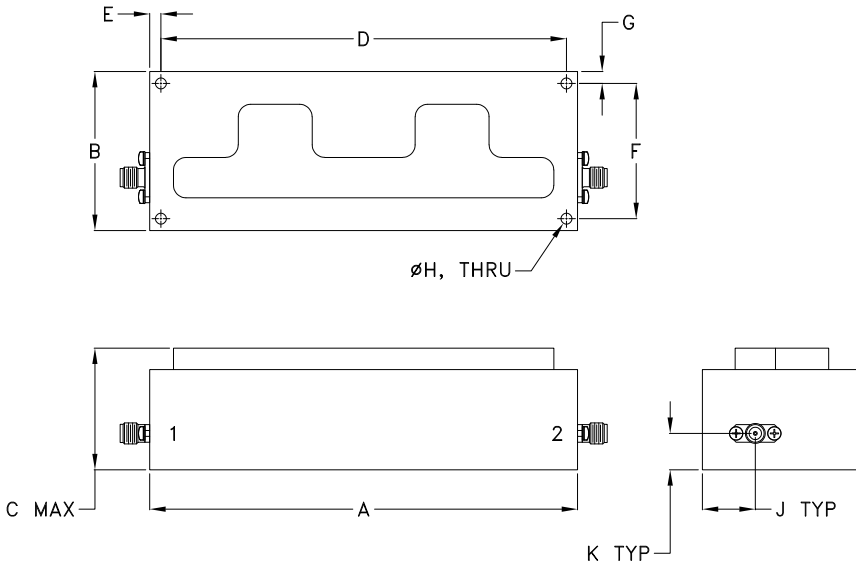
## ZVBP-3100A-S+

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### COAXIAL CONNECTIONS

PORT 1	SMA-Female
PORT 2	SMA-Female

### OUTLINE DRAWING



### OUTLINE DIMENSIONS (Inches/mm)

A	B	C	D	E	F
<b>5.38</b>	<b>2.00</b>	<b>1.53</b>	<b>5.100</b>	<b>.14</b>	<b>1.700</b>
136.7	50.8	38.9	129.54	3.6	43.18
G	H	J	K	Wt.	
<b>.15</b>	<b>.140</b>	<b>.67</b>	<b>.46</b>	grams	
3.8	3.55	16.9	11.6	483	

Note. Please refer to case style drawing for details





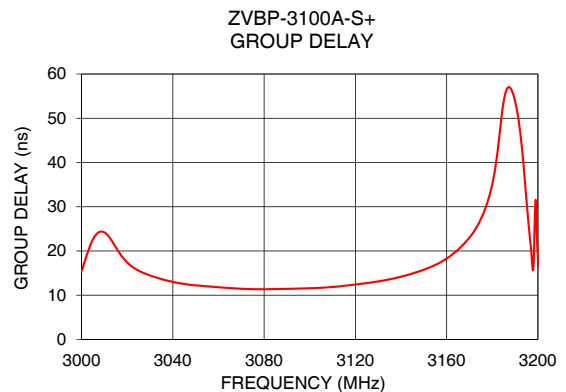
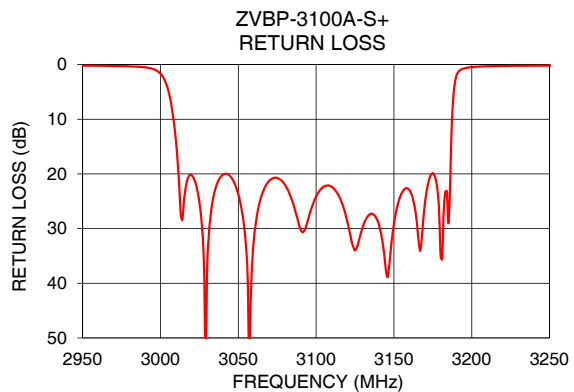
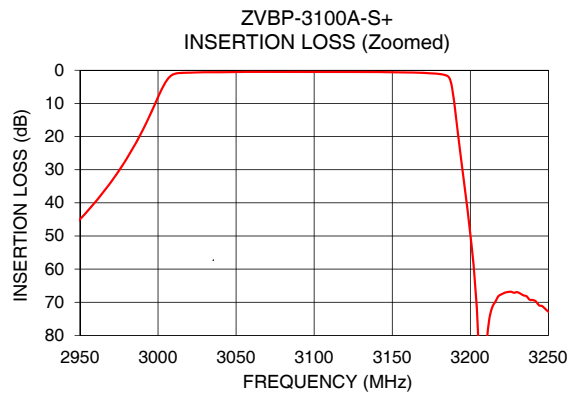
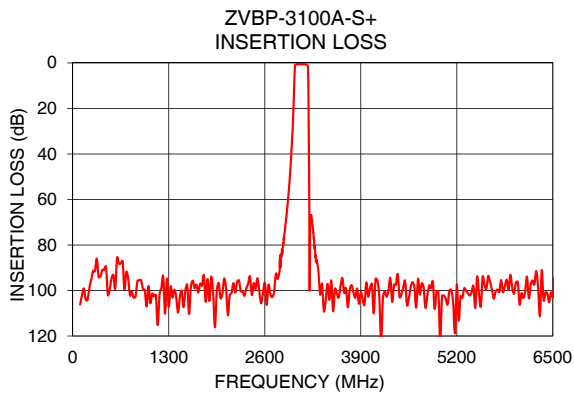
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# Bandpass Filter

## ZVBP-3100A-S+

### TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Frequency (MHz)	GROUP DELAY (ns)
100	106.15	0.04	3020	17.36
2900	65.11	0.15	3030	14.47
2960	39.66	0.22	3040	12.98
2970	33.62	0.26	3050	12.22
2990	18.23	0.50	3060	11.80
3005	3.45	4.76	3070	11.45
3020	0.73	20.25	3080	11.35
3060	0.50	31.92	3090	11.44
3100	0.50	24.13	3100	11.56
3140	0.55	28.95	3110	11.85
3180	1.10	35.05	3120	12.40
3187	2.76	12.27	3130	13.11
3198	41.41	0.53	3140	14.17
3210	84.75	0.31	3150	15.76
6500	102.74	0.13	3180	35.09



#### 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](http://www.minicircuits.com/MCLStore/terms.jsp)

