

# Cavity Bandpass Filters

50Ω DC to 40 GHz



## The Big Deal

- Very low insertion loss with excellent power handling
- Very fast roll-off with wide stopband
- Passbands up to 36 GHz
- Stopbands up to 40 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 1% 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' 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. Custom integrated assembly with LNA and bias tees results in greatly simplifying system integration. Precise machining allows realization of cavity filters with small form factors for applications where size is critical. Excellent repeatability across units is achieved through precise tuning and process control.

## 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

### Notes

- 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.
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# Bandpass Filter

## ZVBP-4300-S+

50Ω 4250 to 4350 MHz



Generic photo used for illustration purposes only

CASE STYLE: ME1656

Connectors	Model
SMA-F	ZVBP-4300-S+

### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
<b>Pass Band</b>	Center Frequency	-	-	4300	-	MHz	
	Insertion Loss	F1-F2	4250-4350	-	1	1.5	dB
	VSWR	F1-F2	4250-4350	-	1.3	1.43	:1
<b>Stop Band, Lower</b>	Insertion Loss	DC-F3	DC - 4140	20	29	-	dB
	VSWR	DC-F3	DC - 4140	-	20	-	:1
<b>Stop Band, Upper</b>	Insertion Loss	F4-F5	4480-8000	20	29	-	dB
	VSWR	F4-F5	4480-8000	-	20	-	:1

### Maximum Ratings

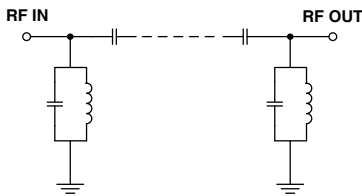
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	10 W max.

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

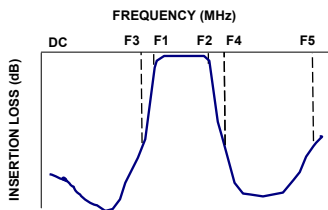
### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	77.25	1737.18	4250	8.28
500	112.86	133.63	4254	7.74
1500	107.49	193.02	4260	7.12
3600	79.00	108.58	4264	6.83
4140	30.22	66.82	4270	6.53
4180	20.13	43.44	4276	6.36
4228	3.52	4.08	4280	6.27
4232	2.49	2.95	4284	6.20
4250	0.76	1.08	4290	6.10
4300	0.65	1.09	4296	6.04
4350	0.75	1.24	4300	6.00
4380	2.50	2.85	4304	5.98
4384	3.51	3.90	4310	5.98
4430	20.02	35.46	4316	6.01
4470	30.69	52.65	4320	6.06
4480	32.91	56.04	4324	6.12
4700	62.88	86.86	4330	6.22
5500	100.21	91.43	4340	6.45
7000	112.78	124.09	4346	6.68
8000	106.65	173.72	4350	6.89

### Functional Schematic

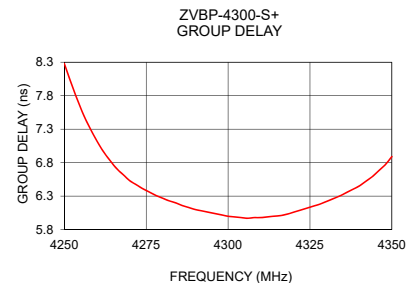
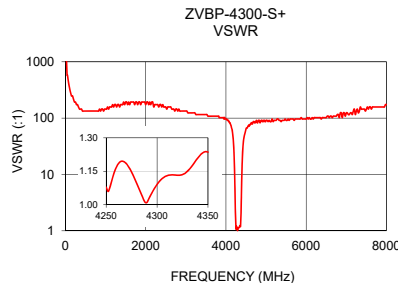
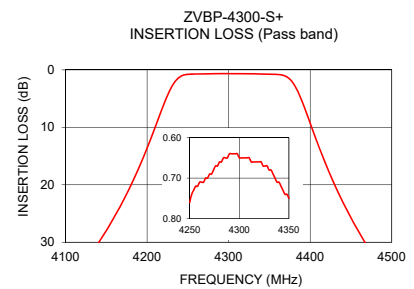
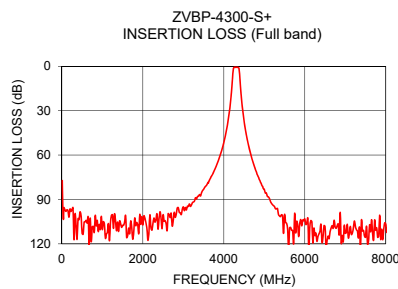


### Typical Frequency Response



### +RoHS Compliant

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



### Notes

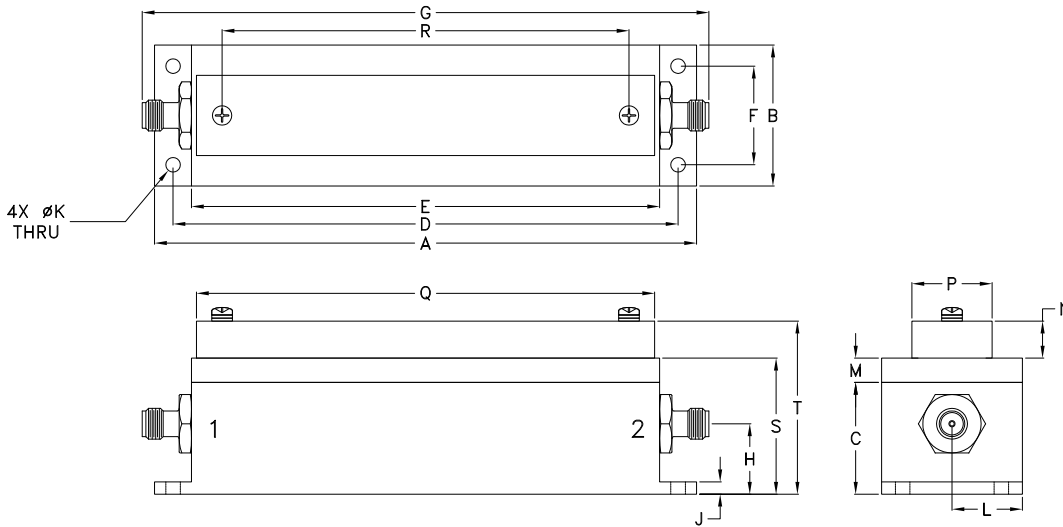
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## Coaxial Connections

PORT - 1	SMA-FEMALE
PORT - 2	SMA-FEMALE

## Outline Drawing



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

A	B	C	D	E	F	G	H	J	K
4.40	1.14	0.91	4.096	3.80	0.800	4.60	0.57	0.10	0.118
111.66	29.03	23.01	104.04	96.42	20.32	116.74	14.50	2.54	3.00
L	M	N	P	Q	R	S	T	Wt.	
0.57	0.20	0.30	0.65	3.72	3.30	1.10	1.40	grams	
14.53	5.00	7.62	16.51	94.39	83.82	28.02	35.64	<b>160</b>	

Note: Please refer to case style drawing for details.

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