

# Cavity Bandpass Filters

50Ω DC to 15 GHz



## The Big Deal

- Very low insertion loss with excellent power handling
- Very fast roll-off with wide stopband
- Passbands up to 15 GHz
- Stopbands up to 20 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. 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

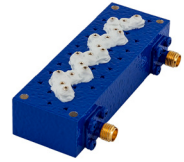
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# Cavity Bandpass Filter

## ZVBP-7100-S+

50Ω 7025 to 7175 MHz



Generic photo used for illustration purposes only

CASE STYLE: SK2596

Connectors	Model
SMA-F	ZVBP-7100-S+

### Features

- Narrow band width
- Good VSWR, 1.29:1 typical
- High rejection
- Broad stopband performance up to 14 GHz
- Fast roll-off

### Applications

- Fixed and mobile communication network
- Satellite communication
- Test and measurements

### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
<b>Pass Band</b>	Center Frequency	-	-	7100	-	MHz	
	Insertion Loss	F1-F2	7025 - 7175	-	3.0	3.5	dB
	VSWR	F1-F2	7025 - 7175	-	1.29	1.5	:1
<b>Stop Band, Lower</b>	Insertion Loss	DC-F3	DC - 6910	70	80	-	dB
		F3-F4	6910 - 6990	-	36	-	dB
	VSWR	DC-F4	DC - 6990	-	20	-	:1
<b>Stop Band, Upper</b>	Insertion Loss	F5-F6	7224 - 7385	-	35	-	dB
		F6-F7	7385 - 14000	70	80	-	dB
	VSWR	F5-F7	7224 - 14000	-	20	-	:1

### Maximum Ratings

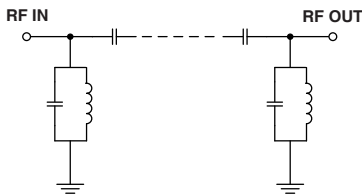
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	3W Max.

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

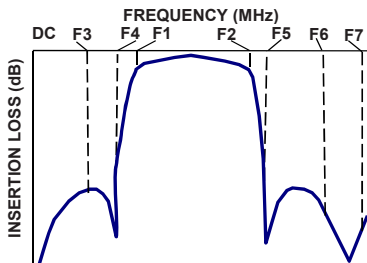
### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
100	93.76	868.59	7025	21.47
2000	104.37	157.93	7040	16.81
6910	85.42	86.86	7030	19.46
6990	40.49	20.22	7040	16.81
6993	34.59	17.22	7050	15.05
6994	32.63	16.11	7060	14.13
6999	22.67	10.75	7100	12.38
7005	10.64	4.14	7080	12.81
7015	3.17	1.09	7090	12.58
7025	2.36	1.30	7100	12.38
7100	1.39	1.20	7110	12.28
7175	2.00	1.30	7120	12.48
7188	4.01	2.03	7130	12.80
7200	16.28	11.31	7140	13.16
7206	22.73	16.41	7150	13.82
7216	32.00	23.18	7160	15.05
7224	38.38	28.03	7165	15.94
7385	105.78	115.81	7168	16.57
10000	114.97	124.09	7170	17.04
14000	104.63	96.51	7175	18.54

### Functional Schematic

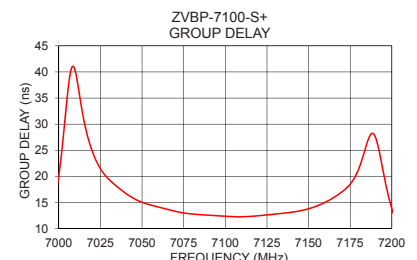
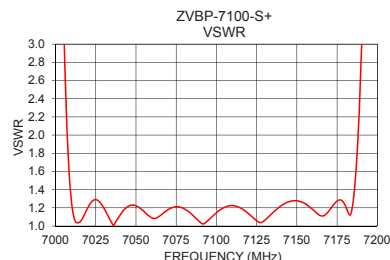
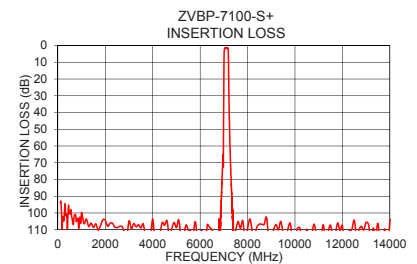
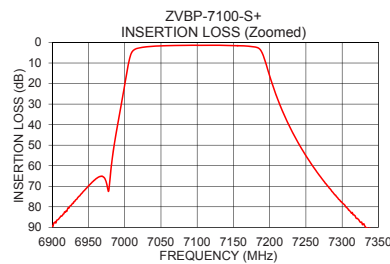


### Typical Frequency Response



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