

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

- 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



Cavity Bandpass Filter

ZVBP-2100-S+

50Ω 2085 to 2115 MHz



Features

- Low insertion loss, 1.3 dB typ.
- Good VSWR, 1.2:1 typ. in passband
- High rejection
- Narrow bandwidth
- Connectorized package

Generic photo used for illustration purposes only

CASE STYLE: UD2969
Connectors SMA-F Model ZVBP-2100-S+

Applications

- Aeronautical Radionavigation
- Space research
- Mobile communication

Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Center Frequency	Fc		2100	-	MHz
	Insertion Loss	F1-F2	2085 - 2115	1.3	2.0	dB
	VSWR	F1-F2	2085 - 2115	1.2	1.5	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 2000	80	94	dB
		F3-F4	2000 - 2065	40	46	dB
	VSWR	F4-F5	2065 - 2073	20	26	dB
		DC-F5	DC - 2073	-	20	:1
Stop Band, Upper	Insertion Loss	F6-F7	2127 - 2135	20	26	dB
		F7-F8	2135 - 2200	40	46	dB
	VSWR	F8-F9	2200 - 5750	80	94	dB
		F6-F9	2127 - 5750	-	20	:1

Maximum Ratings

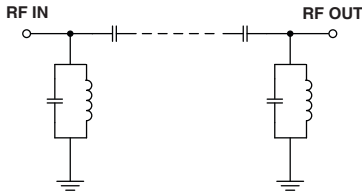
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	20 Watts

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

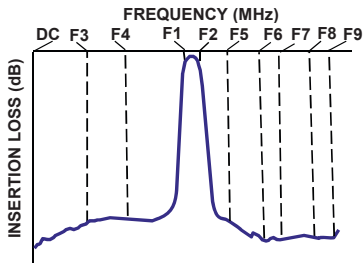
Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	105.04	1200.59	2085	57.76
100	102.17	353.20	2086	54.79
500	117.88	137.49	2087	52.29
2000	101.63	213.67	2088	50.29
2065	47.32	65.60	2089	48.79
2072	30.39	34.83	2090	47.67
2073	27.39	30.38	2091	46.81
2075	20.72	21.28	2092	46.03
2080	2.72	1.80	2093	45.28
2085	1.23	1.04	2100	43.22
2100	0.97	1.05	2102	43.36
2115	1.25	1.07	2104	43.76
2120	3.77	2.64	2106	44.77
2125	22.38	20.98	2108	46.33
2127	28.83	27.41	2110	48.32
2135	48.42	49.64	2111	49.64
2200	110.91	171.46	2112	51.30
2500	95.77	266.36	2113	53.40
5000	103.44	135.86	2114	55.96
5750	101.14	112.91	2115	59.10

Functional Schematic

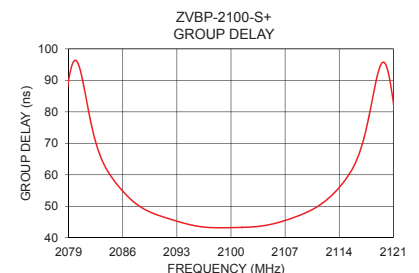
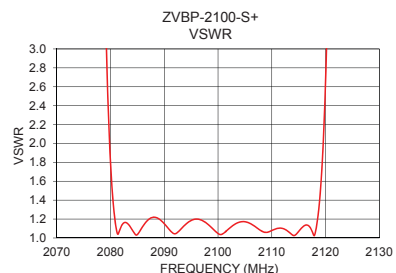
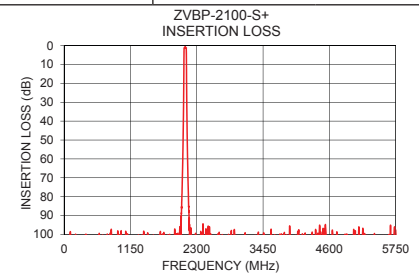
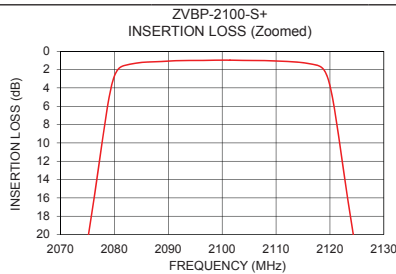


Typical Frequency Response



+RoHS Compliant

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



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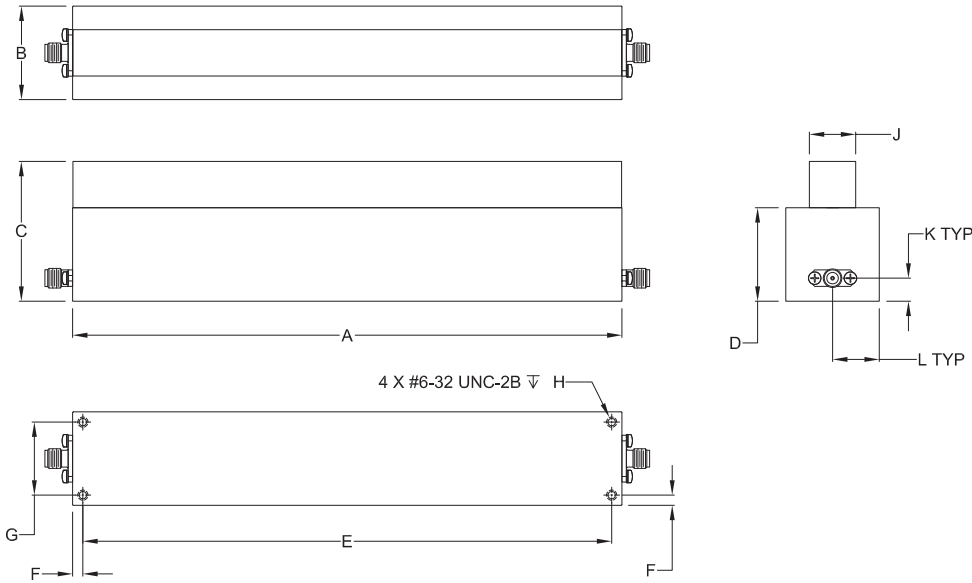
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Coaxial Connections

PORT-1	SMA-Female
PORT-2	SMA-Female

Outline Drawing



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

A	B	C	D	E	F	G
7.40	1.26	1.88	1.26	7.126	.14	.984
188.0	32.0	47.9	32.0	181.00	3.5	25.00
H	J	K	L	Wt.		
.157	.63	.31	.63	grams		
4.00	15.9	7.9	16.0	402		

Note: Please refer to case style drawing for details

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