CAVITY

Bandpass Filter

ZVBP MODEL SERIES

50Ω DC to 57 GHz

THE BIG DEAL

- Very low insertion loss with excellent power handling
- Very fast roll-off with wide stopband
- Passbands upto 36 GHz
- Stopband 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 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' 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

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ZVBP-4450-S+

50Ω 4050 to 4850 MHz SMA-Female

FEATURES

- Low Insertion loss, 0.3dB typ.
- Good Return loss, 25dB typ.
- Great Rejection (50 to 100 dB typ.)
- Wide stopband up to 15000 MHz



Generic photo used for illustration purposes only

Model No.	ZVBP-4450-S+
Case Style	WH3317
Connectors	SMA-FEMALE

APPLICATIONS

- Test & Measurement Equipment
- Radar, EW, and ECM Defense Systems

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS AT 25°C

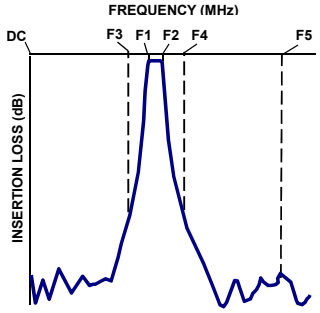
Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Units
	Center Frequency	Fc	-	-	4450	-	MHz
Passband	Insertion Loss	F1-F2	4050 - 4850	-	0.3	0.6	dB
	Return Loss	F1-F2	4050 - 4850	18	25	-	dB
Stop Band, Lower	Rejection	DC-F3	DC - 2900	50	57	-	dB
Stop Band, Upper	Rejection	F4-F5	5700 - 15000	50	61	-	dB

MAXIMUM RATINGS

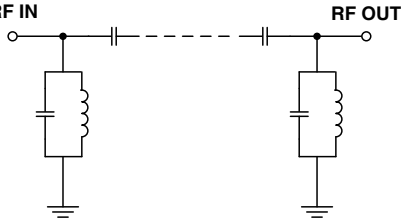
Parameter	Ratings
Operating temperature	-40°C to +85°C
Storage temperature	-55°C to +100°C
RF Power Input	15W max. at 25°C

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

TYPICAL FREQUENCY RESPONSE



FUNCTIONAL SCHEMATIC



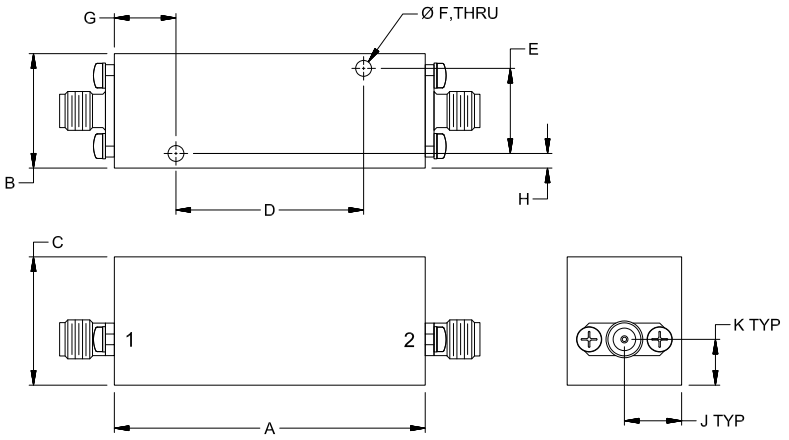
Bandpass Filter

ZVBP-4450-S+

COAXIAL CONNECTIONS

PORT 1	SMA-Female
PORT 2	SMA-Female

OUTLINE DRAWING



OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F
2.12	**.78**	**.87**	**1.280**	**.580**	**.110**
53.8	19.8	22.2	32.51	14.73	2.79
G	H	J	K		Wt.
.42	**.10**	**.39**	**.31**		grams
10.7	2.5	9.9	7.9		62

Note. Please refer to case style drawing for details

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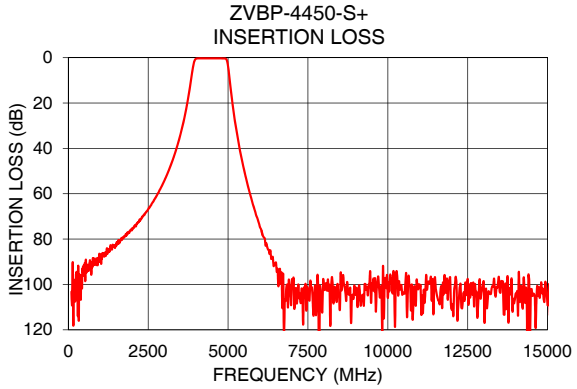
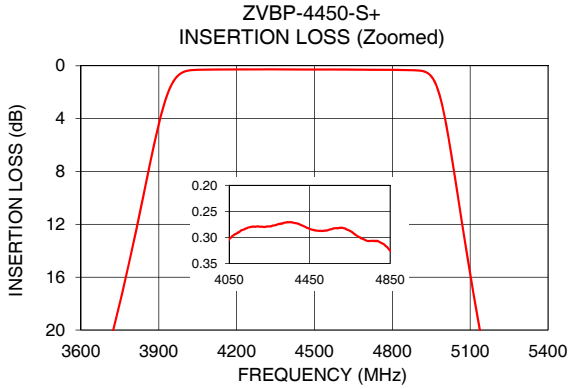
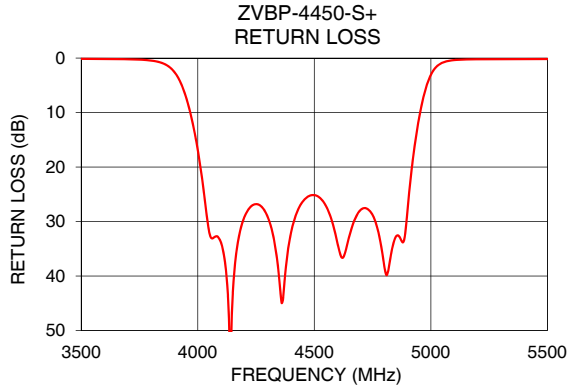
ZVBP-4450-S+

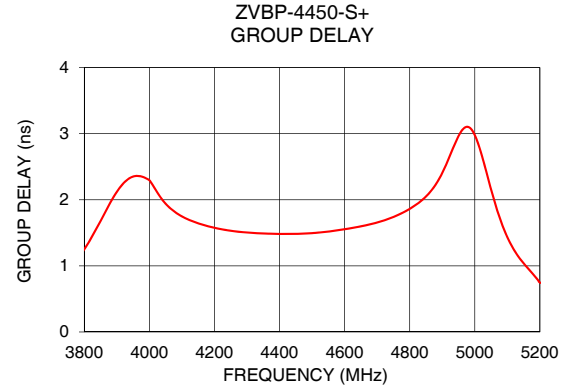
TYPICAL PERFORMANCE DATA AT 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Frequency (MHz)	Group Delay (ns)
100	103.21	0.06	4050	1.94
1000	88.51	0.09	4070	1.85
2900	57.34	0.12	4100	1.75
3560	31.10	0.16	4150	1.64
3910	3.64	3.18	4350	1.49
4050	0.30	32.08	4400	1.48
4250	0.28	26.80	4450	1.48
4450	0.28	26.35	4500	1.50
4650	0.29	32.73	4550	1.52
4850	0.32	32.76	4600	1.55
4995	3.23	3.54	4650	1.60
5140	20.32	0.27	4700	1.66
5250	31.07	0.21	4750	1.74
5700	60.67	0.15	4800	1.86
15000	109.19	0.29	4850	2.05









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