

# Coaxial-Ceramic Resonator Filters and Multiplexers

50Ω DC to 6 GHz

## The Big Deal

- Low insertion loss with excellent power handling
- Passbands up to 6 GHz
- Fractional bandwidth from <1 to 25%
- Excellent temperature stability
- Rugged construction to handle demanding environmental conditions



## Product Overview

Mini-Circuits' *Coaxial-Ceramic Resonator filters* offer low insertion loss in very small form factors, using ceramic material with high dielectric constant and superior Q factor. Bandpass and bandstop filters, diplexer and multiplexer designs can be constructed using this technology. Low insertion loss combined with excellent power handling makes these filters well suited for transmitter and receiver signal chains. Advanced filter design and construction can achieve stopband width greater than 3x the center frequency

All our coaxial-ceramic resonator filters are built with rugged construction, qualified to withstand multiple demanding reflow cycles. Custom integrated assembly with LNA in greatly simplifying system integration. They can be realized in small form factors with high-quality, precise machining 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 signal chain
Fast roll-off	Higher selectivity results in better adjacent channel rejection and dynamic range
Wide stop band	Wide spur-free stopband results in better receiver sensitivity
Excellent power handling	Well suited for transmitter applications
Rugged Construction	These filter assemblies have been qualified over a wide range of thermal, mechanical and environmental conditions including withstanding the stress of extensive solder reflow cycles
Small Size	Very well suited for high performance applications where size is a constraint.
Temperature stability	Very minimal change in electrical performance across temperature makes these filters suitable for a wide range of operating conditions.

### 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)



# Coaxial Bandpass Filter

## ZX75BP-4700-S+

50Ω 4400 to 5000 MHz



Generic photo used for illustration purposes only  
CASE STYLE: KD1465

Connectors Model  
SMA ZX75BP-4700-S+

### Features

- Low insertion loss
- High selectivity
- Connectorized package

### Applications

- Defense systems
- Fixed satellite
- Radio astronomy
- Radar and navigation system

### Electrical Specifications at 25°C

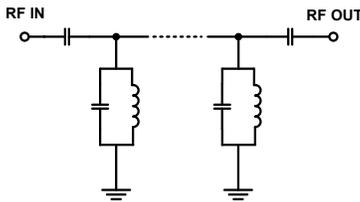
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Center Frequency	-	-	4700	-	MHz	
	Insertion Loss	F1-F2	4400 - 5000	-	2.0	3.0	dB
	VSWR	F1-F2	4400 - 5000	-	1.92	2.32	:1
Stop Band, Lower	Insertion Loss	DC-F3	DC - 2800	40	45	-	dB
	VSWR	DC-F3	DC - 2800	-	20	-	:1
Stop Band, Upper	Insertion Loss	F4-F5	6300 - 8000	30	40	-	dB
	Insertion Loss	F5-F6	8000 - 10000	20	25	-	dB
	VSWR	F4-F6	6300 - 10000	-	20	-	:1

### Maximum Ratings

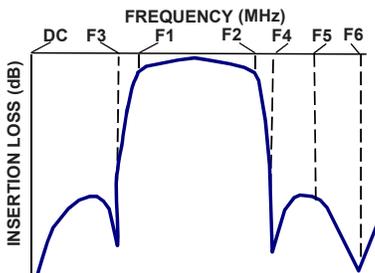
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	1 W Max.

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

### Functional Schematic



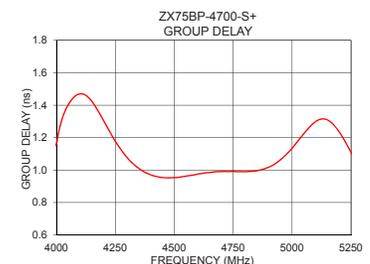
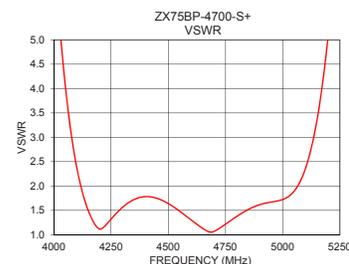
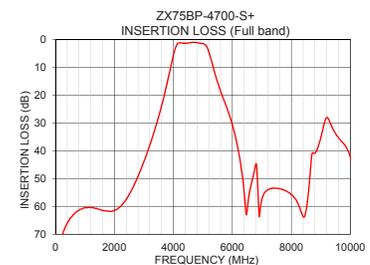
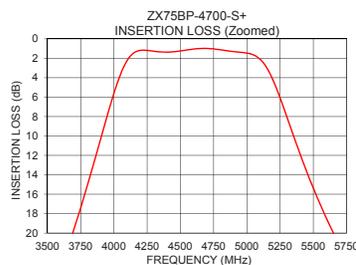
### Typical Frequency Response



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

### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
10	81.23	1248.22	4400	0.97
100	77.17	235.82	4425	0.96
1000	60.49	116.02	4450	0.95
2800	49.22	129.35	4475	0.95
3000	43.93	117.32	4500	0.95
3420	30.65	87.85	4525	0.96
3680	20.48	57.96	4550	0.96
3900	10.33	18.40	4575	0.97
4060	3.29	3.64	4600	0.98
4400	1.36	1.78	4650	0.98
4700	0.98	1.07	4700	0.99
5000	1.47	1.72	4725	0.99
5155	3.09	3.50	4750	0.99
5400	11.84	24.19	4775	0.99
5650	19.96	55.17	4800	0.99
6000	30.65	79.42	4850	1.00
6300	45.90	88.31	4875	1.00
8000	55.79	73.84	4900	1.02
9200	28.04	2.47	4950	1.06
10000	42.31	5.17	5000	1.13



### Notes

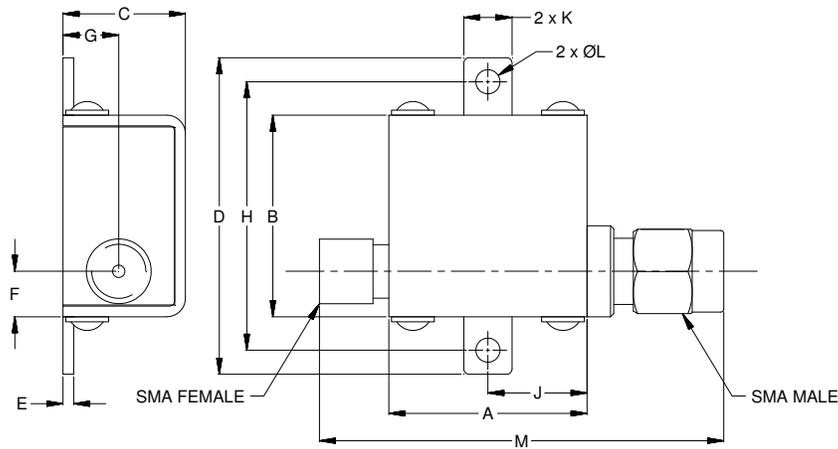
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## Coaxial Connections

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

## Outline Drawing



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

A	B	C	D	E	F	G	
.74	.75	.46	1.18	.04	.17	.21	
18.80	19.05	11.68	29.97	1.02	4.32	5.33	
H	J	K	L	M		Wt.	
1.00	.37	.18	.09	1.51		grams	
25.40	9.40	4.57	2.29	38.4		21.4	

Note: Please refer to case style drawing for details

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