

# Coaxial Reflectionless Low Pass Filter

## ZXLF Series

50Ω

DC to 11 GHz

### The Big Deal

- Patented design terminates Stopband signals
- Stopband up to 35 GHz
- High Stopband rejection, up to 50 dB



Generic photo used for illustration purposes only  
CASE STYLE: UK3042

### Product Overview

Mini-Circuits' ZXLF Series reflectionless filters employ a novel filter topology which absorbs and terminates stop band signals internally rather than reflecting them back to the source. Reflectionless filters eliminate stopband reflections, allowing them to be paired with sensitive devices and used in applications that otherwise require circuits such as isolation amplifiers or attenuators. This is developed in a new broadband, stable connectorized package.

### Key Features

Feature	Advantages
Easy integration with sensitive reflective components, e.g. mixers, multipliers	Reflectionless filters absorb unwanted signals, preventing reflections back to the source. This reduces generation of additional unwanted signals without the need for extra components like attenuators, improving system dynamic range.
Cascadable	Reflectionless filters can be cascaded in multiple sections to provide sharper and higher attenuation, while also preventing any standing waves that could affect pass band signals.
Excellent stability over temperature	Minimal variation in electrical performance across temperature.
Operating temperature up to 105°C	Suitable for operation close to high power components.
Broadband connectorized package	The connectorized package works well even in high frequencies and easy to interface with other devices. This is well suited for test setups.

#### 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.  
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# Low Pass Filter

## ZXLF-K421+

50Ω DC to 420 MHz



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CASE STYLE: UK3042  
Connectors Model  
2.92mm-F ZXLF-K421+

### Features

- Match to 50Ω in the stop band, eliminates undesired reflections
- Cascadable
- Temperature stable, up to 105°C
- Protected by US Patent No. 8,392,495

### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	DC-F1	DC- 420	-	1.5	2.1	dB
	F2	610	-	3.0	-	dB
	DC-F1	DC- 420	-	1.2	-	:1
Stop Band	F3-F4	900 - 5200	11	14	-	dB
	F4-F5	5200 - 18000	-	24	-	dB
	F3-F4	900 - 5200	-	1.2	-	:1
	F4-F5	5200 - 18000	-	1.7	-	:1

### Applications

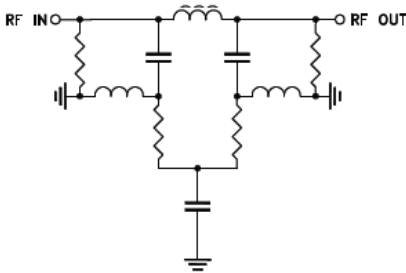
- Aerospace & Defense
- Military Radios

### Absolute Maximum Ratings<sup>3</sup>

Parameter	Ratings
Operating Temperature	-55°C to +105°C
Storage Temperature	-55°C to +105°C
RF Power Input, Passband (DC-F1) <sup>1</sup>	2W at 25°C
RF Power Input, Stopband (F2-F5) <sup>2</sup>	0.5W at 25°C

<sup>1</sup> Passband rating derates linearly to 1W at 105°C ambient  
<sup>2</sup> Stopband rating derates linearly to 0.25W at 105°C ambient  
<sup>3</sup> Permanent damage may occur if any of these limits are exceeded

### Functional Schematic



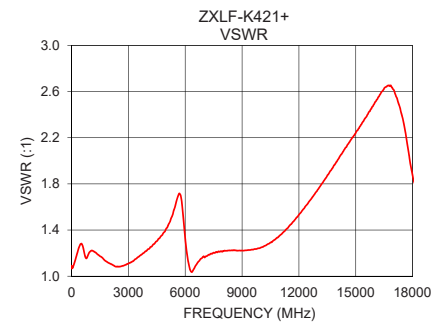
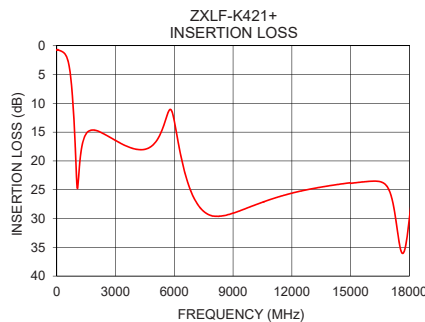
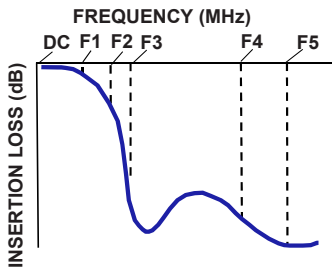
### ESD rating

Human body model (HBM): Class 1A (250 to <500V) in accordance with ANSI/ESD 5.1-2001

### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	0.72	1.07
10	0.70	1.07
100	0.76	1.09
150	0.83	1.11
200	0.90	1.14
400	1.36	1.25
420	1.44	1.26
610	3.17	1.25
900	14.53	1.19
980	20.73	1.21
1000	22.38	1.22
4000	17.93	1.23
5000	16.92	1.41
5200	15.91	1.47
8000	29.59	1.22
10000	27.81	1.25
15000	23.90	2.24
16000	23.54	2.50
17000	25.36	2.62
18000	29.93	1.87

### Typical Frequency Response



#### +RoHS Compliant

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

#### Notes

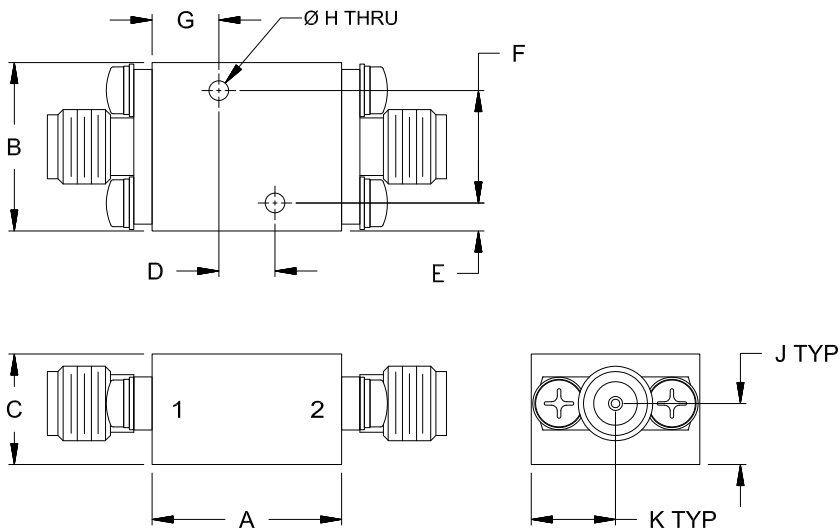
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## Coaxial Connections

PORT - 1	2.92mm-Female
PORT - 2	2.92mm-Female

## Outline Drawing



## Outline Dimensions (inch/mm)

A	B	C	D	E	F
<b>.68</b>	<b>.60</b>	<b>.39</b>	<b>.200</b>	<b>.10</b>	<b>.400</b>
17.1	15.2	10.0	5.08	2.5	10.16
G	H	J	K	Wt.	
<b>.24</b>	<b>.070</b>	<b>.22</b>	<b>.30</b>	grams	
6.0	1.78	5.5	7.6	<b>24</b>	

Note: Please refer to case style drawing for details

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