

# Coaxial Reflectionless High Pass Filter

## ZXHF Series

50Ω DC to 30 GHz



### The Big Deal

- Patented design eliminates in band spurs
- Wideband performance up to 30 GHz

### Product Overview

Mini-Circuits' ZXHF 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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# Coaxial Reflectionless High Pass Filter

## ZXHF-K292M+

50Ω 2900 to 8700 MHz



Generic photo used for illustration purposes only

CASE STYLE: UK3042  
Connectors Model  
2.92mm-F ZXHF-K292M+

### 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 ; 9,705,467, additional patent pending
- Protected by China Patent 201080014266.1
- Protected by Taiwan Patent I581494

### Applications

- Telecom
- Aerospace & Defense
- C band satellite Comm
- 5G Sub 6GHz

### Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Stop Band	Rejection	DC-F1	DC- 1950	22	32	-	dB
	Freq. Cut-Off	F2	2400	-	3.0	-	dB
	VSWR	DC-F1	DC- 1950	-	1.3	-	:1
Pass Band	Insertion Loss	F3-F4	2900 - 8700	-	1.7	2.5	dB
	VSWR	F3-F4	2900 - 8700	-	1.2	-	:1

### 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 (F3-F4) <sup>1</sup>	32dBm at 25°C
RF Power Input, Stopband (DC-F3) <sup>2</sup>	35dBm at 25°C

<sup>1</sup> Passband rating derates linearly to 29dBm at 105°C ambient

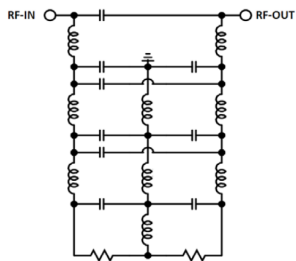
<sup>2</sup> Stopband rating derates linearly to 32dBm at 105°C ambient

<sup>3</sup> Permanent damage may occur if any of these limits are exceeded

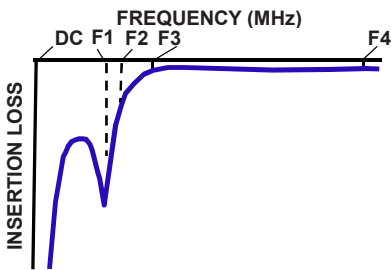
### ESD rating

Human body model (HBM): Class 2(Pass 2000V) in accordance with ANSI/ESD 5.1-2001

### Functional Schematic



### Typical Frequency Response

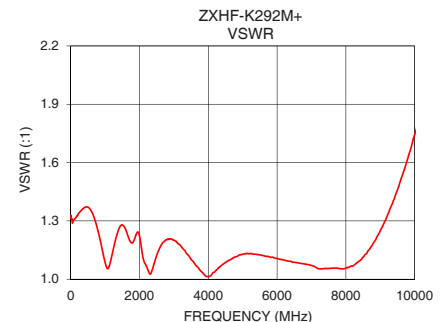
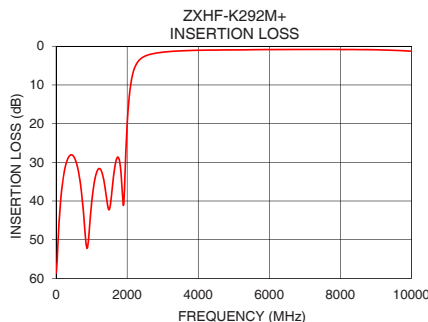


### Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)
1	58.54	1.33
10	58.12	1.32
100	43.21	1.31
200	34.00	1.33
250	31.46	1.34
300	29.74	1.35
500	28.59	1.37
1000	40.45	1.09
1950	30.14	1.24
2000	20.09	1.22
2000	20.09	1.22
2070	11.98	1.14
2400	3.09	1.07
2900	1.66	1.21
2900	1.66	1.21
5000	0.95	1.13
6000	0.86	1.11
7000	0.84	1.07
8700	0.87	1.16
10000	1.28	1.74

#### +RoHS Compliant

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



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## Coaxial Connections

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

## Outline Drawing



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

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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