Coaxial Reflectionless

Low Pass Filter

ZXLF-Series

50Ω DC to 20 GHz

The Big Deal

- Patented design terminates stopband signal internally
- Stopband performance up to 40 GHz
- Small In-line package size of 0.80” x 0.56”

CASE STYLE: RA2937

Product Overview

Mini-Circuits’ ZXLF Series of 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 minimize the stopband reflections, thereby allowing them to be paired with sensitive devices and be used in applications that otherwise require circuits such as isolation amplifiers or attenuators. This is developed in a new broadband connectorized package that delivers stable performance over temperature.

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	Ensures minimal variation in electrical performance across temperature.
Wide Operating temperature from -40 to +85°C	Suitable for use in wide temperature range applications.
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.

Coaxial Reflectionless

Low Pass Filter

50Ω DC to 9.6 GHz

ZXLF-K962+

Generic photo used for illustration purposes only

CASE STYLE: RA2937

Connectors	Model
2.92mm-F to 2.92mm-M	ZXLF-K962+

+RoHS Compliant

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

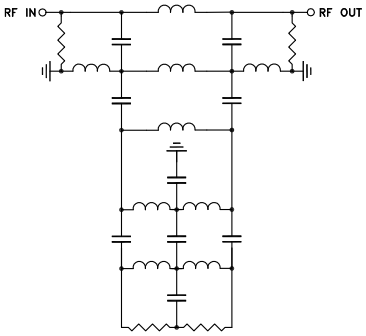
Features

- Match to 50Ω in the stop band, eliminates undesired reflections
- Cascadable
- Temperature stable, up to 85°C
- Protected by US Patent No. 8,392,495

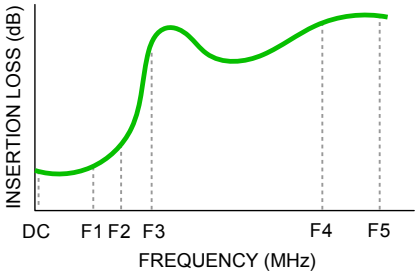
Applications

- Harmonics Rejection
- Satellite
- Radar
- Military & Space

Functional Schematic



Specification Definition



Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC-9600		1.45	2.2	dB
	Freq. Cut-off	F2	12000		3.0		dB
	VSWR	DC-F1	DC-9600		1.4		:1
Stop Band	Rejection	F3-F4	14800-16000		20.0		dB
		F4-F5	16000-25200	16.0	23.0		dB
	VSWR	F3-F4	14800-16000		1.4		:1
		F4-F5	16000-25200		2.4		:1

Absolute Maximum Ratings[3]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
RF Power Input, Passband (DC-F1)[1]	2W at 25°C
RF Power Input, Stopband (F2-F5)[2]	80mW at 25°C

[1] Passband rating derates linearly to 1W at 85°C ambient

[2] Stopband rating derates linearly to 40mW at 85°C ambient

[3] Permanent damage may occur if any of these limits are exceeded

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 (GHz)	Insertion Loss (dB)	VSWR (:1)
10	0.32	1.02
100	0.34	1.02
500	0.42	1.06
1000	0.52	1.14
2000	0.71	1.28
4000	0.95	1.40
6000	1.13	1.32
8000	1.37	1.27
9600	1.68	1.28
12000	2.86	1.36
14800	15.35	1.26
16000	30.12	1.34
18000	24.04	1.88
20000	20.75	2.11
22000	25.50	1.39
25200	19.88	3.31

ZXLF-K962+
INSERTION LOSS

ZXLF-K962+
VSWR