

Coaxial Low Pass Filter

ZLFW-K103+

50Ω

DC to 10 GHz



Generic photo used for illustration purposes only

CASE STYLE: UK3042

The Big Deal

- Good power handling, 2.5W
- Temperature stable
- Broadband connectorized package
- Good rejection, 41 dB typical

Product Overview

ZLFW-K103+ is a 50Ω low pass filter built in broadband connectorized package. Covering DC-10 GHz bandwidth, these units offer good matching within the passband and good rejection in stopband. ZLFW-K103 + offer low insertion loss, and good power handling capability. It handles up to 2.5W RF input power and provides a wide operating temperature range from -55°C to 125°C.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application.
2.5W Power handling	Supports a range of system power requirements.
Connectorized package	The connectorized package is easy to interface with other devices and 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.
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



www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

Low Pass Filter

50Ω DC to 10 GHz

ZLFW-K103+



Features

- Good rejection 41dB typ.
- Temperature stable

Generic photo used for illustration purposes only

CASE STYLE: UK3042
Connectors Model
2.92mm-F ZLFW-K103+

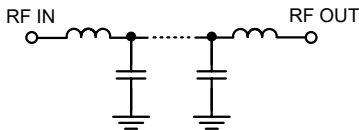
+RoHS Compliant

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

Applications

- Test and measurements
- Telecommunications and broadband wireless system
- Military applications
- Satcom modems

Functional Schematic



Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Pass Band	Insertion Loss	DC-F1	DC - 10000	—	1.9	3 dB
	Freq. Cut-Off	F2*	11400	—	3.0	dB
	Return Loss	DC-F1	DC - 10000	—	11	dB
Stop Band	Rejection Loss	F3-F4	13700 - 15000	20	41	dB
		F4-F5	15000 - 18000	24	36	dB
		F5-F6	18000 - 23000	22	33	dB
		F6-F7	23000 - 26500	—	17	dB

In Applications where DC voltage is present at either input or output ports, DC blocks are required.

* Typically, a $\pm 5\%$ frequency deviation from the stated value may occur on a unit-to-unit basis.

Maximum Ratings

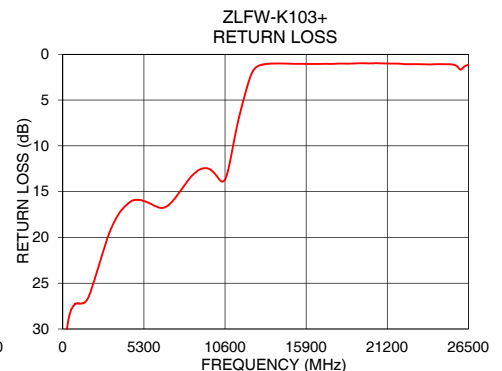
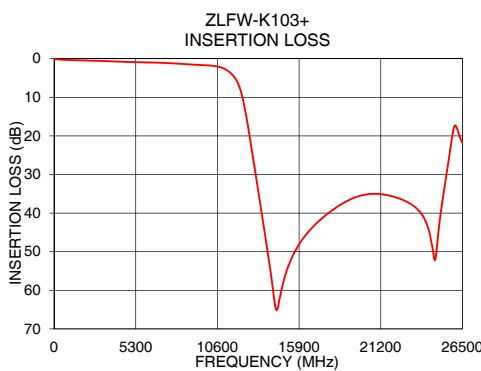
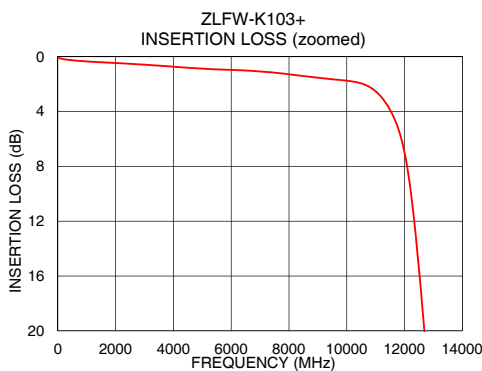
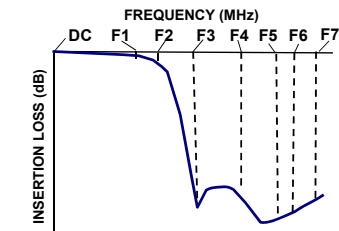
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	2.5W max. @ 25°C

*Passband rating, derate linearly to 0.7W at 125°C ambient
Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)
10	0.07	39.89
100	0.13	34.28
1000	0.34	27.24
2000	0.45	24.94
4000	0.72	16.71
6000	0.96	16.55
8000	1.28	14.20
10000	1.74	13.17
11400	3.52	7.72
12700	20.32	1.35
13050	29.20	1.14
13700	45.85	1.02
15000	56.14	1.04
18000	39.41	1.02
20000	35.38	1.00
21000	35.02	1.01
22000	35.72	1.03
23000	37.29	1.08
25000	42.89	1.09
26500	21.85	1.15

Typical Frequency Response



Notes

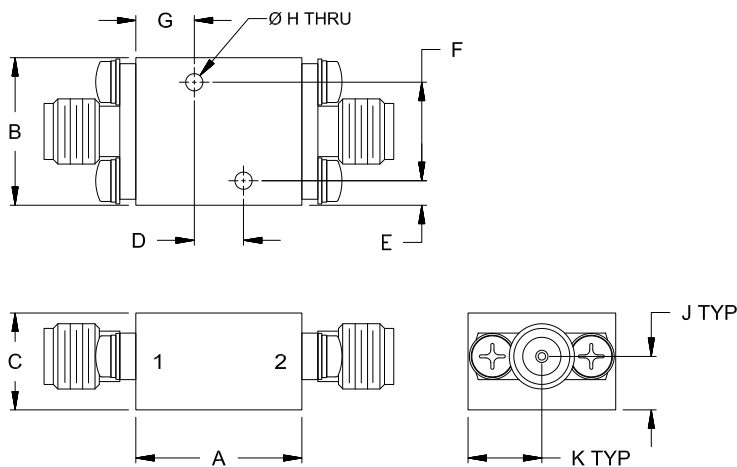
- A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's 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



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
.68	.60	.39	.200	.10	.400
17.1	15.2	10.0	5.08	2.5	10.16
G	H	J	K		Wt.
.24	.070	.22	.30		grams
6.0	1.78	5.5	7.6		24

Note: Please refer to case style drawing for details

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

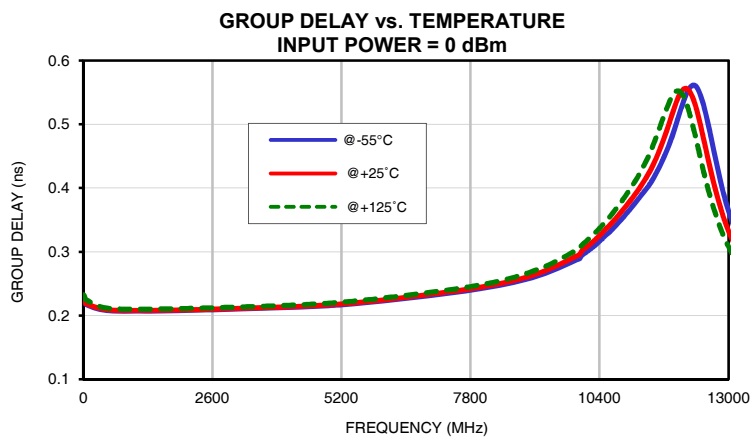
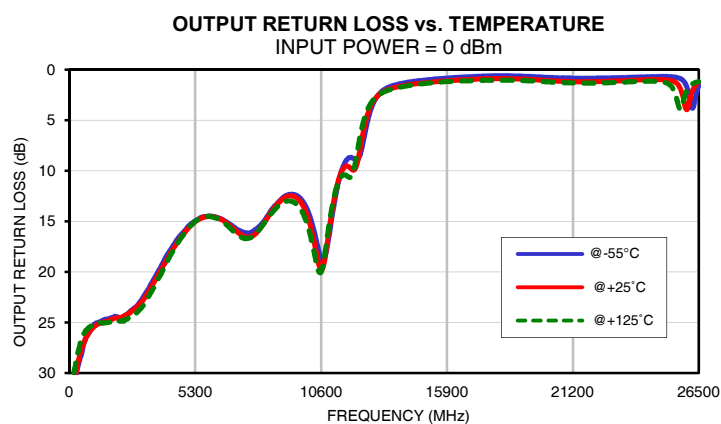
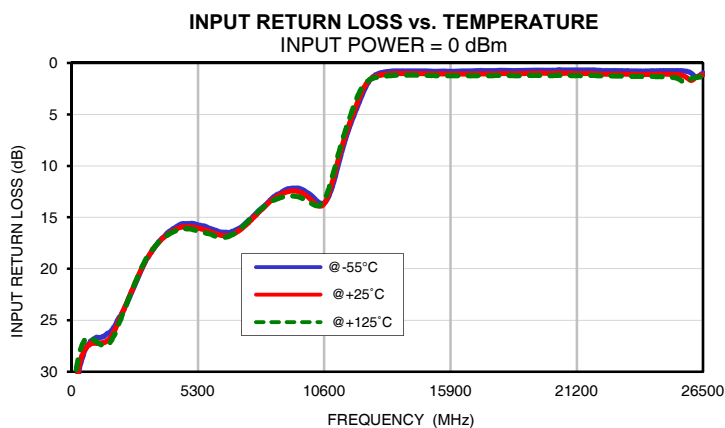
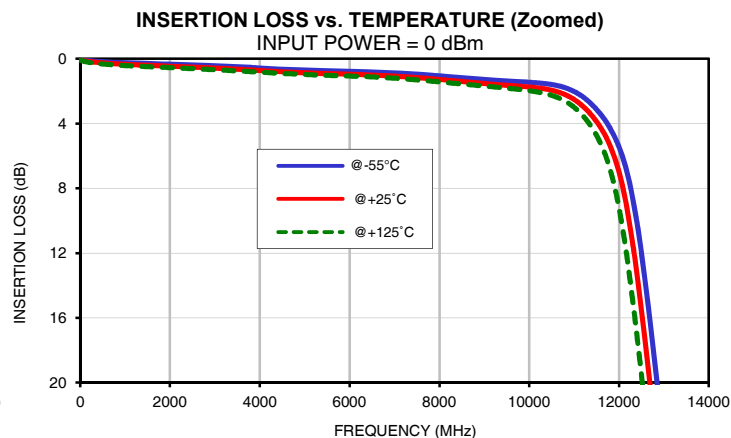
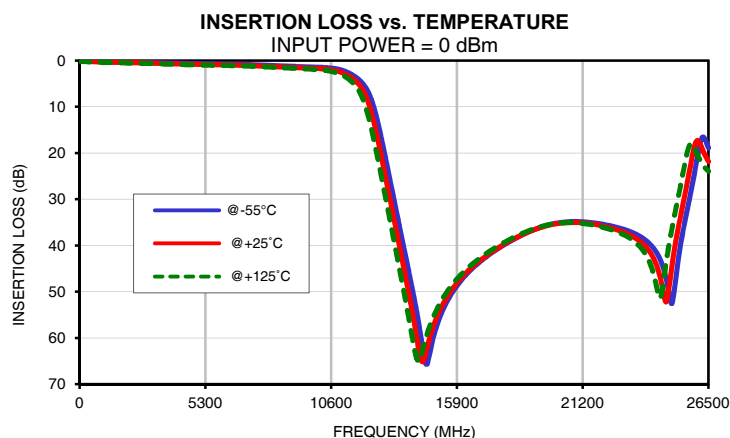
Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C	@-55°C	@+25°C	@+125°C
10	0.04	0.07	0.09	42.47	39.89	37.77	43.33	40.42	38.08
100	0.09	0.13	0.17	36.66	34.28	32.17	36.97	34.30	32.19
300	0.14	0.20	0.26	30.12	29.69	28.50	30.05	29.66	28.56
500	0.18	0.25	0.32	28.42	28.16	27.17	28.21	27.75	26.77
700	0.20	0.29	0.36	27.33	27.46	26.79	26.46	26.49	25.76
900	0.23	0.32	0.40	26.90	27.21	26.86	25.74	25.76	25.35
1000	0.24	0.34	0.42	26.75	27.24	27.03	25.37	25.53	25.21
1200	0.26	0.36	0.45	26.69	27.20	27.32	25.03	25.16	25.03
1400	0.28	0.39	0.47	26.49	27.14	27.48	24.79	24.99	25.04
1600	0.30	0.41	0.50	26.18	26.78	27.22	24.67	24.86	25.00
1800	0.31	0.43	0.52	25.61	26.04	26.45	24.55	24.69	24.91
2000	0.33	0.45	0.55	24.71	24.94	25.24	24.43	24.53	24.84
2200	0.35	0.47	0.57	23.94	23.94	24.09	24.51	24.47	24.86
2400	0.37	0.50	0.59	22.92	22.82	22.89	24.25	24.26	24.69
2600	0.39	0.52	0.62	21.88	21.75	21.75	23.80	23.90	24.37
2800	0.41	0.55	0.65	20.84	20.70	20.65	23.46	23.58	24.12
3000	0.43	0.57	0.67	19.80	19.69	19.60	22.90	23.06	23.64
3500	0.49	0.65	0.75	17.87	17.88	17.82	20.93	21.27	21.76
4000	0.56	0.72	0.83	16.55	16.71	16.76	18.82	19.20	19.53
4500	0.64	0.80	0.90	15.75	16.02	16.17	16.92	17.23	17.37
5000	0.70	0.86	0.97	15.59	15.91	16.14	15.50	15.68	15.68
6000	0.77	0.96	1.07	16.22	16.55	16.79	14.50	14.52	14.55
7000	0.87	1.07	1.20	16.08	16.33	16.26	15.66	15.89	16.15
8000	1.05	1.28	1.43	14.07	14.20	14.10	15.48	15.80	15.79
9000	1.28	1.53	1.68	12.31	12.55	12.97	12.63	12.75	13.14
10000	1.45	1.74	1.97	12.75	13.17	13.53	13.73	14.30	15.16
11400	2.84	3.52	4.27	8.15	7.72	7.25	10.49	10.43	10.72
12300	8.54	11.33	14.83	2.56	2.26	2.03	7.91	7.10	5.92
12700	16.41	20.32	24.59	1.25	1.35	1.44	3.88	3.56	3.30
13050	25.08	29.20	33.72	0.93	1.14	1.30	2.38	2.44	2.45
13500	36.41	40.71	45.55	0.78	1.02	1.19	1.68	1.88	1.97
13700	41.40	45.85	50.90	0.76	1.02	1.18	1.52	1.75	1.84
14000	48.92	53.82	59.38	0.76	1.01	1.18	1.35	1.60	1.68
14200	54.23	59.68	64.31	0.76	1.01	1.17	1.27	1.52	1.60
14500	63.73	64.77	61.65	0.76	1.02	1.18	1.16	1.43	1.50
14800	62.26	59.14	56.84	0.77	1.03	1.19	1.06	1.33	1.40
15000	58.15	56.14	54.43	0.79	1.04	1.21	1.03	1.28	1.35
15200	55.17	53.77	52.42	0.79	1.05	1.21	0.97	1.24	1.31
15500	51.91	51.02	49.90	0.78	1.05	1.21	0.90	1.17	1.24
15800	49.41	48.75	47.86	0.78	1.05	1.22	0.84	1.11	1.19
16000	48.06	47.51	46.70	0.79	1.07	1.23	0.81	1.08	1.16
16300	46.24	45.84	45.14	0.78	1.07	1.23	0.76	1.02	1.13
16500	45.21	44.87	44.23	0.76	1.06	1.22	0.74	1.01	1.12
16700	44.28	43.99	43.40	0.76	1.06	1.22	0.72	0.98	1.10
17000	42.98	42.75	42.22	0.75	1.05	1.22	0.69	0.95	1.08
17200	42.20	42.00	41.51	0.72	1.04	1.21	0.65	0.92	1.06
17500	41.11	40.96	40.53	0.75	1.06	1.23	0.63	0.89	1.04
17700	40.46	40.32	39.89	0.74	1.05	1.22	0.62	0.89	1.05
18000	39.51	39.41	39.04	0.70	1.02	1.19	0.59	0.87	1.03
18200	38.93	38.85	38.50	0.70	1.02	1.20	0.60	0.88	1.04
18500	38.11	38.06	37.76	0.72	1.03	1.22	0.61	0.88	1.05
19000	36.89	36.90	36.68	0.72	1.01	1.21	0.63	0.92	1.07
19500	35.92	35.98	35.83	0.69	0.98	1.20	0.68	0.97	1.11
20000	35.29	35.38	35.30	0.70	1.00	1.22	0.74	1.04	1.17
21000	34.82	35.02	35.11	0.68	1.01	1.23	0.83	1.15	1.28
22000	35.38	35.72	36.00	0.69	1.03	1.22	0.86	1.19	1.33
23000	36.63	37.29	37.86	0.73	1.08	1.25	0.80	1.11	1.25
24000	39.54	41.21	43.43	0.78	1.11	1.31	0.72	1.00	1.15
25000	51.76	42.89	35.24	0.73	1.09	1.34	0.66	0.97	1.21
26500	18.93	21.85	23.93	0.96	1.15	1.32	1.60	1.25	1.17

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
10	0.22	0.22	0.23
20	0.22	0.22	0.23
100	0.22	0.22	0.22
250	0.21	0.21	0.22
500	0.21	0.21	0.21
750	0.21	0.21	0.21
1000	0.21	0.21	0.21
1250	0.21	0.21	0.21
1500	0.21	0.21	0.21
1750	0.21	0.21	0.21
2000	0.21	0.21	0.21
2250	0.21	0.21	0.21
2500	0.21	0.21	0.21
2750	0.21	0.21	0.21
3000	0.21	0.21	0.21
3250	0.21	0.21	0.21
3500	0.21	0.21	0.21
3750	0.21	0.21	0.21
4000	0.21	0.21	0.22
4250	0.21	0.21	0.22
4500	0.21	0.21	0.22
4750	0.21	0.22	0.22
5000	0.22	0.22	0.22
5250	0.22	0.22	0.22
5500	0.22	0.22	0.22
5750	0.22	0.22	0.22
6000	0.22	0.22	0.23
6250	0.22	0.23	0.23
6500	0.23	0.23	0.23
6750	0.23	0.23	0.23
7000	0.23	0.23	0.24
7250	0.23	0.24	0.24
7500	0.24	0.24	0.24
7750	0.24	0.24	0.24
8000	0.24	0.24	0.25
8250	0.25	0.25	0.25
8500	0.25	0.25	0.26
8750	0.25	0.26	0.26
9000	0.26	0.26	0.27
9250	0.26	0.27	0.28
10000	0.29	0.30	0.30

Typical Performance Curves



Outline Dimensions

UK3042



CASE#	A	B	C	D	E	F
UK3042	.68 (17.1)	.60 (15.2)	.39 (10.0)	.200 (5.08)	.10 (2.5)	.400 (10.16)

CASE#	G	H	J	K	WT.GRAMS
UK3042	.24 (6.0)	.070 (1.78)	.22 (5.5)	.30 (7.6)	24

Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .050$; 3 Pl. $\pm .015$

Notes:

- Case material: Brass alloy.
- Case Finish:
 - Case & Cover of the units –Gold plating.
- Refer to the individual model data sheet for the type of connectors available.



P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site



The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

RF/IF MICROWAVE COMPONENTS



All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-55° to 125° C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 125° C Ambient Environment	Individual Model Data Sheet