

Coaxial Low Pass Filter

ZLFW-K143+

50Ω

DC to 14 GHz



Generic photo used for illustration purposes only

CASE STYLE: UK3042

The Big Deal

- Good Power Handling, 3.5 W
- Temperature Stable
- Broadband Connectorized Package
- Good Rejection, 30 dB Typ.

Product Overview

ZLFW-K143+ is a 50Ω low pass filter built in broadband connectorized package. Covering DC-14 GHz bandwidth, these units offer good matching within the passband and good rejection in stopband. ZLFW-K143+ offer low insertion loss, and good power handling capability. It handles up to 3.5W 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 applications.
3.5 W 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



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Low Pass Filter

50Ω DC to 14 GHz

ZLFW-K143+



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CASE STYLE: UK3042
Connectors Model
2.92mm-F ZLFW-K143+

+RoHS Compliant

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

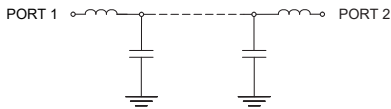
Features

- Good Rejection, 30 dB Typ.
- Temperature Stable

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
Passband	Insertion Loss	DC-F1	DC - 14000	—	2.1	dB
	Freq. Cut-Off	F2*	16000	—	3.0	dB
	Return Loss	DC-F1	DC - 14000	—	11	dB
Stopband	Rejection	F3-F4	19250 - 22000	20	30	dB
		F4-F5	22000 - 25000	20	30	dB
		F5-F6	25000 - 26500	18	30	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

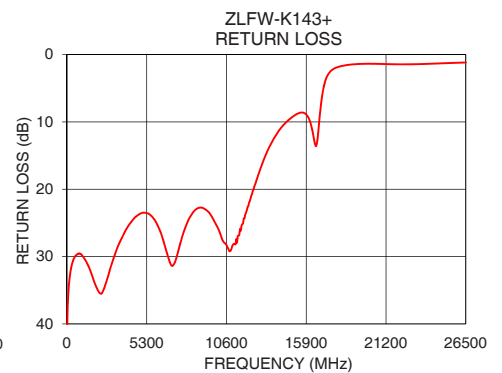
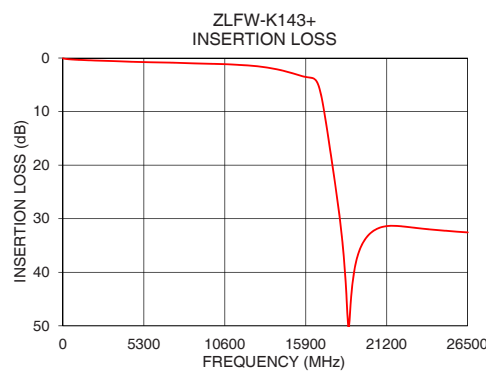
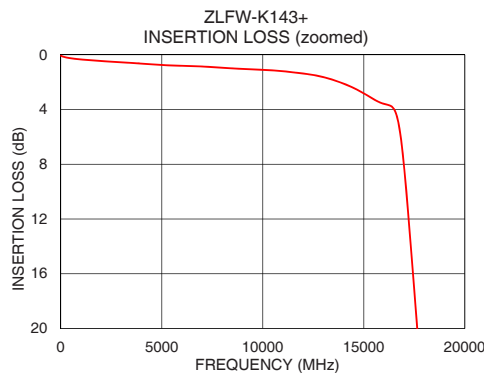
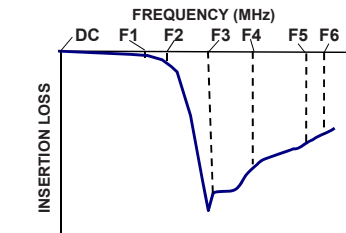
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input*	3.5W max. @25°C

*Passband rating, derate linearly to 0.9W 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	0.06	40.69
100	0.13	35.20
1000	0.34	29.82
2000	0.45	34.75
3000	0.55	30.90
5000	0.74	23.50
10000	1.10	25.63
12000	1.37	22.65
14000	2.11	11.57
16000	3.59	9.18
17300	13.48	3.16
18000	27.11	1.85
18500	41.32	1.59
18800	47.44	1.51
19250	37.39	1.42
20000	33.08	1.36
21000	31.48	1.41
22000	31.38	1.44
25000	32.24	1.29
26500	32.55	1.18

Typical Frequency Response



Notes

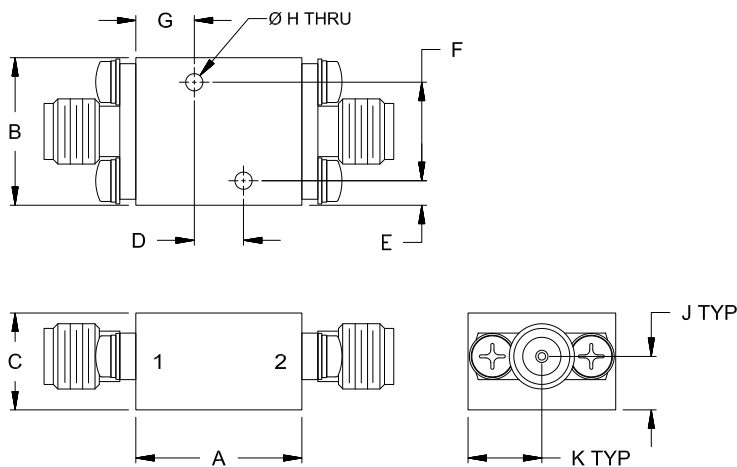
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Coaxial Connections

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

Outline Drawing



Outline Dimensions (inch mm)

A	B	C	D	E	F
.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

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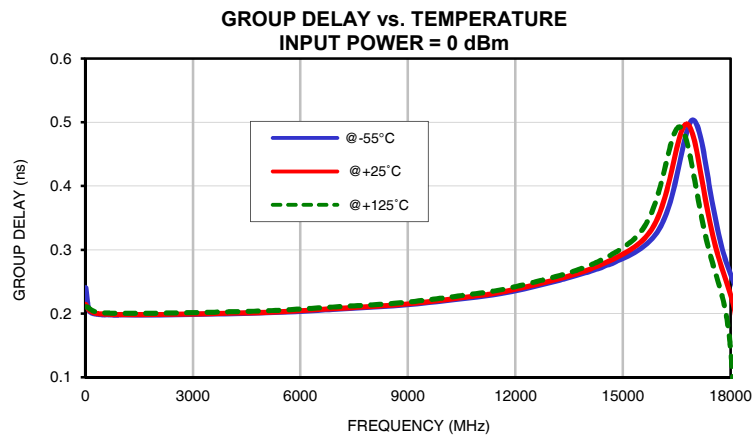
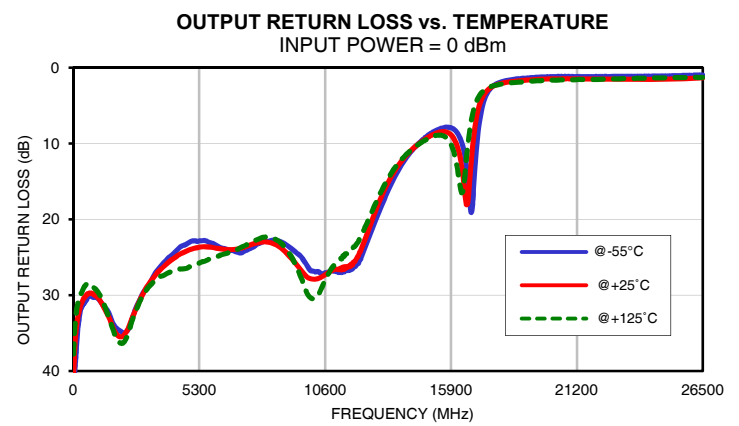
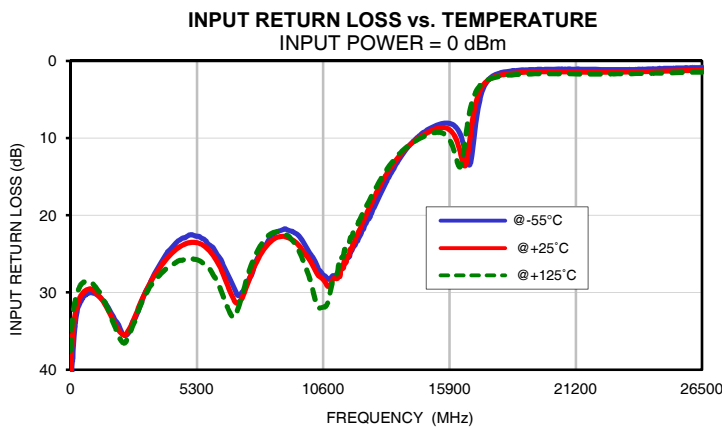
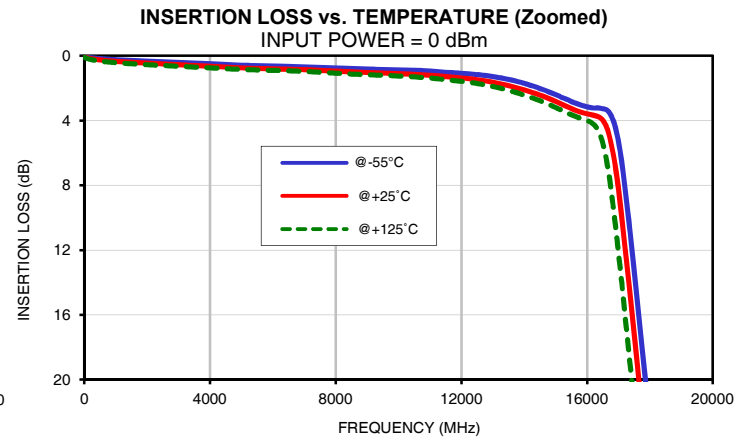
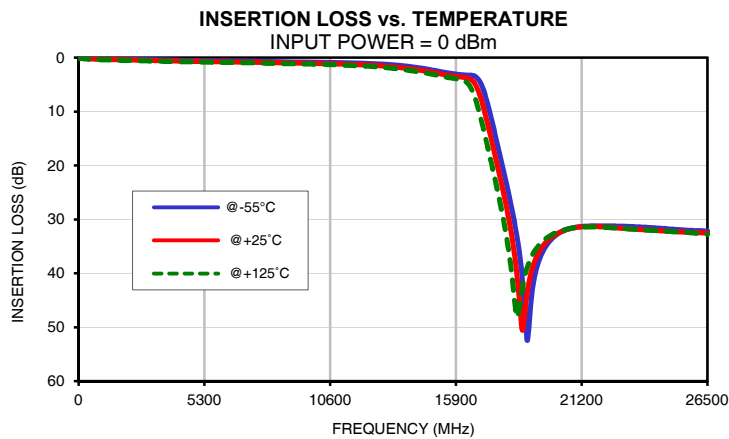
Typical Performance Data

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	0.03	0.06	0.09	41.19	40.69	37.50	44.00	41.07	37.74
100	0.08	0.13	0.17	38.32	35.20	32.83	38.51	35.16	32.71
200	0.11	0.17	0.23	34.09	32.80	31.03	34.15	32.70	30.90
250	0.12	0.19	0.25	32.95	32.02	30.44	32.97	32.03	30.46
300	0.13	0.20	0.27	32.11	31.44	29.92	31.96	31.39	29.99
400	0.15	0.23	0.30	31.33	30.66	29.18	31.16	30.64	29.28
500	0.17	0.25	0.33	30.70	30.15	28.79	30.82	30.17	28.74
600	0.19	0.27	0.35	30.34	29.82	28.61	30.15	29.83	28.48
700	0.20	0.29	0.37	30.07	29.62	28.55	30.01	29.71	28.56
800	0.21	0.31	0.39	30.00	29.53	28.58	30.21	29.78	28.80
1000	0.23	0.34	0.42	30.10	29.82	29.10	30.34	30.22	29.44
2000	0.33	0.45	0.55	34.08	34.75	35.44	34.77	35.50	36.34
3000	0.40	0.55	0.65	31.10	30.90	31.20	29.38	29.41	29.70
4000	0.49	0.64	0.74	25.07	25.72	26.95	25.06	25.66	27.04
6000	0.63	0.80	0.90	24.26	25.25	27.77	23.36	23.77	24.97
7000	0.68	0.85	0.97	30.33	31.39	32.35	24.41	23.84	23.81
8000	0.75	0.94	1.07	24.58	24.93	23.78	22.92	22.95	22.35
10000	0.86	1.10	1.25	24.68	25.63	27.84	26.78	27.83	30.35
10500	0.90	1.14	1.30	27.31	28.03	31.98	27.25	27.52	28.70
11000	0.94	1.20	1.37	27.82	28.37	28.55	26.85	26.59	25.99
11100	0.95	1.21	1.39	27.81	28.10	27.91	26.90	26.58	25.74
11200	0.97	1.23	1.41	27.68	28.17	27.46	27.01	26.61	25.48
11300	0.99	1.25	1.43	27.41	27.92	26.60	27.03	26.67	25.21
11500	1.01	1.28	1.48	25.77	25.90	24.43	26.71	26.39	24.56
12000	1.09	1.37	1.58	23.34	22.65	21.36	25.82	24.80	22.92
13000	1.28	1.63	1.89	17.24	16.10	15.41	18.01	16.80	16.08
14000	1.70	2.11	2.43	11.78	11.57	11.42	11.93	11.61	11.49
14100	1.76	2.16	2.49	11.37	11.25	11.15	11.50	11.27	11.20
14500	2.03	2.43	2.77	10.04	10.20	10.31	10.10	10.13	10.19
15000	2.39	2.82	3.19	8.87	9.24	9.53	8.77	9.05	9.24
15500	2.82	3.26	3.64	8.17	8.64	9.24	7.97	8.44	8.91
16000	3.15	3.59	4.00	8.17	9.18	10.83	8.04	9.21	10.90
17000	5.30	8.28	12.19	8.18	5.51	4.04	9.77	6.16	4.25
17300	9.72	13.48	17.77	3.70	3.16	2.83	4.26	3.48	2.96
17500	13.35	17.24	21.62	2.55	2.51	2.44	2.98	2.78	2.59
17600	15.23	19.14	23.59	2.23	2.31	2.30	2.61	2.56	2.46
17700	17.10	21.06	25.62	1.97	2.15	2.20	2.34	2.40	2.37
17800	18.96	23.02	27.74	1.77	2.04	2.13	2.16	2.27	2.29
17900	20.88	25.03	29.98	1.67	1.93	2.05	2.01	2.17	2.22
18000	22.82	27.11	32.41	1.57	1.85	1.99	1.89	2.08	2.17
18100	24.79	29.32	35.12	1.48	1.78	1.94	1.79	2.00	2.12
18500	34.01	41.32	48.06	1.26	1.59	1.80	1.55	1.80	1.96
18800	46.49	47.44	40.54	1.20	1.51	1.73	1.45	1.70	1.88
19250	39.89	37.39	35.64	1.11	1.42	1.67	1.31	1.59	1.78
20000	33.34	33.08	32.70	1.06	1.36	1.63	1.19	1.48	1.66
20500	32.01	31.99	31.88	1.03	1.37	1.64	1.17	1.45	1.61
21000	31.42	31.48	31.50	1.04	1.41	1.66	1.15	1.45	1.59
21500	31.26	31.33	31.40	1.06	1.43	1.67	1.18	1.47	1.57
21800	31.22	31.34	31.41	1.07	1.45	1.68	1.16	1.47	1.54
22000	31.20	31.38	31.44	1.06	1.44	1.67	1.14	1.48	1.54
22500	31.25	31.52	31.57	1.09	1.45	1.66	1.15	1.50	1.50
23000	31.29	31.68	31.70	1.10	1.44	1.66	1.13	1.50	1.45
23500	31.38	31.84	31.86	1.10	1.42	1.63	1.14	1.53	1.41
24000	31.49	31.99	31.99	1.07	1.39	1.61	1.11	1.53	1.37
24500	31.65	32.12	32.12	1.01	1.34	1.57	1.09	1.53	1.33
25000	31.81	32.24	32.27	0.94	1.29	1.53	1.07	1.51	1.31
25500	31.96	32.36	32.39	0.88	1.25	1.50	1.03	1.46	1.29
26000	32.10	32.46	32.55	0.86	1.21	1.46	1.00	1.40	1.28
26300	32.13	32.51	32.66	0.85	1.19	1.44	0.95	1.36	1.28
26500	32.14	32.55	32.75	0.81	1.18	1.43	0.95	1.33	1.27

Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(nsec)		
	@-55°C	@+25°C	@+125°C
10	0.24	0.21	0.21
20	0.24	0.21	0.21
100	0.20	0.21	0.21
300	0.20	0.20	0.20
500	0.20	0.20	0.20
700	0.20	0.20	0.20
900	0.20	0.20	0.20
1100	0.20	0.20	0.20
1300	0.20	0.20	0.20
1500	0.20	0.20	0.20
1700	0.20	0.20	0.20
1900	0.20	0.20	0.20
2100	0.20	0.20	0.20
2300	0.20	0.20	0.20
2500	0.20	0.20	0.20
2700	0.20	0.20	0.20
2900	0.20	0.20	0.20
3100	0.20	0.20	0.20
3300	0.20	0.20	0.20
3500	0.20	0.20	0.20
3700	0.20	0.20	0.20
3900	0.20	0.20	0.20
4100	0.20	0.20	0.20
4300	0.20	0.20	0.20
4500	0.20	0.20	0.20
4700	0.20	0.20	0.20
5000	0.20	0.20	0.20
6000	0.20	0.20	0.21
7000	0.21	0.21	0.21
8000	0.21	0.21	0.21
9000	0.21	0.22	0.22
10000	0.22	0.22	0.22
10500	0.22	0.22	0.23
11000	0.23	0.23	0.23
11500	0.23	0.23	0.24
12000	0.24	0.24	0.24
12500	0.24	0.24	0.25
13000	0.25	0.25	0.26
13500	0.26	0.26	0.26
13800	0.26	0.26	0.27
14000	0.26	0.27	0.27

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.



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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