

Coaxial Low Pass Filter

ZX75LP-470-S+

50Ω

DC to 470 MHz

The Big Deal

- High rejection
- Low Insertion loss, 0.9 dB typical in passband
- Fast roll-off
- Good VSWR
- Connectorized package



Generic photo used for illustration purposes only

CASE STYLE: KE1467

Product Overview

ZX75LP-470-S+ is a 50Ω low pass filter built in a connectorized package. Covering DC-470 MHz bandwidth, these units offer good matching within the passband and high rejection in stopband. This will find its applications in receivers and transmitters to suppress spurious emission and harmonics. It has repeatable performance across production lots and consistent performance across temperature.

Key Features

Feature	Advantages
Low passband insertion loss	Suitable for high performance application
Fast roll-off	Provides very good adjacent band rejection
Connectorized package	The connectorized package is easy to interface with other devices and well suited for test setups
Good VSWR	Provides good interface when used with other devices.

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 470 MHz

ZX75LP-470-S+



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CASE STYLE: KE1467

Connectors	Model
SMA-MF	ZX75LP-470-S+

Features

- High rejection
- Low Insertion loss
- Fast roll-off
- Good VSWR
- Connectorized package

Applications

- Satellite
- Wireless communications
- Receivers / Transmitters

Functional Schematic



Maximum Ratings

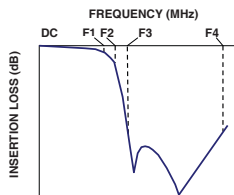
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power Input	0.5W max.

Permanent damage may occur if any of these limits are exceeded.

Typical Performance Data at 25°C

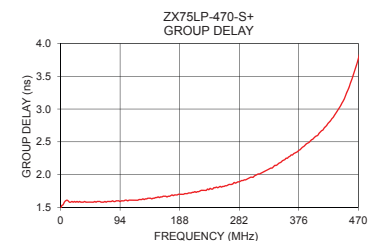
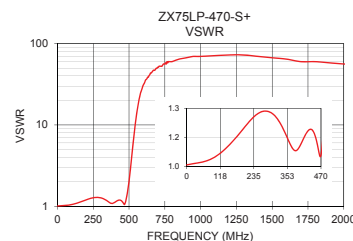
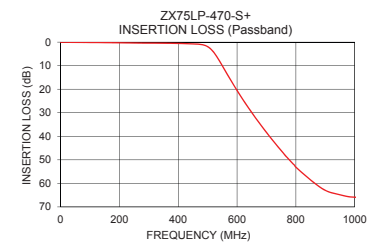
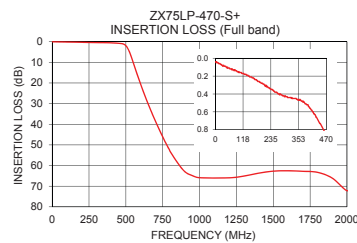
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	0.04	1.01	1	1.50
28	0.08	1.02	10	1.61
102	0.16	1.05	52	1.58
216	0.32	1.23	106	1.60
424	0.64	1.18	120	1.61
450	0.76	1.16	158	1.66
470	0.89	1.06	188	1.70
480	1.04	1.22	214	1.73
500	1.92	2.03	236	1.79
510	2.85	2.87	266	1.85
550	10.06	12.35	290	1.92
580	16.48	24.48	318	2.03
600	20.54	31.03	346	2.18
650	29.91	43.44	370	2.33
700	38.36	51.10	390	2.48
800	53.12	59.91	400	2.56
900	62.98	66.82	420	2.75
1000	65.89	69.49	442	3.05
1500	62.72	66.82	456	3.35
2000	72.18	56.04	470	3.77

Typical Frequency Response



+RoHS Compliant

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



Notes

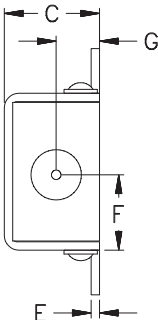
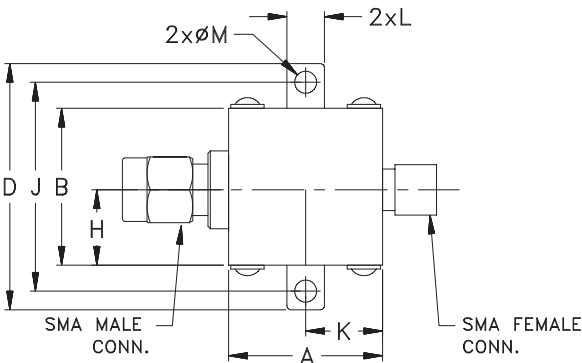
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Coaxial Connections

INPUT	SMA-Male
OUTPUT	SMA-Female

Outline Drawing



Outline Dimensions (^{inch}/_{mm})

A	B	C	D	E	F	G
.74	.75	.46	1.18	.04	.362	.21
18.80	19.05	11.68	29.97	1.02	9.19	5.33
H	J	K	L	M	Wt.	
.362	1.00	.37	.18	.11	grams	
9.19	25.40	9.40	4.57	2.79	24.4	

Note: Please refer to case style drawing for details

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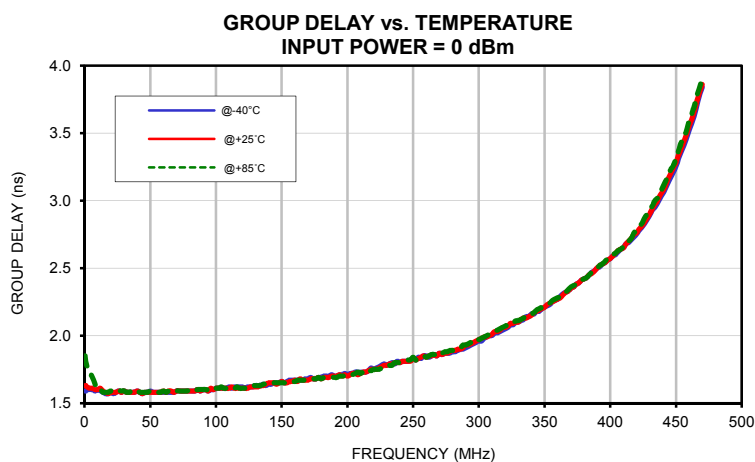
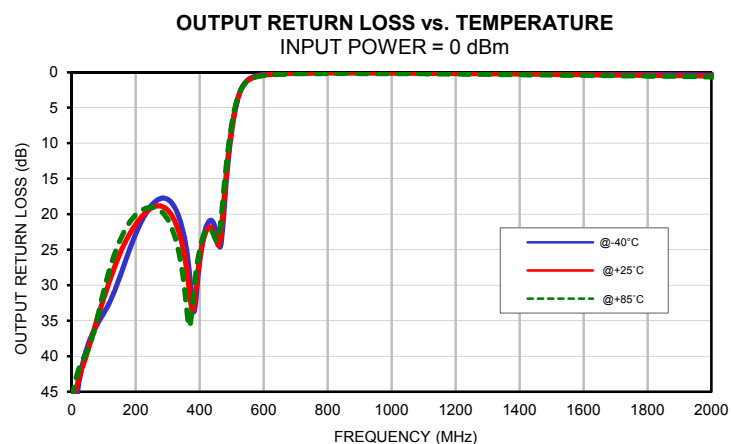
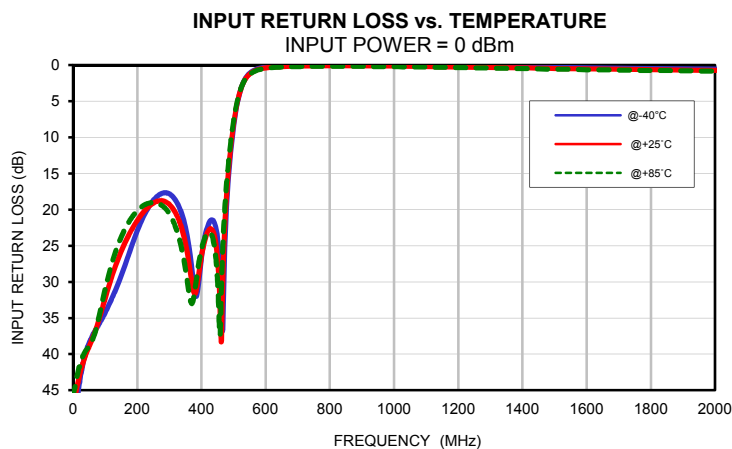
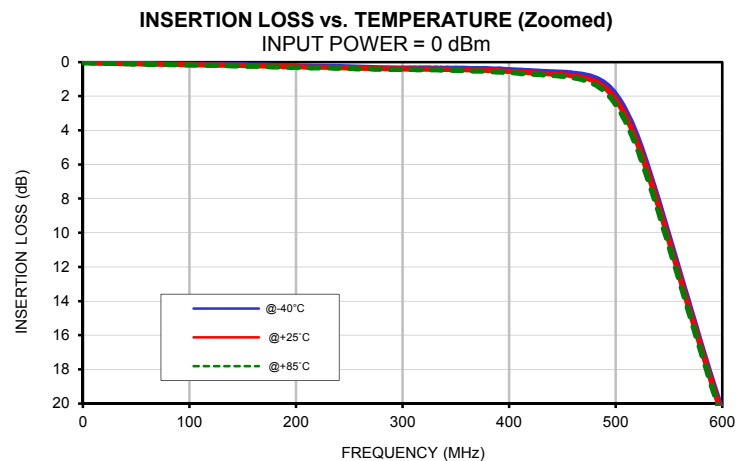
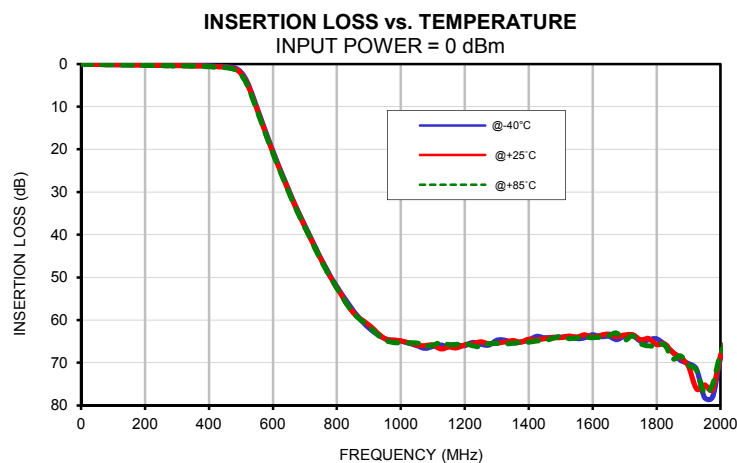
Typical Performance Data

FREQ.	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
(MHz)	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
0.5	0.03	0.04	0.05	50.39	47.58	45.87	50.35	47.53	45.83
1	0.03	0.04	0.05	50.03	47.34	45.64	49.91	47.22	45.56
20	0.05	0.07	0.07	44.02	42.98	41.75	44.49	43.53	42.11
28	0.06	0.08	0.08	42.02	41.71	40.63	42.44	42.39	41.14
50	0.08	0.10	0.11	38.44	38.93	38.87	38.62	39.31	39.22
100	0.12	0.15	0.17	34.24	32.30	31.02	33.97	31.94	30.90
102	0.13	0.16	0.17	34.09	31.98	30.63	33.79	31.67	30.54
150	0.16	0.20	0.23	29.14	25.76	23.80	28.94	25.67	23.81
200	0.22	0.27	0.31	22.94	21.50	20.15	22.81	21.42	20.11
216	0.24	0.30	0.34	21.27	20.52	19.53	21.21	20.48	19.53
240	0.26	0.32	0.36	19.32	19.41	19.06	19.33	19.43	19.06
260	0.31	0.36	0.39	18.24	18.86	19.07	18.26	18.90	19.10
280	0.33	0.39	0.42	17.72	18.80	19.54	17.75	18.87	19.58
300	0.35	0.40	0.43	17.80	19.28	20.56	17.89	19.42	20.71
320	0.35	0.41	0.45	18.74	20.52	22.48	18.87	20.75	22.81
340	0.36	0.43	0.47	20.79	22.84	25.74	21.02	23.25	26.48
360	0.36	0.45	0.51	24.78	27.01	31.18	25.34	28.03	33.56
400	0.44	0.54	0.62	26.77	26.51	25.54	26.68	26.30	25.04
424	0.52	0.64	0.72	21.80	22.78	23.13	21.40	22.10	22.09
450	0.60	0.74	0.83	23.76	26.60	29.75	22.10	23.28	23.57
460	0.65	0.81	0.92	30.02	37.11	34.71	24.23	24.35	23.10
470	0.73	0.92	1.06	29.52	25.28	22.11	22.98	21.09	19.10
474	0.78	0.98	1.13	24.03	21.37	19.12	20.76	18.97	17.17
478	0.85	1.07	1.24	20.18	18.36	16.64	18.33	16.82	15.29
480	0.89	1.12	1.31	18.60	17.05	15.53	17.16	15.81	14.42
490	1.24	1.52	1.75	12.65	11.89	11.03	12.10	11.35	10.48
500	1.87	2.21	2.50	8.58	8.21	7.72	8.30	7.91	7.40
510	2.88	3.26	3.60	5.70	5.54	5.30	5.53	5.37	5.09
520	4.29	4.69	5.05	3.73	3.71	3.61	3.62	3.59	3.47
540	8.05	8.45	8.78	1.62	1.71	1.74	1.59	1.67	1.68
550	10.14	10.51	10.82	1.12	1.22	1.28	1.10	1.20	1.24
560	12.26	12.61	12.90	0.80	0.91	0.98	0.80	0.90	0.95
570	14.37	14.70	14.97	0.59	0.70	0.77	0.60	0.71	0.76
580	16.45	16.75	17.00	0.44	0.56	0.63	0.47	0.57	0.63
590	18.47	18.78	19.00	0.35	0.46	0.53	0.38	0.48	0.54
600	20.42	20.73	20.94	0.27	0.38	0.45	0.31	0.41	0.46
620	24.21	24.47	24.66	0.18	0.28	0.35	0.22	0.32	0.38
630	26.03	26.30	26.48	0.14	0.25	0.31	0.19	0.28	0.34
640	27.84	28.09	28.27	0.11	0.22	0.29	0.17	0.26	0.32
650	29.64	29.91	30.06	0.09	0.20	0.26	0.16	0.25	0.30
700	37.87	38.11	38.26	0.02	0.12	0.19	0.08	0.16	0.22
800	52.15	52.44	52.59	0.02	0.09	0.16	0.02	0.11	0.18
850	57.69	58.17	58.20	0.02	0.08	0.16	0.01	0.11	0.17
900	61.87	61.13	61.52	0.01	0.10	0.18	0.00	0.10	0.18
950	64.36	64.33	64.67	0.00	0.12	0.19	0.00	0.11	0.18
1000	64.93	64.85	65.40	0.02	0.14	0.22	0.00	0.12	0.19
1050	66.00	65.85	65.38	0.04	0.16	0.24	0.02	0.14	0.21
1100	66.19	65.82	65.88	0.06	0.19	0.27	0.01	0.14	0.22
1150	66.20	66.34	65.75	0.09	0.22	0.31	0.03	0.16	0.24
1200	65.99	65.80	65.54	0.11	0.26	0.33	0.04	0.18	0.26
1250	65.69	65.10	66.23	0.16	0.29	0.38	0.06	0.19	0.29
1300	64.74	65.41	65.47	0.18	0.32	0.40	0.09	0.22	0.31
1350	65.37	64.82	65.45	0.23	0.36	0.45	0.09	0.23	0.32
1400	64.71	64.48	65.16	0.25	0.39	0.48	0.12	0.26	0.35
1500	64.00	64.12	63.83	0.31	0.46	0.55	0.16	0.30	0.39
1600	63.45	64.01	64.12	0.38	0.52	0.63	0.21	0.35	0.44
1700	63.72	63.49	64.69	0.43	0.58	0.69	0.24	0.39	0.49
1800	64.38	65.76	66.00	0.47	0.64	0.74	0.29	0.44	0.54
1900	70.21	70.93	70.55	0.50	0.68	0.80	0.33	0.48	0.58
2000	68.95	68.27	67.90	0.54	0.72	0.84	0.38	0.53	0.63

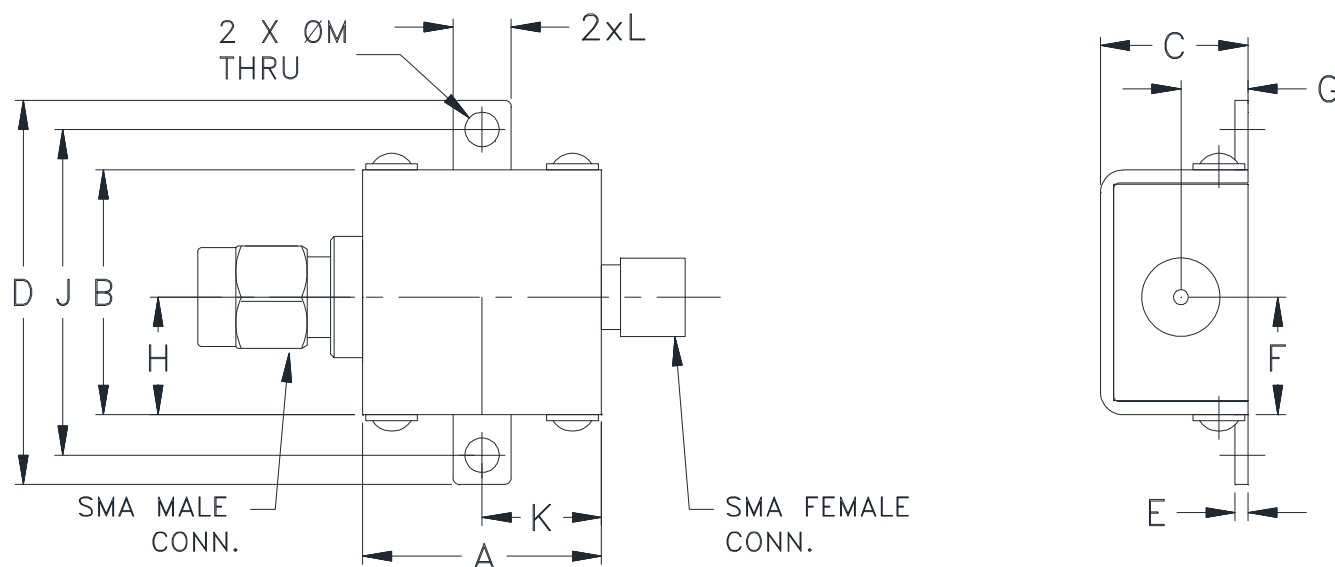
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
0.5	1.59	1.63	1.85
1	1.59	1.63	1.81
10	1.60	1.60	1.60
20	1.58	1.58	1.59
30	1.59	1.59	1.59
40	1.59	1.59	1.59
50	1.59	1.58	1.59
60	1.58	1.59	1.59
70	1.59	1.59	1.59
80	1.59	1.59	1.60
90	1.60	1.60	1.60
100	1.61	1.61	1.61
110	1.62	1.61	1.61
120	1.62	1.61	1.61
130	1.63	1.62	1.63
140	1.64	1.65	1.64
150	1.66	1.66	1.65
160	1.67	1.67	1.66
170	1.68	1.67	1.67
180	1.69	1.68	1.68
190	1.70	1.70	1.69
200	1.71	1.70	1.70
210	1.73	1.72	1.72
220	1.75	1.75	1.75
230	1.78	1.78	1.78
240	1.80	1.80	1.80
250	1.83	1.83	1.84
260	1.85	1.84	1.84
270	1.87	1.87	1.87
280	1.88	1.89	1.89
290	1.91	1.93	1.93
300	1.96	1.97	1.97
310	2.00	2.01	2.02
320	2.05	2.06	2.07
330	2.10	2.10	2.11
340	2.16	2.15	2.16
350	2.21	2.21	2.22
354	2.23	2.24	2.24
360	2.27	2.27	2.28
366	2.32	2.32	2.32
370	2.35	2.35	2.36
376	2.39	2.39	2.39
380	2.42	2.42	2.42
386	2.47	2.46	2.47
390	2.50	2.50	2.50
396	2.54	2.54	2.55
400	2.57	2.57	2.58
406	2.62	2.63	2.63
410	2.65	2.65	2.66
420	2.75	2.76	2.78
430	2.89	2.90	2.93
440	3.05	3.07	3.10
450	3.25	3.28	3.31
460	3.52	3.55	3.59
470	3.84	3.86	3.90

Typical Performance Curves



Outline Dimensions



CASE #.	A	B	C	D	E	F	G	H	J	K	L	M
KE1467	.74 (18.80)	.75 (19.05)	.46 (11.68)	1.18 (29.97)	.04 (1.02)	.362 (9.19)	.21 (5.33)	.362 (9.19)	1.00 (25.40)	.37 (9.40)	.18 (4.57)	.11 (2.79)

CASE #.	WT. GRAM
KE1467	24.4

Dimensions are in inches (mm). Tolerances: 2Pl. $\pm .03$; 3Pl. $\pm .015$

Tolerance on hole size and interaxes dimensions to be $\pm .005$.

Note:

1. Case material: Brass
2. Case finish: Gold
3. Cover: Nickel plated.



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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	-40° to 85°C	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Barometric Pressure	100,000 Feet	MIL-STD-202, Method 105, Condition D
Humidity	90% RH, 65°C Units may require bake-out after humidity to restore full performance.	MIL-STD-202, Method 103
Thermal Shock	-65° to 125°C, 5 cycles	MIL-STD-202, Method 107, Condition B
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	100g, 6ms sawtooth, 3 shocks each direction 3 axes (total 18)	MIL-STD-202, Method 213, Condition I