

Coaxial Low Pass Filter

ZX75LP-30-S+

50Ω DC to 30 MHz

The Big Deal

- High rejection
- Low Insertion loss, 1 dB typical in passband
- Fast roll-off
- Good VSWR
- Connectorized package



Generic photo used for illustration purposes only
CASE STYLE: KE1467

Product Overview

ZX75LP-30-S+ is a 50Ω low pass filter built in a connectorized package. Covering DC-30 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



Low Pass Filter

50Ω DC to 30 MHz

ZX75LP-30-S+



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CASE STYLE: KE1467

Connectors	Model
SMA-MF	ZX75LP-30-S+

Features

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

Applications

- Satellite
- Wireless communications
- Receivers / Transmitters

Electrical Specifications at 25°C

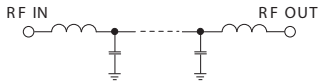
Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Pass Band	Insertion Loss	DC-F1	DC-30	—	1.0	2.0	dB
	Freq. Cut-Off	F2	38	—	3.0	—	dB
	VSWR	DC-F1	DC-30	—	1.3	1.7	:1
Stop Band	Rejection Loss	F3-F4	48-3000	20	31	—	dB
	VSWR	F3-F4	48-3000	—	14	—	:1

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.

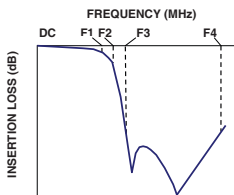
Functional Schematic



Typical Performance Data at 25°C

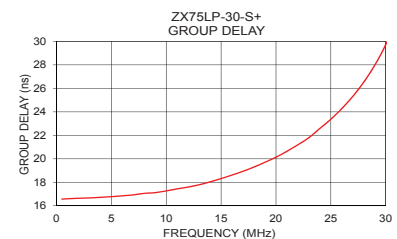
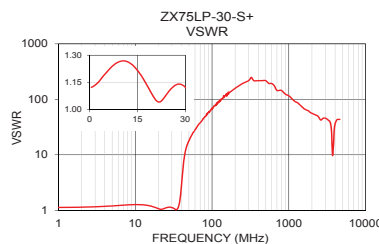
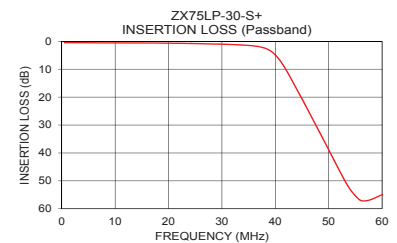
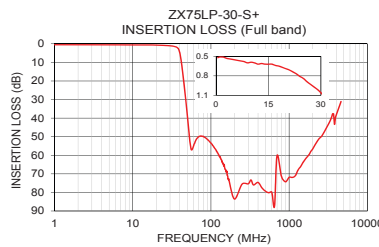
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	0.51	1.13	1	16.60
5	0.55	1.20	2	16.64
10	0.59	1.27	3	16.67
25	0.84	1.10	4	16.72
30	1.06	1.12	5	16.78
38	2.44	1.46	6	16.85
41	7.20	4.17	8	17.06
44	17.07	9.90	10	17.27
48	31.49	15.67	12	17.60
50	38.85	17.93	14	18.04
100	53.49	69.49	16	18.62
150	66.66	115.81	18	19.30
200	83.58	157.93	20	20.14
250	75.54	193.02	22	21.20
500	79.41	217.15	24	22.59
1000	71.86	115.81	26	24.28
1500	63.96	72.39	27	25.32
2000	56.62	56.04	28	26.53
2600	49.77	42.38	29	27.97
3000	45.21	45.72	30	29.72

Typical Frequency Response



+RoHS Compliant

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



Notes

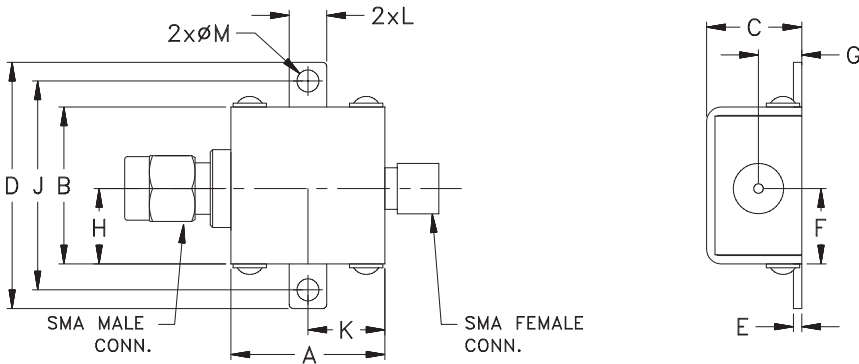
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Coaxial Connections

INPUT	SMA-Male
OUTPUT	SMA-Female

Outline Drawing



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

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

Notes

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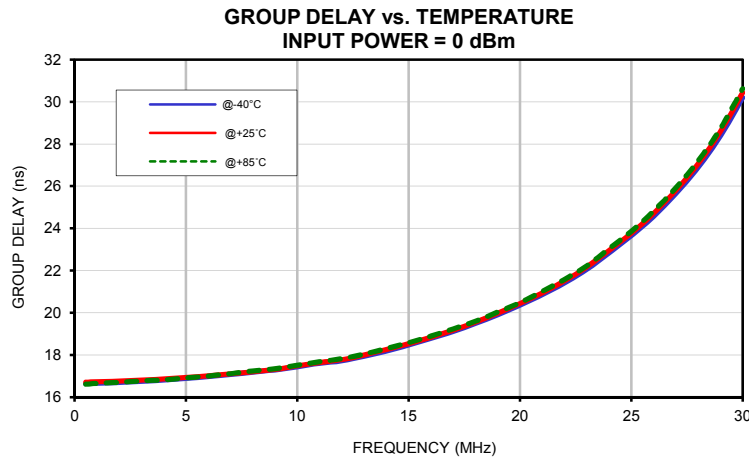
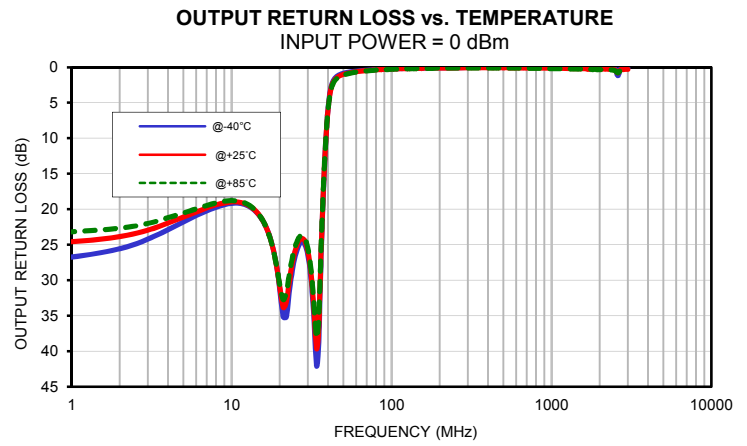
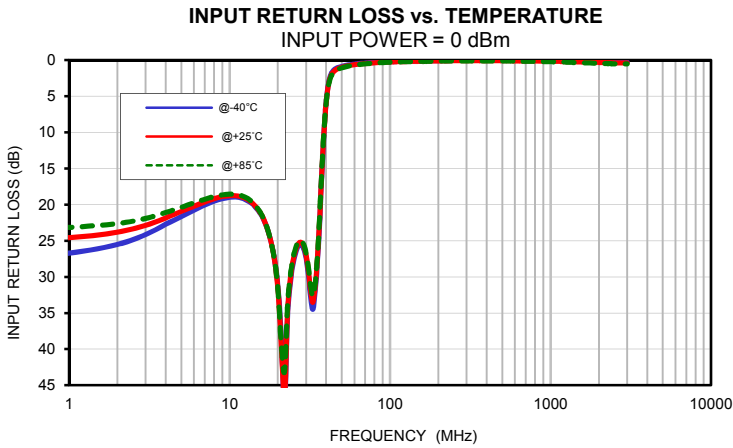
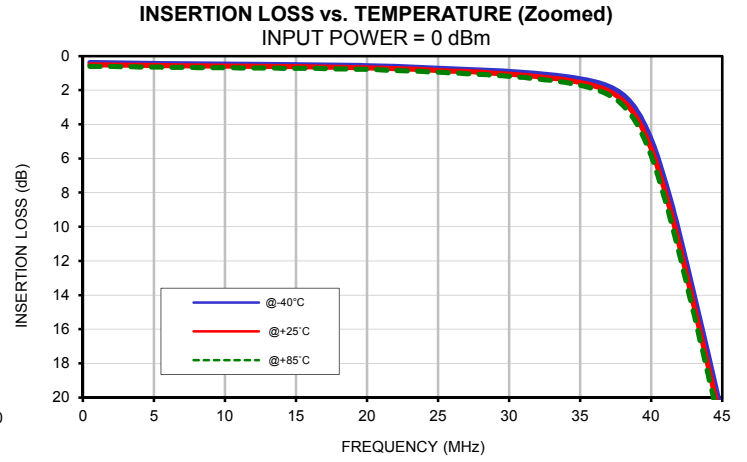
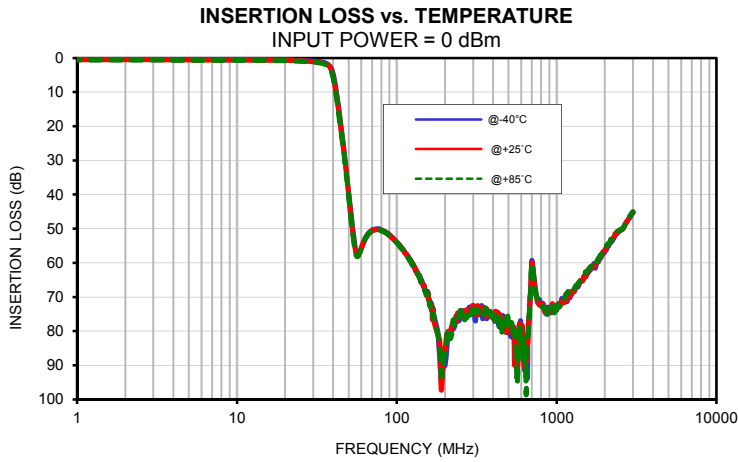
Typical Performance Data

FREQ. (MHz)	INSERTION LOSS			INPUT RETURN LOSS			OUTPUT RETURN LOSS		
	(dB)			(dB)			(dB)		
	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C	@-40°C	@+25°C	@+85°C
0.5	0.38	0.51	0.61	27.11	24.79	23.33	27.12	24.80	23.33
1	0.39	0.51	0.61	26.72	24.57	23.16	26.74	24.59	23.17
2	0.39	0.51	0.61	25.52	23.82	22.62	25.57	23.86	22.67
4	0.43	0.53	0.64	22.72	21.83	21.09	22.87	21.96	21.20
5	0.43	0.55	0.64	21.65	20.94	20.37	21.79	21.09	20.53
6	0.44	0.56	0.66	20.75	20.21	19.75	20.91	20.40	19.94
8	0.45	0.57	0.67	19.53	19.19	18.88	19.69	19.37	19.11
10	0.48	0.59	0.68	18.99	18.75	18.55	19.17	18.97	18.79
12	0.49	0.61	0.69	19.11	18.95	18.79	19.32	19.19	19.08
14	0.51	0.62	0.71	19.98	19.86	19.76	20.20	20.13	20.10
15	0.50	0.63	0.72	20.74	20.65	20.56	20.98	20.93	20.93
16	0.51	0.63	0.71	21.70	21.61	21.57	21.95	21.95	21.95
18	0.53	0.65	0.75	24.88	24.89	24.90	25.20	25.23	25.26
20	0.56	0.68	0.78	31.24	31.54	31.63	31.10	30.88	30.61
22	0.61	0.73	0.84	47.43	46.74	43.08	35.14	33.04	31.67
24	0.67	0.80	0.91	30.49	30.01	29.58	28.52	27.52	26.80
25	0.71	0.84	0.95	27.90	27.49	27.18	26.55	25.80	25.23
26	0.74	0.88	0.98	26.41	26.06	25.79	25.35	24.70	24.23
28	0.81	0.95	1.07	25.56	25.24	25.02	24.69	24.17	23.79
30	0.90	1.06	1.18	27.41	27.03	26.76	26.49	25.98	25.52
32	1.02	1.20	1.34	32.79	31.94	31.26	32.08	31.21	30.55
34	1.21	1.40	1.55	32.39	31.80	31.27	42.11	39.66	38.13
35	1.33	1.55	1.71	29.07	28.63	28.27	39.21	37.24	35.85
36	1.50	1.75	1.93	24.55	24.12	23.77	29.00	28.20	27.57
37	1.77	2.05	2.27	18.93	18.57	18.31	20.77	20.34	19.99
38	2.26	2.61	2.88	13.51	13.29	13.10	14.39	14.17	13.99
40	4.88	5.44	5.86	5.75	5.79	5.84	6.06	6.12	6.17
42	10.48	11.14	11.65	2.50	2.69	2.84	2.65	2.84	2.99
44	17.46	18.14	18.64	1.50	1.70	1.85	1.58	1.79	1.94
45	21.07	21.72	22.24	1.29	1.47	1.61	1.35	1.53	1.68
46	24.66	25.32	25.84	1.15	1.32	1.45	1.19	1.37	1.50
48	31.92	32.59	33.08	0.96	1.11	1.22	0.99	1.14	1.26
50	39.27	39.97	40.51	0.84	0.97	1.07	0.87	1.00	1.09
75	50.04	50.21	50.23	0.35	0.41	0.45	0.36	0.41	0.45
100	54.02	54.00	54.01	0.22	0.26	0.28	0.22	0.26	0.28
150	68.03	68.21	68.25	0.11	0.14	0.16	0.12	0.15	0.16
200	90.13	85.89	86.32	0.07	0.11	0.13	0.07	0.11	0.13
250	75.69	75.46	73.95	0.04	0.09	0.11	0.06	0.09	0.11
400	75.83	76.28	74.15	0.02	0.08	0.10	0.03	0.08	0.10
500	78.23	79.17	78.94	0.01	0.08	0.11	0.02	0.08	0.11
600	81.38	81.05	80.69	0.02	0.10	0.14	0.02	0.09	0.12
800	72.49	72.20	72.99	0.02	0.13	0.18	0.03	0.11	0.15
1000	73.74	72.66	72.73	0.04	0.15	0.22	0.03	0.14	0.19
1200	70.30	69.83	69.12	0.07	0.20	0.28	0.04	0.16	0.21
1400	65.38	65.25	65.37	0.08	0.22	0.32	0.05	0.19	0.24
1500	64.10	64.21	63.32	0.10	0.25	0.35	0.06	0.20	0.26
1600	62.40	61.63	61.77	0.12	0.27	0.38	0.07	0.21	0.30
1700	60.86	61.07	60.69	0.12	0.29	0.39	0.14	0.29	0.32
1800	59.56	59.41	59.26	0.12	0.28	0.40	0.10	0.24	0.32
1900	58.23	57.99	57.79	0.13	0.30	0.42	0.09	0.24	0.32
2000	56.81	56.33	56.06	0.13	0.32	0.44	0.08	0.24	0.32
2100	55.20	54.73	54.67	0.14	0.34	0.46	0.08	0.25	0.33
2200	53.70	53.38	53.20	0.13	0.34	0.47	0.08	0.26	0.34
2300	52.22	52.08	51.80	0.14	0.34	0.48	0.11	0.27	0.36
2400	51.16	51.09	50.76	0.15	0.36	0.49	0.13	0.29	0.39
2500	50.57	50.33	50.28	0.16	0.37	0.50	0.16	0.38	0.51
2600	49.90	50.01	49.81	0.18	0.38	0.51	1.19	0.80	0.78
2700	48.51	48.41	48.40	0.18	0.38	0.52	0.18	0.35	0.45
2800	47.43	47.29	47.13	0.17	0.38	0.53	0.13	0.32	0.41
3000	45.34	45.16	45.03	0.22	0.38	0.53	0.11	0.31	0.41

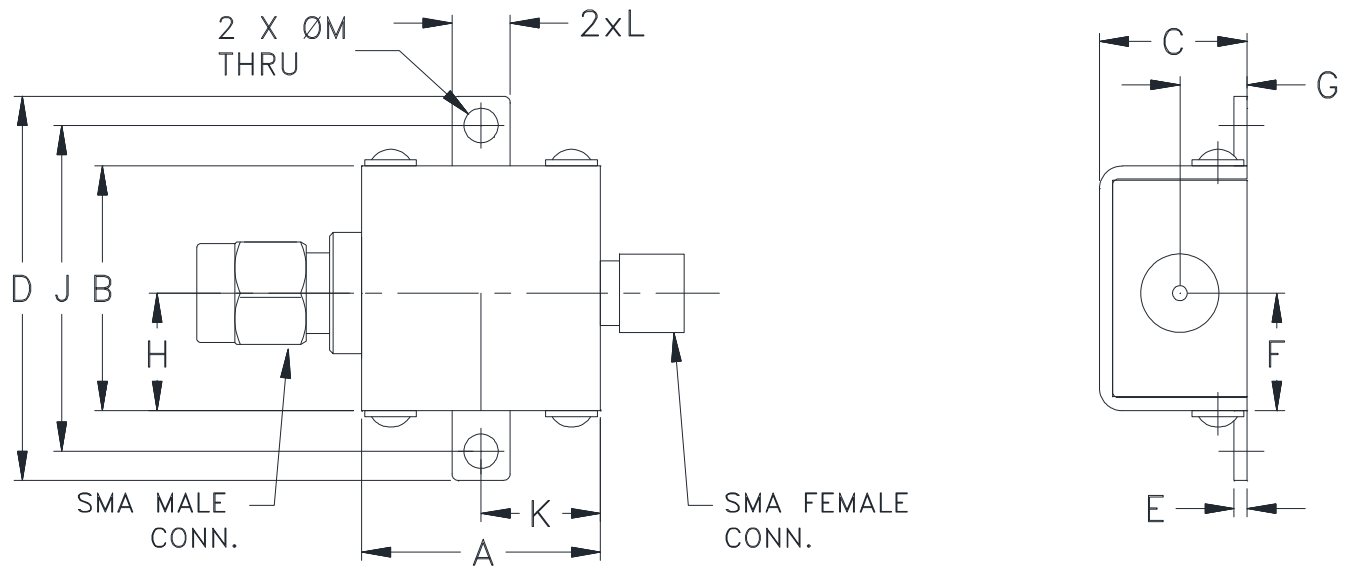
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
0.5	16.64	16.71	16.61
1	16.66	16.73	16.65
2	16.69	16.76	16.70
3	16.75	16.81	16.77
4	16.81	16.86	16.82
5	16.88	16.92	16.91
6	16.97	17.01	17.00
7	17.07	17.11	17.11
8	17.19	17.21	17.24
9	17.29	17.31	17.35
10	17.44	17.48	17.51
11	17.60	17.64	17.68
12	17.72	17.77	17.82
13	17.94	18.00	18.04
14	18.19	18.26	18.30
15	18.46	18.53	18.58
16	18.79	18.84	18.89
17	19.11	19.18	19.23
18	19.49	19.55	19.60
19	19.90	19.98	20.03
20	20.35	20.44	20.48
21	20.86	20.94	21.01
22	21.41	21.51	21.58
23	22.05	22.17	22.22
24	22.84	22.95	23.04
25	23.65	23.77	23.86
26	24.57	24.71	24.82
27	25.65	25.80	25.92
28	26.89	27.06	27.20
29	28.37	28.58	28.73
30	30.19	30.43	30.62

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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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