

Coaxial Low Pass Filter

ZX75LP-158-S+

50Ω

DC to 158 MHz

The Big Deal

- High rejection
- Low Insertion loss, 1.2 dB typical in passband
- Fast roll-off
- Good VSWR
- Connectorized package



Generic photo used for illustration purposes only

CASE STYLE: KE1467

Product Overview

ZX75LP-158-S+ is a 50Ω low pass filter built in a connectorized package. Covering DC-158 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

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Connectors	Model
SMA-MF	ZX75LP-158-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-158	—	1.2	dB
	Freq. Cut-Off	F2	170	—	3.0	dB
	VSWR	DC-F1	DC-158	—	1.2	:1
Stop Band	Rejection Loss	F3-F4	220-1000	20	30	dB
	VSWR	F3-F4	220-1000	—	33	: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.

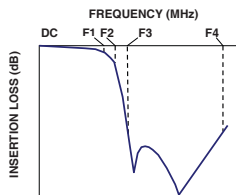
Functional Schematic



Typical Performance Data at 25°C

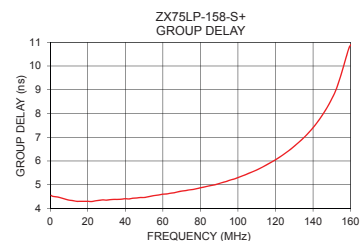
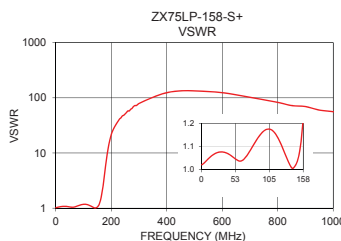
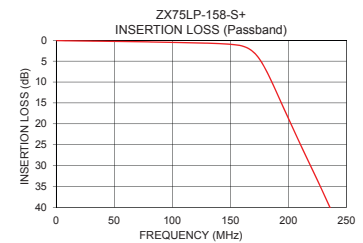
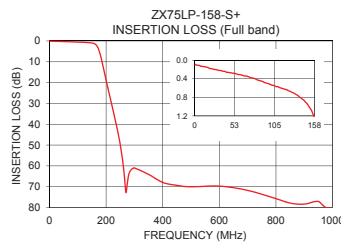
Frequency (MHz)	Insertion Loss (dB)	VSWR (:1)	Frequency (MHz)	Group Delay (nsec)
1	0.09	1.02	1	4.52
20	0.18	1.07	10	4.35
50	0.28	1.05	22	4.29
72	0.36	1.07	32	4.37
100	0.52	1.17	42	4.40
132	0.72	1.05	52	4.49
144	0.86	1.01	64	4.64
158	1.24	1.22	74	4.78
160	1.36	1.31	84	4.94
170	2.85	2.43	94	5.14
180	6.76	6.03	100	5.30
190	12.57	13.09	106	5.49
200	18.72	21.46	118	5.96
220	30.58	34.75	128	6.49
300	60.97	78.97	138	7.22
400	67.93	124.09	140	7.40
500	70.05	133.63	144	7.82
600	69.72	124.09	148	8.32
800	75.74	82.73	150	8.62
1000	80.20	56.04	158	10.46

Typical Frequency Response



+RoHS Compliant

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



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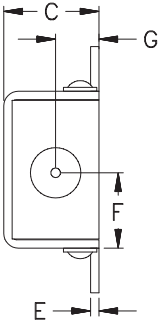
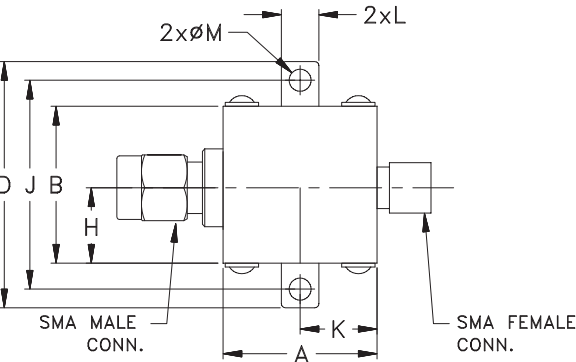


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Coaxial Connections

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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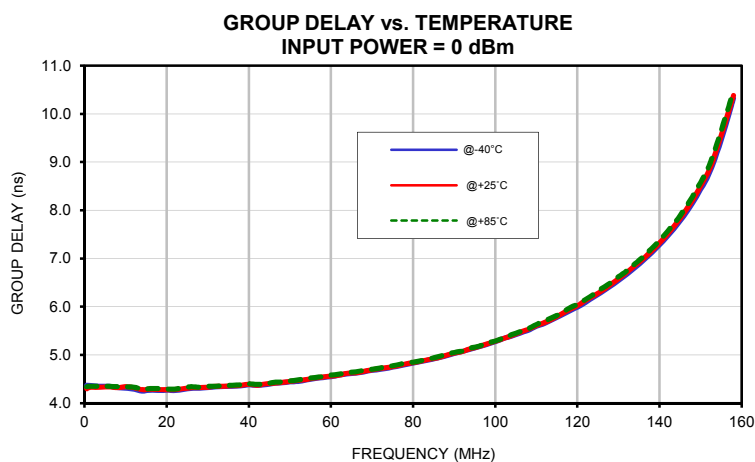
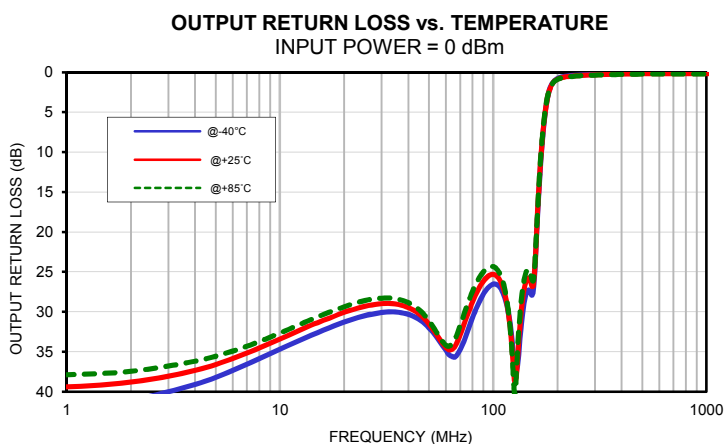
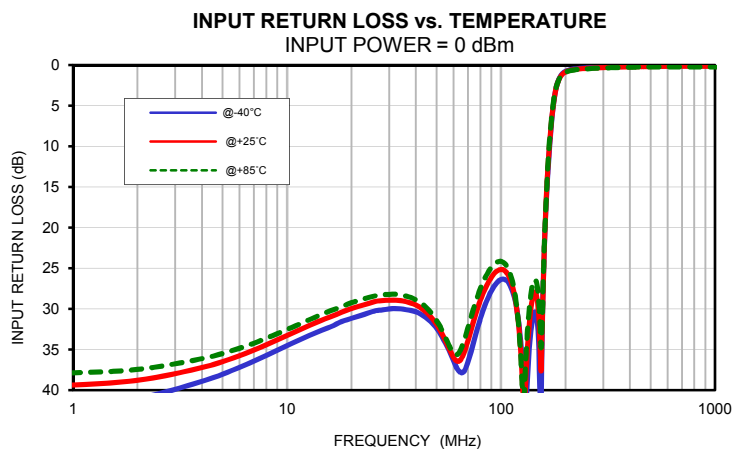
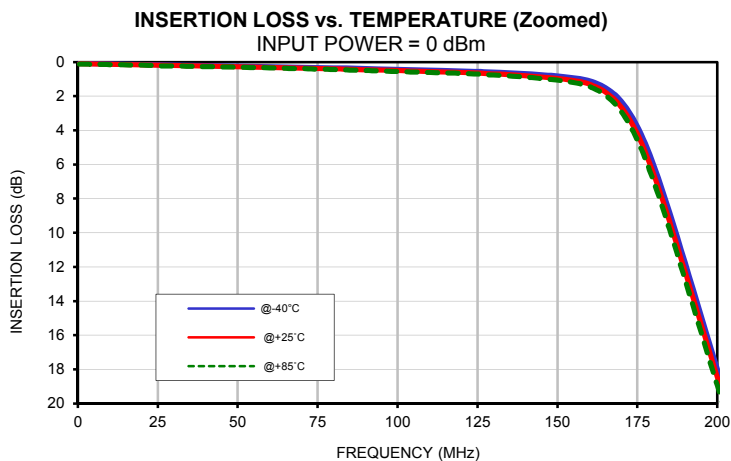
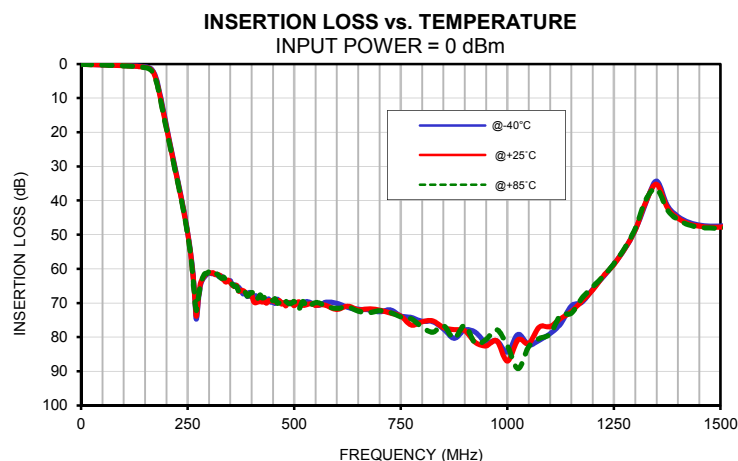
Typical Performance Data

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	0.07	0.10	0.12	42.07	39.51	38.03	42.09	39.54	38.03
1	0.08	0.10	0.12	41.80	39.34	37.85	41.83	39.36	37.89
10	0.11	0.13	0.15	34.52	33.26	32.53	34.69	33.41	32.66
20	0.14	0.16	0.18	31.15	29.93	29.22	31.27	30.04	29.38
30	0.17	0.20	0.22	29.99	28.91	28.20	30.08	28.97	28.29
40	0.20	0.24	0.26	30.34	29.52	28.88	30.31	29.45	28.85
50	0.23	0.27	0.30	32.37	31.92	31.45	32.01	31.54	31.14
60	0.27	0.31	0.34	36.40	35.98	35.45	34.79	34.46	34.18
72	0.30	0.36	0.39	35.50	32.80	31.21	34.06	32.05	30.75
80	0.34	0.40	0.44	31.21	28.94	27.51	30.72	28.71	27.43
90	0.38	0.45	0.49	27.80	26.11	24.89	27.76	26.13	24.98
100	0.43	0.50	0.55	26.37	25.14	24.15	26.52	25.31	24.33
110	0.47	0.56	0.61	27.03	26.28	25.56	27.34	26.62	25.88
120	0.52	0.61	0.67	30.96	31.26	31.13	31.51	31.95	32.01
132	0.60	0.70	0.78	39.87	36.15	33.86	34.94	33.27	31.97
140	0.68	0.80	0.88	31.31	28.75	27.18	28.72	27.00	25.84
150	0.82	0.96	1.06	34.29	30.94	28.97	27.67	26.37	25.40
152	0.85	1.00	1.11	40.38	34.45	31.76	27.92	26.83	25.98
154	0.89	1.05	1.16	41.45	37.55	34.76	27.48	26.77	26.13
156	0.94	1.11	1.23	31.26	31.18	30.72	25.73	25.35	24.95
158	1.01	1.18	1.31	25.49	25.32	25.12	23.06	22.75	22.44
160	1.09	1.29	1.43	21.31	21.03	20.78	20.12	19.79	19.49
165	1.50	1.76	1.94	13.64	13.28	12.97	13.42	13.04	12.73
170	2.29	2.64	2.90	8.63	8.35	8.10	8.57	8.29	8.03
175	3.75	4.21	4.57	5.20	5.06	4.91	5.19	5.05	4.89
180	5.96	6.51	6.94	3.09	3.07	3.01	3.09	3.06	3.00
185	8.73	9.30	9.76	1.92	1.96	1.95	1.93	1.97	1.96
190	11.77	12.32	12.80	1.29	1.37	1.38	1.31	1.38	1.40
195	14.88	15.40	15.88	0.95	1.03	1.07	0.97	1.05	1.08
200	17.99	18.48	18.95	0.76	0.85	0.89	0.78	0.86	0.89
210	24.09	24.51	24.96	0.56	0.64	0.68	0.59	0.66	0.70
220	30.08	30.44	30.82	0.47	0.55	0.59	0.49	0.56	0.60
250	49.42	49.60	50.02	0.33	0.40	0.44	0.35	0.42	0.45
300	61.12	61.09	60.80	0.24	0.30	0.35	0.26	0.32	0.36
350	63.49	64.03	64.23	0.18	0.25	0.29	0.20	0.26	0.30
400	68.25	67.43	66.95	0.15	0.22	0.25	0.17	0.22	0.27
425	68.68	69.73	68.55	0.14	0.20	0.25	0.15	0.21	0.25
450	69.44	69.30	69.31	0.12	0.19	0.23	0.14	0.19	0.24
475	70.19	69.91	70.26	0.12	0.18	0.23	0.13	0.19	0.24
500	70.24	70.76	69.62	0.10	0.17	0.22	0.12	0.19	0.23
520	70.04	70.71	69.58	0.09	0.17	0.21	0.11	0.18	0.22
550	70.64	70.71	69.90	0.09	0.16	0.21	0.10	0.17	0.22
575	69.75	70.73	71.02	0.08	0.16	0.21	0.10	0.17	0.22
600	70.09	71.91	71.59	0.08	0.15	0.20	0.09	0.16	0.21
625	71.29	70.93	71.15	0.07	0.15	0.21	0.09	0.16	0.21
650	71.82	71.96	72.39	0.07	0.15	0.21	0.09	0.16	0.21
675	72.02	71.73	72.83	0.07	0.15	0.21	0.08	0.16	0.21
700	72.62	72.10	72.29	0.06	0.15	0.21	0.08	0.16	0.21
725	72.03	72.95	72.80	0.05	0.15	0.21	0.08	0.17	0.22
750	73.79	73.86	74.09	0.05	0.15	0.21	0.08	0.17	0.21
775	74.29	76.50	74.70	0.05	0.15	0.21	0.06	0.16	0.21
800	75.36	75.51	77.09	0.05	0.15	0.21	0.07	0.16	0.21
825	75.47	75.24	78.57	0.05	0.15	0.22	0.07	0.16	0.21
850	77.57	77.21	76.63	0.05	0.16	0.22	0.07	0.16	0.22
875	80.35	77.83	80.40	0.05	0.16	0.23	0.07	0.17	0.22
900	77.93	78.10	76.57	0.04	0.15	0.21	0.07	0.17	0.23
925	78.59	81.57	81.87	0.05	0.16	0.22	0.06	0.17	0.22
950	81.62	82.57	80.67	0.04	0.16	0.23	0.07	0.17	0.23
975	81.09	81.11	77.84	0.05	0.16	0.24	0.07	0.17	0.23
1000	84.36	87.03	82.54	0.05	0.16	0.23	0.06	0.17	0.23

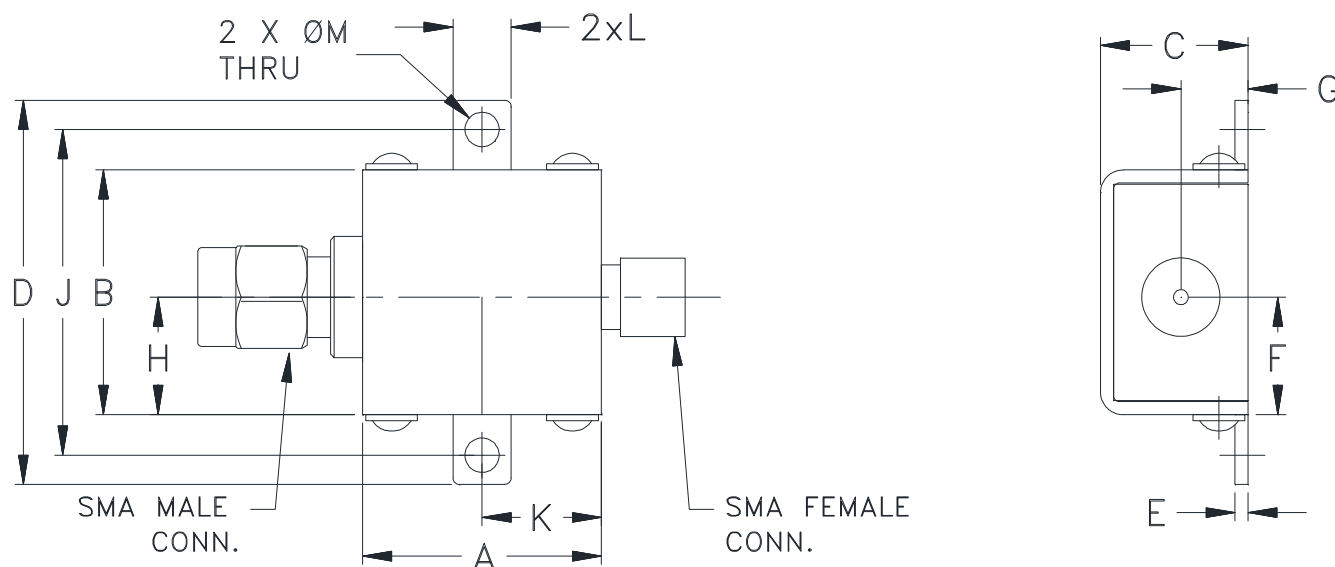
Typical Performance Data

FREQ.	GROUP DELAY		
(MHz)	(ns)		
	@-40°C	@+25°C	@+85°C
0.5	4.37	4.30	4.34
1	4.37	4.32	4.35
10	4.31	4.34	4.34
12	4.29	4.32	4.33
14	4.25	4.28	4.29
16	4.27	4.29	4.30
18	4.26	4.28	4.30
20	4.27	4.28	4.29
22	4.26	4.28	4.29
24	4.28	4.30	4.32
26	4.31	4.32	4.34
28	4.31	4.32	4.33
30	4.32	4.33	4.35
32	4.34	4.35	4.35
34	4.34	4.35	4.36
36	4.35	4.36	4.37
38	4.36	4.37	4.38
40	4.38	4.39	4.40
42	4.37	4.37	4.39
44	4.38	4.40	4.40
46	4.41	4.41	4.43
48	4.42	4.43	4.44
50	4.44	4.45	4.46
52	4.45	4.47	4.48
54	4.48	4.49	4.51
56	4.51	4.52	4.53
58	4.53	4.54	4.55
60	4.55	4.56	4.58
62	4.58	4.58	4.60
64	4.61	4.62	4.63
66	4.62	4.63	4.65
68	4.65	4.66	4.68
70	4.68	4.69	4.70
72	4.70	4.72	4.73
74	4.73	4.74	4.76
76	4.76	4.77	4.79
78	4.80	4.81	4.83
80	4.83	4.84	4.85
90	5.03	5.04	5.05
100	5.27	5.28	5.29
110	5.59	5.61	5.63
120	5.99	6.02	6.05
130	6.54	6.58	6.62
140	7.28	7.32	7.37
150	8.43	8.50	8.58
158	10.32	10.38	10.47

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