

ALLEN AVIONICS, INC.

Custom Built LC Filters - Bandpass 400 Hz - 200 MHz

yp400-5m

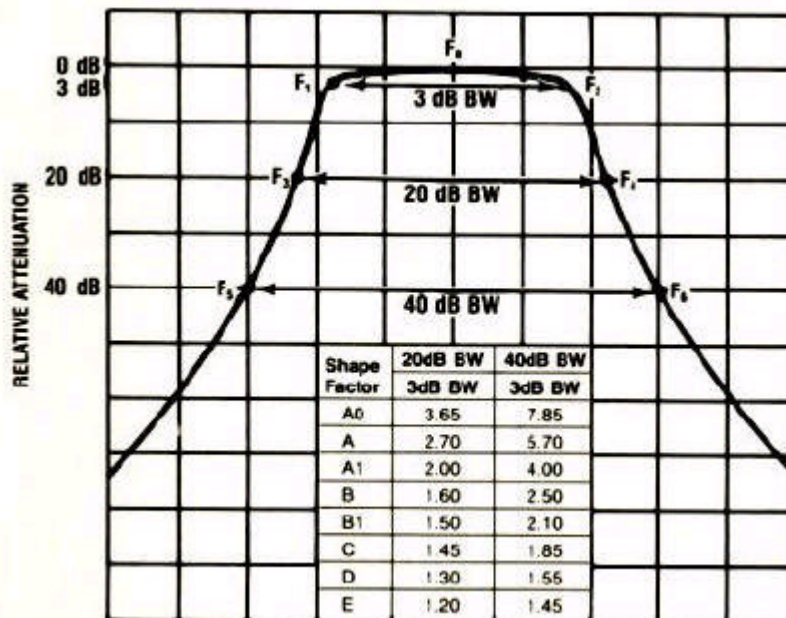
Allen Avionics manufactures Filters using many design types such as: Butterworth, Chebyshev and Elliptic Functions. The filters tabulated on this page are Chebyshev type. Other types can be designed when their special properties are needed.

- ▶ **Frequency Range:** 400 Hz to 200 MHz
- ▶ **Impedance Range:** 50 Ohms to 10K Ohms
- ▶ **Q Range:** .5 to 50
- ▶ **Construction:** Epoxy encapsulated or sealed in metal cans
- ▶ **Delivery:** Prototypes can often be delivered in less than 7 days.
Call or e-mail factory for special sizes
- ▶ **Maximum Ripple:** 1dB

Order any Center Frequency from 400 Hz to 200 MHz. Interpolation between tabulated Center Frequencies and Bandwidth is allowable.

The size package that each Bandpass filter requires is a function of impedance, shape factor and type of termination or connector that is needed. The sizes listed will provide you with the minimum and maximum size for the combination of shape factor and impedance. Allen Avionics has hundreds of filter packages that are not listed and can be used to custom fit your application.

Size (Inches)			
Units normally supplied in metal cans for printed circuit mounting (or end terminals). SMA connectors same size. BNC connectors may require larger cans.			
Metal Cans			
	L	W	H
K3	3.00 x	1.125	x .750
M	3.00 x	1.625	x 1.125
M1	3.00 x	2.000	x 1.250
N	4.00 x	1.500	x 1.250
N1	4.00 x	2.000	x 1.250
O	5.00 x	1.500	x 1.250
O1	5.00 x	2.000	x 1.250
P	6.00 x	1.500	x 1.250
P1	6.00 x	2.000	x 1.250
Encapsulated in Epoxy Case			
	L	W	H
U	2.00 x	1.125	x .750
W	2.50 x	1.125	x .750
X	3.00 x	1.500	x 1.000
X1	3.00 x	2.000	x 1.000
Y	4.00 x	1.500	x 1.125
Y1	4.00 x	2.000	x 1.250
Z	4.50 x	2.500	x 1.375



$$F_0 = \sqrt{F_1 F_2} = \sqrt{F_3 F_4} = \sqrt{F_5 F_6}$$

Custom Bandpass Filters - Series BP

1 dB Maximum Ripple						
Center Frequency (Fo)	Q Range F _o / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal
400 Hz	.5-16	A	1K-10K	2-8	Y1	N1
	.5-8	A1	1K-10K	3-7	Z	O1
1 KHz	.5-20	A	1K-10K	2-8	Y, Y1	N, N1
	.5-10	A1	1K-10K	2-6	Z	O1
	.5-8	B	1K-10K	4-8	Z	P1
	.5-10	A	500-1 OK	1-4	Y, Y1	N, N1
5KHz	10-25	A	500-1 OK	3-7	X, Y, Y1	M, N, N1
	.5-10	A1	500-10K	1-5	X, Y, Z	M, N, O1
	10-25	A1	500-1 OK	4-8	Y, Y1	N, N1
	.5-10	B	500-1 OK	2-6	Y, Z	N, O1
	.5-6	B1	500-10K	3-7	Y, Z	N, O1
	.5-5	C	1K	3-7	Z	P1
10KHz	.5-10	A	100-1 OK	1-4	Y, Y1	N, N1
	10-25	A	100-10K	2-5	X, Y, Y1	M, N, N1
	25-50	A	100-10K	3-7	Y, Y1	N, N1
	.5-10	A1	100-1 OK	1-4	X, Y, Y1	M, N, N1
	10-25	A1	100-1 OK	2-5	X, Y, Y1	M, N, N1
	25-40	A1	100-1 OK	3-7	Y, Z	Y Y1
	.5-10	B	100-10K	1-5	X, Y, Z	M, N, O1
	10-30	B	100-1 OK	3-8	Y, Z	N, O1
	.5-10	B1	100-1 OK	1-4	X, Y, Z	M, N, O1
	10-25	B1	100-1 OK	3-7	Y, Z	N, O1
	.5-10	C	100-5K	2-6	Y, Z	N, O1
	10-20	C	100-500	3-7	Z	O1
	.5-10	D	500	3-7	Z	O1
	.5-5	E	500	4-8	Z	P1
25KHz	.5-10	A	100-10K	1-4	X, Y Y1	M, N, N1
	10-25	A	100-1 OK	2-5	X, Y Y1	M, N, N1
	25-50	A	100-10K	3-8	Y Y1	N, N1
	.5-10	A1	100-10K	1-4	X, Y Y1	M, N, N1
	10-25	A1	100-10K	2-5	X, Y Y1	M, N, N1
	25-50	A1	100-5K	3-8	Y, Z	N, O1
	.5-10	B	100-1 OK	1-4	X, Y, Z	M, N, O1
	10-25	B	100-10K	3-7	Y, Z	N, O1
	25-40	B	100-5K	3-8	Z	P1
	.5-10	B1	100-1 OK	1-4	X, Y, Z	M, N, O1
	10-25	B1	100-10K	2-6	X, Y, Z	M, N, O1
	25-35	B1	100-500	3-8	Z	P1
	.5-10	C	100-5K	3-7	X, Y, Z	M, N, O1
	10-30	C	100-500	4-8	Y, Z	N, O1
	.5-10	D	100-500	3-7	Z	O1
	.5-5	E	100-500	4-8	Z	P1

1 dB Maximum Ripple						
Center Frequency (Fo)	Q Range F _o / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal
50KHz	.5-10	A	100-5K	1-4	W, X, Y	K3, M, N
	10-25	A	100-5K	2-5	X, Y, Y1	M, N, N1
	25-50	A	100-5K	3-8	Y, Y1	N, N1
	.5-10	A1	100-5K	2-5	X, Y, Y1	M, N, N1
	10-25	A1	100-5K	3-6	X, Y, Y1	M, N, N1
	25-50	A1	100-5K	4-8	Y, Z	N, O1
	.5-10	B	100-5K	2-5	X, Y, Z	M, N, N1
	10-25	B	100-5K	3-6	Y, Z	N, O1
	25-40	B	100-500	4-8	Z	P1
	.5-10	B1	100-5K	2-5	X, Y, Z	M, N, O1
	10-25	B1	100-5K	3-6	X, Y, Z	M, N, O1
	25-35	B1	100-500	3-8	Z	P1
	.5-10	C	100-5K	2-5	X, Y, Z	M, N, O1
	10-30	C	100-250	4-8	Y, Z	N, O1
75KHz	.5-10	D	100-500	3-7	Z	O1
	.5-5	E	100-500	4-8	Z	P1
	.5-10	A	100-5K	1-4	W, X, Y	K3, M, N
	10-25	A	100-5K	2-5	X, Y, Y1	M, N, N1
	25-50	A	100-5K	3-8	Y, Y1	N, N1
	.5-10	A1	100-5K	2-5	X, Y, Y1	M, N, N1
	10-25	A1	100-5K	3-6	X, Y, Y1	M, N, N1
	25-40	A1	100-500	3-8	Y, Z	N, O1
	.5-10	B	100-5K	2-5	X, Y, Z	M, N, O1
	10-25	B	100-5K	3-6	YZ	N, O1
	25-40	B	100-500	3-8	Z	P1
	.5-10	B1	100-5K	2-5	X, Y, Z	M, N, O1
	10-25	B1	100-5K	3-6	X, Y, Z	M, N, O1
	25-35	B1	100-500	3-8	Z	P1
100KHz	.5-10	C	100-5K	2-5	X, Y, Z	M, N, O1
	10-30	C	100-250	4-8	Y, Z	N, O1
	.5-10	D	50-250	3-7	Z	O1
	.5-6	E	50-200	4-8	Z	P1
	.5-10	A	100-5K	1-4	W, X, Y	K3, M, N
	10-25	A	100-5K	2-5	X, Y	M, N
	25-50	A	100-5K	3-8	Y, Y1	N, N1
	.5-10	A1	100-5K	2-5	X, Y, Y1	M, N, N1
	10-25	A1	100-5K	3-6	X, Y, Y1	M, N, N1
	24-45	A1	50-100	3-8	Y, Z	N, O1
	.5-10	B	100-5K	2-5	X, X1, Y	M, M1, N
	10-25	B	50-5K	3-6	Y, Z	N, O1
	25-40	B	50-150	3-8	Z	P1
	.5-10	B1	100-5K	2-5	X, Y, Z	M, N, O1

Custom Bandpass Filters - Series BP

Center Frequency (Fo)	Q Range $F_o / 3dB BW$	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal	Center Frequency (Fo)	Q Range $F_o / 3dB BW$	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal	
100 KHz	10-25	B1	100-5K	3-6	X, Y, Z	M, N, O1	400 KHz	.5-10	A	50-5K	1-4	W, X, X1	K3, M, M1	
	25-35	B1	50-100	3-8	Z	P1		10-25	A	50-5K	2-5	W, X, Y	K3, M, N	
	(cont'd)	.5-10	C	50-5K	2-5	X, Y, Z		M, N, N1	25-50	A	50-5K	3-8	Y, Y1	N, N1
		10-30	C	50-100	4-8	Y, Z		N, O1	.5-10	A1	50-5K	2-5	X, Y	M, N
		.5-10	D	50-100	3-7	Z		O1	10-25	A1	50-5K	3-6	X, Y	M, N
		10-12	D	50-100	4-8	Z		P1	25-40	A1	50-2K	3-8	Y, Z	N, O1
		.5-8	E	50-100	4-8	Z		P1	.5-10	B	50-5K	2-5	X, Y	M, N
200 KHz		.5-10	A	50-5K	1-4	W, X, X1		K3, M, M1	10-25	B	50-5K	3-6	X, Y, Z	M, N, O1
	10-25	A	50-5K	2-5	W, X, Y	K3, M, N		10-25	B1	50-5K	3-6	Y, Z	N, O1	
	25-50	A	50-5K	3-8	X1, Y, Y1	M1, N, N1		.5-10	C	50-2K	2-5	X, Y, Z	M, N	
	.5-10	A1	50-5K	2-5	X, Y, Y1	M, N, N1		10-12	C	50-100	4-8	Y, Z	N, O1	
	10-25	A1	50-5K	3-6	X, Y	M, N		.5-10	D	50-100	3-7	Y, Z	N, O1	
	25-35	A1	50-5K	3-8	Y, Z	N, O1		.5-6	E	50-100	4-8	Z	P1	
	.5-10	B	50-5K	2-5	X, X1, Y	M, M1, N		500 KHz	.5-10	A	50-5K	1-4	W, X, X1	K3, M, M1
	10-25	B	50-5K	3-6	X, Y, Z	M, N, O1			10-25	A	50-5K	2-5	W, X, Y	K3, M, N
	25-30	B	50-100	3-8	Y Z	N, O1			25-50	A	50-5K	3-8	Y, Y1	N, N1
	.5-10	B1	50-5K	2-5	X, Y, Z	M, N, O1			.5-10	A1	50-5K	2-5	X, Y	M, N
	10-25	B1	50-5K	3-6	Y, Z	N, O1			10-25	A1	50-5K	3-6	X, Y	M, N
	25-30	B1	50-100	3-8	Y, Z	N, O1			25-40	A1	50-2K	3-8	Y, Z	N, O1
	.5-10	C	50-5K	2-5	X, Y, Z	M, N, O1			.5-10	B	50-5K	2-5	X, Y	M, N
	10-25	C	50-100	4-8	Y, Z	N, O1			10-25	B	50-5K	3-6	X, Y, Z	M, N, O1
.5-10	D	50-100	3-7	Y, Z	N, O1	.5-10	B1		50-5K	2-5	X, YZ	M, N, O1		
10-12	D	50-100	4-8	Z	O1	10-25	B1		50-5K	3-6	Y, Z	N, O1		
.5-8	E	50-100	4-8	Z	P1	.5-10	C		50-2K	2-5	X, Y, Z	M, N, O1		
300 KHz	.5-10	A	50-5K	1-4	W, X, X1	K3, M, M1	10-12		C	50-100	4-8	Y, Z	N, O1	
	10-25	A	50-5K	2-5	W, X, Y	K3, M, N	.5-8		D	50-100	3-7	Y, Z	N, O1	
	25-50	A	50-5K	3-8	Y, Y1	N, N1	.5-5		E	50-100	4-8	Z	—	
	.5-10	A1	50-5K	2-5	X, X1, Y	M, M1, N	750 KHz	45-50	AO	50-2K	10 Max.	Y1	N1	
	10-25	A1	50-5K	3-6	X, Y	M, N		.5-10	A	50-5K	1-4	W, X, X1	K3, M, M1	
	25-40	A1	50-5K	3-8	Y, Z	N, O1		10-25	A	50-5K	2-5	W, X, Y	K3, M, N	
	.5-10	B	50-5K	2-5	X, Y Y1	M, N, N1		25-45	A	50-5K	3-8	Y Y1	N, N1	
	10-25	B	50-5K	3-6	X, Y, Z	M, N, O1		.5-10	A1	50-5K	2-5	X, Y	M, N	
	25-30	B	50-100	3-8	Y, Z	N, O1		10-25	A1	50-5K	3-6	X, Y	M, N	
	.5-10	B1	50-5K	2-5	X, Y, Z	M, N, O1		25-40	A1	50-5K	3-8	Y, Z	N, O1	
	10-25	B1	50-5K	3-6	Y, Z	N, O1		.5-10	B	50-5K	2-5	X, Y	M, N	
.5-10	C	50-2K	2-5	X, Y, Z	M, N, O1	10-25		B	50-5K	3-6	X, Y, Z	M, N, O1		
10-15	C	50-100	4-8	Y, Z	N, O1	.5-10		B1	50-5K	2-5	X, Y, Z	M, N, O1		
.5-10	D	50-100	3-7	Y, Z	N, O1	10-25		B1	50-5K	3-6	Y, Z	N, O1		
.5-6	E	50-100	4-8	Z	P1	.5-10	C	50-2K	2-5	X, Y, Z	M, N, O1			

Custom Bandpass Filters - Series BP

Center Frequency (Fo)	Q Range $F_o / 3dB BW$	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal	Center Frequency (Fo)	Q Range $F_o / 3dB BW$	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Size Epoxy	Size Metal
750 KHz (cont'd)	.5-5	D	50-100	3-7	Y, Z	N, O1	3 MHz	40-50	AO	50	10 Max.	—	N, O
	.5-3	E	50-100	4-8	Z	P1		.5-10	A	50-500	1-4	—	K3, M, N
1 MHz	40-50	AO	50-100	10 Max.	—	N, O		10-25	A	50-200	2-5	—	M, N, O
	.5-10	A	50-5K	1-4	W, X, X1	K3, M, M1		25-40	A	50-100	3-8	—	M, N, O
	10-25	A	50-500	2-5	W, X, Y	K3, M, M1		.5-10	A1	50-500	1-4	—	K3, M, N
	25-40	A	50-200	3-8	—	M, N, O		10-25	A1	50-200	2-5	—	M, N, O
	.5-10	A1	50-2K	1-4	X, Y	M, N		25-35	A1	50-100	3-7	—	M, N, O
	10-25	A1	50-200	2-5	X, Y	M, N		.5-10	B	50-500	2-5	—	M, N, O
	25-40	A1	50-100	3-7	—	M, N		10-20	B	50-200	3-8	—	N, O, P
	.5-10	B	50-5K	2-5	X, Y	M, N		.5-10	B1	50-200	2-5	—	M, N, O
	10-25	B	50-100	3-8	—	M, N, O		10-15	B1	50-100	3-6	—	N, O, P
	.5-10	B1	50-5K	2-5	X, Y	M, N		.5-5	C	50-100	2-5	—	M, N, O
	10-25	B1	50-100	3-8	—	M, N, O		5-10	C	50-100	3-6	—	N, O, P
	.5-5	C	50-100	2-5	—	M, N, O		.5-8	D	50	3-8	—	P, P1
	5-10	C	50-100	3-6	—	O, P, P1		.5-5	E	50	3-7	—	P, P1
	.5-10	D	50	3-7	—	P1		4 MHz	35-50	AO	50	10 Max.	—
.5-5	E	50	3-7	—	P1	.5-10			A	50-200	1-4	—	K3, M, N
40-50	AO	50	10 Max.	—	N, O	10-25			A	50-100	2-5	—	M, N, O
.5-10	A	50-500	1-4	—	K3, M, N	25-35			A	50	3-8	—	M, N, O
10-25	A	50-200	2-5	—	M, N, O	.5-10			A1	50-200	1-4	—	K3, M, N
25-40	A	50-100	3-8	—	M, N, O	10-25	A1		50-100	2-5	—	M, N, O	
.5-10	A1	50-500	1-4	—	K3, M, N	25-30	A1		50	3-7	—	M, N, O	
10-25	A1	50-200	2-5	—	M, N, O	.5-10	B		50-100	2-5	—	M, N, O	
25-40	A1	50-100	3-7	—	M, N, O	10-20	B		50	3-8	—	N, O, P	
.5-10	B	50-500	2-5	—	M, N, O	.5-10	B1		50-100	2-5	—	M, N, O	
10-25	B	50-100	3-8	—	N, O, P	10-15	B1		50	3-8	—	N, O, P	
.5-10	B1	50-500	2-5	—	M, N, O	.5-5	C		50	2-5	—	M, N, O	
10-20	B1	50-100	3-8	—	N, O, P	5-10	C		50	3-6	—	N, O, P	
.5-5	C	50-100	2-5	—	M, N, O	.5-5	D		50	3-7	—	P, P1	
5-10	C	50-100	3-6	—	N, O, P	.5-3	E		50	3-7	—	P, P1	
.5-10	D	50	3-8	—	P, P1	5 MHz	35-50		AO	50	10 Max.	—	N, O
.5-5	E	50	3-7	—	P, P1		.5-10		A	50-100	1-4	—	K3, M, N
40-50	AO	50	10 Max.	—	N, O		10-25		A	50	2-5	—	M, N, O
.5-10	A	50-500	1-4	—	K3, M, N		25-35	A	50	3-8	—	M, N, O	
10-25	A	50-200	2-5	—	M, N, O		.5-10	A1	50-100	1-4	—	L, M, N	
25-40	A	50-100	3-8	—	M, N, O		10-25	A1	50	2-5	—	M, N, O	
.5-10	A1	50-500	1-4	—	K3, M, N		25-30	A1	50	3-7	—	M, N, O	
10-25	A1	50-200	2-5	—	M, N, O		.5-10	B	50-100	2-5	—	M, N, O	
25-40	A1	50-100	3-7	—	M, N, O		10-20	B	50	3-8	—	N, O, P	
.5-10	B	50-500	2-5	—	M, N, O		.5-10	B1	50-100	2-5	—	M, N, O	
10-25	B	50-100	3-8	—	N, O, P		10-15	B1	50	3-8	—	N, O, P	
.5-10	B1	50-500	2-5	—	M, N, O		.5-5	C	50	2-5	—	M, N, O	
10-20	B1	50-100	3-8	—	N, O, P		5-10	C	50	3-6	—	N, O, P	
.5-5	C	50-100	2-5	—	M, N, O		.5-5	D	50	3-7	—	P, P1	
5-10	C	50-100	3-6	—	N, O, P	.5-3	E	50	3-7	—	P, P1		