

# ALLEN AVIONICS, INC.

## Bandpass Custom Built LC Filters - 7.5 MHz to 200 MHz

Printer

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:** 7.5 MHz to 200 MHz
- ▶ **Impedance Range:** 50 Ohms to 100 Ohms
- ▶ **Q Range:** .5 to 50
- ▶ **Construction:** 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 7.5 MHz to 200 MHz.  
Interpolation between tabulated Center Frequencies and Bandwidth is allowable.**

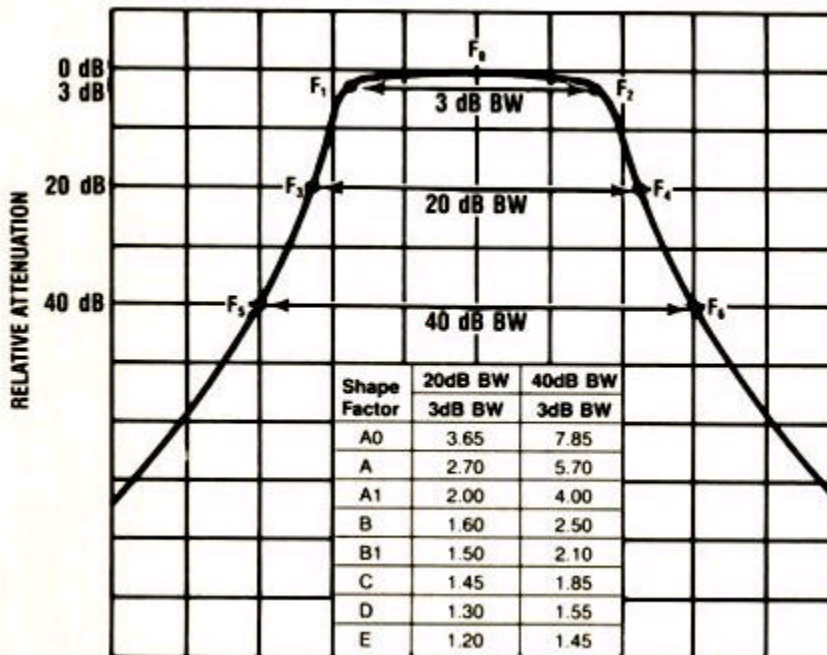
The size package that each Bandpass filter requires is a function of impedance, shape factor and type of termination or connector that is needed. The sizes listed will provide you with the minimum and maximum size for the combination of shape factor and impedance. Allen Avionics has hundreds of filter 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



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

**Custom Bandpass Filters - Series BP**

1dB Maximum Ripple						1dB Maximum Ripple						
Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size	Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size	
<b>7.5MHz</b>	35-50	AO	50	10 Max.	N, O	<b>80MHz</b>	25-50	AO	50	10 Max.	N, O	
	.5-10	A	50-100	1-4	K3, M, N		.5-10	A	50	1-4	M, N, O	
	10-25	A	50	2-5	M, N, O		10-25	A	50	3-8	N, O, P	
	25-35	A	50	3-8	M, N, O		.5-10	A1	50	1-4	N, O, P	
	.5-10	A1	50-100	1-4	K3, M, N		10-15	A1	50	3-8	N, O, P	
	10-25	A1	50	2-5	M, N, O		.5-10	B	50	2-5	N, O, P	
	25-35	A1	50	3-8	M, N, O		10-15	B	50	3-8	O, P, P1	
	.5-10	B	50-75	3-5	M, N, O		.5-12	B1	50	2-5	O, P, P1	
	10-15	B	50	3-6	N, O, P		.5-5	C	50	2-5	P, P1	
	.5-10	B1	50	2-5	M, N, O		.5-3	D	50	3-7	P, P1	
	10-12	B1	50	3-6	O, P, P1		<b>90MHz</b>	25-50	AO	50	10 Max.	N, O
	.5-5	C	50-75	2-5	M, N, O			.5-10	A	50	1-4	M, N, O
	5-10	C	50	3-6	N, O, P			10-25	A	50	3-8	N, O, P
	.5-5	D	50	3-7	P, P1			.5-10	A1	50	1-4	N, O, P
	.5-3	E	50	3-7	P, P1			10-15	A1	50	3-8	N, O, P
<b>10MHz</b>	35-50	AO	50	10 Max.	N, O	.5-10		B	50	2-6	O, P, P1	
	.5-10	A	50-75	1-4	M, N, O	.5-8		B1	50	2-6	O, P, P1	
	10-25	A	50	2-5	M, N, O	.5-6		C	50	2-6	P, P1	
	25-35	A	50	3-8	M, N, O	.5-3		D	50	3-7	P, P1	
	.5-10	A1	50-75	1-4	N, O, P	<b>100 MHz</b>		25-50	AO	50	10 Max.	N, O
	10-25	A1	50	2-5	N, O, P			.5-10	A	50	1-4	N, O, P
	25-35	A1	50	3-8	N, O, P			10-15	A	50	2-6	N, O, P
	.5-10	B	50	2-5	N, O, P			15-25	A	50	3-8	O, P, P1
	10-25	B	50	3-8	O, P, P1			.5-10	A1	50	2-6	O, P, P1
	.5-10	B1	50	2-5	O, P, P1			10-15	A1	50	3-8	O, P, P1
	10-20	B1	50	3-8	O, P, P1		.5-10	B	50	2-6	O, P, P1	
	.5-10	C	50	2-5	O, P, P1		10-12	B	50	3-8	P, P1	
	10-15	C	50	3-8	P, P1		.5-10	B1	50	2-6	O, P, P1	
	.5-10	D	50	3-7	P, P1		.5-8	C	50	2-6	P, P1	
	.5-6	E	50	3-7	P, P1		.5-3	D	50	3-7	P, P1	
<b>15MHz</b>	35-50	AO	50	10 Max.	N, O		.5-3	E	50	3-7	P, P1	
	.5-10	A	50	1-4	M, N, O		<b>110MHz</b>	18-45	AO	50	10 Max.	N, O
	10-25	A	50	2-5	M, N, O			.5-10	A	50	1-5	M, N, O
	25-35	A	50	3-8	M, N, O			10-18	A	50	3-8	N, O, P
	.5-10	A1	50	1-4	M, N, O	.5-10		A1	50	1-5	O, P, P1	
	10-25	A1	50	2-5	N, O, P	10-12		A1	50	3-8	O, R P1	
	25-35	A1	50	3-8	N, O, P	.5-10		B	50	2-6	O, R P1	
	.5-10	B	50	2-5	N, O, P	.5-8		B1	50	2-6	O, R P1	
	10-20	B	50	3-6	N, O, P	.5-7		C	50	2-6	P, P1	
	.5-10	B1	50	2-5	N, O, P	.5-3		D	50	2-6	R P1	
	10-15	B1	50	3-7	O, P, P1							
	.5-10	C	50	2-5	P, P1							
	.5-8	D	50	3-7	P, P1							
	.5-5	E	50	3-7	P, P1							

Custom Bandpass Filters - Series BP

1dB Maximum Ripple					
Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size
20MHz	35-50	AO	50	10 Max.	N, 0
	.5-10	A	50	1-4	M, N, 0
	10-25	A	50	2-5	M, N, 0
	25-35	A	50	3-8	M, N, O
	.5-10	A1	50	1-4	M, N, O
	10-25	A1	50	2-5	N, O, P
	25-35	A1	50	3-8	N, O, P
	.5-10	B	50	2-5	N, O, P
	10-20	B	50	3-6	N, O, P
	.5-10	B1	50	2-5	N, O, P
	10-15	B1	50	3-6	O, P, P1
	.5-12	C	50	2-5	P, P1
	.5-8	D	50	3-7	P, P1
	.5-5	E	50	3-7	P, P1
	35-50	AO	50	10 Max.	N, 0
.5-10	A	50	2-5	M, N, 0	
10-35	A	50	3-8	M, N, O	
.5-10	A1	50	2-5	M, N, 0	
10-30	A1	50	3-8	N, O, P	
.5-10	B	50	2-6	N, O, P	
10-20	B	50	3-8	N, O, P	
.5-10	B1	50	2-6	N, O, P	
10-15	B1	50	3-8	O, P, P1	
.5-12	C	50	2-6	P, P1	
.5-7	D	50	3-7	P, P1	
.5-3	E	50	3-7	P, P1	
40-50	AO	50	10 Max.	N, 0	
.5-10	A	50	2-5	M, N, O	
10-40	A	50	3-8	M, N, O	
.5-10	A1	50	2-5	M, N, 0	
10-30	A1	50	3-8	N, O, P	
.5-10	B	50	2-6	N, O, P	
10-15	B	50	3-8	N, O, P	
.5-10	B1	50	2-6	O, P, P1	
10-12	B1	50	3-8	O, P, P1	
.5-8	C	50	3-7	P, P1	
.5-3	D	50	3-7	P, P1	
.5-10	A	50	2-5	M, N, 0	
10-35	A	50	3-8	M, N, 0	
.5-10	A1	50	2-5	M, N, 0	
10-25	A1	50	3-8	N, O, P	
.5-10	B	50	2-6	N, O, P	
10-15	B	50	3-8	N, O, P	
.5-10	B1	50	2-6	O, P, P1	
10-12	B1	50	3-8	O, P, P1	
.5-8	C	50	3-8	P, P1	
.5-3	D	50	3-7	P, P1	

1dB Maximum Ripple					
Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size
120MHz	15-40	AO	50	10 Max.	N, O
	.5-10	A	50	1-5	M, N, 0
	10-15	A	50	3-8	N, O, P
	.5-10	A1	50	1-5	O, P, P1
	.5-8	B	50	2-6	O, P, P1
	.5-6	B'	50	2-6	O, P, P1
	.5-5	C	50	2-6	P, P1
	.5-3	D	50	3-7	R P1
	.5-3	E	50	3-7	P, P1
130MHz	12-35	AO	50	10 Max.	N, O
	.5-10	A	50	1-5	M, N, O
	10-12	A	50	3-8	N, O, P
	.5-7	A1	50	1-5	O, P, P1
	.5-6	B	50	2-6	O, P, P1
	.5-5	B1	50	2-6	O, P, P1
	.5-4	C	50	2-6	P, P1
	.5-3	D	50	3-7	P, P1
	.5-3	E	50	3-7	P, P1
140MHz	10-25	AO	50	10 Max.	N, O
	.5-5	A	50	1-5	M, N, O
	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-8	A1	50	3-8	O, P, P1
	.5-5	B	50	2-7	O, P, P1
	.5-4	B1	50	2-7	O, P, P1
	.5-4	C	50	2-8	O, P, P1
	.5-3	D	50	3-8	P, P1
150MHz	10-20	AO	50	10 Max.	N, O
	.5-5	A	50	2-6	M, N, O
	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	2-6	N, O, P
	5-8	A1	50	3-8	N, O, P
	.5-6	B	50	2-7	N, O, P
	.5-5	B1	50	2-7	O, P, P1
	.5-4	C	50	2-8	P, P1
	.5-3	D	50	3-8	P, P1
160MHz	10-15	AO	50	10 Max.	N, O
	.5-5	A	50	1-5	M, N, O
	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-9	A1	50	3-8	O, P, P1
	.5-6	B	50	2-7	O, R P1
	.5-5	B1	50	2-7	O, P, P1
	.5-4	C	50	2-8	O, P, P1
	.5-3	E	50	3-8	R P1

**Custom Bandpass Filters - Series BP**

1dB Maximum Ripple					
Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size
50MHz	35-50	AO	50	10 Max.	N, O
	.5-10	A	50	1-4	M, N, O
	10-35	A	50	3-8	M, N, O
	.5-10	A1	50	1-4	M, N, O
	10-25	A1	50	3-8	N, O, P
	.5-10	B	50	2-5	N, O, P
	10-20	B	50	3-8	N, O, P
	.5-10	B1	50	2-5	O, P, P1
	10-15	B1	50	3-8	O, P, P1
	.5-10	C	50	3-7	P, P1
.5-3	D	50	3-7	P, P1	
60MHz	35-50	AO	50	10 Max.	N, O
	.5-10	A	50	1-4	M, N, O
	10-15	A	50	2-6	N, O, P
	15-35	A	50	3-8	N, O, P
	.5-10	A1	50	1-4	N, O, P
	10-15	A1	50	2-6	N, O, P
	15-25	A1	50	3-8	N, O, P
	.5-10	B	50	2-5	O, P, P1
	10-20	B	50	3-6	O, P, P1
	.5-10	B1	50	2-6	O, P, P1
10-15	B1	50	3-7	O, P, P1	
.5-8	C	50	2-7	P, P1	
.5-3	D	50	3-7	P, P1	
70MHz	35-50	AO	50	10 Max.	N, O
	.5-10	A	50	1-4	M, N, O
	10-35	A	50	3-8	N, O, P
	.5-10	A1	50	1-4	N, O, P
	10-25	A1	50	3-8	N, O, P
	.5-10	B	50	2-5	N, O, P
	10-20	B	50	3-8	O, P, P1
	.5-10	B1	50	2-5	O, P, P1
	10-15	B1	50	3-8	P, P1
	.5-6	C	50	2-5	P, P1
.5-3	D	50	3-7	P, P1	

1dB Maximum Ripple					
Center Frequency (F <sub>o</sub> )	Q Range F <sub>o</sub> / 3dB BW	Shape Factor	Impedance Range (Ohms)	Insertion Loss (dB)	Metal Can Size
170MHz	.5-5	A	50	1-5	M, N, O
	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-8	A1	50	3-8	O, P, P1
	.5-5	B	50	2-7	O, R P1
	.5-4	B1	50	2-7	O, R P1
	.5-3	C	50	2-8	O, P, P1
	.5-5	A	50	1-5	M, N, O
180MHz	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-8	A1	50	3-8	O, P, P1
	.5-5	B	50	2-7	O, P, P1
	.5-4	B1	50	2-7	O, R P1
	.5-3	C	50	2-8	O, P, P1
190MHz	.5-5	A	50	1-5	M, N, O
	5-10	A	50	3-8	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-7	A1	50	3-8	O, R P1
	.5-5	B	50	2-7	O, P, P1
	.5-4	B1	50	2-7	O, P, P1
	.5-3	C	50	2-8	O, P, P1
	.5-5	A	50	1-5	M, N, O
200 MHz	5-10	A	50	30 -o	M, N, O
	.5-5	A1	50	1-4	N, O, P
	5-6	A1	50	3-8	O, R P1
	.5-5	B	50	2-7	O, P, P1
	.5-4	B1	50	2-7	O, P, P1
	.5-3	C	50	2-8	O, P, P1

**Allen Avionics, Inc.**

224 East Second Street, Mineola, NY 11501

Phone: (516) 248-8080 Fax: (516) 747-6724

E-Mail: [Info@AllenAvionics.com](mailto:Info@AllenAvionics.com)