◆ Features:

- Economical Design Yields High Performance Results
- 100 MHz to 6000 MHz Frequency Range*
- 3 dB BW; 4-40%
- Design Available in 2-8 Sections
- 0.05 dB Chebychev Design Response
- Ruggedized Package Designs

◆ Specifications:

Model	Diameter (Inches/mm)	Frequency (MHz)	3 dB % BW	VSWR	Average Power (Watts)	Impedance (Ohms)	No. of Sections	Shock	Vibration	Temp.	Relative Humidity
B250	.25/6.35	1000-6000	4-40	1.5:1	2	50	2-8	20 G's, 1/2 Sine, 11 Ms	10 G's, 10 Hz-2000 Hz	-55 to +85 °C	0-95%
B120**	.50/12.7	100-2500	4-40	1.5:1	18						
B340	.75/19.05	100-1000	4-40	1.5:1	40						
B110	1.25/31.7	70-600*	4-40	1.5:1	200						

** Model B120 fits most applications and is the most cost effective choice.

◆ Attenuation:

The following curves are used in determining the out-of-band attenuation. The curves show minimum stopband in dB as multiples of the 3 dB bandwidth.

To determine which series of curves to use, first calculate the percentage 3 dB bandwidth from the following formula:

$$\% \text{ BW} = \left(\frac{\text{3 dB BW}}{\text{Center Frequency}}\right) \times 100$$

To determine the number of bandwidths (3 dB) from center frequency, use the following formula:

$$\text{No. \% BW} = \frac{\text{Reject Frequency-Center Frequency}}{\text{3 dB BW}}$$

Example:

Center Frequency = 300 MHz
3 db Bandwidth = 50 MHz
Number of Sections = 6

Determine attenuation at 200 MHz and 400 MHz:
1. Calculate % BW = $\frac{50 \times 100}{300}$ = 17%
2. -3 dB BW = $\frac{200-300}{50}$ = -2 BW's
3. +3 dB BW = $\frac{400-300}{50}$ = +2 BW's

Referring to the curve for a 15%-30% bandwidth, a 6 section response -2 BW yields 64 dB, and +2 BW yields greater than 70 dB.

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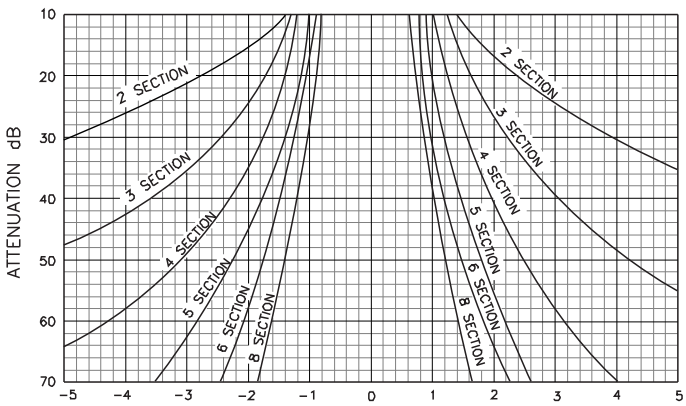
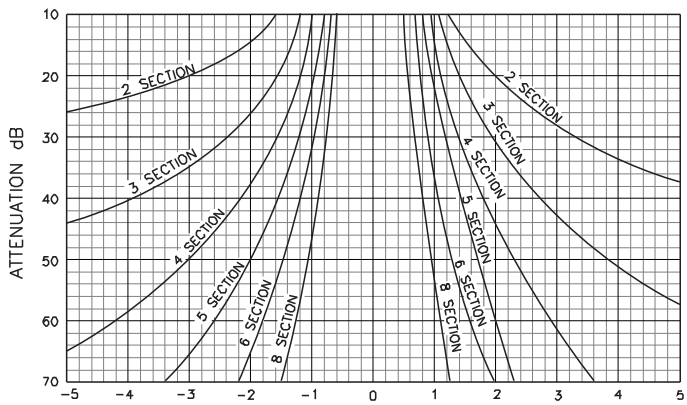
Bandpass Filters — B Series

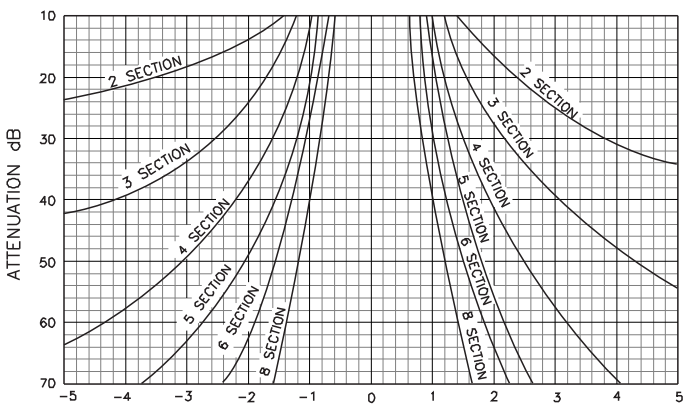
For Bandwidths 4 to 5%



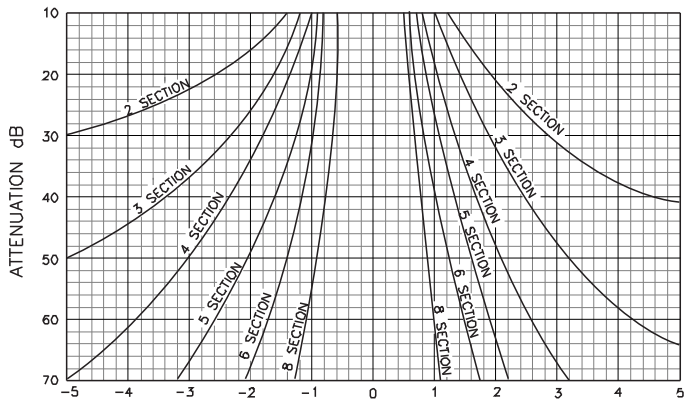
For Bandwidths 15 to 30%



For Bandwidths 5 to 15%



For Bandwidths 30 to 40%



◆ Mechanical/Connectors- See page 42/43.

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◆ Insertion Loss:

The maximum insertion loss at center frequency can be determined by using the following formula:

$$\text{Insertion Loss at Center Frequency} = \left(\frac{(\text{Loss Constant})\ (\text{No. of Sections} + 1/2)}{\%\ 3\ \text{dB BW}}\right) + 0.2$$

Example:
Filter Model = B120
Center Frequency = 500 MHz
3 dB Bandwidth = 80 MHz
Number of Sections = 5

Determine the insertion loss at center frequency:
From the table, the loss constant is shown to be 2.0.

$$\%\ 3\ \text{dB BW} = \frac{(3\ \text{dB BW})\ (100)}{\text{Center Frequency}} = \frac{80 \times 100}{5000} = 16\%$$

By substituting in the formula we find the insertion loss =

$$\left(\frac{(2)\ (5+1/2)}{16}\right) + 0.2 = 0.9\ \text{dB}$$

◆ Loss Constant vs. Frequency vs. Model:

Model	Center Frequency (MHz)						
	100	101 200	201 400	401 1000	1001 2000	2001 4000	4001 6000
B250					3.5	3.0	2.5
B120		3.0	2.5	2.0	1.8	1.6	
B340	2.2	2.0	1.6	1.4	1.2		
B110	1.8	1.6	1.3	1.2			

◆ To Order:

5 B 120 — 500 / T 80 — O / O
1 2 3 4 5 6 7 8

Code	Description
1	Number of Sections
2	B- Bandpass
3	Model 250-.25″- 6.35mm 120-.50″ - 12.7mm 340-.75″ - 19.05mm 110-1.25″ - 25.4mm
4	Center Frequency (MHz)
5	Supplemental Codes (See Page 13)
6	Bandwidth (MHz)
7	Input Connector
8	Output Connector