



NO. OF SECTIONS	2	3	4	5	6 OR MORE
1.5/1 VSWR BW	0.4	0.7	0.8	0.85	0.9
MIN. 3 dB BW					

SPECIFICATIONS	STANDARD	*SPECIAL
ELECTRICAL		
Center Frequency (Fc)	2000 to 9000 MHz	1000 to 12000 MHz
3dB Relative Bandwidth (% of Fc)	3 to 30	2 to 70
Number of Sections Available	3 to 10	2 to 14
Nominal Impedance	50Ω	50Ω
Maximum Insertion Loss	See Curve	See Curve
Maximum VSWR	1.5/1	1.3/1
Attenuation in the Stopband	See Page 40	See Page 40
Maximum Input Power (Average) (Watts to 10,000 ft.)	$\frac{300 \times 3 \text{ dB BW (MHz)}}{(\text{LOSS FACTOR})(F_c \text{ MHz})}$	See Standard
Maximum Input Power (Peak) (Watts to 10,000 ft.)	$\frac{1500 \times 3 \text{ dB BW (MHz)}}{F_c \text{ (MHz)}}$	See Standard
ENVIRONMENTAL		
Shock	5G's	15G's
Vibration	2G's	15G's
Humidity	90% relative	100% relative
Altitude	Unlimited	Unlimited
Temperature Range (Operating)	- 25°C to + 50°C	- 54°C to + 100°C
Temperature (Non-Operating)	- 54°C to + 70°C	- 62°C to + 150°C
MECHANICAL		
Approximate Weight in oz.	1.7 x L x W	1.0 x L x W
Mounting Provisions	See Next Page	Consult Factory
Special Configurations	Consult Factory	Consult Factory

*Contact Lark Applications Engineering

INSERTION LOSS:

The maximum Insertion Loss at center frequency is equal to:

$$LF \times (N + 0.5) + 0.1$$

% 3 dB BW

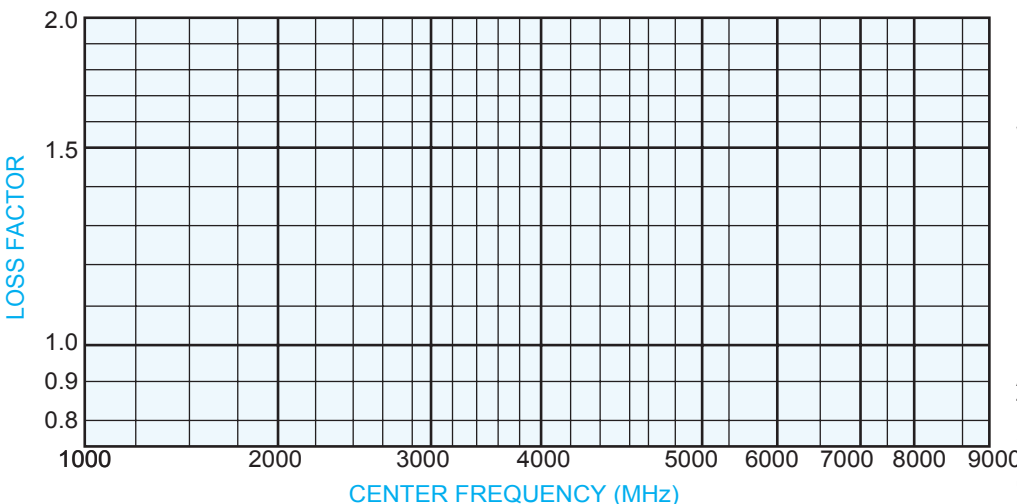
Where:

LF = Loss Factor
N = Number of Sections

% 3dB BW:
 $\frac{3\text{dB BW (MHz)} \times 100}{\text{CENTER FREQUENCY (MHz)}}$

Example:
A 5 section 2B with a center frequency of 5000 MHz and a 3dB BW of 500 MHz would have,

$$\frac{0.8 \times 5.5}{10} = \frac{4.4}{10} = 0.44 + 0.1 = 0.5 \text{ dB}$$



STOPBAND SPECIFICATIONS

The graphs on the following pages define the normal specification limits on attenuation for Lark bandpass filter series 2B, 3B, and 4B. The minimum level of attenuation in dB is shown as a “number of 3dB bandwidths from center frequency”. Since the frequency characteristics vary for differing bandwidths, it is necessary to establish specifications for each bandwidth of filter. The different graphs represent various 3dB percentage bandwidths. Intermediate values should be interpolated.

The 3dB percentage bandwidth is defined as follows:

$$\frac{3\text{dB Bandwidth (MHz)} \times 100}{\text{Center Frequency (MHz)}}$$

The exact relationship is as follows: 1.
$$\frac{3\text{dB Bandwidths From Center Frequency}}{\text{Rejection Frequency} - \text{Center Frequency}} = \frac{(\text{MHz})}{(\text{MHz})}$$

Example:

- Given: 2. Center Frequency = 5000 MHz
 Minimum 3dB Bandwidth = 500 MHz
 Number of Sections = 5

Find: Minimum attenuation levels at 4250 MHz and 5800 MHz.

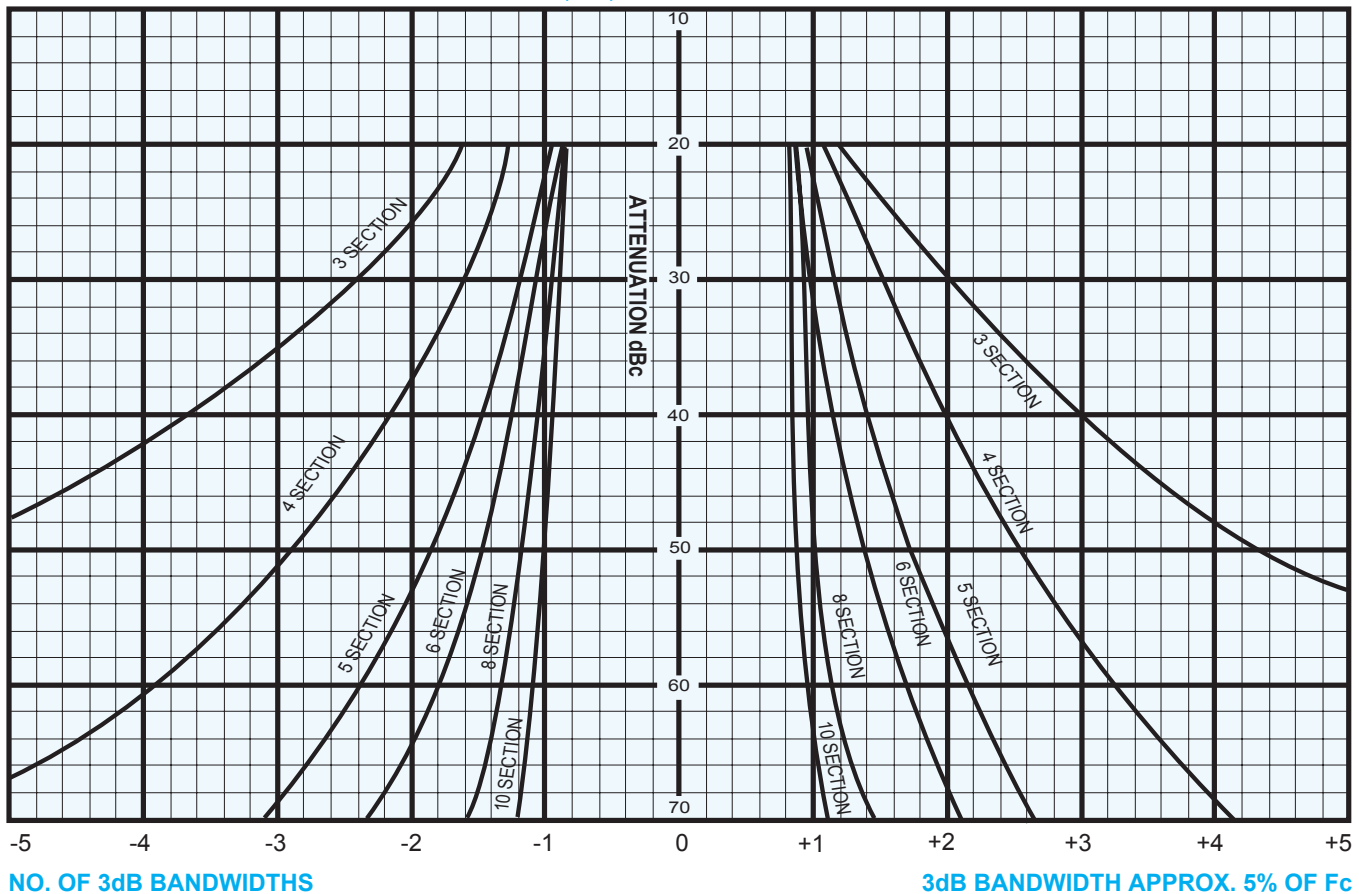
$$3\text{dB BW's from } F_c = \frac{4250 - 5000}{500} = -1.5$$

$$\text{and } \frac{5800 - 5000}{500} = +1.6$$

The answer can be read directly from the 10% graph. Using the 5 section curve at the point -1.5 (4250 MHz) we find the minimum level of attenuation is 40dB. At +1.6 (5800 MHz) the minimum level of attenuation is 50dB.

For special requirements, please contact our Application Engineering Department.

2B, 3B, AND 4B SERIES



2B, 3B, AND 4B SERIES

