



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)	20 to 2000 MHz	10 to 3000 MHz
3dB Relative Bandwidth (% of Fc)	5 to 20	3 to 100
Number of Sections Available	3	2 to 5
Nominal Impedance	50Ω	50 to 100Ω
Maximum Insertion Loss	See Curve	See Curve
Maximum VSWR	1.5/1	1.3/1
Attenuation in the Stopband	See Page 14	See Page 14
Maximum Input Power (Average) (Watts to 10,000 ft.)	2	4
Maximum Input Power (Peak) (Watts to 10,000 ft.)	20	40
ENVIRONMENTAL		
Shock	15G's	75G's
Vibration	5G's	30G'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 Grams	3	3
Mounting Provisions	See Next Page	See Next Page
Special Configurations	See Next Page	See Next Page

*Contact Lark Applications Engineering

INSERTION LOSS:

The maximum Insertion Loss at center frequency is equal to:

$$\frac{LF \times (N + 0.5)}{\% \text{ 3 dB BW}} + 0.2$$

Where:

LF = Loss Factor

N = Number of Sections

% 3dB BW:

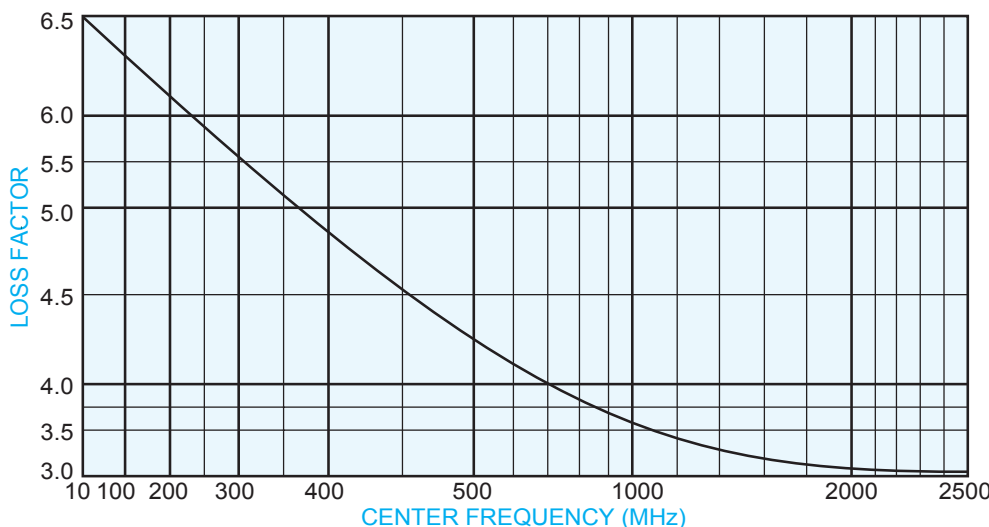
$$\frac{3\text{dB BW (MHz)} \times 100}{\text{CENTER FREQUENCY (MHz)}}$$

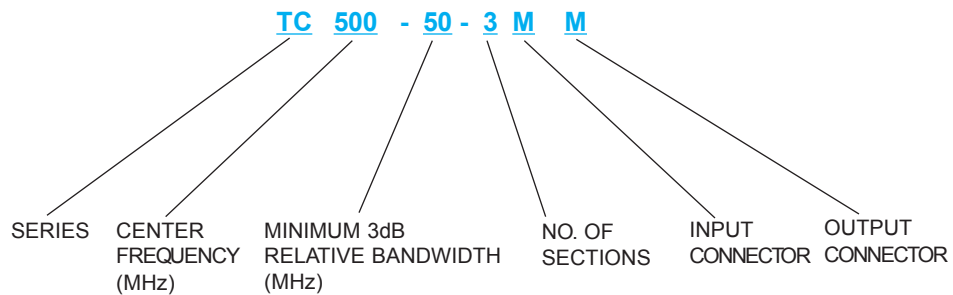
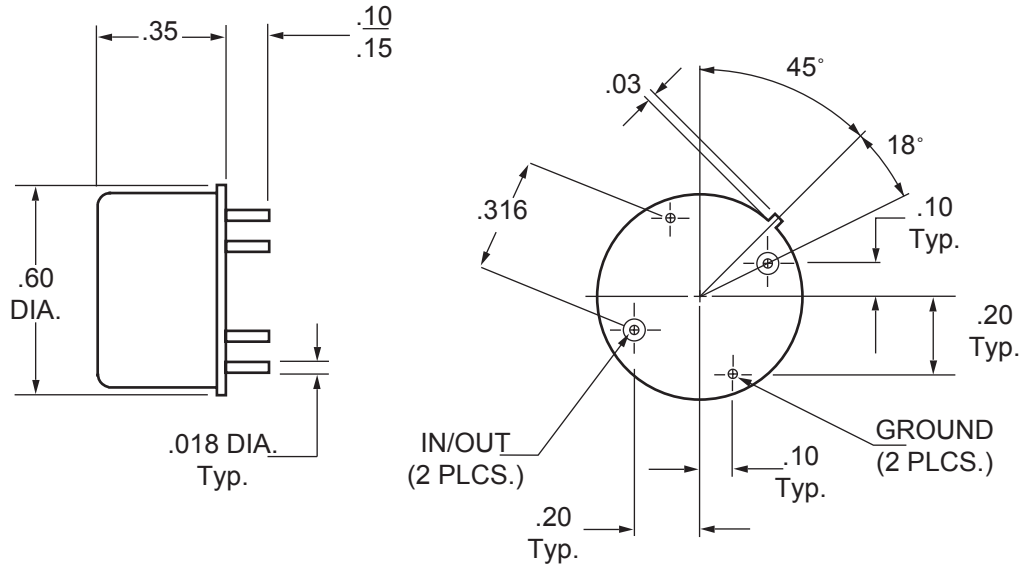
Example:

A 3 section TC with a center frequency of 700 MHz and a 3dB BW of 70 MHz would have,

$$\frac{4.0 \times 3.5}{10} = \frac{14}{10} = 1.4$$

$$1.4 + 0.2 = 1.6 \text{ dB}$$





The size shown is a standard used by Lark to facilitate a low cost, easily reproducible unit. Should you require another size, please submit all of your requirements - both electrical and mechanical. This will enable Lark Engineering to quote the optimum design for your application

STOPBAND ATTENUATION

The graphs on the following pages define the normal specification limits on attenuation for Lark bandpass filter series MC, MS and TC. 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. 3dB Bandwidths

$$\text{From Center Frequency} = \frac{\text{Rejection Frequency (MHz)} - \text{Center Frequency (MHz)}}{3\text{dB Bandwidth (MHz)}}$$

Example:

Given:

- Center Frequency = 500 MHz
Minimum 3dB Bandwidth = 50 MHz
Number of Sections = 5

Find: Minimum attenuation levels at 425 MHz and 585 MHz.

$$3\text{dB BW's from } F_c = \frac{425 - 500}{50} = -1.5$$

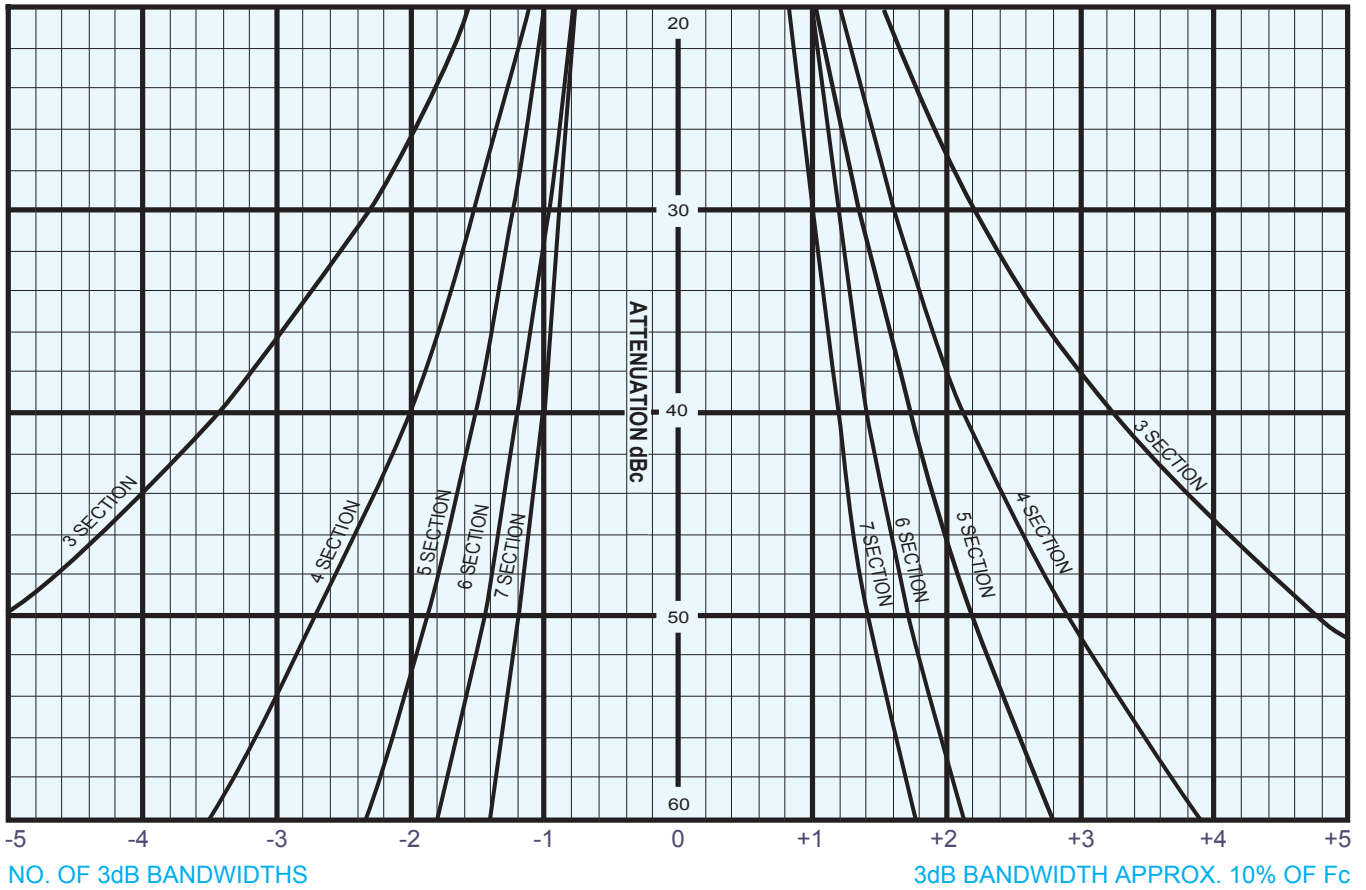
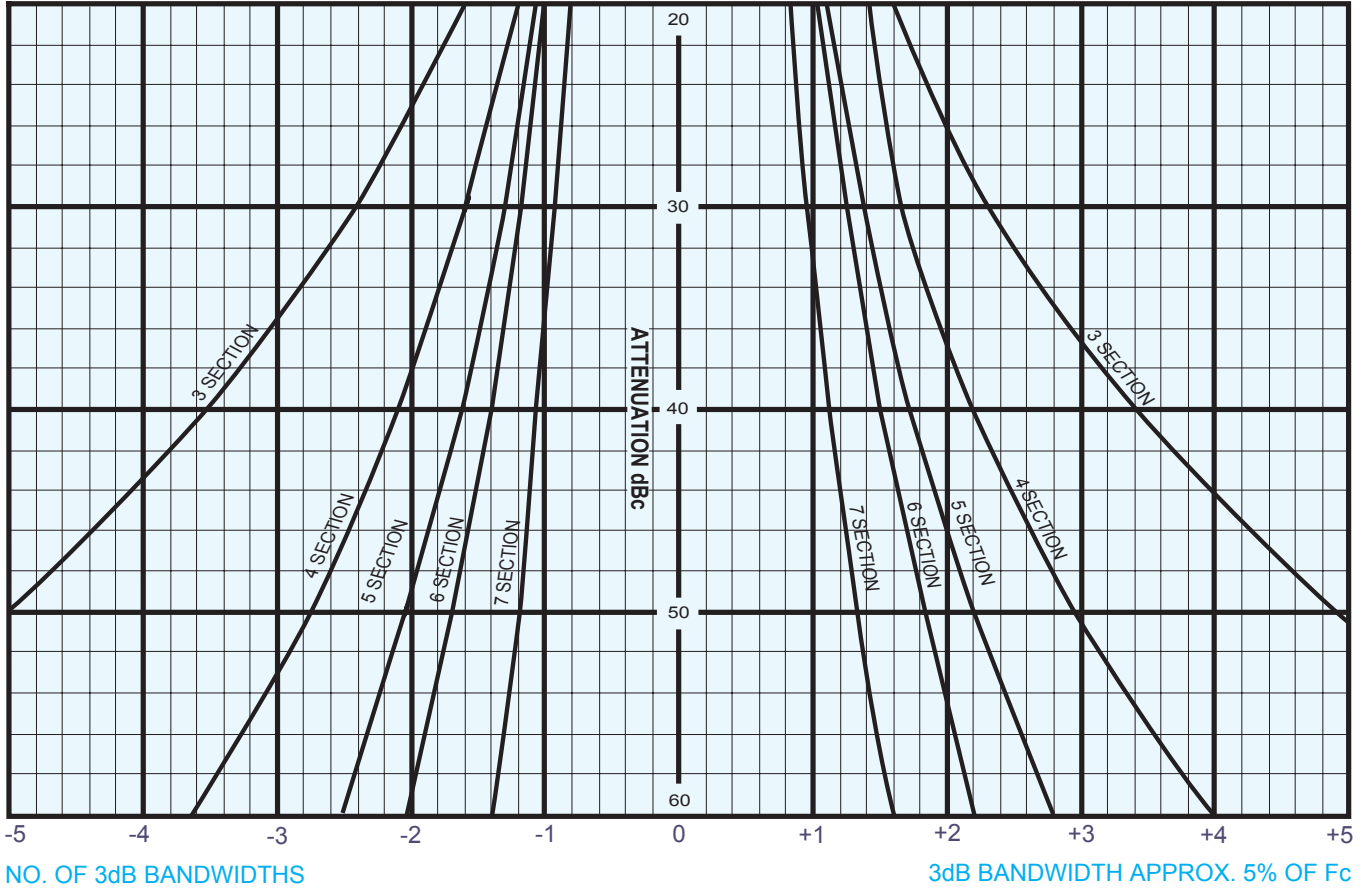
$$\text{and } \frac{585 - 500}{50} = +1.7$$

The answer can be read directly from the 10% graph. Using the 5 section curve at the point -1.5 (425 MHz) we find the minimum level of attenuation is 40dB. At +1.7 (585 MHz) the minimum level of attenuation is 39dB.

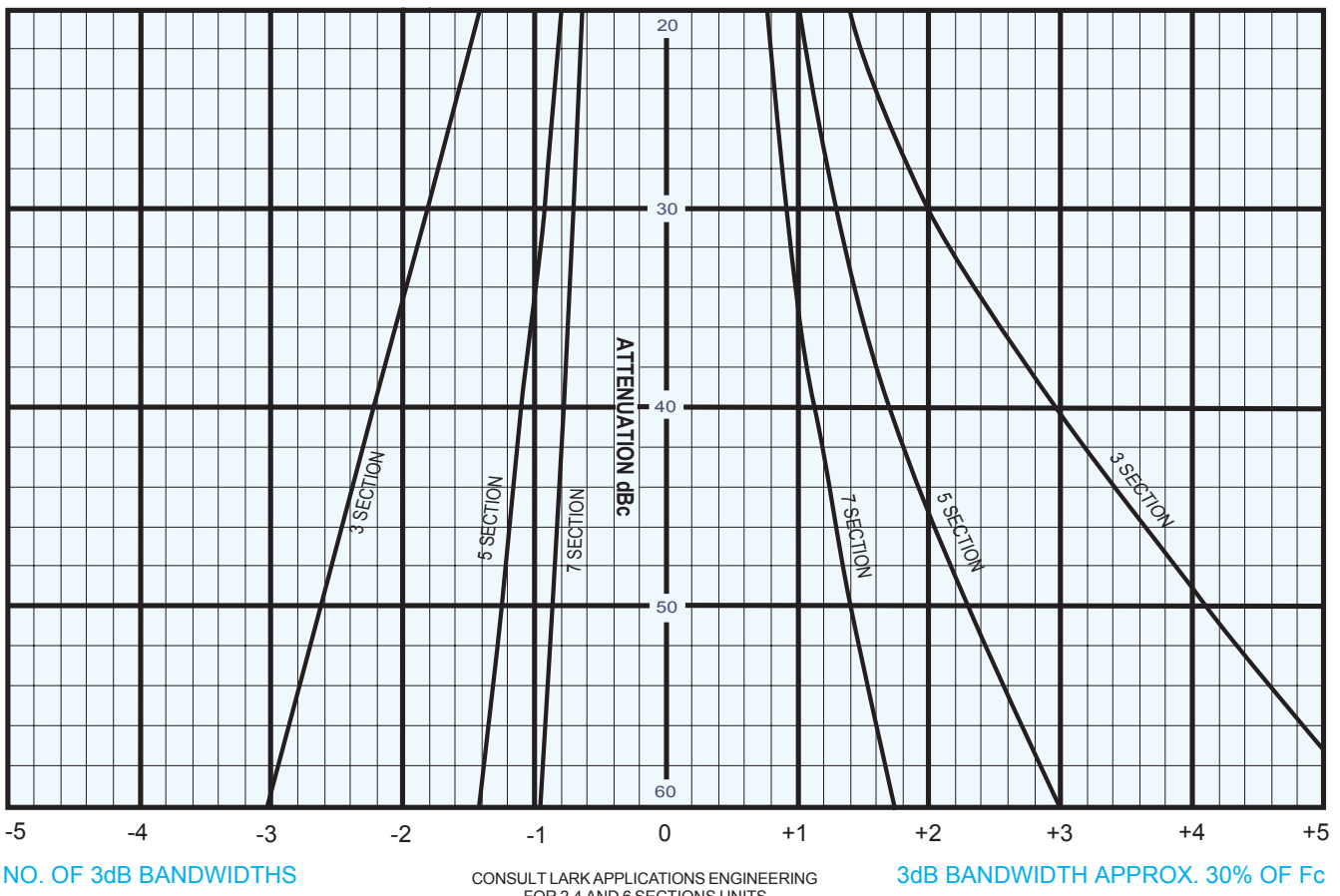
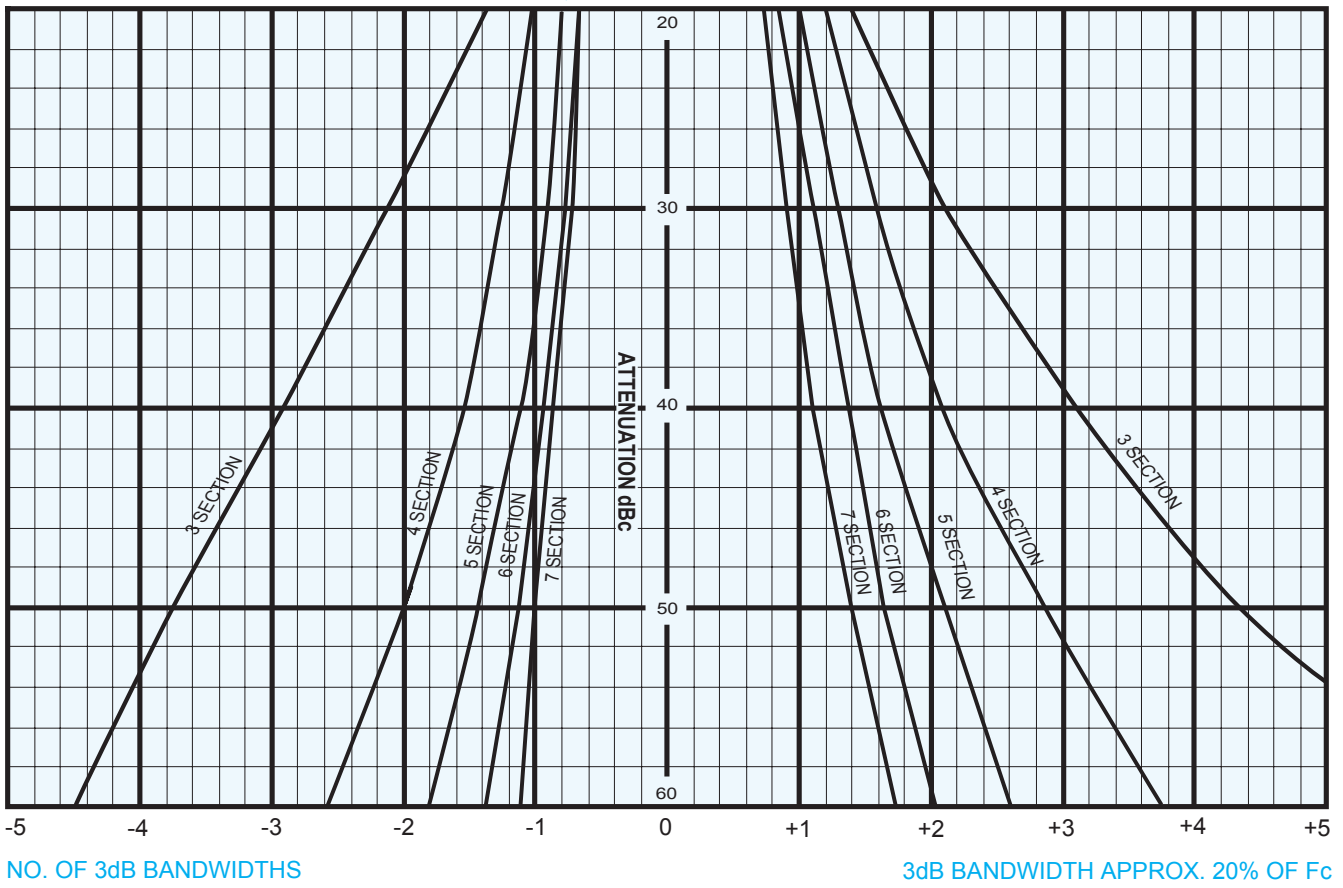
NOTE: The attenuation curves shown for the “MC”, “MS” and “TC” series are for our standard designs. Other topologies may be utilized yielding different attenuation characteristics.

For special requirements, please contact our Application Engineering Department.

MC, MS AND TC SERIES



MC, MS AND TC SERIES



CONSULT LARK APPLICATIONS ENGINEERING FOR 2,4 AND 6 SECTIONS UNITS