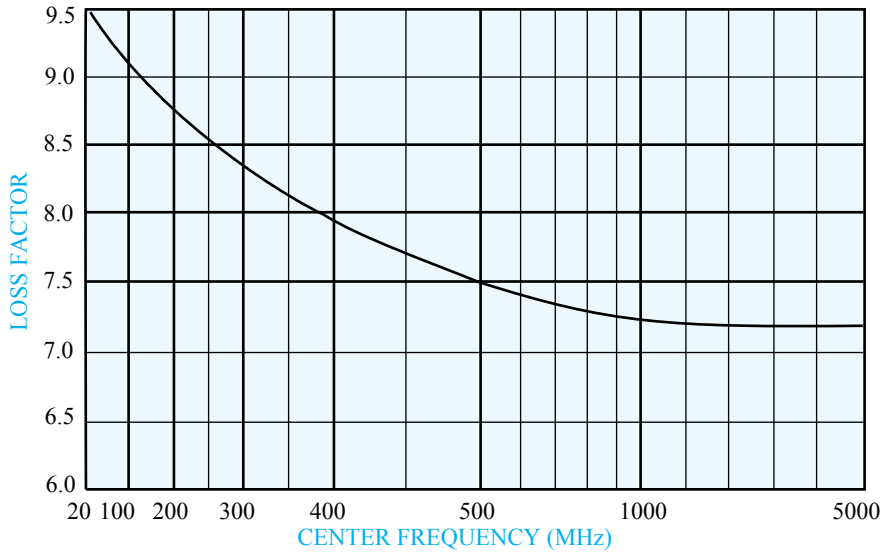

| NO. OF SECTIONS | 2 | 3 | 4 | 5 | 6 OR MORE |
|---|---|---|---|---|---|
| 1.5/1 VSWR BW MIN. 3 dB BW | 0.4 | 0.7 | 0.8 | 0.85 | 0.9 |

| SPECIFICATIONS | STANDARD |
|---|---|
| **ELECTRICAL** | |
| Center Frequency (Fc) | 20 to 5000 MHz |
| 3dB Relative Bandwidth (% of Fc) | 10 to 60 |
| Number of Sections Available | 3 to 7 |
| Nominal Impedance | 50Ω |
| Maximum Insertion Loss | See Curve |
| Maximum VSWR | 1.5/1 |
| Attenuation in the Stopband | See Page 16 |
| Maximum Input Power (Average) (Watts to 10,000 ft.) | 1 |
| Maximum Input Power (Peak) (Watts to 10,000 ft.) | 5 |
| **ENVIRONMENTAL** | |
| Shock | 20 G's |
| Vibration | 10 G's |
| Humidity | 95% Relative |
| Altitude | Unlimited |
| Temperature Range (Operating) | - 40°C to + 85°C |
| Temperature (Non-Operating) | - 65°C to + 125°C |
| **MECHANICAL** | |
| Mounting Provisions | See Next Page |

*Contact Lark Engineering




**INSERTION LOSS:**

The maximum Insertion Loss at center frequency is equal to:

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

Where:

LF = Loss Factor

N = Number of Sections

% 3dB BW:

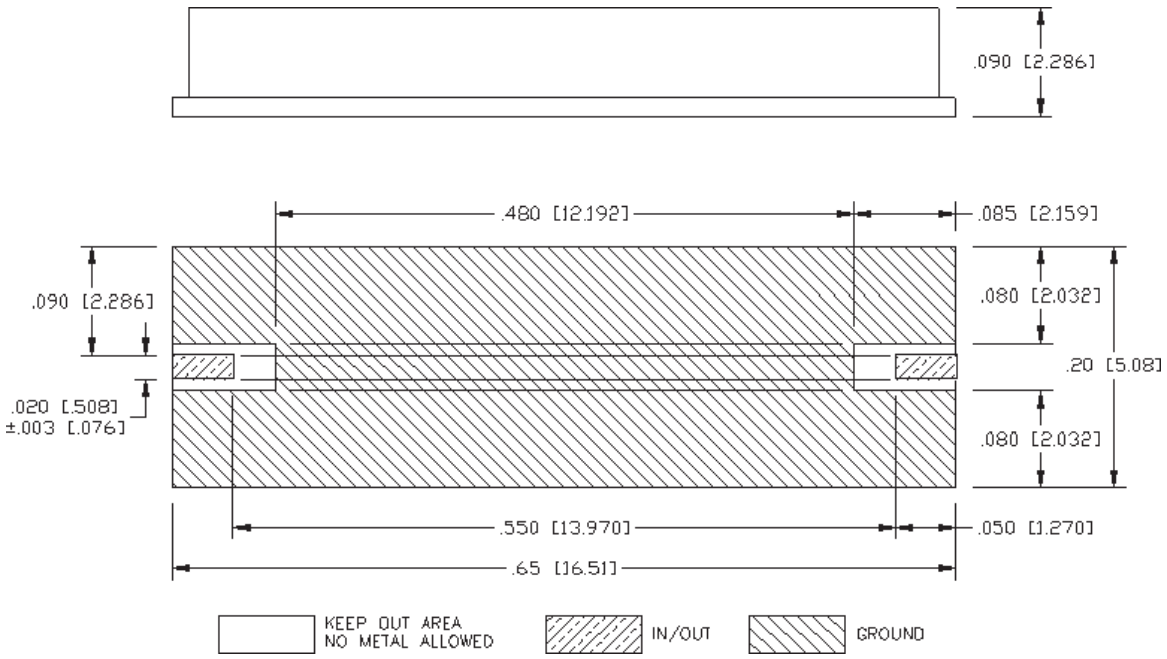
$$\frac{3dB\ BW\ (MHz) \times 100}{CENTER\ FREQUENCY\ (MHz)}$$

Example:

A 3 section MS with a center frequency of 500 MHz and a 3dB BW of 50 MHz would be:

$$\frac{7.5 \times 3.5}{10} = \frac{26}{10} = 2.6$$

2.6 + 0.2 = 2.8 dB




LAYOUT FOR PRINTED
CIRCUIT DESIGN

The size shown is a standard used by Lark to facilitate low cost, easily reproduced units. Should you require another size, please submit all of your requirements, both electrical and mechanical, to Lark Engineering. This will enable Lark 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's MC and MS bandpass filter series. 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. The different graphs represent various 3dB percentage bandwidths. Intermediate values should be interpolated. The 3dB percentage bandwidth is defined as follows:

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

The exact relationship is as follows:

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

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.

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

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

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" and "MS" series are for our standard designs. Other topologies may be utilized yielding different attenuation characteristics.

For special requirements, please contact our Engineering Department.

MC AND MS SERIES