

# MM Series

## Interdigital Bandpass Filters

Microwave Filter Company's MM series of Interdigital filters offer superior performance in a small package for medium bandwidth applications



### FEATURES:

- Available frequency range: 300 MHz to 26.5 GHz
- Low-profile package
- Wide range of 3 dB bandwidths (10-70%)
- 2-18 section designs are standard
- Call the factory for custom designs

### SPECIFICATIONS

Model No.	Frequency (GHz)	3 dB BW (percent)	VSWR typical	No. of Sections
MM10	0.3 to 1.5	10-70	1.5:1	2-18
MM20	1.5 to 6	10-70	1.5:1	2-18
MM30	4 to 10	10-70	1.5:1	2-18
MM40	8 to 18	10-70	1.5:1	2-18
MM50	18 to 26.5	10-70	1.5:1	2-18

### MODEL DESIGNATION

Code	Description
1	Number of Sections
2	Model Number
3	Center Frequency (GHz)
4	3 dB Bandwidth (MHz)
5	Connector Code (Input/Output)

### SAMPLE

<u>5</u>	<u>MM30-</u>	<u>5.0/</u>	<u>1800-</u>	<u>NF/NF</u>
1	2	3	4	5

### CONNECTOR CODE CHART

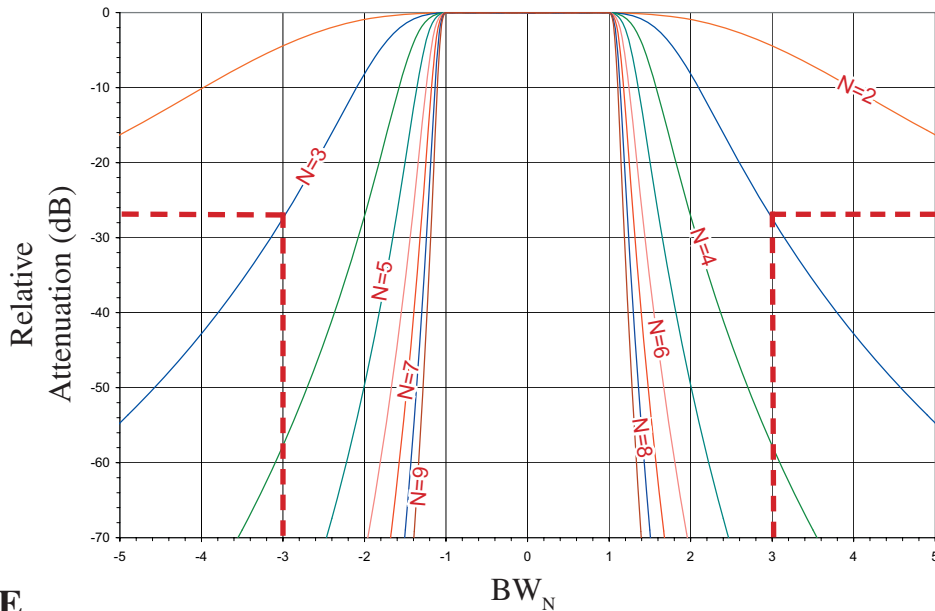
Connector Style	Connector Code	Style
"N" Female	NF	1
"N" Male	NM	1
BNC Female	BF	1
BNC Male	BM	1
TNC Female	TF	1
TNC Male	TM	1
SMA Female	SF	1,2
SMA Male	SM	1,2
PC Pins	PN	1,2
Special	XX	1,2

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The curves below show the attenuation as a function of the normalized 3dB bandwidth. The following formula is used to predict the attenuation for a given number of sections:

$$\text{Number of normalized 3 dB bandwidths from center frequency, } BW_N = \frac{\text{Rejection Frequency (MHz)} - \text{Center Frequency (MHz)}}{3 \text{ dB Bandwidth (MHz)}}$$



## EXAMPLE

Determine minimum attenuation levels at 2482 MHz and 2518 MHz for the following filter:

Center Frequency = 2500 MHz  
 Minimum 3 dB Bandwidth = 6 MHz  
 Number of sections = 3

Solution:

$$3 \text{ dB bandwidths from } F_c, (BW_N) = \frac{(2482 - 2500)/6}{1} = -3 BW_N$$

$$\frac{(2518 - 2500)/6}{1} = +3 BW_N$$

From the curve above:

$$-3 BW_N = 27 \text{ dB}$$

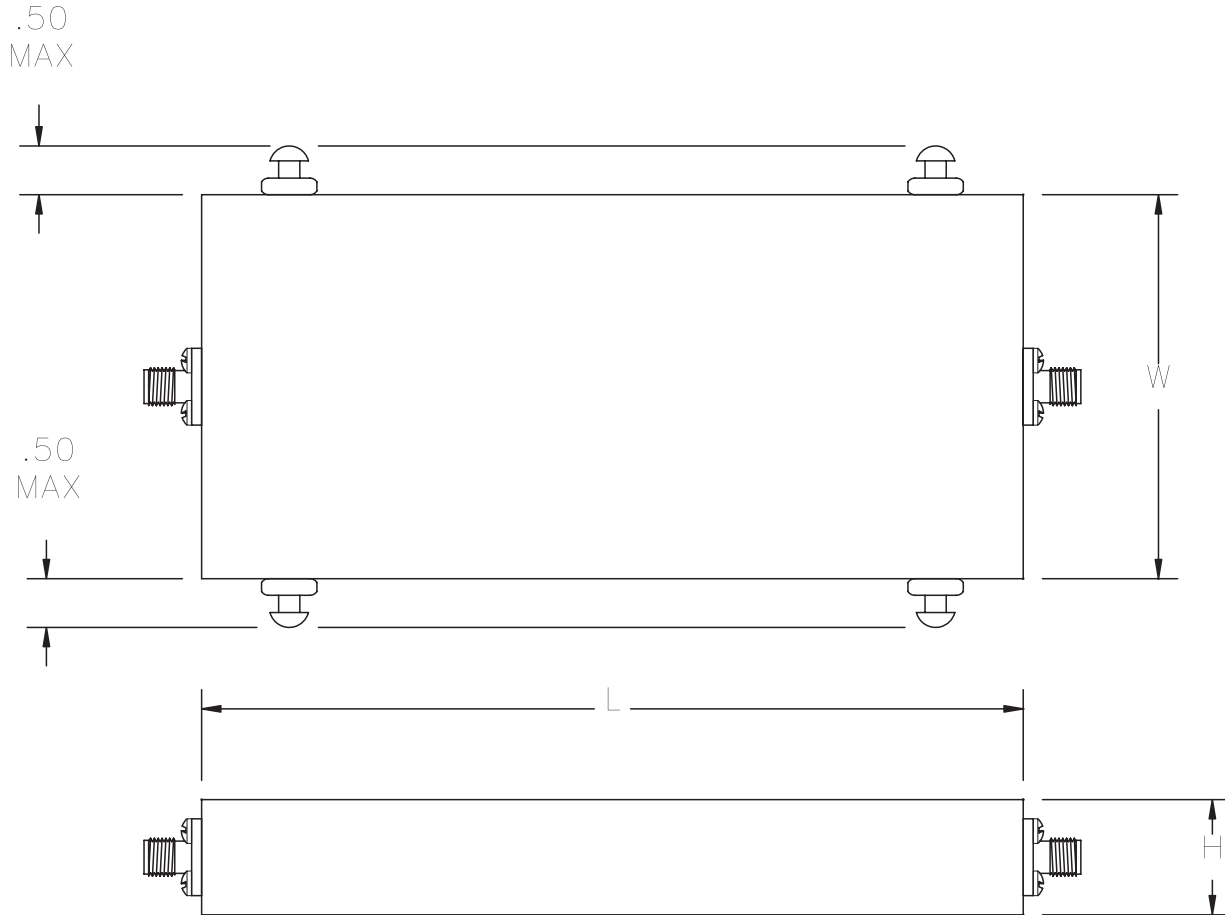
$$+3 BW_N = 27 \text{ dB}$$

\*Note: For illustration purposes only. Consult factory for specific information.

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Model	Width* (IN.)	Height (IN.)	Length (IN.)
MM10	3.0- 10.0	0.75	SEE CALCULATIONS
MM20	0.75 - 3.0	0.625	SEE CALCULATIONS
MM30	0.5 - .75	0.5	SEE CALCULATIONS
MM40	0.5	0.5	SEE CALCULATIONS
MM50	0.5	0.5	SEE CALCULATIONS

ESTIMATED  $L = [ N(PS) ] + [ N(D) ] + H$

WHERE:

$N = \#$  OF SECTIONS

$PS = H(.75)$

$D = H(.126)$

\* LOWER FREQUENCY = LARGER W

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