

# Cavity Filters High Frequency, Medium Bandwidth — FV Series

## ◆ Features:

- Small Package Design, High "Q" Response
- Ruggedized Package Design
- Covers the 500 MHz to 40 GHz Frequency Range
- Combine Design Results in Low Insertion Loss Performance
- 3 dB BW Available from 3-18%
- Designs Available in 2-17 Sections
- Custom Package Designs Available



## ◆ Specifications:

Model	Frequency (GHz)	3 dB % BW	VSWR	Insertion Loss	Passband Return	Impedance (Ohms)	No. of Sections	Shock	Vibration	Temperature	Relative Humidity
FV-50	.5-2	3-18	1.5:1	0.1 dB per section @ BW>=5%	$\geq 3.5 X f_0$	50	2-17	20 G's, 1/2 Sine, 11 Ms	10 G's, 10 Hz-2000 Hz	-55 to +85 °C	0-95%
FV-40	2-5										
FV-30	3-8										
FV-20	4-10										
FV-10	7-18										

## ◆ To Order:

5 FV 20 — 6575 / I 750 - O / O  
 1 2 3      4 5 6 7 8

Code	Description
1	Number of Sections
2	Series (FV-Combine)
3	Package Designator 20 Series
4	Center Frequency (MHz)
5	Supplemental Codes (See Page 13)
6	Bandwidth (MHz)
7	Input Connector
8	Output Connector

## ◆ Connectors:

Connector	Code
SMA Female	O
SMA Male	OP
N Female	N*
N Male	NP*
TNC Female	T*
TNC Male	TP*
RF Pins	P
Removable SMA	RO
Blind Mate	OB

\*Requires .75 W and .75 H

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## ◆ Attenuation:

The adjacent curve is used to determine the out-of-band or stopband attenuation for K&L's combine filters. This curve shows the attenuation as multiples of the 3 dB bandwidth for filters up to 13 sections. The formula for approximate stopband attenuation:

$$3 \text{ dB BW from } f_0 = \frac{\text{Reject Frequency}-\text{Center Frequency}}{3 \text{ dB BW}}$$

## Example:

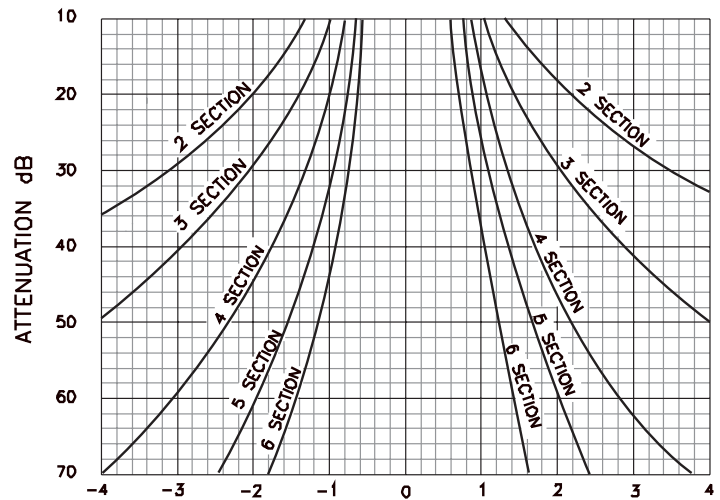
Center Frequency = 6575 MHz  
3 dB Bandwidth = 750 MHz  
Number of Sections = 7

Find the attenuation at 5600 MHz and 7550 MHz by substituting in the formula:

$$3 \text{ dB BW from } f_0 = \frac{5600-6575}{750} = -1.3 \text{ BW}$$

$$3 \text{ dB BW from } f_0 = \frac{7550-6575}{750} = +1.3 \text{ BW}$$

From the 7 section curves -1.3 BW and +1.3 BW yield approximately 56 dB



## ◆ Mechanical:

The mechanical dimensions and mounting hole locations are dependent upon the design parameters specified by the customer. Contact K&L Microwave for details.



Deutschland  
Telemeter Electronic GmbH  
Joseph-Gänsler-Straße 10  
D-86609 Donauwörth  
Telefon (09 06) 7 06 93-0  
Telefax (09 06) 7 06 93-50  
E-Mail info@telemeter.de  
www.telemeter.info

Schweiz  
Telemeter Electronic GmbH  
Romanshonerstrasse 117  
CH-8280 Kreuzlingen  
Telefon (071) 699 20 20  
Telefax (071) 699 20 24  
E-Mail info@telemeter.ch  
www.telemeter.info

