Microwave Filter Company

HIGH Q
Bandpass Filters
MODELS 9393, 9494, 9507, 9510, 9512

Microwave Filter Company's line of High Q Bandpass Filter offers tunable quarter wave cavities in a variety of diameters for increased Q, selectivity and low loss. Tunability, $F_o \pm 5\%$, is achieved using adjustable loops and tunable resonators. Single, double and triple cavity models are available covering a broad frequency band of 30 - 950 MHz.

Useful as a receive preselector or to clean up spurious transmit signals, the High Q Bandpass Filter is also available in custom configurations and multiplexers to meet your particular requirements.

Temperature stability using an invar tuning rod, and our rugged low loss construction makes a dependable filter.

Please feel free to contact the company toll free for additional information.

9xxx -(F_o)(# sections)(BW)
F_o = Center Frequency

Bandwidth: .....Up to 3% (bandwidth/center frequency)
VSWR: ..... 1.5:1 max.
Power handling: .....350 watts w/0.5 dB insertion loss
250 watts w/1.0 dB insertion loss
100 watts w/2.0 dB insertion loss
Temperature stability: ..... 0.0005 MHz/°C
Approx. size:.....Diameter x 1/4 wavelength
Connectors: .....Type N female (50 Ohm)

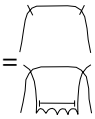
Freq. Range (MHz)	9393 3"x3"	9494 4"x4"	9507 7" Dia.	9510 10" Dia	9512 12" Dia.
30 - 200					
200 - 300					
300 - 406					
406 - 512					
512 - 700					
700 - 950					

REJECTION

	10 dB BW	30 dB BW
Single Cavity	4.0 x BW_3	30 x BW_3
Double Cavity	4.0 x BW_r	13 x BW_r
Triple Cavity	2.1 x BW_r	4.5 x BW_r

INSERTION LOSS

Single Cavity	$\frac{(.06)\sqrt{F}}{BW_3}$	$\frac{(0.0463)(\sqrt{F})}{BW_3}$	$\frac{(0.0254)(\sqrt{F})}{BW_3}$	$\frac{(0.0228)(\sqrt{F})}{BW_3}$	$\frac{(0.0188)(\sqrt{F})}{BW_3}$
Double Cavity	$\frac{(.0359)\sqrt{F}}{BW_r}$	$\frac{(0.0275)(\sqrt{F})}{BW_r}$	$\frac{(0.0151)(\sqrt{F})}{BW_r}$	$\frac{(0.0135)(\sqrt{F})}{BW_r}$	$\frac{(0.0122)(\sqrt{F})}{BW_r}$
Triple Cavity	$\frac{(.083)\sqrt{F}}{BW_r}$	$\frac{(0.0642)(\sqrt{F})}{BW_r}$	$\frac{(0.035)(\sqrt{F})}{BW_r}$	$\frac{(0.0315)(\sqrt{F})}{BW_r}$	$\frac{(0.0279)(\sqrt{F})}{BW_r}$

BW_3 =  Passband width at 3 dB points

BW_r = Ripple bandwidth at 14 dB return loss

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Microwave Filter Company

HIGH Q
Notch Filters
MODELS 9603, 9604, 9607, 9610, 9612

Microwave Filter Company's line of High Q Notch or Band Reject filters is field tunable using rotating loops and an adjustable resonator for applications in removing interfering carriers that cause intermodulation products.

Standard models are available in single, double and triple cavities covering a broad frequency range of 30-950 MHz. Phased together or cascaded, filter cavities can be combined to increase attenuation at a spot frequency or across a wider band.

Constructed with aluminum housings, high conductivity resonator and an invar tuning rod, the notch filters have excellent power handling capabilities and temperature stability.

Custom designs are also available.

Please feel free to contact the company toll free for additional information.

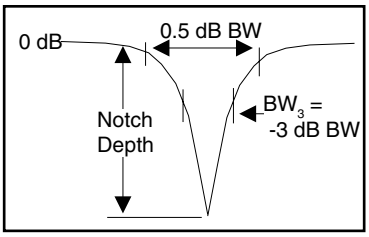
96xx -(F_o)(# sections)(BW_3)
F_o = Notch frequency

Bandwidth: ..... Up to 3% (bandwidth/center frequency)
VSWR: ..... 1.5:1 max.
Power handling: ..... 350 watts w/0.5 dB insertion loss
..... 250 watts w/1.0 dB insertion loss
..... 100 watts w/2.0 dB insertion loss
Temperature stability: ..... 0 .0005 MHz/°C
Approx. size: ..... Diameter x 1/4 wave length
Connectors: ..... Type N female (50 Ohms)

Freq. Range (MHz)	9603 3"x3"	9604 4"x4"	9607 7" Dia.	9610 10" Dia	9612 12" Dia.
30 - 200					
200 - 300					
300 - 406					
406 - 512					
512 - 700					
700 - 950					

0.5 dB BANDWIDTH

Single Cavity	3.0 x BW_3
Double Cavity	1.80 x BW_3
Triple Cavity	1.65 x BW_3



NOTCH DEPTH - dB

	9603	9604	9607	9610	9612
Single Cavity	$20\text{Log}\left[\frac{120(BW_3)}{\sqrt{F_o}}\right]$	$20\text{Log}\left[\frac{185(BW_3)}{\sqrt{F_o}}\right]$	$20\text{Log}\left[\frac{300(BW_3)}{\sqrt{F_o}}\right]$	$20\text{Log}\left[\frac{380(BW_3)}{\sqrt{F_o}}\right]$	$20\text{Log}\left[\frac{460(BW_3)}{\sqrt{F_o}}\right]$
Double Cavity	$40\text{Log}\left[\frac{120(BW_3)}{\sqrt{F_o}}\right]$	$40\text{Log}\left[\frac{185(BW_3)}{\sqrt{F_o}}\right]$	$40\text{Log}\left[\frac{300(BW_3)}{\sqrt{F_o}}\right]$	$40\text{Log}\left[\frac{380(BW_3)}{\sqrt{F_o}}\right]$	$40\text{Log}\left[\frac{460(BW_3)}{\sqrt{F_o}}\right]$
Triple Cavity	$60\text{Log}\left[\frac{120(BW_3)}{\sqrt{F_o}}\right]$	$60\text{Log}\left[\frac{185(BW_3)}{\sqrt{F_o}}\right]$	$60\text{Log}\left[\frac{300(BW_3)}{\sqrt{F_o}}\right]$	$60\text{Log}\left[\frac{380(BW_3)}{\sqrt{F_o}}\right]$	$60\text{Log}\left[\frac{460(BW_3)}{\sqrt{F_o}}\right]$

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