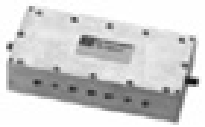
Cavity, Comb Line and Interdigital Band Pass Filters



RLC Electronics' Cavity, Comb Line and Interdigital Band PassFilters are fixed tuned filters that feature sharp stop band rejec-tion and lower losses that comparable tubular band pass filters.Parallel coupled round rod distributed resonators afford smallsize and high Q to achieve a near ideal bandpass response.Units are constructed to operate over the most severe militaryenvironmental conditions. Integral Low Pass Filters are availableto extend the stopband to as high as 40 GHz. The type of filterselected is usually determined by the percentage 3 dB band-width desired.

Specifications

Model Number [1-2-3-4]

Filter Type	Model Number	Center Frequency Range (MHz)	3 dB Bandwidth (% of fc)	Number of Sections	Stopband Attenuation
Cavity	CBPF	500 to 26000	0.2 to 3.0	2 to 14	See Curves on following page
Comb Line	CF	500 to 36000	3.0 to 25.0	2 to 14	
Interdigital	IBPF	10000 to 26000	25.0 to 67.0	3 to 15	

Insertion Loss(max at fc): Curve 1, pg. 51.
***VSWR: 1.5:1, Bandwidth**: Curve 1, pg. 30
*For no. of sections <= 8, VSWR is 1.5:1
For N=9 to 11, VSWR is 1.5:1 to 10 GHz, above 10GHz VSWR = 1.5+0.07(N-8) For N=12 to 15, VSWR is 1.5:1 to 7 GHz, above 7 GHz, VSWR is 1.5+0.1(N-11)
Power Rating: IBPF 100 watts CF and CBPF 15 watts
Impedance: 50 Ohms
Environmental:MIL-E-5400, Class 1A

0.5 dB Bandwidth:Curve 2, pg. 30
1 dB Bandwidth:Curve 3, pg. 30
Phase Linearity: 5 deg. Curve 4, pg. 30
Connectors (female):

Type	Recommended Freq Rng (MHz)
BNC	DC-1,000
N	DC-12,400
TNC	DC-15,000
SMA	DC-26,000
K	DC-40,000

To designate the filter desired use:

(1) Center frequency in MHz
(2) 3dB bandwidth in MHz
(3) Number of sections
(4) "N" for type N, "B" for BNC, "T" for TNC, "R" for SMA (female) "K" for 2.92mm (female)

Example: IBPF-3500-1000-10-R is a 3500 MHz center frequency, 1000 MHz 3 dB BW, 10 section filter with SMA(female) connectors.

Specifications subject to change without notification. Tolerances unless otherwise specified are .xx +/- .02, xxx +/- .005

Specials requiring closer tolerances, different frequency ranges, special connectors, different materials, finishes, etc. can be furnished upon request.

RLC ELECTRONICS, INC.
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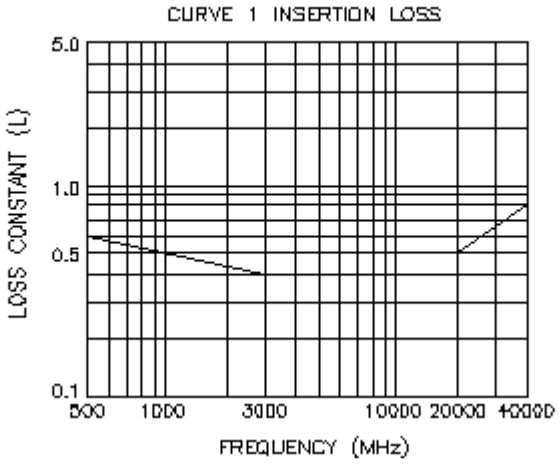
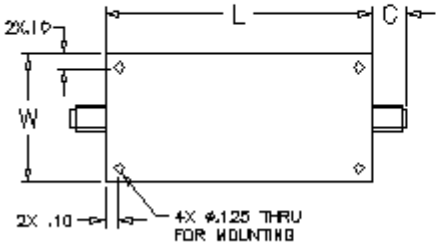
Outline Drawings

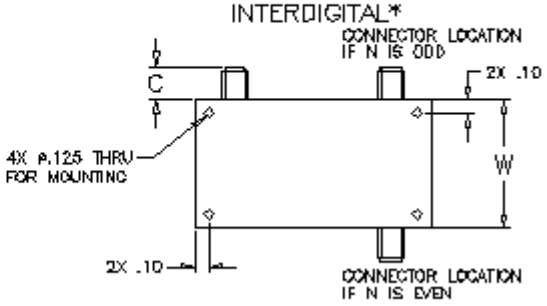


$$\text{INSERTION LOSS} = \frac{L \times (\text{NUMBER OF SECTIONS} + .5)}{\%\ 3\ \text{dB BANDWIDTH}} + 0.35\ \text{dB}$$

CAVITY & COMB LINE



INTERDIGITAL*



*Connector location may optionally be specified at filter end walls

Center Frequency(MHz)	Approximate Dimension Table			
	W IBPF	W CBPF,CF	H	L (N is the number of sections)
501-800	$\frac{2950}{Fc(MHz)} + .45$	3.75	1.19	1.125xN+.625
801-2000		2.25	1.00	3.75 for N=2 N+.75 for N>2
2001-4000		1.38	.75	2.50 for N=2 .625xN+.625 for N>2
4001-8000		.94	.63	2.00 for N=2 .50xN+.5 for N>2
8001-12000		.75	.56	1.50 for N=2, 2.00 for N=3 2.50 for N=4 or 5, 3.00 for N=6 3.50 for N=7 or 8
12001-20000		.70	.53	1.75 for N=2 to 4 2.38 for N=5 or 6 3.00 for N=7 or 8
20001-36000		.53	.38	

CONNECTORS	R	N	T/B
"C" Dimension	.30	.60	.52

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