

Tubular Band Pass Filters



RLC Electronics' Tubular Band Pass Filters are designed for operation over the frequency range of 15MHz to 8.0 GHz. These fixed tuned filters are constructed utilizing 2 to 12 sections with 3 dB bandwidths of 2 to 60% of center frequency. These filters utilize direct coupled sections.

Specifications

BPF-1-2-3-4-5

Model Number	Center Frequency Range (MHz)	3 dB Bandwidth (% of fc)	Number of Sections	Stopband Attenuation
BPF-	15 to 1000 (BPF-1250)	2	2 to 12	See Curves on page 89
	30 to 2000 (BPF-750)	to		
	50 to 4000 (BPF-500)	60		
	75 to 400 (BPF-250)	3 to 40		
	400 to 8000 (BPF-250)	3 to 60		

VSWR: 1.5:1, Bandwidth: Curve 1, see page 89

Passband Insertion Loss (max at fc): Curve 1, see page 89

0.5 dB Bandwidth: Curve 2, see page 89

1 dB Bandwidth: Curve 3, see page 89

Power, Average, Max:

10 Watts BPF-250 25 Watts BPF-500

50 Watts BPF-750 200 Watts BPF-1250

Impedance: 50 Ohms

Connectors: Type N, BNC, TNC, SMA (male or female)

Environmental: MIL-E-5400, Class 1A

Phase Linearity: 5 deg. Curve 4, see page 89

To designate the filter desired use:

1: Filter diameter, "250" is 1/4 inch "500" is 1/2 inch,

"750" is 3/4 inch "1250" is 1 1/4 inch

2: Center frequency in MHz

3: 3dB bandwidth in MHz

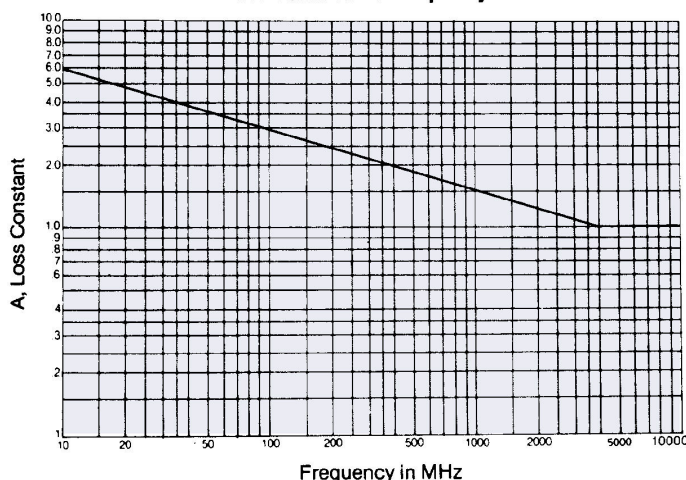
4: Number of sections

5: "N" for type N, "B" for BNC, "T" for TNC, "R" for SMA. BPF-250 is available with only SMA. Add "M" or "F" for two male or female.

Example: BPF-500-950-95-5-R is a 1/2" diameter, 950 MHz center frequency, 95 MHz 3 dB bandwidth, 5 sections and sma connectors

Insertion Loss

Loss Constant Vs. Frequency



Filter	Max. Insertion Loss at Center Frequency
BPF 250	$2.2 \times A \times (N + .5) \div B + 0.2$
BPF 500	$A \times (N + .5) \div B + 0.2$
BPF 750	$.65 \times A \times (N + .5) \div B + 0.2$
BPF 1250	$.5 \times A \times (N + .5) \div B + 0.2$

N is number of sections

B is percent 3dB bandwidth =

$100 \times 3 \text{ (3 dB bandwidth in MHz)} \div \text{center frequency in MHz}$

Outline Drawing

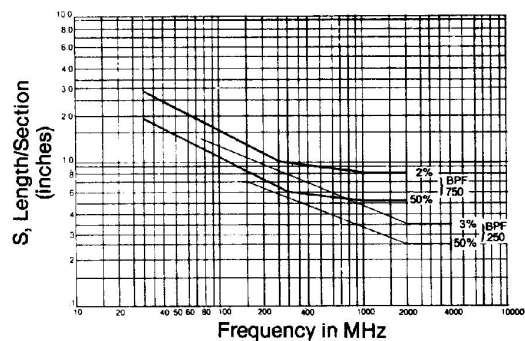
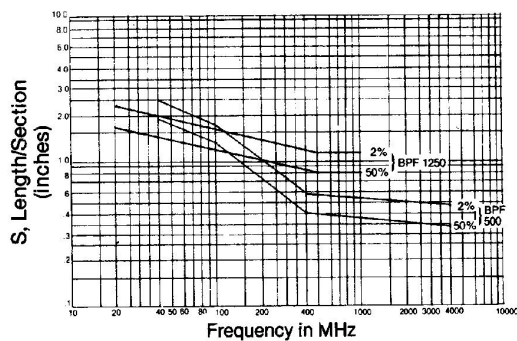


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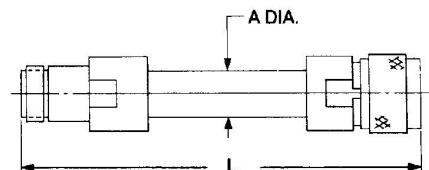
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Length per Section Vs. Frequency



		BPF-	250	500	750	1250
		A DIM	.250	.500	.750	1.250
CONNECTOR LENGTH		SMA	1.28	1.25	1.31	1.31
		BNC/ TNC	—	1.56	2.27	2.27
		N	—	2.19	2.10	2.10

APPROXIMATE LENGTH OF FILTER (L) =
 $S \times (N + .5) + \text{connector length}$



Tolerances unless otherwise specified are: .xx, ± .02; .xxx, ± .005.