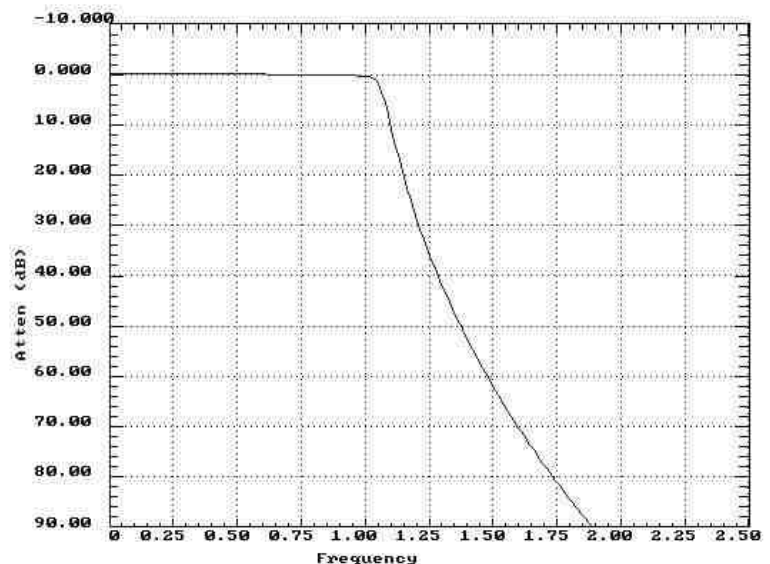


## High Performance - Low Pass Filters

**Allen Avionics** high-performance filters use 11 pole Chebyshev or Elliptic Functions. They are designed using the specifications and techniques that work for most precision signal conditioning high performance testing applications. In a typical application they are used to enhance the performance of all test generators and signal sources used in testing A to D, D to A converters, amplifiers and other electronic components. They improve selectivity and dynamic range of all spectrum analyzers for harmonic distortion and intermodulation measurements. They are designed to pass the fundamental frequency with less than 1.0 dB attenuation and attenuate all harmonics over 95 dB. If your testing application requires balanced or differential filters, these filters can be supplied in a differential configuration. If you do not need this good of a filter, need something even better or need a specific mounting configuration, see our "Custom Filter" information or contact us and tell us what you need. We may already have a custom filter to meet your design requirements.

### Typical High-Performance Low Pass Filter



### High-performance Filter Specs.

**Frequency Range:** 1 KHz to 500 MHz

**Impedance Range:**  $z = 50 \text{ Ohms}$

**Shape factor:** E

**Q range:** 5 to 50

**Maximum Ripple:** .25dB

**Maximum Insertion Loss:** 1dB

**Construction:** Epoxy encapsulated in metal cans

**Temperature Range:** -30C to +70C

**Power Handling:** 1 to 5 Watts

### Part Number specification" (LPSmmPkkC):

**LPS:** Low-Pass Standard High-performance Filter

**mmPkk** Fundamental frequency with mm for MHz value and kk for KHz values

A 9-digit number: remove a leading "m" for KHz values and trailing "k" for MHz values

**mm:** MHz value - This can be 1 to 4 positions in the MHz position to the left of the P  
LPS35P00C = 35MHz

**P:** This is a decimal point divider between MHz and KHz

**kk:** This can be 2 to 4 positions to specify KHz filters  
LPSP0015C = 1.5KHz  
LPS0P010C = 10KHz  
LPS01P50C = 1.5 MHz

**C:** Connector style:  
B = BNC; S = SMA connector; N = Type N



# High Performance - Low Pass Filters

Standard High-performance Low Pass filters are shown in the table below. Other frequencies are available upon request. Connectors are shown as BNC but can be specified as B, S or N.

Part Number	Center Freq. Fc	Impedance (z)	Filter Algorithm	Enclosure Style
LPS0P001B	1 KHZ	50 Ohms	Elliptic	P1
LPSP0015B	1.5 KHZ	50 Ohms	Elliptic	P1
LPS0P002B	2 KHZ	50 Ohms	Elliptic	P1
LPSP0024B	2.4 KHZ	50 Ohms	Elliptic	P1
LPS0P003B	3 KHZ	50 Ohms	Elliptic	P1
LPSP0036B	3.6 KHZ	50 Ohms	Elliptic	P1
LPSP0048B	4.8 KHZ	50 Ohms	Elliptic	P1
LPS0P005B	5 KHZ	50 Ohms	Elliptic	P1
LPS00P01B	10 KHZ	50 Ohms	Chebyshev	P1
LPS00P02B	20 KHZ	50 Ohms	Elliptic	P1
LPS0P025B	25 KHZ	50 Ohms	Chebyshev	P1
LPS00P05B	50 KHZ	50 Ohms	Chebyshev	P1
LPS00P10B	100 KHZ	50 Ohms	Chebyshev	P1
LPS0P165B	165 KHZ	50 Ohms	Chebyshev	P1
LPS00P20B	200 KHZ	50 Ohms	Chebyshev	P1
LPS0P330B	330 KHZ	50 Ohms	Chebyshev	P1
LPS00P50B	500 KHZ	50 Ohms	Chebyshev	P1
LPS00P60B	600 KHZ	50 Ohms	Chebyshev	P1
LPS01P00B	1 MHZ	50 Ohms	Chebyshev	P
LPS01P50B	1.5 MHZ	50 Ohms	Chebyshev	P
LPS02P00B	2.0 MHZ	50 Ohms	Chebyshev	P
LPS02P50B	2.5 MHZ	50 Ohms	Chebyshev	P
LPS03P00B	3.0 MHZ	50 Ohms	Chebyshev	P
LPS05P00B	5.0 MHZ	50 Ohms	Chebyshev	P
LPS10P00B	10.0 MHZ	50 Ohms	Chebyshev	O
LPS12P00B	12.0 MHZ	50 Ohms	Chebyshev	O
LPS15P00B	15.0 MHZ	50 Ohms	Chebyshev	O
LPS20P00B	20.0 MHZ	50 Ohms	Chebyshev	O
LPS30P00B	30.0 MHZ	50 Ohms	Chebyshev	O
LPS50P00B	50.0 MHZ	50 Ohms	Chebyshev	O
LPS70P00B	70.0 MHZ	50 Ohms	Chebyshev	M
LPS100P0B	100.0 MHZ	50 Ohms	Chebyshev	M
LPS200P0B	200.0 MHZ	50 Ohms	Chebyshev	N
LPS250P0B	250.0 MHZ	50 Ohms	Chebyshev	N
LPS500P0B	500.0 MHZ	50 Ohms	Chebyshev	N
LPS1000PB	1,000 MHZ	50 Ohms	Chebyshev	N

# High Performance - Low Pass Filters

## Differential Low Pass Filters

Part Number	Center Freq. Fc	Impedance (z)	Connector Style	Enclosure Style	
LPS0P001B-Diff	1 KHZ	Diff, 100 ohms	BNC	PP	Chebyshev
LPS0P002B-Diff	2 KHZ	Diff, 100 ohms	BNC	PP	Chebyshev
LPS0P005B-Diff	5 KHZ	Diff, 100 ohms	BNC	PP	Chebyshev

## Enclosures:

**Allen Avionics** filter enclosures are supplied in shielded metal cases to provide the best insulation against unwanted external signals. The enclosures are then painted and a part Identification applied along with other pertinent information. The filters are packaged for shipping to prevent damage.

Because the components needed to make the filters can vary in size and shape depending upon the number of filter sections and the sizes of cores and capacitors, different frequencies require different sizes of enclosures. Our standard filters shown in the table above include the style of enclosure that is used. A drawing of the various styles is shown below. If modifications or special packaging requirements are needed, please contact Allen Avionics with the details. is made to the outside of the enclosure with laser etching. typically accomplished with laser etching. Changes to enclosures could affect pricing and lead-times for delivery of the desired filters.

## Drawing and table for enclosures

Type	L	W	H	F	Studs
M	3.00	1.625	1.125	2.5	6-32 x .500
N	4.00	1.500	1.250	3.0	6-32 x .500
O	5.00	1.500	1.250	4.0	6-32 x .500
P	6.00	1.500	1.250	5.0	6-32 x .500
P1	6.00	2.000	1.250	5.0	6-32 x .500
PP	6.00	3.000	1.250	5.0	6-32 x .500

Allen Avionics  
Filter Enclosure  
Dimensions

