

620-650 Series Bolt Style Resin Sealed Filters

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FILTERS

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Instec Bolt Style Resin Sealed Filters are ideal for applications where small size and high performance are critical and a threaded mounting technique is desired. Small cases and a wide range of electrical characteristics provide effective solutions to many filtering applications. C, L, and PI filter designs offer predictable insertion loss over the frequency range. These bolt style filters and matching hardware are silver plated for better conductivity and superior performance.

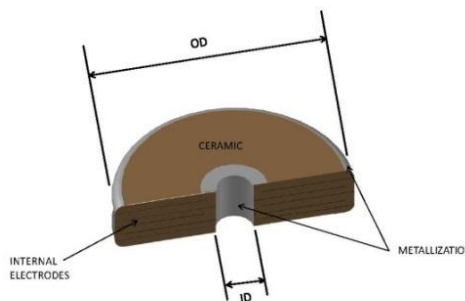
Features:

- Utilizes MLC discoidal capacitors, the heart of the filter
- Silver plated case and hardware offer excellent conductivity
- Infinite paths to ground allow for lowest impedance to ground available
- Better filtering than MLCC chips and more robust than tubular capacitors
- Part marking includes cap value, voltage rating, and filter construction (i.e. C, L, or PI)
- Designed and can be tested to MIL-PRF-28861 requirements
- Rated to 10 Amps
- Hooked leads available for ease of attachment
- 04-40, 08-32, and 12-32 Bolts are available
- Custom configurations also available—contact factory



Applications:

- High Frequency/Microwave
- Telecom and Military Communications
- Multi-circuit filter assemblies
- Industrial Controls
- Oscillators
- Attenuators
- Low noise amplifiers
- High temperature applications



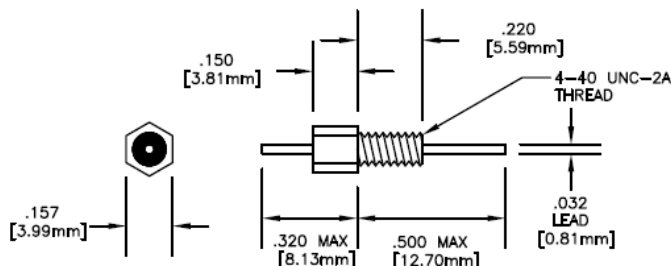
Instec Filters ♦ 7426A Tanner Parkway ♦ Arcade, NY 14009
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620-650 Series Bolt Style Resin Sealed Filters



620 Series (4-40 Bolt Style):



How to Order:

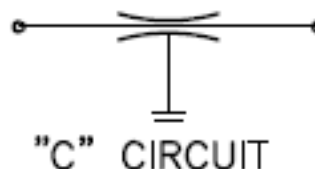
<u>621</u>	--	<u>333</u>	<u>B</u>	<u>P</u>	<u>**</u>
620= C-filter 4-40 621= L1-filter 4-40	placeholder	Capacitance code in PF, 1 st 2 digits are significant, 3 rd digit is number of zeros P tolerance assumed unless specified	Voltage rating A=50VDC B=100VDC C=200VDC D=300VDC	Lead-wire S=Standard P=Hooked leads	Special requirements (to be assigned by the factory)

4-40 Bolt Filter

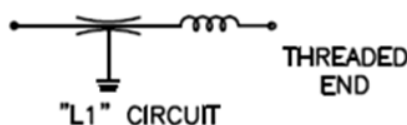
Maximum Cap Values:

The below table gives the maximum cap values available and typical Insertion Loss performance by voltage rating:

620 Series 4-40 Bolt C-Filter				
Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (NF) P tolerance assumed	120	100	33	27
Typical Insertion Loss (dB)				
1MHz	23	20	12	10
10MHz	41	38	32	28
100MHz	59	56	50	45
1GHz	>70	>70	65	62
10GHz	>70	>70	>70	>70



621 Series 4-40 Bolt L1-Filter				
Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (NF) P tolerance assumed	120	100	33	27
Typical Insertion Loss (dB)				
1MHz	23	22	13	11
10MHz	43	42	33	31
100MHz	61	60	53	51
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



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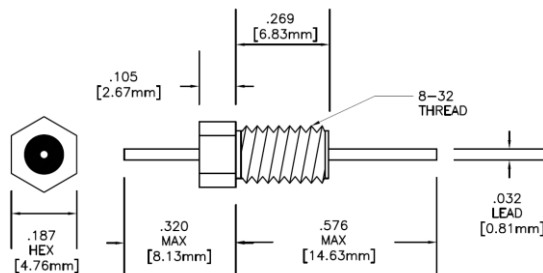
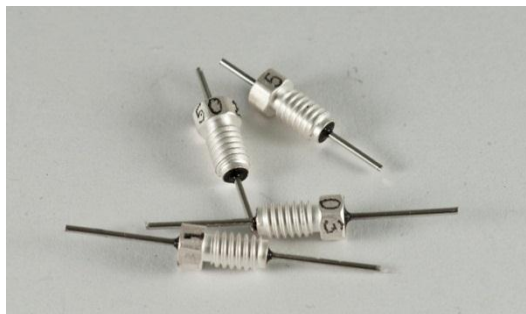
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640 Series (8-32 Bolt Style):



8-32 Bolt Filter

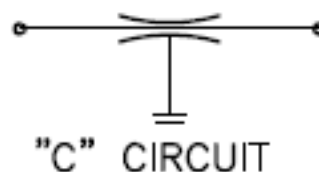
How to Order:

<u>640</u>	--	<u>503</u>	<u>C</u>	<u>S</u>	<u>**</u>
640= C-filter 8-32 641= L1-filter 8-32	placeholder	Capacitance code in PF, 1 st 2 digits are significant, 3 rd digit is number of zeros P tolerance assumed unless specified	Voltage rating A=50VDC B=100VDC C=200VDC D=300VDC	Lead-wire S=Standard P=Hooked leads	Special requirements (to be assigned by the factory)

Maximum Cap Values:

The below table gives the maximum cap values available and typical Insertion Loss performance by voltage rating:

640 Series 8-32 Bolt C-Filter				
Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	0.36	0.27	0.12	0.082
Typical Insertion Loss (dB)				
1MHz	32	30	23	20
10MHz	52	50	43	40
100MHz	>70	>70	63	60
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



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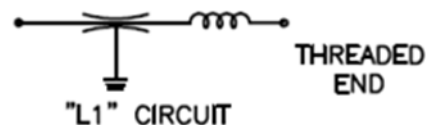
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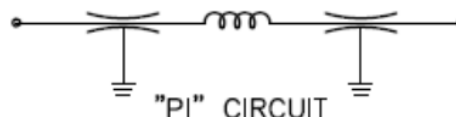
641 Series 8-32 Bolt L1-Filter

Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	0.22	0.18	0.068	0.047
Typical Insertion Loss (dB)				
1MHz	28	27	18	16
10MHz	47	45	36	35
100MHz	64	63	53	50
1GHz	>70	>70	>70	66
10GHz	>70	>70	>70	>70



643 Series 8-32 Bolt PI-Filter

Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	0.36	0.27	0.12	0.082
Typical Insertion Loss (dB)				
1MHz	35	32	25	20
10MHz	45	45	40	38
100MHz	>70	>70	>70	>70
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



Typical Insertion Loss Performance of Common Filters:

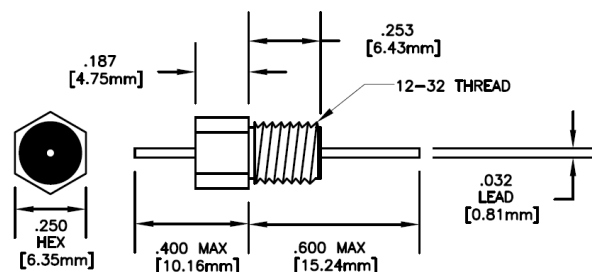
Instec P/N	Thread	Type	Cap Value	Voltage Rating	Current Rating	Insertion Loss (dB)				
						1MHz	10MHz	100MHz	1GHz	10GHz
620-103C	4-40	C-Filter	10,000 pf	200VDC	10A	4	23	41	58	70
620-472B	4-40	C-Filter	4700 pf	100VDC	10A		15	30	45	55
621-273B	4-40	L1-Filter	27,000 pf	100VDC	10A	12	32	53	70	>70
621-333B	4-40	L1-Filter	33,000 pf	100VDC	10A	14	34	54	70	>70
640-103B	8-32	C-Filter	10,000 pf	100VDC	10A	4	23	41	58	70
640-154B	8-32	C-Filter	0.15 μf	100VDC	10A	26	44	60	70	>70
640-502C	8-32	C-Filter	5000 pf	200VDC	10A	7	17	35	47	55
643-252C	8-32	PI-Filter	2500 pf	200VDC	10A		12	45	70	>70
643-473A	8-32	PI-Filter	47,000 pf	50VDC	10A	20	60	>70	>70	>70

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12-32 Bolt Filter

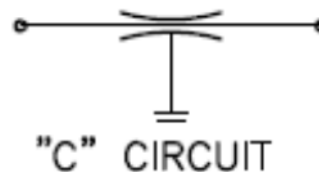
How to Order:

653	--	503	B	P	**
650= C-filter 12-32 651= L1-filter 12-32 653= PI-filter 12-32	placeholder	Capacitance code in PF, 1 st 2 digits are significant, 3 rd digit is number of zeros P tolerance assumed unless specified	Voltage rating A=50VDC B=100VDC C=200VDC D=300VDC	Lead-wire S=Standard P=Hooked leads	Special requirements (to be assigned by the factory)

Maximum Cap Values:

The below table gives the maximum cap values available and typical Insertion Loss performance by voltage rating:

650 Series 12-32 Bolt C-Filter				
Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	1.4	1.2	0.56	0.47
Typical Insertion Loss (dB)				
1MHz	44	43	36	35
10MHz	60	59	52	51
100MHz	>70	>70	67	66
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



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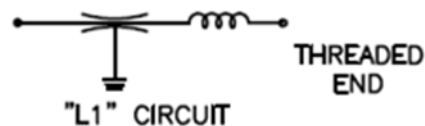
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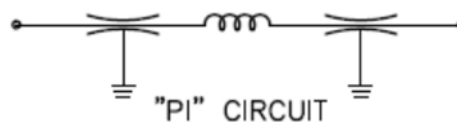
651 Series 12-32 Bolt L1-Filter

Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	0.68	0.56	0.33	0.22
Typical Insertion Loss (dB)				
1MHz	44	43	36	35
10MHz	60	59	52	51
100MHz	>70	>70	67	66
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



653 Series 12-32 Bolt PI-Filter

Rated Voltage---->	50V	100V	200V	300V
Max Capacitance (μF) P tolerance assumed	0.82	0.68	0.47	0.27
Typical Insertion Loss (dB)				
1MHz	47	45	40	37
10MHz	>70	>70	>70	>70
100MHz	>70	>70	67	66
1GHz	>70	>70	>70	>70
10GHz	>70	>70	>70	>70



Typical Insertion Loss Performance of Common Filters:

Instec P/N	Thread	Type	Cap Value	Voltage Rating	Current Rating	Insertion Loss (dB)				
						1MHz	10MHz	100MHz	1GHz	10GHz
650-103B	12-32	C-Filter	10,000 pf	100VDC	10A	4	23	41	58	70
650-103C	12-32	C-Filter	10,000 pf	200VDC	10A	4	23	41	58	70
650-204B	12-32	C-Filter	0.2 μf	100VDC	10A	29	48	65	>70	>70
650-471B	12-32	C-Filter	470 pf	100VDC	10A			12	32	50
650-683C	12-32	C-Filter	68,000 pf	200VDC	10A	20	38	56	>70	>70
653-103B	12-32	PI-Filter	10,000 pf	100VDC	10A		18	60	>70	>70
653-103C	12-32	PI-Filter	10,000 pf	200VDC	10A		18	60	>70	>70
653-123C	12-32	PI-Filter	12,000 pf	200VDC	10A		7	70	>70	>70
653-333C	12-32	PI-Filter	33,000 pf	200VDC	10A	14	40	70	>70	>70
653-503A	12-32	PI-Filter	50,000 pf	50VDC	10A	40	60	70	>70	>70
653-503B	12-32	PI-Filter	50,000 pf	100VDC	10A	40	60	70	>70	>70

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