LCA
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Fuzhou LCA Electronic Technology Co.,Ltd
福州欣翔威电子科技有限公司

ultra high voltage ceramic capacitors

Resin Sealed Bolt-in Filters

Obbligato Premium Audio Capacitors

Miniature RF Filters

Hermetically Sealed Filters

Filtered Arrays

EMI feedthrough filters

Feedthrough Capacitor Filters Technology Leader

Fuzhou LCA Electronic Technology Co., Ltd. (Also call Fuzhou XinXiangWei Electronic Technology Co., Ltd.) is a high-tech enterprise specializing in the development and production of filters such as feedthrough capacitor filters, miniature RF filters, and ultrahigh voltage ceramic capacitors.

Since its establishment, the company has been committed to the production and research and development of various EMI filters. The company's own factory covers an area of 2,000 square meters. It has obtained a number of independent intellectual property rights recognized and issued by the state, and has successfully passed the national high-tech enterprise certification many times.

The company strictly implements the ISO9001:2015 quality management system. The "LCA" brand created by the company has won a good reputation among the customer base for its reliable quality, excellent service and reasonable price, and obtained three stars brand certification in 2018.

The company has successfully developed and produced tubular ceramic capacitors, solder-in filters, threaded feedthrough capacitors, obbligato premium audio capacitors, discoidal capacitors, EMI feedthrough filters, ultra-high voltage ceramic capacitors, filtered arrays, miniature RF filters, hermetically sealed filters and other filter products. These products are widely used in defense communications, aerospace, medical equipment, radio and television, instrumentation, automotive electronics, microwave modules, smart appliances and other fields.

Fuzhou LCA Electronic Technology Co., Ltd. adheres to the tenets of excellent quality, reputation first, and customer first, and sincerely cooperates with all units with a full range of high-quality services to develop together and create success!

Introduction to Feedthrough Capacitors

With the rapid increase in the operating frequency of electronic equipment, the frequency of electromagnetic interference is getting higher and higher, and the interference frequency usually reaches hundreds of MHz or even above GHz. Since the higher frequency of voltage or current easier cause to produce radiation, it is these very high-frequency interference signals that cause the problem of radiation interference to become increasingly serious. Therefore, a basic requirement for filters used to solve radiation interference is to have a large attenuation of these high-frequency interference signals. This type of radio frequency interference filter is an EMI/EMC filter, also called a feedthrough filter. Based on its physical structure characteristics, we also call it a feedthrough capacitor filter, or a feedthrough capacitor.

The effective filtering frequency range of ordinary RFI filters is several kHz and tens of MHz, while the effective filtering frequency range of RFI filters is from several kHz to over GHz. A filter constructed conventionally cannot be an RF filter. This is due to two reasons: the first reason is that the parasitic inductance of traditional capacitors is large (leading to series resonance and increasing bypass impedance), resulting in the capacitor not having a low impedance at higher frequencies and not being able to play a bypass role. The role of roads. The second reason is that the stray capacitance between the input and output ends of the filter causes high-frequency interference signal coupling, making the filter ineffective against high-frequency interference. The solution to this problem is to use feedthrough capacitors as bypass capacitors.

The feedthrough capacitor is a three-terminal capacitor with very small parasitic inductance and very small bypass impedance. Since the feedthrough capacitor can be directly installed on the metal panel, its grounding inductance is smaller and there is almost no influence of lead inductance, so the self-resonant frequency is very high. At the same time, due to the through-core design and its input and output terminals being isolated by metal plates, it effectively prevents high-frequency signals from being directly coupled from the input terminal to the output terminal. This combination of low pass and high impedance provides excellent rejection in the 1GHz frequency range. These two characteristics determine that the feedthrough capacitor has a filtering effect close to that of an ideal capacitor, that is, the feedthrough capacitor/radio frequency interference filter is an ideal device for interference/anti-interference filtering.

Advantages of LCA

Fuzhou LCA Electronic Technology Co., Ltd. (hereinafter referred to as LCA) is a national high-tech enterprise dedicated to the manufacturing of ceramic electronic components. The company has been producing feedthrough capacitor filters for over 20 years and has been committed to providing customers with high quality products and fast, friendly and flexible service through state-of-the-art facilities.

The core of LCA manufacturing technology is the "dry pressing process". This powder pressing molding process not only has high density and precision, but also has high stability and withstand voltage, and the product volume can be made smaller. It has great advantages in manufacturing feedthrough capacitor filter products. unique advantage. This makes LCA a leader in the manufacturing of feedthrough capacitor filters, high voltage ceramic capacitors and filtered arrays. We strictly implement the ISO 9001 quality management system and strive to make a good feedthrough filter for the world.

The LCA brand feedthrough capacitor filter produced by Fuzhou LCA Electronic Technology Co., Ltd. has been developed and improved by the company's R&D personnel for many years, and the production process has been further improved. The density and air tightness of the product have been further improved, and the withstand voltage and reliability of the product have been further improved. The application scope of the product has become wider, from the initial application of high-frequency heads of TV sets to gradually broadened to mobile phone repeaters, instruments, satellite antennas, and medical equipment. Recently, due to the rise of the Internet of Things and intelligent AI industries, our company The products have been expanded to automotive electronics, radio frequency modules, aerospace, military products and other fields.

LCA's excellence in ceramic materials technology, combined with EMI filter expertise, enables us to offer an unparalleled range of EMI filter products.

Contents

LCA Product Introduction:

1、Tubular Ceramic Capacitors

Tubular Capacitors are available in NPO, X7R, and Y5V ceramic bodies from 1.1 millimeter up to 8 millimeter. LCA can also design a custom ceramic blend for your specific application.

- Shoulder Tubular Ceramic Capacitors. Circuit configurations: C
- Straight Tubular Ceramic Capacitors. Multiple circuit configurations: C and Pi

2、Solder-in Filters

Solder-in filters provide a compact and low cost filter that can be soldered into a bulkhead. Small size to allow effective use of space. The solder-in feature also allows installation in unison with other board mounted components. Primarily used in filtering signal/data lines, AC power lines, telecommunications equipment, transceivers, microwave filters, industrial control systems, and multi-circuit filter assemblies. Multiple circuit configurations: C and Pi

- Solder-in Filters without Metallic Shell
- Solder-in Filters with Metallic Shell

Resin Sealed Solder Mount Filters provide environmental protection at low cost.
Glass Sealed Solder Mount Filters maintain hermeticity and provides protection from hostile environments.

3、Resin Sealed Bolt-in Filters

These filters are easily mounted in a tapped hole or thru-hole with supplied nut and lock-washer. The rugged case with resin seals at both ends provides excellent environmental protection. Primarily used in filtering signal/data lines and DC power lines. Multiple circuit configurations: C, LC and Pi

4、Filtered Arrays

The filtered array product offers flexibility to customers in choosing an efficient and cost effective solution to solving EMC issues. The filtered array product line encompasses our filter plates and filtered terminal blocks. Filter arrays primarily used in telecommunications equipment, cellular base stations, linear power amplifiers, cellular microcell repeaters, industrial, scientific, remote sensory, medical equipment, industrial controls, power supplies, uninterruptible power supplies, instrumentation and power distribution equipment.

5、Miniature RF Filters

These filters are ideal for microwave applications such as attenuators and oscillators, and perform well in high impedance circuits. The high temperature constructionmeets military requirements for solderability andresistance to soldering heat. Some gold plating filters compatible with gold bonding techniques. Circuit configurations: C

6、Hermetically Sealed Filters

This series of filters features hermetic glass seals and high EMI filtering performance. They are excellent for critical applications that demand high reliability in the toughest environmental conditions. Now we only have a glass seal on one side of the filter body,with the other end resin sealed. They arebetter than resin sealed filters in applications where outgassingis critical, or where the environment is particularly harsh. They are used where a rugged, hermetically sealed filter is required. Circuit configurations: C

7、Obbligato Premium Audio Capacitors

A superb low-cost high-quality capacitors that has a big following in the DIY community. Used in signal circuitry and in loudspeaker crossovers. Obbligato caps are made with extra tight winding giving great control. They provide a smooth and easy sound.

8、Discoidal Capacitors

Discoidal capacitors are at the heart of many EMI filters. More robust and reliable than tubular capacitors, they offer higher capacitance options and highvoltage capability. Discoidal multilayer ceramic capacitors are of a configuration suitable for direct mounting into filters, onto bulkheads and hybrid circuits.

9、Special Feedthrough Filters

This series of filtered connectors includes custom products ranging. Commonmarkets for Custom Filtered Connectors are military, industrial and medical equipment. Including but not limited to commercial avionics, satellites, telecommunications, power supplies, electronic warfare, ground/air weapon systems and mining and oil drilling exploration.

Demand and Application of EMI Filters

With the increasing use of electronic devices, the possibility of interference from other devices is also increasing. Additionally, circuits at lower power levels are more susceptible to interference, which means equipment increasingly needs to be protected from EMI (Electro Magnetic Interference). To meet legislation such as the EU EMC Directive, EMI filtering is now an essential element of equipment design, in addition to other international regulations such as the FCC. In many cases, introducing shielding (e.g. to the chassis or cables) may be sufficient, but some form of low-pass filtering is usually required.

What is Electro Magnetic Interference (EMI) ?

Electro Magnetic Interference (abbreviation: EMI) occurs when two or more circuits interfere with each other. These destructive currents (often called "noise" or "electromagnetic noise") may originate from external sources or be generated by other components inside the device. This type of interference can cause radio frequency (RF) noise that disrupts functionality and communications between devices.

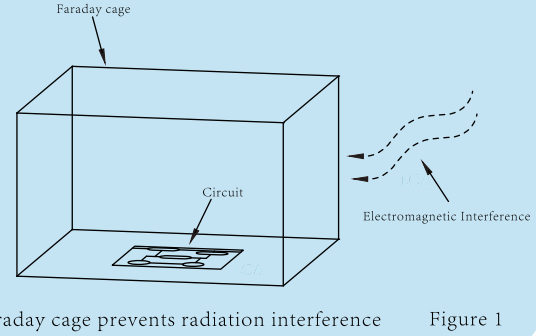
When EMI occurs, it disrupts the functionality of a device and may cause unintended operation. Depending on the severity of the interference, EMI can affect the quality of the signal a device receives, cause components to temporarily fail or malfunction, or permanently damage electronic equipment.

What are the two types of EMI?

There are two main types of EMI: conducted EMI and radiated EMI. Conducted EMI travels through conductors, such as wires or power lines, while radiated EMI travels through the air and does not require conductors. Both conducted and radiated EMI can affect the performance of electronic equipment through damage, degradation, malfunction, or system failure.

Faraday cage

The ideal way to protect a device or circuit from EMI is to completely enclose it in a metal (or conductive) box. This shielded enclosure is called a "Faraday cage." This prevents radiated interference from adversely affecting it (Figure 1).

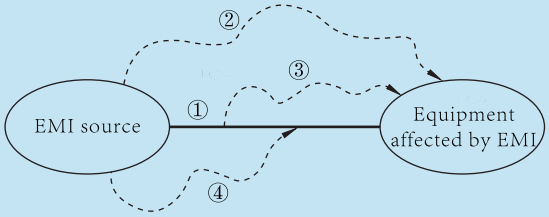


Faraday cage prevents radiation interference Figure 1

input/output cable

However, in reality, most devices require input and/or output connections, which may be power lines or signal and control lines. The cables that provide these connections can act as antennas, capable of picking up interference, or they can radiate it (Figure 2). Cables or wires that pass through a device's enclosure can introduce electrical noise that radiates internally to other wires and circuits. Likewise, it can provide a path to the outside from any noise generated internally, which can also be radiated and may in turn adversely affect other equipment.

1. Interference can enter a device directly through wiring (conducted interference).
2. Radiated interference can propagate directly to affected equipment.
3. Interference can leave the EMI source through the cable and subsequently radiate from the cable to the affected equipment.
4. Interference can be radiated from the EMI source and then received through the cables entering the affected equipment.



How electromagnetic interference spreads Figure 2

What is an EMI filter?

EMI filters, also known as EMI suppression filters, are an effective way to prevent the harmful effects of electromagnetic interference.

It is a passive filter composed of inductors and capacitors. It allows useful low-frequency signals to pass smoothly and inhibits high-frequency interference. This filter is a new type of component that has been popularized and applied in recent years. It can effectively suppress power grid noise, improve the anti-interference ability of electronic equipment and the reliability of the system. It can be widely used in electronic measuring instruments, computer room equipment, switches Power supply, measurement and control systems and other fields.

What does an EMI filter do?

EMI filters suppress electromagnetic noise that travels through conduction when connected to a device or circuit. These filters extract any unwanted current conducted through wires or cables while allowing the desired current to flow freely.

What applications require EMI filters?

EMI filters effectively reduce EMI noise and prevent interference with sensitive electronic components, thereby minimizing the risk of failure or data corruption, helping ensure reliable operation of power electronic systems and helping manufacturers meet electromagnetic compatibility standards. EMI filters are commonly used in applications such as power supplies, inverters, motor drives, LED lighting, and other electronic equipment where EMI mitigation is critical. With proper EMI filtering, these devices can be used with confidence in mission-critical applications such as medical equipment, aerospace and defense equipment where failure is not tolerated.

How do EMI filters work?

Most electromagnetic noise is in the higher frequency range, so EMI filters are typically low-pass filters that filter out high frequencies while passing low frequencies. Different EMI line filters suppress noise at specific frequencies while allowing other noise to pass unimpeded. After a filtering process, electromagnetic noise is transferred from the device to the ground. Some EMI filters may also route unwanted current back to noise sources or absorb them.

Since EMI filters can only protect against conducted EMI, they are often paired with shields that block radiated EMI. Unshielded EMI filters can still transmit noise through the air, damaging equipment. Noise can emanate from wires on one side of the EMI filter and then travel to the device by recoupling with wires on the other side.

Adding shielding at the connection points of an EMI filter can effectively block all forms of EMI. However, if there is only a short length of conductor between the filter and the EMI source, the filter alone may be sufficient.

How to use EMI filter?

In the field of power electronics, EMI filters are used to suppress and filter out unwanted high-frequency electromagnetic noise generated by the switching operations of power electronic circuits. Especially with ceramic EMI filters, the primary function of these components is to provide a low-impedance path for unwanted high-frequency noise while allowing the desired power signal to pass with minimal impedance. EMI filters act as low-pass filters, attenuating high-frequency noise and preventing its propagation (Figure 3).

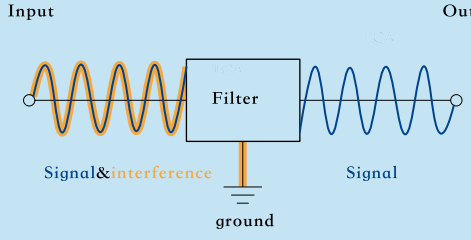
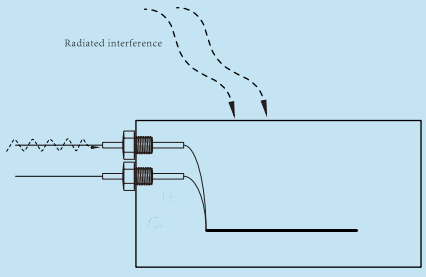


Illustration of the basic concepts of how EMI filters work

Figure 3

Filter Location - Panel Mount Filter

To prevent interference from entering or leaving the equipment, feedthrough EMI filters can be mounted on the walls of a shielded box. Any input or output cables will pass through the filter. The mains or desired signal passes through the filter unaffected, while higher frequency interference is removed. A shielded enclosure prevents radiated interference and a feedthrough filter prevents conducted interference. This ensures the integrity of the device (Figure 4).



Feedthrough filter eliminates conducted interference for ultimate performance

Figure 4

The Key to Excellent Performance of Feedthrough EMI Filters

The key to a feedthrough filter's performance is its metal housing. Coaxial feedthrough capacitors have the leads through the center and include a ground plane that completely surrounds the leads. Feedthrough capacitors do not become inductors at higher frequencies. This is true for every leaded or surface mount capacitor.

The metal casing also provides shielding, isolating the filter's input from the output (especially above 1GHz). The performance of a feedthrough EMI filter can easily be higher than what the enclosure can provide.

There is no physical way for a PC board EMI filter to match the performance of a feedthrough EMI filter without a miniature shielded enclosure with feedthrough mounted directly on the printed circuit board.

Why are LCA® ceramic capacitors ideal for EMI filters?

Ceramic materials have excellent electrical and mechanical properties, making them suitable for EMI filter applications. LCA® ceramic EMI filters are typically constructed using single-layer shoulder tubular ceramic feedthrough capacitors, multilayer chip ceramic capacitors (MLCC), or multilayer ring ceramic capacitors. These capacitors are designed with high capacitance values and low equivalent series inductance (ESL) and equivalent series resistance (ESR) to minimize the impedance of the desired power signal. EMI filters made of ceramic are also designed to exhibit high impedance at high frequencies, effectively filtering out EMI noise.

Explanation of Common Terms

Conducted Interference

Interference transmitted along conductors/cables.

Protection is provided by series elements. If a feedthrough filter is used to eliminate conducted interference and installed on the walls of a shielded room, it can provide effective filtration while maintaining screening integrity.

Cutoff Frequency/3dB Point

The frequency at which the filter begins to take effect.

It is generally considered to be at the 3dB point of the attenuation curve. Anything on the line below this frequency will not be affected. The higher the capacitance of the filter, the lower the cutoff value, and vice versa. It also varies depending on the source and load impedances.

EMC

Electromagnetic compatibility.

A situation where two pieces of electrical or electronic equipment are able to operate in the same environment without adversely affecting or affecting each other.

EMI

Electro Magnetic Interference.

This is a compound word. We should consider "electro" and "interference" separately. The so-called "interference" refers to the two-tiered meaning of the performance degradation of the equipment after being interfered with and the interference sources that cause interference to the equipment. The first meaning is that thunder and lightning cause noise on the radio, snowflakes appear on the TV screen after a motorcycle is driving nearby, and radio sounds are heard after picking up the phone. These can be abbreviated as "BC I", "TV I" and "Tel I", these abbreviations all have the same "I" (interference) (BC: broadcast, TV: television, Tel: telephone). Sources of interference may include radar transmitters, electric motors, computer clocks, lightning, electrostatic discharge, and many other phenomena. Second is "electro". If the charge is stationary, it is called static electricity. When different potentials move in unison, electrostatic discharge occurs, generating a current, and a magnetic field is generated around the current. If the direction and magnitude of the current continue to change, electromagnetic waves are produced.

EMI Filter

Electro Magnetic Interference filter.

It is a passive filter composed of inductors and capacitors. It allows useful low-frequency signals to pass smoothly and inhibits high-frequency interference. This filter is a new type of component that has been popularized and applied in recent years. It can effectively suppress power grid noise, improve the anti-interference ability of electronic equipment and the reliability of the system. It can be widely used in electronic measuring instruments, computer room equipment, switches Power supply, measurement and control systems and other fields.

Insertion Loss

The insertion loss of a feedthrough suppression capacitor or filter connected to a given transmission system at a given frequency.

Defined as the ratio of the voltage across the lines that occurs immediately outside the insertion point before and after insertion. The ratio is expressed in decibels (dB) as follows:

$$\text{Insertion loss} = 20 \log \frac{E_1}{E_2}$$

In the formula:

E1=The ratio of the output voltage of the signal generator to the components in the circuit.

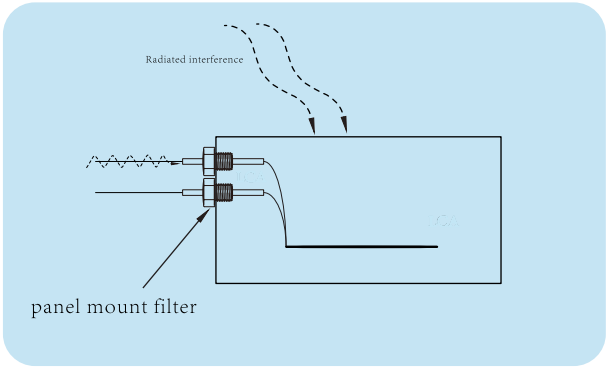
E2=output voltage of a signal generator with components not in the circuit.

When testing with a network/spectrum analyzer, the device typically maintains a constant output voltage and can be set up to record the output to input voltage ratio in decibels.

Panel Mount Filter

A panel-mounted filter that passes signals from one side of a shielded box (or "Faraday cage") to the other (which feeds the signal through the panel).

To operate effectively, the input and output of the filter should be shielded from each other, i.e. ideally there should be no holes in the panel.



Feedthrough Capacitor

The capacitors used in EMI filters are generally ceramic capacitors. Due to their physical structure, such ceramic capacitors are also called feedthrough capacitors.

The self-inductance of feedthrough capacitors is much smaller than that of ordinary capacitors, so the self-resonant frequency is very high. At the same time, the through-core design also effectively prevents high-frequency signals from being directly coupled from the input end to the output end. This combination of low pass and high impedance provides excellent rejection in the 1GHz frequency range.

The simplest feedthrough structure is one (C type) or two capacitors (Pi type) consisting of inner and outer electrodes and ceramics. The capacitance of this capacitor can range from 10pF to 2 uF, and the operating voltage can reach 1000VDC. Due to its coaxiality, the tubular feedthrough capacitor will not produce obvious self-resonance even at a frequency of 10GHz.

Insertion Loss/Filter Performance

Insertion loss performance aids in filter selection by showing signal attenuation at any given frequency. However, it should only be used as a guide as actual performance will vary based on overall circuit characteristics.

Insertion loss is determined by:

- Electrical Configuration
- Source/load impedance
- Load current (can cause ferrite saturation)
- Ceramic dielectric materials. Changes in capacitance are affected by applied voltage, temperature and component age
- Ground impedance
- Shield integrity

Electrical Configuration

There are many internal Electrical Configuration of feedthrough capacitors. Capacitors and ferrite beads are combined according to different circuit structures to form C, LC, Pi, T-type filter circuits. A single element filter (capacitor or inductor) theoretically provides an insertion loss characteristic of 20dB per decade, a two element filter (capacitor/inductor) theoretically provides 40dB per decade, and a three element filter (Pi or T configuration) theoretically provides an insertion loss characteristic of 20dB per decade. Produces 60dB. In practice, the insertion loss curve does not exactly match the predictions, and the data sheet should be consulted for actual numbers. These circuits provide different filtering characteristics. The more components the filter has, the shorter the transition band between the passband and the stopband, and the greater the insertion loss.

C Filter

Single capacitor structure. It is a low self-induction device that avoids high-frequency noise interference with the ground. It is suitable for signal line filtering and DC power line filtering. It is suitable for applications with high impedance sources and high loads.

L-C Filter

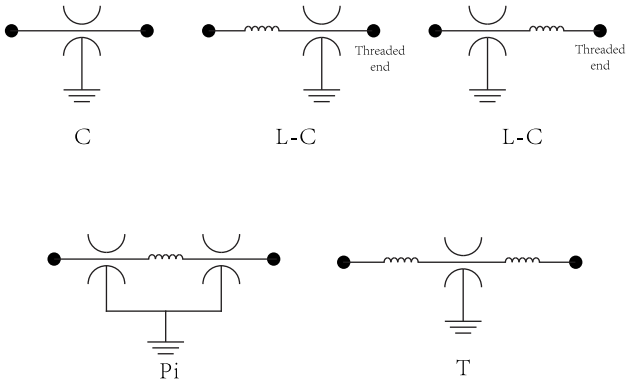
This is a feedthrough filter with an inductor and a capacitor. Different installation methods (directions) can be used in situations where the source impedance is high and the load impedance is low, or where the source impedance is low and the load impedance is high. The sensing element should face low impedance.

Pi Filter

It consists of two capacitive elements and an inductive element between the two capacitive elements. Provides better high-frequency filtering performance than C and LC structures. It is suitable for situations where both source impedance and load impedance are high, and interference suppression performance (insertion loss) is required.

T Filter

It consists of two inductive components and a capacitive component. It has a similar structure to the Pi filter, but is not as widely used as the Pi filter. It is suitable for situations where the source impedance and load impedance are both low, and the interference suppression performance (insertion loss) is required.



Multi-element filters

These filters contain more than 3 elements, such as L-C-L-C-L filters. Further added elements increase the steepness of the insertion loss curve.

Ceramic dielectric material selection

The medium of the feedthrough capacitor is ceramic dielectric, and the capacity of the ceramic capacitor will change with changes in ambient temperature. This capacity change will affect the filter cutoff rate of the filter. The capacitance temperature change rate of ceramic capacitors is determined by the ceramic dielectric itself. Therefore, it is very important to choose the appropriate ceramic media.

In general, the stability of the dielectric constant (and therefore the filter capacitance value) relative to certain operating and environmental parameters deteriorates as the dielectric constant increases. The specific factors that affect the dielectric constant are temperature, voltage, frequency and time (aging).

The three main ceramic dielectrics used in EMI filter manufacturing are often referred to as ultra-stable (NP0/C0G), stable (X7R), and general-purpose (Y5U or Y5V).

NP0/C0G

Most parameters of materials in this dielectric classification are not affected by temperature, voltage, frequency or time. Stability is measured in parts per million, but the dielectric constant is relatively low (10 to 100).

X7R

This is a classification of materials that are relatively stable in temperature, voltage, frequency and time. A typical dielectric constant will be between 2000 and 4000, allowing much higher capacitance values to be obtained for a given size capacitor than with C0G/NP0 materials.

Y5U/Y5V

This type of powder has a higher dielectric constant and a higher relative capacitance value, but its temperature range is narrow, and temperature changes have a greater impact on the capacitance value. Generally used in situations where the temperature changes little. Performance under applied voltage may be severely compromised。

Overview of Ceramic Dielectric Properties

EIA media		NP0/C0G	SL	X7R	Y5U	Y5V
EIA media categories		Ultra stable	Stable		General purpose	
working temperature		-55°C~+125°C	-55°C~+125°C	-55°C~+125°C	-25°C~+85°C	-25°C~+85°C
Capacity temp. change rate (without voltage)		0±30ppm/°C	±3000ppm/°C	±15%	-56%~+22%	-85%~+22%
Insulation resistance Ri		⩾3000MΩ	⩾3000MΩ	Cr⩽25nF Ri ⩽3000MΩ Cr⩽25nF Ri *Cr ⩽200S		
dielectric loss tangent		Cr>50pF⩽0.015 Cr⩽50pF<0.015 (15/Cr+0.7)	<0.035	<0.035	<0.035	0.035
Withstand voltage (depend on capacity)	Operating Voltage	Multiples of applied working voltage (pressure time 5 seconds)				
	⩽100V	X2.5	X2.5	X2.5	X2.5	X2.5
	>100V	X1.5+100	X1.5+100	X1.5+100	X1.5+100	X1.5+100

Installation of Solder-in Filters

Filter Soldering

The soldering process should be controlled so that the filter is not subjected to sudden thermal shock that could cause the internal ceramic capacitors to rupture.

The speed during preheating is maintained at 2° C/sec. In practice, successful temperature rises tend to be between 1.5° C/sec and 4° C/sec, depending on the substrate and component.

It is useful to use a soaking zone before soldering so that the temperature of the substrate is uniform without deformation. On cooling, any recovery of substrate deformation can create stresses that damage the filter.

The soldering material can be SN42 or similar type.

The soldering time should be controlled within 3 seconds, and the soldering temperature should be controlled not to exceed 300° C (suitable for welded through-core series).

Natural cooling should be used when cooling to room temperature to allow the temperature difference stress in the soldering points to gradually relax. Air leakage should be avoided. Forced air cooling can cause thermal cracking, and cleaning with cold water immediately after the soldering process can cause the filter to crack. When using different production processes, corresponding tests need to be carried out.

Lead bending and trimming

The bending of the filter lead should not be done within 4mm of the epoxy seal, and the lead should be supported when trimming it.

Installation of threaded feedthrough capacitors

Resin Sealed Bolt-in Filters

General

Ceramic capacitors are the heart of the filter and can be damaged by thermal and mechanical shock, as well as by overvoltage. Care should be taken to minimize the risk of stress when mounting the filter to the panel and soldering the wires to the filter terminals.

Install on the panel

Installation torque

The recommended mounting rotation relative to the housing should be used when mounting the filter to a bulkhead or panel. This is an important point. Otherwise, the ceramic capacitor inside may be damaged due to deformation of the casing. When installing, the maximum installation torque should not be greater than the recommended installation torque. Excessive installation torque will cause damage to the capacitor. See drawings for details on torque data for each filter range.

Tool

Hexagonal filters should be installed with suitable bushings or wrenches. The round head filter can be installed on the panel in one of the following two ways (cannot be installed with pliers tools to avoid damaging the filter):

- Round body with grooved top designed for easy turning with special tools enter.
- A round body without a slotted top is used to insert into the slotted hole and use Nut fixation. The flat surface processing of the thread and the flat surface engagement in the hole combine.

Ground

In order to ensure the normal operation of the filter, the filter housing must be sufficiently connected to the ground of the panel to provide an effective path for interference. Adhesive locking is not recommended and, if used, should be done after the filter is installed.

Minimum plate thickness

Users should note that sometimes feedthrough filters have undercuts between the threads and the mounting edge of the housing. When the thickness of the installed plate is less than the length of the undercut, problems will arise in the tight fit of the threaded holes and the positioning of the filter. Therefore, whenever possible, the thickness of the panel should be greater than the length of the undercut.

Maximum plate thickness

This indicator is used to ensure that the nut can be fully locked including the use of washers.

Terminal soldering

Soldering temperature

The temperature of the soldering iron tip should not exceed 300° C.

Soldering time

The dwell time should be 3-5 seconds maximum to minimize the risk of cracking the capacitor due to thermal shock.

Soldering materials

Soldering materials can be SN60, SN62 or similar types.

Heat sink

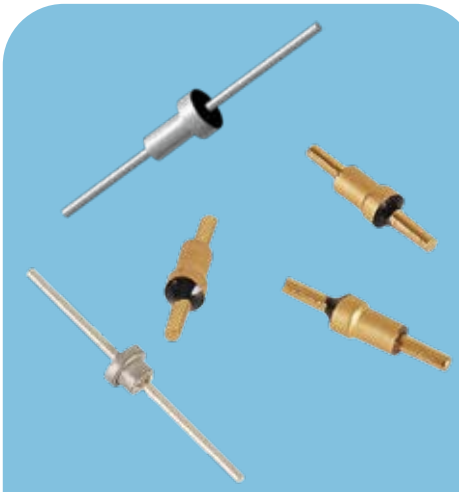
Use a radiator between the soldering point and the case as much as possible, especially when the soldering time is long. Excessive soldering time and failure to dissipate heat in time will cause secondary melting of the internal soldering part of the capacitor.

Lead bending and trimming

The bending of the filter lead should not be done within 4mm of the epoxy seal, and the lead should be supported when trimming it.

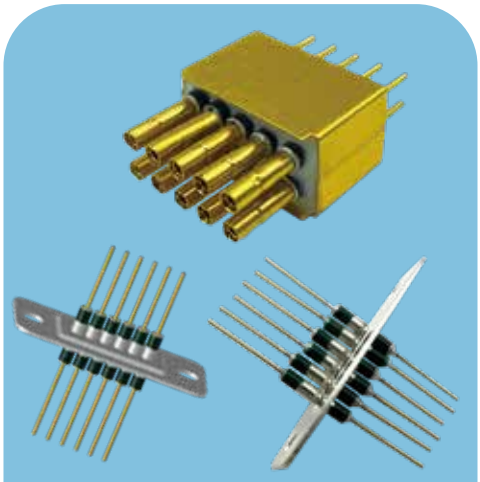
LCA Product Categories

Tubular Ceramic Capacitors

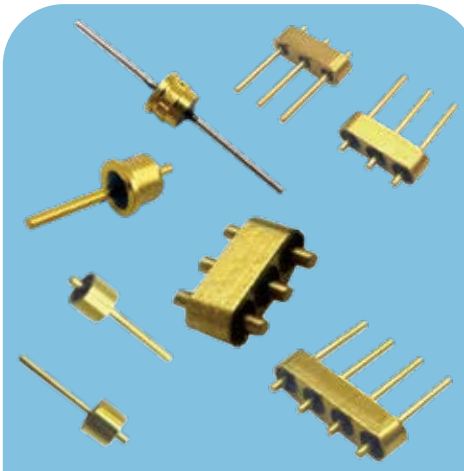


Solder-in Filters

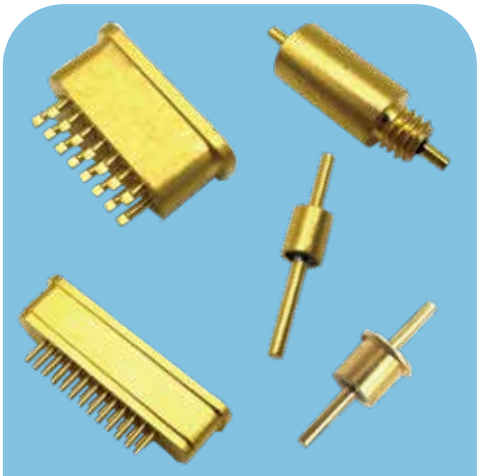
Resin Sealed Bolt-in Filters



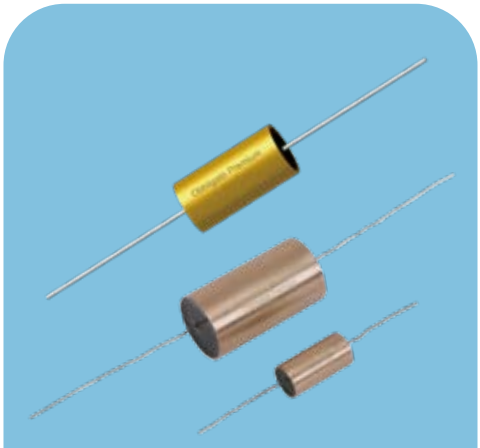
Filtered Arrays



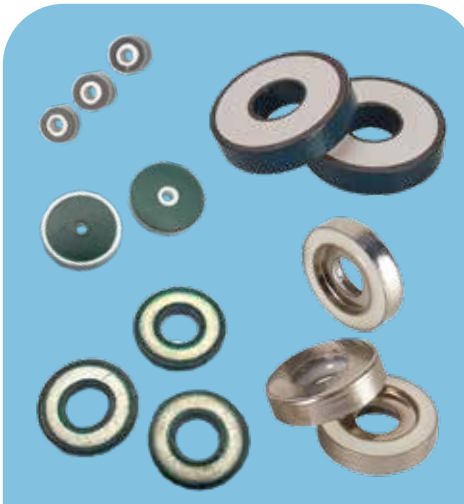
Miniature RF Filters



Hermetically Sealed Filters



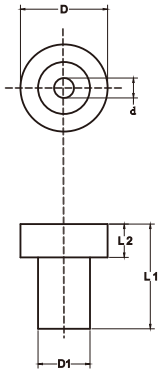
Obbligato Premium Audio Capacitors



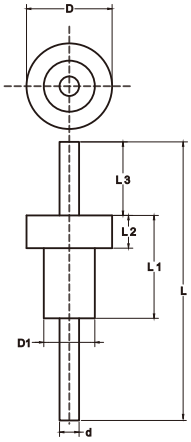
Discoidal Capacitors (Single/Multilayer)

Special Feedthrough Filters

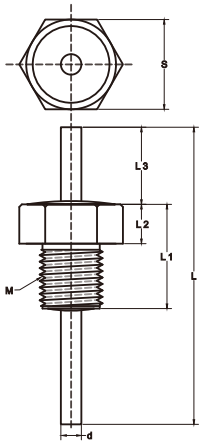
Quick Model Consultation Method



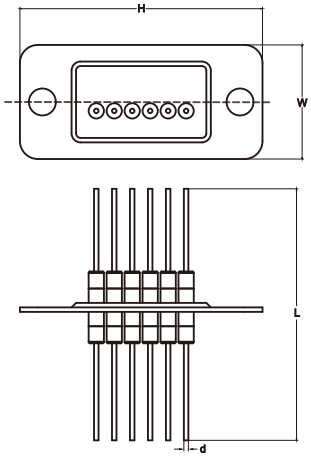
Tubular



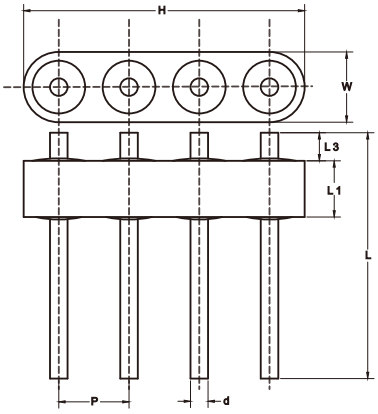
Solder-in



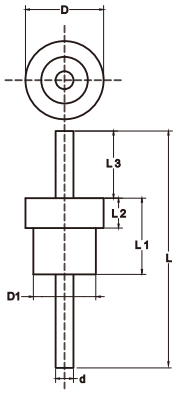
Threaded



Arrays



Miniature RF



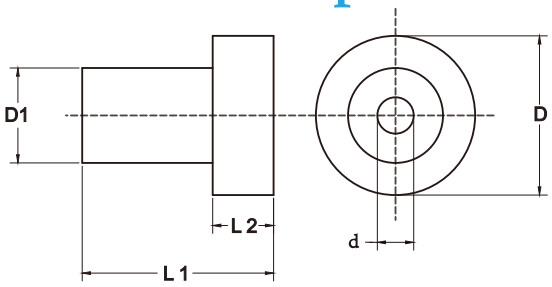
Hermetically Sealed

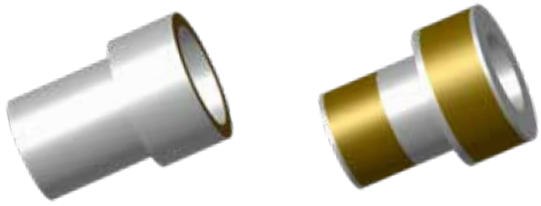
LCA HC 3822-5008X _ -100VDC-102M

- **LCA Logo**
- **Installation method:** G=Tubular; H=Solder-in; L=Threaded; ZL =Arrays; HA=Miniature RF; HB=Hermetically Sealed
- **Electrical Configuration (E.C.):** C, LC, PI, T
- **Large diameter/Length:** D/S/H
- **Small diameter/Width:** D1/M/W
- **Filter Length:** L1
- **Lead diameter d:** 08=0.8mm; 10=1.0mm; 15=1.5mm
- **Material:** X=X7R; Y=Y5P/Y5U/Y5V; S=SL; N=NPO
- **Num. of Lead:** _=1 Lead; 205=2Row*5Col
- **Rated Voltage: (DC/AC)** 50V, 100V, 250V, 500V, 1000V
- **Capacitance:** 100=10pF; 101=100pF; 102=1000pF; 103=0.01uF; 104=0.1uF
- **Accuracy:** K=±10%; M=±20%; S=-20%+50%; Z=-20%+80%; P=-0%+100%

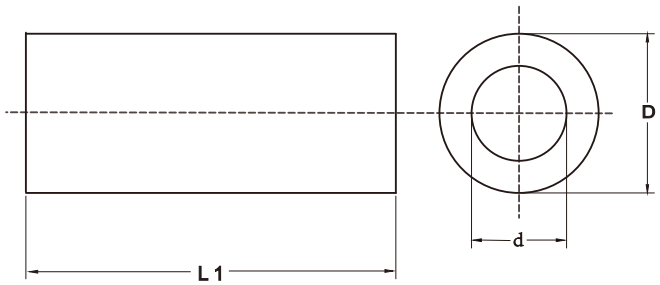
If there are special requirements, we can accept the sample drawing customization.

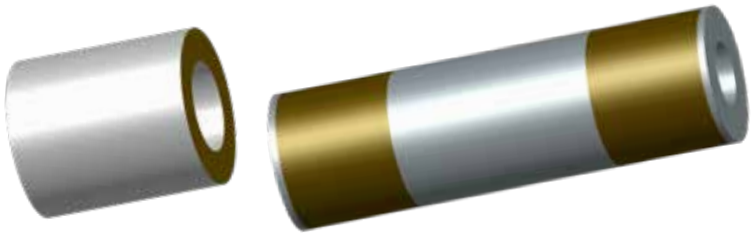
Tubular Ceramic Capacitors



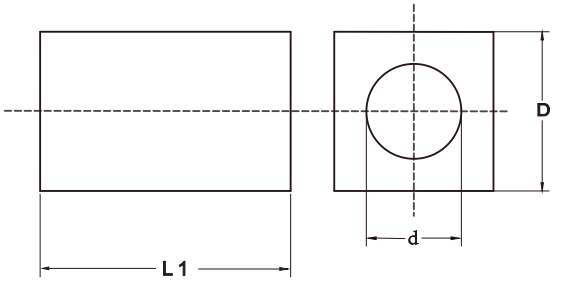


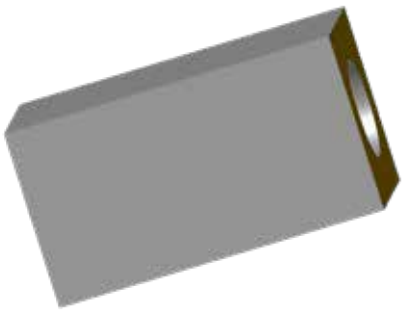
Part Num.	Size					Plate	Rated Vol.		Diel.	Cap.	Insertion Loss (dB)						
	D	D1	d	L1	L2		DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
G1915-909	1.9	1.5	0.8	<3	1	-	100	-	-	-	-	-	-	-	-	-	-
G1915-921	1.9	1.5	0.8	2	0.9	Tin	100	-	NPO	<5pF	-	-	-	-	-	-	5
G1915-914	1.9	1.5	0.7	2.5	1	Tin	100	-	NPO	10pF	-	-	-	-	-	5	12
G1915-908	1.9	1.5	0.8	2.5	1	Gold	100	-	X7R	1000pF	-	-	-	5	20	35	40
G1915-916	1.9	1.5	0.8	2.5	1	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G2416-908	2.4	1.6	0.75	3	1.1	Tin	100	-	NPO	10pF	-	-	-	-	-	5	12
G2416-901	2.4	1.6	0.8	4	1.5	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G2416-905	2.4	1.6	0.75	4	1.5	Tin	100	-	Y5V	3300pF	-	-	-	10	27	38	45
G2520-903	2.45	1.95	0.9	2.2	0.7	Tin	200	-	SL	47pF	-	-	-	-	-	10	20
G2520-902	2.45	1.95	0.9	2.5	0.7	Tin	200	-	Y5P	470pF	-	-	-	-	9	28	33
G2520-904	2.5	1.9	1	2.4	0.7	Tin	50	-	X7R	1000pF	-	-	-	5	20	35	40
G2618-901	2.6	1.8	0.8	3.5	1	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G3822-907	3.8	2.2	0.75	6.5	2	Tin	100	-	Y5U	2000pF	-	-	-	6	23	35	40
G3822-913	3.8	2.2	0.75	4.5	1.5	Tin	100	-	Y5V	4700pF	-	-	-	13	30	40	50
G4224-901	4.2	2.4	1	3.5	1	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G4330-906	4.3	3	1.2	4	1.7	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G4532-908	4.5	3.2	1.3	6.2	2	Tin	160	-	NPO	22pF	-	-	-	-	-	8	15
G4532-914	4.5	3	1.3	4	2	Tin	200	-	X7R	1000pF	-	-	-	5	20	35	40
G4532-911A	4.5	3	1.3	5.5	2	Tin	200	-	X7R	1500pF	-	-	-	5	22	35	40
G4722-907	4.7	2.2	0.8	3.2	1	Tin	100	-	SL	100pF	-	-	-	-	3	20	27
G4722-901B	4.7	2.2	1	3.7	1.5	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G4722-901A	4.7	2.2	1	3.7	1.5	Tin	100	-	X7R	2000pF	-	-	-	6	23	35	40
G4722-906	4.7	2.2	0.8	3.2	1	Tin	100	-	Y5V	4700pF	-	-	-	13	30	40	50
G4737-903	4.7	3.7	1.5	6.5	2.1	Tin	200	-	X7R	1000pF	-	-	-	5	20	35	40
G4737-907	4.7	3.7	1.5	6	2	Tin	200	-	Y5V	3300pF	-	-	-	10	27	38	45
G4737-904	4.7	3.7	1.5	6	2	Tin	200	-	Y5V	4700pF	-	-	-	13	30	40	50
G4737-908	4.7	3.7	1.5	6	2	Tin	200	-	Y5V	6000pF	-	-	-	15	30	42	50
G4743-901	4.8	4.3	1.3	6.5	0.8	Tin	100	-	X7R	1000pF	-	-	-	5	20	35	40
G5038-905	5.1	3.8	0.85	4.5	2.2	Tin	500	-	X7R	1000pF	-	-	-	5	20	35	40
G5122-904	5.1	2.2	1	6	2.5	Tin	100	-	X7R	3300pF	-	-	-	10	27	38	45
G5124-902	5.1	2.4	1.4	5.5	1.6	Tin	100	-	X7R	3300pF	-	-	-	10	27	38	45
G6045-903	6	4.5	2.5	6.5	1.5	Tin	160	-	Y5P	1000pF	-	-	-	5	20	35	40
G6045-904	6	4.5	2.5	6	1.5	Tin	160	-	X7R	1500pF	-	-	-	5	22	35	40
G6045-905	6	4.5	2.5	6.5	1.5	Tin	200	-	X7R	1800pF	-	-	-	6	23	35	40
G6045-906	6	4.5	2.5	6	1.7	Tin	160	-	NPO	68pF	-	-	-	-	-	12	23
G7774-901	7.7	7.4	0.9	6.5	3	Tin	500	-	X7R	500pF	-	-	-	-	10	28	35





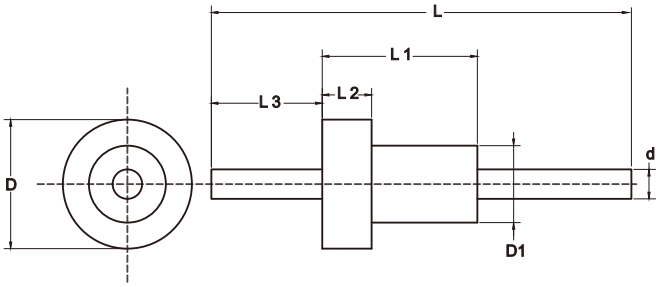
Part Num.	Size			Plate	Rated Vol.		Diel.	Cap.	E.C.	Insertion Loss (dB)						
	D	d	L1		DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
G1111-901	1.1	0.55	0.63	Tin	200	-	Y5P	100pF	C	-	-	-	-	3	20	27
G1818-901	1.85	0.65	1.25	Tin	100	-	Y5V	1000pF	C	-	-	-	5	20	35	40
G1818-902	1.8	1.2	2.5	Tin	100	-	X7R	1200pF	C	-	-	-	5	20	35	40
G2020-905	2	1.1	2.5	Tin	100	-	X7R	1000pF	C	-	-	-	5	20	35	40
G2020-906	2	1.1	3.2	Tin	100	-	X7R	1500pF	C	-	-	-	5	22	35	40
G2222-003	2.2	1.6	12	Tin	100	-	Y5P	430pF*2	PI	-	-	-	3	25	60	>70
G2222-014	2.2	1.6	8.5	Tin	250	-	X7R	800pF*2	PI	-	-	-	8	37	65	>70
G2222-013	2.2	1.6	8.5	Tin	100	-	Y5V	5000pF*2	PI	-	-	4	27	67	>70	>70
G2222-005	2.2	1.6	12	Tin	100	-	Y5U	0.01μF	C	-	-	4	21	35	50	58
G2222-006	2.2	1.6	12	Tin	100	-	Y5V	0.012μF*2	PI	-	-	10	40	>70	>70	>70
G2424-910	2.4	1.65	2.2	Tin	100	-	X7R	1000pF	C	-	-	-	5	20	35	40
G2424-912	2.4	1.65	2	Tin	100	-	X7R	1000pF	C	-	-	-	5	20	35	40
G2424-913	2.4	1.65	2.4	Tin	100	-	X7R	1200pF	C	-	-	-	5	20	35	40
G2424-911	2.4	1.65	2.6	Tin	100	-	Y5V	3300pF	C	-	-	-	10	27	38	45
G2424-914	2.4	1.65	2.6	Tin	100	-	Y5V	5500pF	C	-	-	-	13	30	40	50
G2525-913	2.5	1.3	1.3	Tin	100	-	SL	10pF	C	-	-	-	-	-	5	12
G2525-909	2.4	1.3	2.4	Tin	50	-	Y5P	500pF	C	-	-	-	-	10	28	35
G2525-906	2.5	1.3	2.5	Tin	200	-	X7R	1000pF	C	-	-	-	5	20	35	40
G3838-001A	3.8	1.8	12.5	Tin	500	-	X7R	1800pF	C	-	-	-	6	23	35	40
G8080-901	8	3.8	4	Tin	500	-	X7R	1000pF	C	-	-	-	5	20	35	40





Part Num.	Plate	Rated Vol.		Diel.	Cap.	Insertion Loss (dB)						
		DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
G1717-902B	Tin	100	-	Y5V	2200pF	-	-	-	8	24	35	43
G1717-902	Tin	100	-	Y5V	4000pF	-	-	-	10	30	39	45

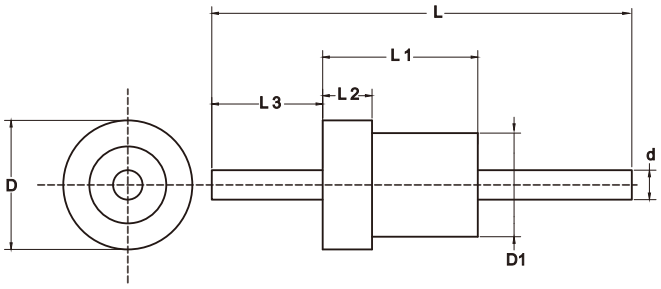
Solder-in Filters



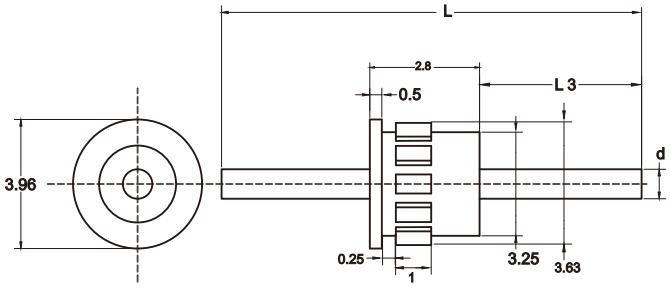
Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	D	D1	d	L	L1	L2	L3			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
H1915-916	1.9	1.5	0.8	30.3	2	0.5	10	NPO	Tin	100	-	7A	8pF	-	-	-	-	-	-	7
H1915-904	1.9	1.5	0.7	24	3.5	1	10	NPO	Tin	100	-	7A	10pF	-	-	-	-	-	5	12
JH1915-908	1.9	1.5	0.75	8.7	3	1	3	NPO	Gold	100	-	7A	10pF	-	-	-	-	-	5	12
H1915-906	1.9	1.5	0.7	17	3.5	1	9.5	NPO	Tin	100	-	7A	14pF	-	-	-	-	-	5	12
H1915-914	1.9	1.5	0.75	30.3	3.2	1	10	KL	Tin	100	-	7A	100pF	-	-	-	-	3	20	27
H1915-902	1.9	1.5	0.75	22	3.5	1	10	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H1915-917	1.9	1.5	0.75	22	2.5	1	10.2	X7R	Gold	100	-	7A	1000pF	-	-	-	5	20	35	40
H1915-925	1.9	1.5	0.75	11.2	3.0	1	4	X7R	Tin	100	-	7A	1000pF*2	-	-	-	5	20	35	40
H1915-912	1.9	1.5	0.7	24	3.2	1	10	Y5U	Tin	100	-	7A	3300pF	-	-	-	10	27	38	45
H1915-924	1.9	1.5	0.75	11.2	3.0	1	3.5	Y5V	Tin	100	-	7A	3300pF	-	-	-	10	27	38	45
H2416-906	2.4	1.6	0.7	30.3	4	1.5	9	NPO	Tin	50	-	7A	15pF	-	-	-	-	-	5	13
H2416-901	2.4	1.6	0.75	30.3	4	1.5	9	X7R	Tin	50	-	7A	1000pF	-	-	-	5	20	35	40
H2416-905	2.4	1.6	0.7	30.3	4	1.5	9	Y5V	Tin	100	-	7A	3300pF	-	-	-	10	27	38	45
H2416-911	2.4	1.6	0.7	30.3	4	1.5	9	Y5V	Tin	100	-	7A	4700pF	-	-	-	13	30	40	50
H2520-904	2.5	1.9	0.8	30.3	2.3	0.6	10	SL	Tin	100	-	7A	47pF	-	-	-	-	-	10	20
H2520-901	2.5	1.9	1	24.3	3	0.7	10.5	KL	Gold	100	-	10A	100pF	-	-	-	-	3	20	27
H2520-903	2.5	1.9	0.8	22	2.8	0.6	9.5	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H2618-931	2.6	1.8	0.75	14	3.5	1	6.5	NPO	Gold	100	-	7A	10pF	-	-	-	-	-	5	12
H2618-916A	2.6	1.8	0.7	30.3	3.5	1	9.5	SL	Tin	100	-	7A	50pF	-	-	-	-	-	10	20
H2618-917	2.6	1.8	0.75	22	3.5	1	9.5	SL	Tin	100	-	7A	100pF	-	-	-	-	3	20	27
H2618-907	2.6	1.8	0.75	22	3.5	1	9.5	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H2618-929	2.6	1.8	0.75	14	3.5	1	6.5	X7R	Gold	100	-	7A	1000pF	-	-	-	5	20	35	40
H2618-907E	2.6	1.8	0.75	22	3.5	1	9.5	X7R	Tin	100	-	7A	1500pF	-	-	-	5	22	35	40
H2618-905	2.6	1.8	0.75	22	3.5	1	9.5	Y5V	Tin	100	-	7A	3300pF	-	-	-	10	27	38	45
H2618-905A	2.6	1.8	0.75	22	3.5	1	9.5	Y5V	Tin	100	-	7A	4700pF	-	-	-	13	30	40	50
H3822-922	3.8	2.2	0.75	28.3	4.6	1.4	13	KL	Tin	100	-	7A	150pF	-	-	-	-	4	20	28
H3822-911	3.8	2.2	0.75	57	6.5	1.2	23	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H3822-912	3.8	2.2	0.75	19	5	1.5	9.5	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H3822-923A	3.8	2.2	0.75	14	5	1.5	6	X7R	Tin	300	-	7A	1000pF	-	-	-	5	20	35	40
H3822-912B	3.8	2.2	0.75	19	5	1.5	9.5	X7R	Tin	100	-	7A	1500pF	-	-	-	5	22	35	40
H3822-907	3.8	2.2	0.75	57	6.5	2	23	Y5U	Tin	100	-	7A	2000pF	-	-	-	6	23	35	40
H3822-924A	3.8	2.2	0.75	28.3	6	1.5	12.5	Y5V	Tin	100	-	7A	4700pF	-	-	-	13	30	40	50
H3822-924	3.8	2.2	0.75	28.3	6	1.5	12.5	Y5V	Tin	100	-	7A	6800pF	-	-	-	15	30	42	50
H4224-909	4.1	2.4	1	32.0	3.6	1	21.4	X7R	Tin	100	-	10A	1000pF	-	-	-	5	20	35	40
H4224-905	4.2	2.4	1	28.3	3	1	13	Y5V	Tin	100	-	10A	3300pF	-	-	-	10	27	38	45
H4330-903	4.5	3	1	28.3	4	1.8	12.5	Y5P	Tin	100	-	10A	330pF	-	-	-	-	6	25	32
H4330-905	4.3	3	1.2	28.5	3.5	1.5	8.5	Y5U	Tin	100	-	12A	2200pF	-	-	-	8	24	35	43

Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	D	D1	d	L	L1	L2	L3			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
H4532-915	4.5	3.2	1	57	4.5	2	26	X7R	Tin	100	-	15A	560pF	-	-	-	-	10	28	35
H4532-901	4.5	3.2	0.7	24	6	2.5	10	X7R	Tin	400	-	6A	1000pF	-	-	-	5	20	35	40
H4532-908	4.5	3.2	0.75	57	6	2.1	22	Y5U	Tin	400	-	7A	2200pF	-	-	-	8	24	35	43
H4722-902	4.7	2.2	0.75	22	3.2	1	12	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H4722-903	4.7	2.2	0.75	22	2.8	1	12	Y5V	Tin	100	-	7A	3300pF	-	-	-	10	27	38	45
H4722-906A	4.7	2.2	0.7	22	3.3	1	12	Y5V	Tin	100	-	7A	4700pF	-	-	-	13	30	40	50
H4722-916	4.7	2.2	1	28.3	4	1.5	12.5	Y5V	Tin	100	-	10A	10000pF	-	-	4	21	35	50	58
H4737-901	4.7	3.7	1.5	35	6.5	2.1	12	X7R	Tin	100	-	20A	1000pF	-	-	-	5	20	35	40
H4737-902	4.7	3.7	1.5	35	6	2	13.5	Y5V	Tin	100	-	20A	4700pF	-	-	-	13	30	40	50
H4743-901	4.7	4.3	1.2	35	6.5	0.5	14	X7R	Tin	100	-	10A	1000pF	-	-	-	5	20	35	40
H5038-901	5	3.8	0.75	30.3	4.5	2	9	X7R	Tin	100	-	7A	1000pF	-	-	-	5	20	35	40
H6045-901	6	4.2	2.5	35	6.5	1.5	12	Y5P	Tin	100	-	35A	1000pF	-	-	-	5	20	35	40

Solder-in Filters with Metallic Shell



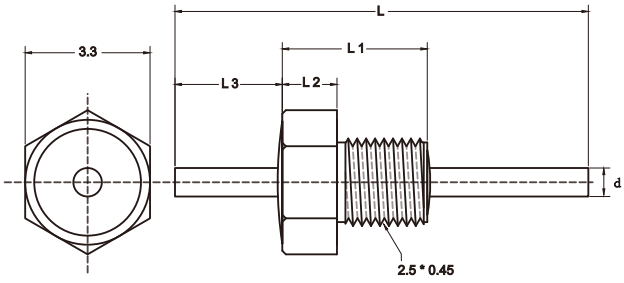
Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	D	D1	d	L	L1	L2	L3			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
H3630-010	3.6	3	0.8	19.0	3.5	0.25	8.5	X7R	Silver	100	-	7A	1000pF	-	-	-	5	20	35	40
H3630-001	3.6	3	0.8	11	3	0.5	6.5	Y5V	Gold	50	-	5A	4000pF	-	-	-	10	30	39	45
H3630-012	3.55	2.95	0.8	11.5	3	0.5	7	Y5V	Gold	50	-	5A	5000pF	-	-	-	13	30	40	50
H4033-016	4	3.3	0.8	22	2.8	0.5	11	SL	Gold	100	-	7A	80pF	-	-	-	-	-	15	25
H4033-002	4	3.3	0.8	22	3	0.5	9	X7R	Gold	50	-	7A	1000pF	-	-	-	5	20	35	40
H4033-024	4	3.3	0.8	11.5	2.8	0.5	6.7	X7R	Gold	20	-	7A	1000pF	-	-	-	5	20	35	40
H4033-012	4	3.3	0.8	22	3	0.5	9	X7R	Gold	100	-	7A	0.1μF	-	5	22	40	47	65	⩾65
H7040-001	7	4	1.2	13	4.5	2.5	4.5	X7R	Silver	200	-	10A	1000pF	-	-	-	5	20	35	40

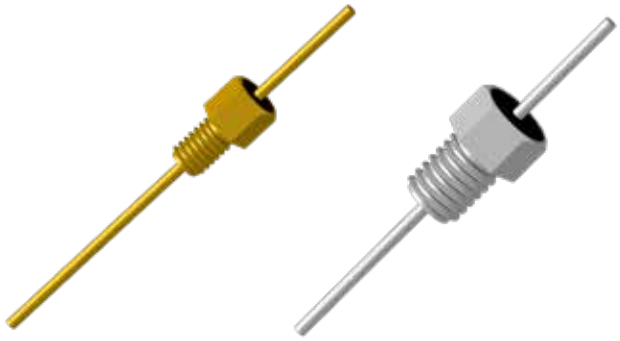


Part Num.	Size			Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	d	L	L3			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
Q4033-006A	0.6	22	9	SL	Gold	100	-	5A	80pF	-	-	-	-	-	15	25
Q4033-006	0.6	22	9	SL	Gold	100	-	5A	100pF	-	-	-	-	3	20	27
Q4033-005	0.8	15.88	6.5	X7R	Gold	50	-	5A	0.03μF	-	-	10	30	43	55	60

Resin Sealed Bolt-in Filters (Metric)

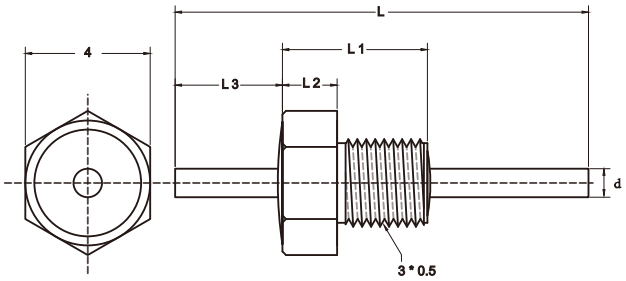
S3.3 M2.5 Series:





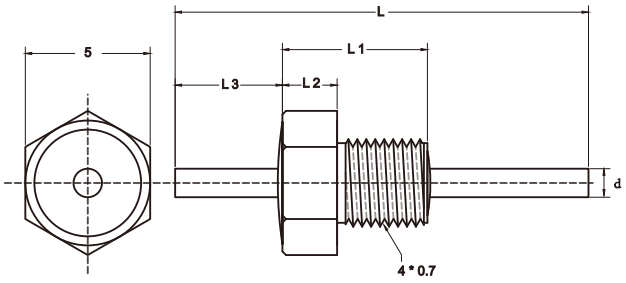
Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L3325-036N	0.75	22	6.6	3	8.5	NPO	Nickel	100	-	7A	4.7pF	C	-	-	-	-	-	-	5
L3325-008	0.75	30.3	6.6	3	8.3	NPO	Silver	100	-	7A	5.1pF	C	-	-	-	-	-	-	5
L3325-008N	0.75	30.3	6.6	3	8.3	NPO	Nickel	100	-	7A	5.1pF	C	-	-	-	-	-	-	5
L3325-012	0.75	30.3	6.6	3.6	7.7	NPO	Nickel	100	-	7A	5.1pF	C	-	-	-	-	-	-	5
L3325-037	0.75	30.3	6.6	3	8.3	NPO	Gold	100	-	7A	5.1pF	C	-	-	-	-	-	-	5
L3325-004N	0.75	30.3	6.6	3	8.3	NPO	Nickel	10	-	7A	10pF	C	-	-	-	-	-	5	12
L3325-025N	0.7	30.3	6.6	3	21.5	NPO	Nickel	100	-	7A	10pF	C	-	-	-	-	-	5	12
L3325-044N	0.75	30.3	6.6	3	8.3	NPO	Nickel	50	-	7A	25pF	C	-	-	-	-	-	8	15
L3325-044N	0.75	30.3	6.6	3	8.3	NPO	Nickel	50	-	7A	25pF	C	-	-	-	-	-	8	15
L3325-002N	0.7	30.3	6.6	3	8.3	SL	Nickel	50	-	7A	100pF	C	-	-	-	-	3	20	27
L3325-031	0.7	30.3	6.6	3	8.3	SL	Gold	50	-	7A	100pF	C	-	-	-	-	3	20	27
L3325-043	0.75	30.3	6.0	3	8.3	SL	Gold	100	-	7A	100pF	C	-	-	-	-	3	20	27
L3325-006	0.7	30.3	6.6	3	8.3	Y5P	Silver	100	-	7A	470pF	C	-	-	-	-	9	28	33
L3325-001	0.75	30.3	6.6	3	8.3	X7R	Silver	50	-	7A	1000pF	C	-	-	-	5	20	35	40
L3325-019	0.75	30.3	6.6	3	7.5	X7R	Silver	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L3325-020N	0.75	30.3	6.6	3	8.3	X7R	Nickel	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L3325-034	0.7	30.3	6.6	3	8.3	X7R	Gold	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L3325-021N	0.75	30.3	6.6	3	8	Y5U	Silver	100	-	7A	2200pF	C	-	-	-	8	24	35	43
L3325-003	0.7	30.3	6.6	3	8.3	Y5V	Silver	50	-	7A	3300pF	C	-	-	-	10	27	38	45
L3325-013	0.75	30.3	6.6	3.6	7.7	X7R	Nickel	100	-	7A	3300pF	C	-	-	-	10	27	38	45
L3325-014	0.75	30.3	6.6	3	8.3	X7R	Silver	50	-	7A	3300pF	C	-	-	-	10	27	38	45
L3325-024N	0.7	30.3	6.6	3	8	Y5V	Nickel	50	-	7A	3300pF	C	-	-	-	10	27	38	45
L3325-005	0.7	30.3	6.6	3	8.3	Y5V	Silver	50	-	7A	4700pF	C	-	-	-	13	30	40	50
L3325-023AN	0.75	30.3	6.6	3	8	Y5V	Nickel	100	-	7A	4700pF	C	-	-	-	13	30	40	50
L3325-015	0.75	30.3	6.6	3	8.3	X7R	Silver	50	-	7A	0.01μF	C	-	-	4	21	35	50	58
L3325-023N	0.75	30.3	6.6	3	8	Y5V	Silver	100	-	7A	0.01μF	C	-	-	4	21	35	50	58
L3325-017	0.75	30.3	6.6	3	8.3	X7R	Silver	25	-	7A	0.03μF	C	-	-	10	30	43	55	60
L3325-016A	0.75	30.3	6.6	3	8.3	X7R	Silver	25	-	7A	0.1μF	C	-	5	22	40	47	65	≥65

S4 M3 Series:



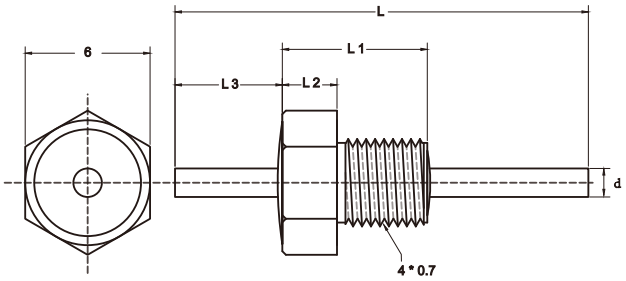
Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L4030-037N	0.75	30.3	6	2.5	8.8	NPO	Nickel	100	-	7A	5pF	C	-	-	-	-	-	-	5
L4030-001	0.75	30.3	7	3	8.3	NPO	Silver	50	-	7A	10pF	C	-	-	-	-	-	5	12
L4030-001N	0.75	30.3	7	3	8.8	NPO	Nickel	100	-	7A	10pF	C	-	-	-	-	-	5	12
L4030-030N	0.75	30.3	6	2.5	8.8	NPO	Nickel	100	-	7A	10pF	C	-	-	-	-	-	5	12
L4030-073	0.75	30.3	7	3	8	NPO	Silver	100	-	7A	22pF	C	-	-	-	-	-	8	15
L4030-023	0.7	17	7	3	5	SL	Silver	100	-	7A	50pF	C	-	-	-	-	-	10	20
L4030-059N	0.75	30.3	6	2.5	8.8	NPO	Nickel	100	-	7A	50pF	C	-	-	-	-	-	10	20
L4030-006A	0.7	17	7	3	5	SL	Silver	100	-	7A	80pF	C	-	-	-	-	-	15	25
L4030-002	0.75	30.3	7	3	8.3	Y5P	Silver	100	-	7A	200pF	C	-	-	-	-	4	22	30
L4030-003N	0.75	30.3	6	3	8.8	Y5P	Nickel	100	-	7A	470pF	C	-	-	-	-	9	28	33
L4330-052	0.75	30.3	7	3	8.3	Y5P	Silver	100	-	7A	680pF	C	-	-	-	-	13	30	37
L4030-004	0.75	30.3	7	3	8.3	X7R	Silver	50	-	7A	1000pF	C	-	-	-	5	20	35	40
L4030-034N	0.75	30.3	6	2.5	8.8	X7R	Nickel	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L4030-075N	0.75	26	6	2.5	6	X7R	Nickel	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L4030-004E	0.75	30.3	7	3	8.3	X7R	Silver	100	-	7A	1500pF	C	-	-	-	5	22	35	40
L4030-033N	0.75	30.3	6	2.5	8.8	Y5U	Nickel	100	-	7A	2200pF	C	-	-	-	8	24	35	43
l4030-032AN	0.75	30.3	6	2.5	8.8	Y5V	Nickel	100	-	7A	2700pF	C	-	-	-	10	25	38	45
L4030-005	0.7	30.3	7	3	8.3	Y5V	Silver	50	-	7A	3300pF	C	-	-	-	10	27	38	45
l4030-032N	0.75	30.3	6	2.5	8.8	Y5V	Nickel	100	-	7A	3300pF	C	-	-	-	10	27	38	45
L4030-010	0.75	30.3	7	3	8.3	X7R	Silver	100	-	7A	4700pF	C	-	-	-	13	30	40	50
l4030-032BN	0.75	30.3	6	2.5	8.8	Y5V	Nickel	100	-	7A	4700pF	C	-	-	-	13	30	40	50
L4030-069	0.75	30.3	7	3	8	Y5V	Silver	100	-	7A	6800pF	C	-	-	-	15	30	42	50
L4030-008	0.75	30.3	7	3	8.3	X7R	Silver	50	-	7A	0.01μF	C	-	-	4	21	35	50	58
L4030-008N	0.75	30.3	6	2.5	8.8	X7R	Nickel	50	-	7A	0.01μF	C	-	-	4	21	35	50	58
L4330-053N	0.75	28.3	6	2.5	11.5	Y5V	Nickel	100	-	7A	0.01μF	C	-	-	4	21	35	50	58
L4030-081	0.75	30.3	7	3	8.3	X7R	Silver	50	-	7A	0.027μF	C	-	-	10	30	41	55	60
L4030-080A	0.75	30.3	7	3	8.3	X7R	Silver	50	-	7A	0.047μF	C	-	-	12	32	43	57	60
L4030-082	0.75	19.0	7	3	8.0	X7R	Silver	60	-	10A	0.05μF	C	-	-	15	34	45	58	60
L4030-011	0.75	30.3	7	3	8.3	X7R	Silver	16	-	7A	0.1μF	C	-	5	22	40	47	65	⩾65
L4030-083N	0.75	14.0	7	3	4.0	X7R	Silver	16	-	7A	0.1μF	C	-	5	22	40	47	65	⩾65

S5 M4 Series:



Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L5040-004	0.75	35	6.5	3	12	SL	Silver	100	-	7A	50pF	C	-	-	-	-	-	10	20
L5040-023	0.75	38	6.5	3	15	SL	Silver	100	-	7A	50pF	C	-	-	-	-	-	10	20
L5040-007	1	28.3	8.2	3.2	11.5	SL	Silver	100	-	10A	100pF	C	-	-	-	-	3	20	27
L5040-033	0.75	57	6.5	3	21	SL	Silver	100	-	7A	100pF	C	-	-	-	-	3	20	27
L5040-019	0.75	57	6.5	3	21	SL	Silver	100	-	7A	200pF	C	-	-	-	-	4	22	30
L5040-006	1	28.3	8.2	3.2	11.5	Y5P	Silver	100	-	10A	470pF	C	-	-	-	-	9	28	33
L5040-002	1	28.3	8	4	10.3	X7R	Silver	100	-	10A	1000pF	C	-	-	-	5	20	35	40
L5040-001	0.75	28.3	8.2	3.2	9.3	X7R	Silver	100	-	7A	1000PF*2	PI	-	-	-	10	44	68	>70
L5040-009	0.75	35	13.5	3.5	9.5	X7R	Silver	100	-	7A	3300pF*2	PI	-	-	-	21	64	>70	>70
L5040-005	0.75	28.3	8.2	3.2	11	Y5V	Silver	200	-	7A	4700pF	C	-	-	-	13	30	40	50
L5040-021	0.75	28.3	12	5	7	Y5U	Silver	100	-	7A	5000pF*2	PI	-	-	4	27	67	>70	>70
L5040-020	0.75	28.3	12	5	7	Y5V	Silver	50	-	5A	8000pF*2	PI	-	-	7	32	>70	>70	>70
L5040-003	0.75	35	6.5	3	12	X7R	Silver	50	-	7A	0.01μF	C	-	-	4	21	35	50	58
L5040-024	0.75	30.3	13.5	3.5	8.5	X7R	Silver	50	-	7A	0.03μF	LC	-	-	12	30	48	68	>70

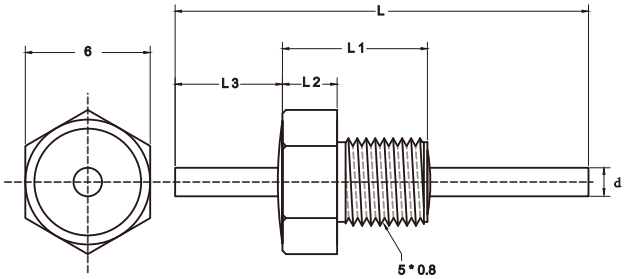
S6 M4 Series:



Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L6040-057	1	28.3	7.5	3.5	11.5	NPO	Silver	100	-	10A	5.1pF	C	-	-	-	-	-	-	5
L6040-032A	1	28.3	7.5	3.5	11.5	NPO	Silver	100	-	10A	6.8pF	C	-	-	-	-	-	-	6
L6040-054AN	1	28.3	7.5	3.5	11.5	NPO	Nickel	100	-	10A	10pF	C	-	-	-	-	-	5	12
L6040-054	1	28.3	7.5	3.5	11.5	NPO	Silver	200	-	10A	15pF	C	-	-	-	-	-	5	13
L6040-084N	1	28.3	7.5	3.5	11.5	NPO	Nickel	100	-	10A	22pF	C	-	-	-	-	-	8	15
L6040-006AN	1	28.3	7.5	3.5	11.5	SL	Nickel	100	-	10A	100pF	C	-	-	-	-	3	20	27
L6040-006	1	28.3	7.5	3.5	11.5	SL	Silver	100	-	10A	150pF	C	-	-	-	-	4	20	28
L6040-056	1	28.3	7.5	3.5	11.5	NPO	Silver	100	-	10A	220pF	C	-	-	-	-	4	22	30
L6040-055	1	28.3	7.5	3.5	11.5	Y5P	Silver	200	-	10A	250pF	C	-	-	-	-	4	22	30
L6040-007	1	28.3	7.5	3.5	11.5	NPO	Silver	100	-	10A	330pF	C	-	-	-	-	6	25	32
L6040-095	1	28.3	7.5	3.5	11.5	Y5P	Silver	100	-	10A	330pF	C	-	-	-	-	6	25	32
L6040-002N	1	28.3	7.5	3.5	11.5	Y5P	Nickel	200	-	10A	470pF	C	-	-	-	-	9	28	33
L6040-002A	1	28.3	7.5	3.5	11.5	Y5P	Silver	100	-	10A	560pF	C	-	-	-	-	10	28	35
L6040-001	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	1000pF	C	-	-	-	5	20	35	40
L6040-058AN	1	28.3	7.5	3.5	11.5	X7R	Nickel	500	-	10A	1000pF	C	-	-	-	5	20	35	40
L6040-058N	1	28.3	7.5	3.5	11.5	X7R	Nickel	100	-	10A	1000pF	C	-	-	-	5	20	35	40
L6040-086N	1.3	28.3	7.5	3.5	10.5	X7R	Nickel	100	-	15A	1000pF	C	-	-	-	5	20	35	40
L6040-091N	1	28.3	7.5	3.5	11.5	X7R	Nickel	100	-	15A	1500pF	C	-	-	-	5	22	35	40
L6040-042	0.75	28.3	7.5	3.5	12	X7R	Silver	100	-	7A	1800pF	C	-	-	-	6	23	35	40
L6040-059N	1	28.3	7.5	3.5	11.5	X7R	Nickel	100	-	10A	2200pF	C	-	-	-	8	24	35	43
L6040-011	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	3300pF	C	-	-	-	10	27	38	45
L6040-060AN	1	28.3	7.5	3.5	11.5	X7R	Nickel	500	-	10A	3300pF	C	-	-	-	10	27	38	45
L6040-060N	1	28.3	7.5	3.5	11.5	X7R	Nickel	100	-	10A	3300pF	C	-	-	-	10	27	38	45
L6040-066	1.2	28.5	7.5	3.5	6.5	X7R	Silver	100	-	15A	3300pF	C	-	-	-	10	27	38	45
L6040-085N	1	28.3	7.5	3.5	11.5	Y5V	Nickel	100	-	10A	4700pF	C	-	-	-	13	30	40	50
L6040-008	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	0.01μF	C	-	-	4	21	35	50	58
L6040-008N	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	0.01μF	C	-	-	4	21	35	50	58
L6040-015	1	28.3	11	4	10.5	X7R	Silver	300	-	10A	0.01μF	C	-	-	4	21	35	50	58
L6040-080N	1	35	7.5	3.5	12	Y5V	Silver	300	-	10A	0.01μF	C	-	-	4	21	35	50	58
L6040-029	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	0.03μF	C	-	-	10	30	43	55	60
L6040-071	0.8	28.3	7.5	3.5	11.5	X7R	Silver	200	-	10A	0.047μF	C	-	-	12	32	43	57	60
L6040-010	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	0.1μF	C	-	5	22	40	47	65	≥65
L6040-016	1	28.3	11	4	10.5	X7R	Silver	100	-	10A	0.1μF	C	-	5	22	40	47	65	≥65
L6040-096N	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	0.47μF	C	-	17	34	50	62	65	≥70
L6040-061N	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	1.0μF	C	5	20	38	52	65	70	≥80
L6040-097N	1	28.3	7.5	3.5	11.5	X7R	Silver	100	-	10A	2.0μF	C	17	30	50	63	70	75	≥80

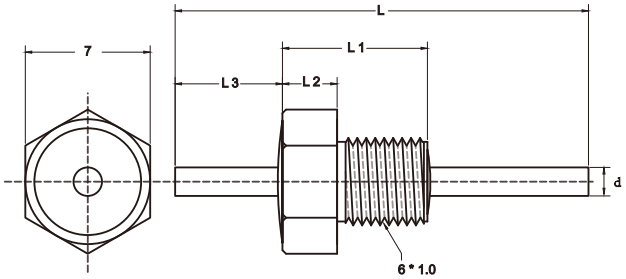
Resin Sealed Bolt-in Filters (Metric)

S6 M5 Series:



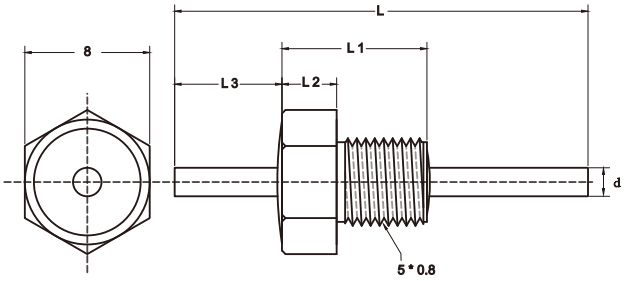
Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L6050-024N	0.75	30.3	10	4	7.5	-	Nickel	-	600	7A	-	-	-	-	-	-	-	-	-
L6050-048N	1	35	15.5	4.5	10.5	SL	Nickel	1250	-	10A	10	C	-	-	-	-	-	5	12
L6050-064N	1	35	10	4	10.5	SL	Nickel	300	-	10A	47pF	C	-	-	-	-	-	10	20
L6050-053	0.8	57	16	5	19.5	SL	Silver	1250	-	7A	56pF	C	-	-	-	-	-	10	20
L6050-030N	1	28.3	10	4	10.5	SL	Nickel	750	-	10A	80pF	C	-	-	-	-	-	15	25
L6050-015N	1	28.3	10	4	10.5	SL	Silver	500	-	10A	100pF	C	-	-	-	-	3	20	27
L6050-019	1.3	28.5	10	4	10.5	KL	Silver	1500	-	10A	100pF	C	-	-	-	-	3	20	27
L6050-020	1.3	28.5	10	4	10.5	KL	Silver	1500	-	10A	200pF	C	-	-	-	-	4	22	30
L6050-014N	1.2	28.5	15.5	4.5	7	X7R	Nickel	1000	-	15A	1000pF	C	-	-	-	5	20	35	40
L6050-016N	0.75	35	10	4	10.5	X7R	Nickel	600	-	7A	1000pF	C	-	-	-	5	20	35	40
L6050-008	0.75	28.3	7	3	10.5	X7R	Silver	300	-	7A	1000pF*2	PI	-	-	-	3	35	60	70
L6050-021AN	1	35	10	4	10.5	X7R	Nickel	1250	-	10A	1500pF	C	-	-	-	5	22	35	40
L6050-021N	1	35	10	4	10.5	X7R	Nickel	750	-	10A	1500pF	C	-	-	-	5	22	35	40
L6050-046	0.8	54	16	5	15	X7R	Silver	1000	-	7A	1500pF	C	-	-	-	5	22	35	40
L6050-018N	1.2	28.5	15.5	4.5	7	X7R	Nickel	1000	-	15A	2000pF	C	-	-	-	6	23	35	40
L6050-005N	1	35	10	4	10.5	X7R	Nickel	300	-	10A	3300pF	C	-	-	-	10	27	38	45
L6050-033N	1	35	10	4	10.5	X7R	Silver	300	-	10A	4700pF	C	-	-	-	13	30	40	50
L6050-058N	0.75	23	10	4	5	X7R	Silver	600	-	10A	4700pF	C	-	-	-	13	30	40	50
L6050-023N	1	35	10	4	10.5	X7R	Nickel	750	-	10A	10000pF	C	-	-	4	21	35	50	58
L6050-043N	1	35	10	4	10.5	X7R	Nickel	750	-	10A	0.022μF	C	-	-	7	20	37	50	60
L6050-025	1	28.3	10	4	10.5	X7R	Silver	300	-	10A	68000pF	C	-	4	17	36	45	60	⩾62
L6050-049N	1.2	28.5	10	4	6.5	X7R	Nickel	500	-	15A	0.1μF	C	-	5	22	40	47	65	⩾65
L6050-036N	1	28.3	10	4	10.5	X7R	Nickel	300	-	10A	1.0μF	C	5	20	38	52	65	70	⩾80
L6050-051N	1	28.3	10	4	10.5	X7R	Nickel	75	-	10A	3.3μF	C	20	34	52	63	70	75	⩾80

S7 M6 Series:

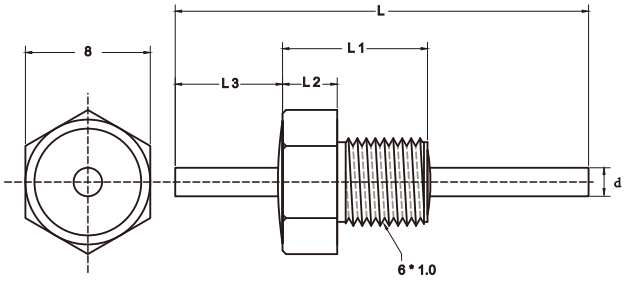


Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L7060-002	2.0	42	16	8	15.5	SL	Silver	300	-	25A	100pF	C	-	-	-	-	3	20	27
L7060-001	2.0	42	16	8	15.5	SL	Silver	300	-	25A	220pF	C	-	-	-	-	4	22	30
L7060-015	1.5	35	16	8	9	X7R	Silver	200	-	15A	1500pF	C	-	-	-	5	22	35	40

Resin Sealed Bolt-in Filters (Metric)



S8M5 Series



S8M6 Series

S8 M5 Series:

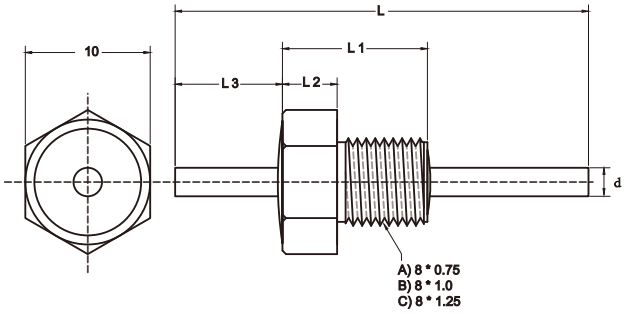
Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8050-020N	1	35	11.5	6.5	9.5	NPO	Nickel	200	-	10A	5pF	C	-	-	-	-	-	-	5
L8050-001	1.5	32	10	6	8	X7R	Silver	200	-	20A	1000pF	C	-	-	-	5	20	35	40
L8050-002C	1.5	35	11	6	10	X7R	Silver	100	-	20A	1500pF	C	-	-	-	5	22	35	40
L8050-008	1.5	35	10	6	10	X7R	Silver	200	-	20A	3300pF	C	-	-	-	10	27	38	45
L8050-013	1.5	35	10	6	10	X7R	Silver	200	-	20A	5600pF	C	-	-	-	13	30	40	50
L8050-012	1	35	11	6	9	X7R	Silver	100	-	10A	0.01μF	C	-	-	4	21	35	50	58
L8050-009	1	35	11	6	9	X7R	Silver	100	-	10A	0.1μF	C	-	5	22	40	47	65	⩾65

S8 M6 Series:

Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8060-095N	1	24.3	9	4	8.5	X7R	Nickel	100	-	10A	5pF	C	-	-	-	-	-	-	5
L8060-020N	1.5	35	11	6	10.5	SL	Nickel	-	250	20A	100pF	C	-	-	-	-	3	20	27
L8060-015N	0.8	30.3	9	4	7	X7R	Nickel	100	-	7A	1000pF	C	-	-	-	5	20	35	40
L8060-015BN	0.8	30.3	9	4	7	X7R	Nickel	500	-	7A	1000pF	C	-	-	-	5	20	35	40
L8060-063BN	1.5	35	11	6	10	X7R	Nickel	500	-	20A	1500pF	C	-	-	-	5	22	35	40
L8060-018CN	1.5	35	11	6	10.5	X7R	Nickel	-	250	20A	2200pF	C	-	-	-	8	24	35	43
L8060-013N	1.5	35	11	6	10.5	Y5V	Nickel	-	250	20A	3300pF	C	-	-	-	10	27	38	45
L8060-003N	0.8	30.3	9	4	7	X7R	Nickel	200	-	7A	4700pF	C	-	-	-	13	30	40	50
L8060-013EN	1.5	35	11	6	10.5	Y5V	Nickel	-	250	20A	4700pF	C	-	-	-	13	30	40	50
L8060-013AN	1.5	35	11	6	10.5	Y5V	Nickel	-	250	20A	5000pF	C	-	-	-	13	30	40	50
L8060-083N	1.2	35	9	4	12	X7R	Nickel	100	-	15A	6800pF	C	-	-	-	15	30	42	50
L8060-044N	1.5	35	11	6	10.5	X7R	Nickel	500	-	20A	10000pF	C	-	-	4	21	35	50	58
L8060-061N	1.5	35	11	6	10.5	X7R	Silver	500	-	20A	0.022μF	C	-	-	7	20	37	50	60
L8060-019AN	1	28.3	9	4	10.5	X7R	Nickel	100	-	10A	0.1μF	C	-	5	22	40	47	65	⩾65
L8060-025N	1	28.3	9	4	10.5	X7R	Nickel	250	-	10A	0.15μF	C	-	4	26	42	55	65	⩾70
L8060-023N	1	28.3	9	4	10.5	X7R	Nickel	100	-	10A	0.33μF	C	-	12	30	47	62	65	⩾70
L8060-070N	1	28.3	9	4	10.5	X7R	Nickel	200	-	10A	0.47μF	C	-	17	34	50	62	65	⩾70
L8060-028	1	35	15	10	13.5	X7R	Silver	50	-	10A	0.47μF*2	PI	4	18	60	>70	>70	>70	>70
L8060-009N	1	28.3	9	4	10.5	X7R	Silver	100	-	10A	1.0μF	C	5	20	38	52	65	70	⩾80
L8060-029	1	35	15	10	13.5	X7R	Silver	50	-	10A	1.0μF*2	PI	10	27	63	>70	>70	>70	>70
L8060-007N	1	28.3	9	4	10.5	X7R	Nickel	100	-	10A	1.5μF	C	10	26	42	57	70	75	⩾80
L8060-017N	1	28.3	9	4	10.5	X7R	Nickel	50	-	10A	2.0μF	C	17	30	50	63	70	75	⩾80
L8060-085N	1.2	35	9	4	12	X7R	Nickel	50	-	15A	4.7μF	C	25	37	56	65	70	75	⩾80

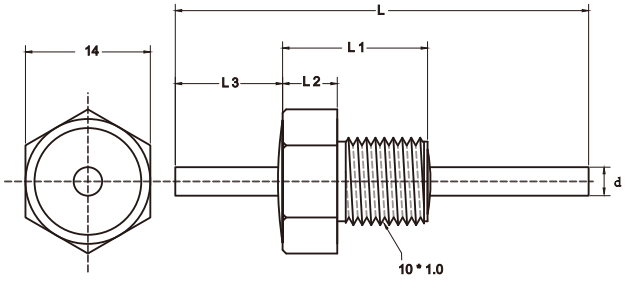
Resin Sealed Bolt-in Filters (Metric)

S10 M8 Series:



Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3	M			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L10080-045N	1.5	35	15	7	10	A	-	Nickel	500	-	20A	-	-	-	-	-	-	-	-	-
L10080-019N	1.5	35	15	7	10	B	-	Nickel	200	-	15A	-	-	-	-	-	-	-	-	-
L10080-030N	1.5	35	15	7	10	A	SL	Nickel	-	250	20A	100pF	C	-	-	-	-	3	20	27
L10080-001AN	1.5	35	15	7	10	A	X7R	Nickel	500	-	20A	1000pF	C	-	-	-	5	20	35	40
L10080-042N	1.5	35	15	7	10	A	X7R	Nickel	-	500	20A	1000pF	C	-	-	-	5	20	35	40
L10080-023N	2.5	35	15	7	10	A	X7R	Nickel	500	-	50A	2200pF	C	-	-	-	8	24	35	43
L10080-032AN	2.5	35	15	7	10	A	Y5V	Nickel	-	250	50A	3300pF	C	-	-	-	10	27	38	45
L10080-024N	1.5	35	15	7	10	A	Y5V	Nickel	-	250	20A	3300pF	C	-	-	-	10	27	38	45
L10080-032N	2.5	35	15	7	10	A	Y5V	Nickel	-	220	50A	4700pF	C	-	-	-	13	30	40	50
L10080-032BN	2.5	35	15	7	10	A	Y5V	Nickel	100	-	50A	5000pF	C	-	-	-	13	30	40	50
L10080-009N	1.5	35	15	7	10	A	X7R	Silver	100	-	25A	0.01μF	C	-	-	4	21	35	50	58
L10080-026N	2.5	35	15	7	10	A	X7R	Nickel	500	-	40A	0.01μF	C	-	-	4	21	35	50	58
L10080-028N	1.5	35	15	7	10	B	X7R	Nickel	500	-	15A	0.05μF	C	-	-	15	34	45	58	60
L10080-018N	2	35	15	7	10	A	X7R	Nickel	60	-	50A	0.1μF	C	-	5	22	40	47	65	⩾65
L10080-044N	2	35	15	7	10	C	X7R	Nickel	60	-	50A	0.1μF	C	-	5	22	40	47	65	⩾65
L10080-014N	1.5	35	15	7	10	A	X7R	Nickel	100	-	20A	1.0μF	C	5	20	38	52	65	70	⩾80
L10080-049N	1.5	35	15	7	10	A	X7R	Nickel	100	-	20A	2.0μF	C	17	30	50	63	70	75	⩾80

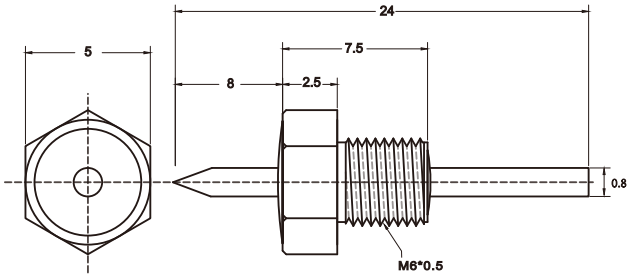
S14 M10 Series:



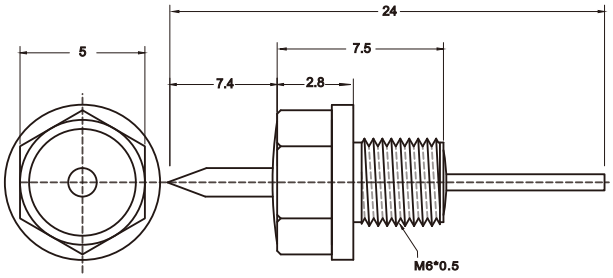
Part Num.	Diel.	Plate	Rated Vol.		I	E.C.
			DC	AC		
L140100-004N	X7R	Nickel	-	500	20A	C

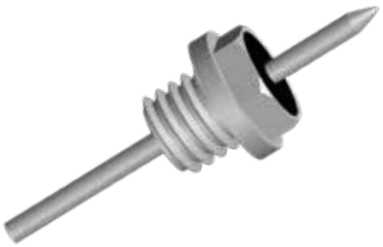
Cap.	Insertion Loss (dB)						
	10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
1000pF	-	-	-	5	20	35	40

Resin Sealed Bolt-in Filters (special)



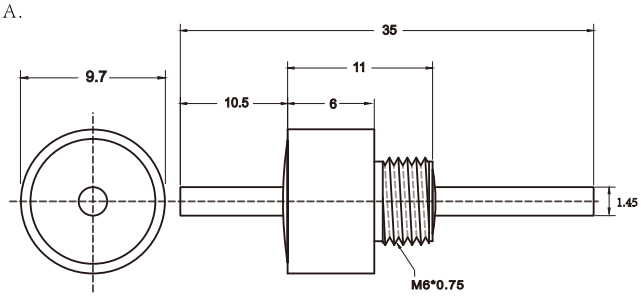
Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L5060-001	X7R	Silver	200	-	10A	1500PF	C	-	-	-	5	22	35	40





Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L5060-001A	X7R	Silver	200	-	10A	1500PF	C	-	-	-	5	22	35	40

A.



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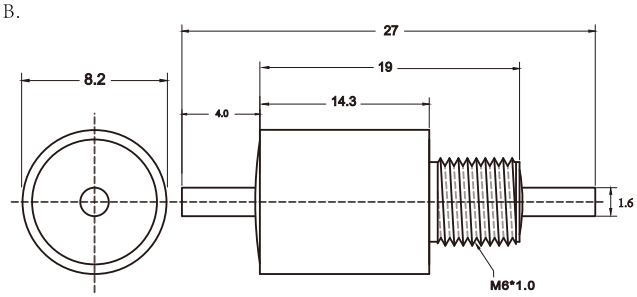
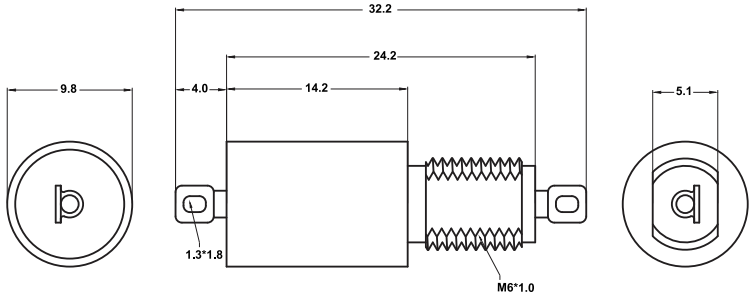
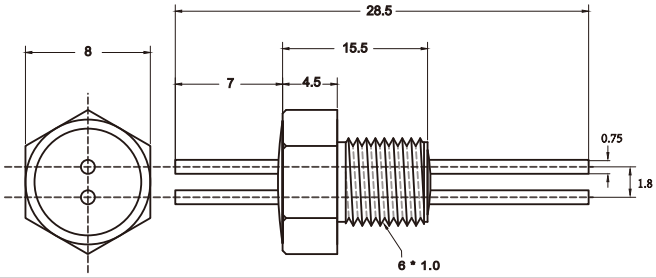


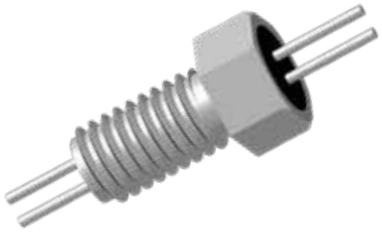
Part Num.	Size	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
				DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8260-001	B	X7R	Gold	50	-	15A	58000pF	C	-	-	15	34	45	60	≥60
L8260-002	B	X7R	Gold	50	-	15A	680000pF	C	5	20	35	50	62	65	≥70
L9860-001	A	X7R	Silver	100	-	15A	1.5μF	C	10	26	42	57	70	75	≥80

Resin Sealed Bolt-in Filters (special)

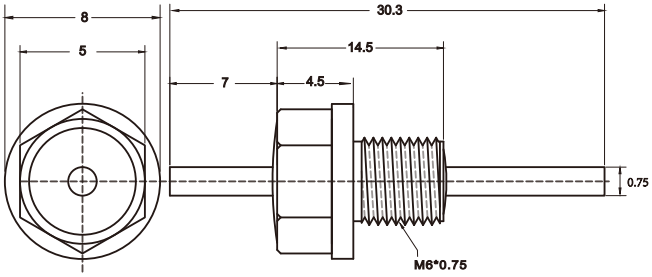


Part Num.	Size				Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	L	L1	L2	M			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L9860-004	32.2	24.2	14.2	M6*1.0	X7R	Silver	220	-	15A	0.2μF*2	PI	-	13	42	>70	>70	>70	>70
L9860-002	32.2	24.2	14.2	M6*1.0	X7R	Silver	80	-	15A	1.4μF*2	PI	12	29	65	>70	>70	>70	>70
L9860-003	32.2	24.2	14.2	M6*1.0	X7R	Silver	80	-	15A	4.0μF	C	23	35	55	65	70	75	⩾80
L1/4-28UNF-2A-008A	17.5	9.3	4.5	1/4-28UNF-2A	X7R	Silver	80	-	15A	1.2μF	LC	4	22	42	62	70	>70	>70
L1/4-28UNF-2A-008	17.5	9.3	4.5	1/4-28UNF-2A	X7R	Silver	100	-	15A	1.4μF	LC	6	23	44	63	70	>70	>70

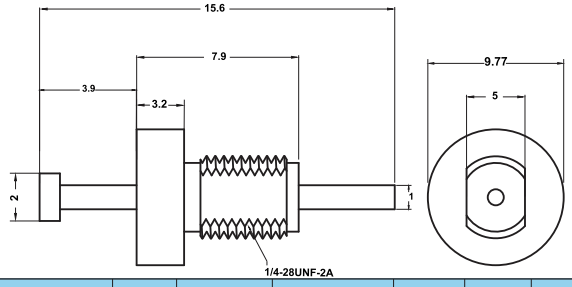


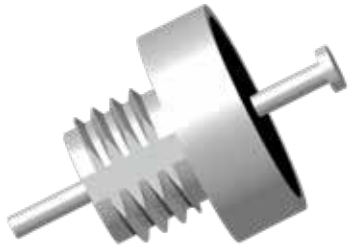


Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8060-075	-	Silver	500	-	7A	<10pF	C	-	-	-	-	-	-	7



Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8060-076	X7R	Silver	50	-	7A	0.05μF*2	PI	-	4	18	64	>70	>70	>70
L8060-094	Y5U	Silver	200	-	7A	3000pF	C	-	-	-	10	25	38	45

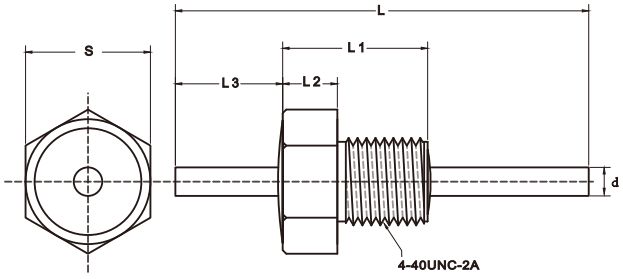




Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L1/4-28UNF-2A-001	X7R	Silver	50	-	15A	1.4μF	LC	6	23	44	63	70	>70	>70

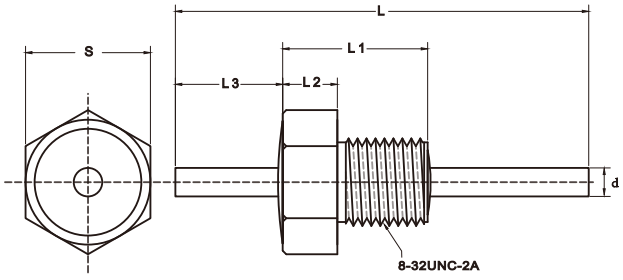
Resin Sealed Bolt-in Filters (UTS)

M4-40UNC-2A Series:



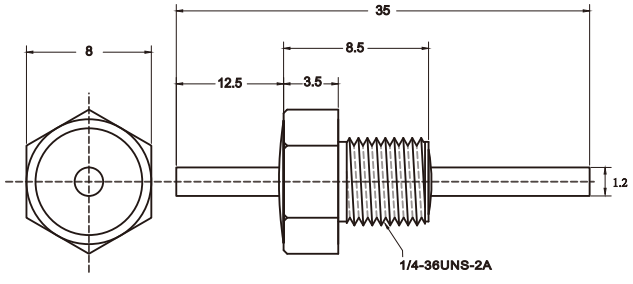
Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	S	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L4-40UNC-2A-016N	4.0	0.75	22	8.6	3	9	SL	Nickel	300	-	7A	100pF	LC	-	-	-	-	6	23	>70
L4-40UNC-2A-017N	4.0	0.75	22	8.6	3	9	SL	Nickel	300	-	7A	500pF	LC	-	-	-	2	19	37	>70
L4-40UNC-2A-002N	3.2	0.75	30.3	5.4	1.8	9.5	X7R	Nickel	100	-	10A	1000pF	C	-	-	-	5	20	35	40
L4-40UNC-2A-011N	4.0	0.75	22	8.6	3	9	X7R	Nickel	300	-	7A	1200pF	LC	-	-	-	6	25	44	>70
L4-40UNC-2A-008N	3.2	0.75	19	5.4	1.8	9	X7R	Nickel	100	-	7A	0.01μF	C	-	-	4	21	35	50	58
L4-40UNC-2A-010N	4.0	0.75	22	8.6	3	9	X7R	Nickel	50	-	7A	0.01μF	LC	-	-	3	20	40	60	>70
L4-40UNC-2A-001N	3.2	0.75	11.4	5.4	1.8	3	X7R	Nickel	50	-	10A	0.027μF	C	-	-	10	30	41	55	60
L4-40UNC-2A-003N	3.2	0.75	30.3	5.4	1.8	9.5	X7R	Nickel	50	-	7A	0.1μF	C	-	5	22	40	47	65	⩾65

M8-32UNC-2A Series:



Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	S	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L8-32UNC-2A-017	4.75	0.8	30.3	9.2	2.4	7.5	KL	Silver	100	-	10A	125pF*2	PI	-	-	-	-	11	42	>70
L8-32UNC-2A-010A	4.75	1	28.3	9.2	2.4	12.0	X7R	Silver	100	-	10A	1000pF	C	-	-	-	5	20	35	40
L8-32UNC-2A-031	4.75	0.75	30.3	9.2	2.4	7	X7R	Silver	200	-	10A	1000pF*2	PI	-	-	-	10	44	68	>70
L8-32UNC-2A-001	5	0.75	28.3	5.4	1.7	12.5	X7R	Silver	100	-	7A	1500pF*2	PI	-	-	-	13	51	>70	>70
L8-32UNC-2A-003	5	1	28.3	5.1	1.52	12.5	Y5U	Silver	100	-	10A	2000pF	C	-	-	-	6	23	35	40
L8-32UNC-2A-030	4.75	1.2	28.3	9.2	2.4	11	Y5U	Silver	100	-	15A	2700pF	C	-	-	-	10	25	38	45
L8-32UNC-2A-012A	4.75	0.8	30.3	9.2	2.4	7.5	Y5U	Silver	200	-	7A	2750pF*2	PI	-	-	-	18	60	>70	>70
L8-32UNC-2A-008	5	1	28.3	5.1	1.52	12.5	X7R	Silver	200	-	10A	500pF	C	-	-	-	-	10	28	35
L8-32UNC-2A-028	4.75	1	28.3	9.2	2.4	12	X7R	Silver	50	-	10A	0.27μF	C	-	10	29	47	60	65	⩾70

S8 M1/4-36UNS-2A Series:

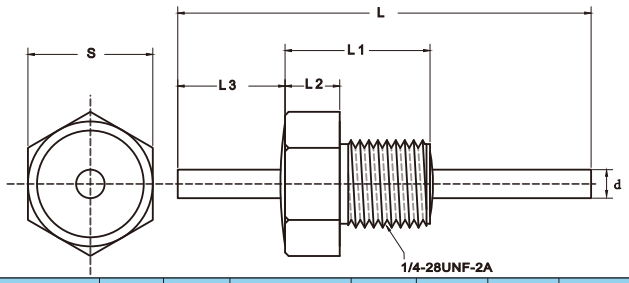


Part Num.	Diel.	Plate	Rated Vol.		I	E.C.
			DC	AC		
L1/4-36UNS-2A-001N	X7R	Silver	100	-	15A	C

Cap.	Insertion Loss (dB)						
	10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
1000pF	-	-	-	5	20	35	40

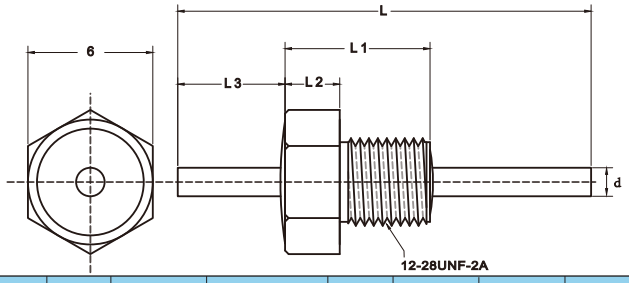
Resin Sealed Bolt-in Filters (UTS)

M1/4-28UNF-2A Series:



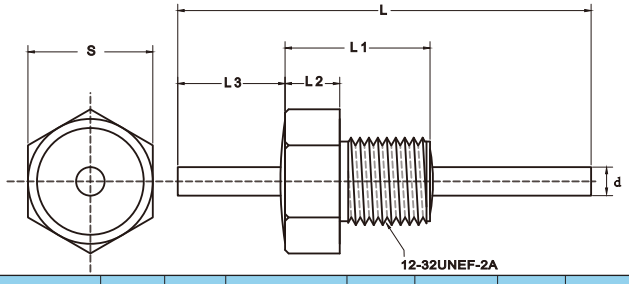
Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	S	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L1/4-28UNF-2A-007	8	1.3	25.4	12	6.4	6.7	SL	Silver	500	-	25A	100pF	C	-	-	-	-	3	20	27
L1/4-28UNF-2A-016	9.5	1	18.8	11.7	3.8	3.3	X7R	Silver	400	-	15A	0.12μF	C	-	5	22	40	47	65	⩾65
L1/4-28UNF-2A-012	10	1	15.6	7.9	3.2	3.9	X7R	Silver	100	-	15A	0.5μF	LC	-	-	17	38	51	70	>70
L1/4-28UNF-2A-009	9.8	1.2	27.0	19	14.2	4	X7R	Silver	80	-	15A	1.4μF*2	PI	12	29	65	>70	>70	>70	>70
L1/4-28UNF-2A-010	9.8	1.2	27	19	14.2	4	X7R	Silver	80	-	15A	4.0μF	C	23	35	55	65	70	75	⩾80

S6 M12-28UNF-2A Series:



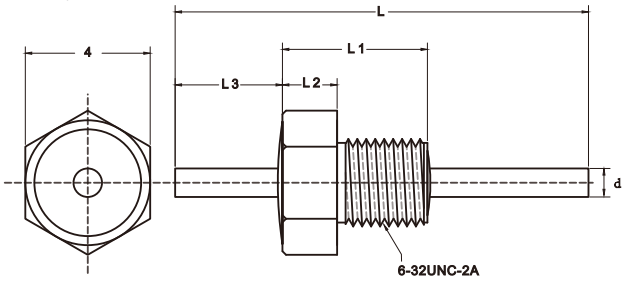
Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L12-28UNF-2A-003	0.8	28.3	12	4	7	X7R	Silver	-	150	7A	3000pF*2	PI	-	-	-	20	62	>70	>70
L12-28UNF-2A-006A	1.3	25.4	12	4	6.35	X7R	Silver	500	-	20A	10000pF	C	-	-	4	21	35	50	58

M12-32UNEF-2A Series:



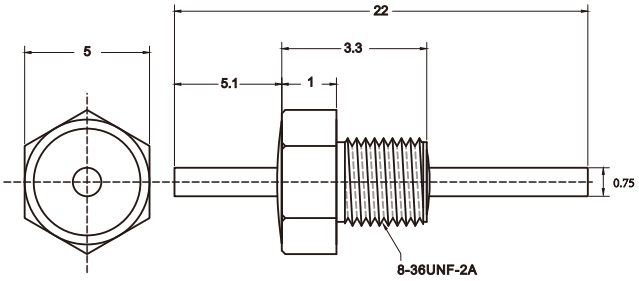
Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	S	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L12-32UNEF-2A-003N	6	1	52	10	4	12.5	-	Nickel	500	-	10A	-	-	-	-	-	-	-	-	-
L12-32UNEF-2A-001	7.45	0.75	29	17.5	7.2	5	X7R	Silver	70	-	10A	0.05μF*2	PI	-	4	18	64	>70	>70	>70

S4 M6-32UNC-2A Series:



Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L6-32UNC-2A-001	0.7	30.3	9.1	3.2	8.3	X7R	Silver	200	-	10A	330pF	LC	-	-	-	-	15	34	>70
L6-32UNC-2A-003	0.75	30.3	9.1	3.2	8.3	X7R	Silver	25	-	7A	0.1μF	C	-	5	22	40	47	65	⩾65

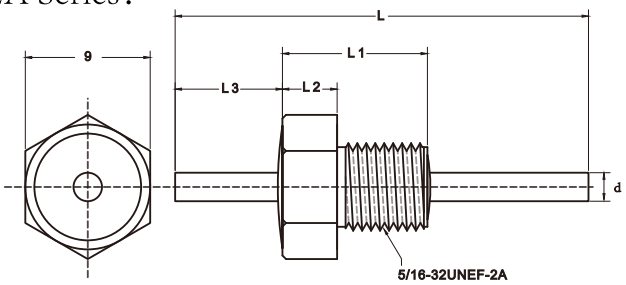
S5 M8-36UNF-2A Series:



Part Num.	Diel.	Plate	Rated Vol.		I	E.C.
			DC	AC		
L8-36UNF-2A-001	X7R	Silver	200	-	7A	C

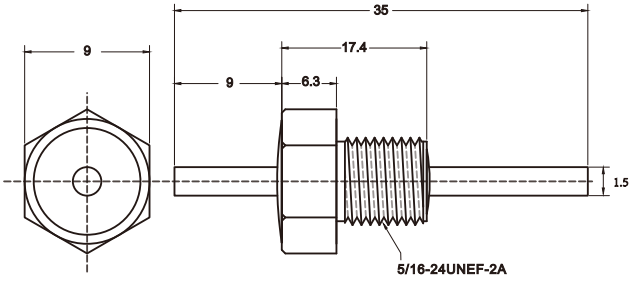
Cap.	Insertion Loss (dB)						
	10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
100pF	-	-	-	-	3	20	27

S9 M5/16-32UNEF-2A Series:



Part Num.	Size					Diel.	Plate	Rated Vol.		I	Cap.	E.C.	Insertion Loss (dB)						
	d	L	L1	L2	L3			DC	AC				10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
L5/16-32UNEF-2A-002A	1.5	35	17.4	6.3	9	X7R	Silver	300	-	20A	1500pF*2	PI	-	-	-	13	51	>70	>70
L5/16-32UNEF-2A-001A	1.5	35	17.4	6.3	9	X7R	Silver	700	-	25A	2000pF*2	PI	-	-	-	15	55	>70	>70
L5/16-32UNEF-2A-005	1.5	35	17.4	6.3	8.5	X7R	Silver	700	-	20A	3000pF*2	PI	-	-	-	20	62	>70	>70

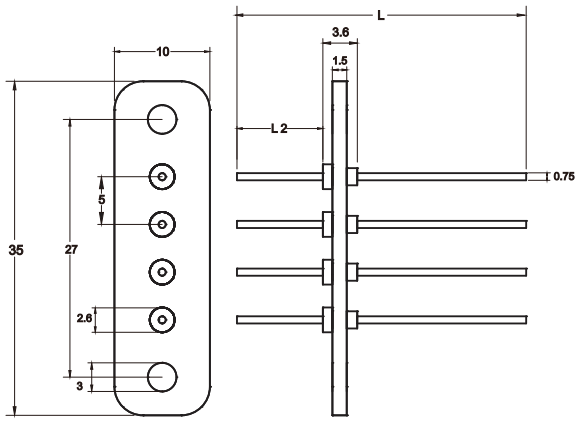
S9 M5/16-24UNEF-2A Series:

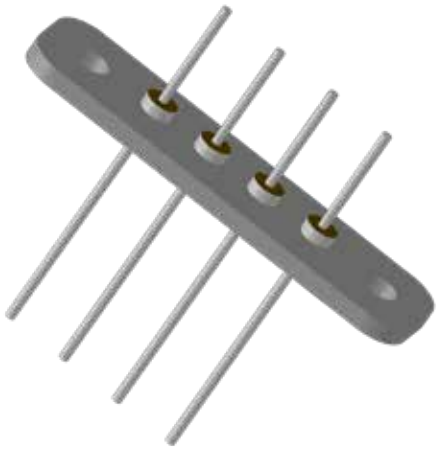


Part Num.	Diel.	Plate	Rated Vol.		I	E.C.
			DC	AC		
L5/16-24UNEF-2A-006	X7R	Silver	500	350	25A	PI

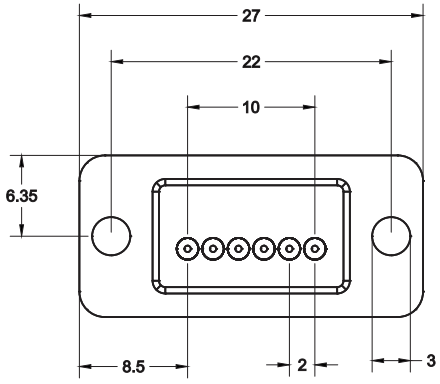
Cap.	Insertion Loss (dB)						
	10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
1000pF*2	-	-	-	10	44	68	>70

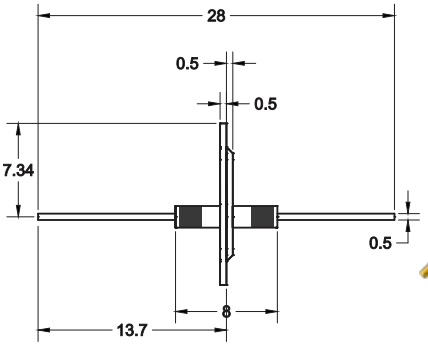
Filtered Arrays

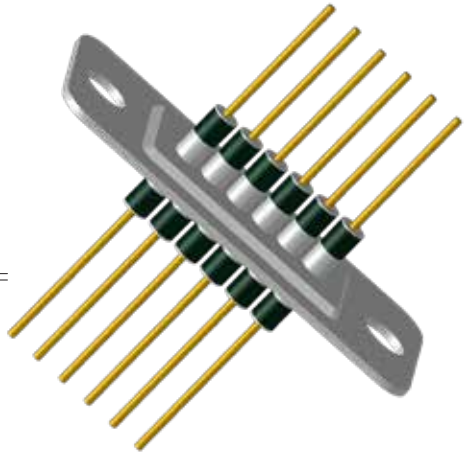




Part Num.	Size		Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	L	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
ZL350100-102*4-001	30	10	X7R	Tin	50	-	7A	1000pF*4	-	-	-	5	20	35	40
ZL350100-102*4-002	15.6	4	X7R	Tin	50	-	7A	1000pF*4	-	-	-	5	20	35	40

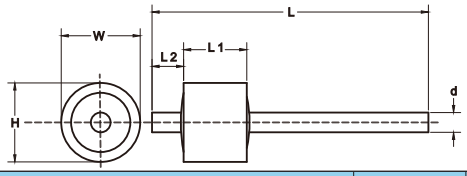




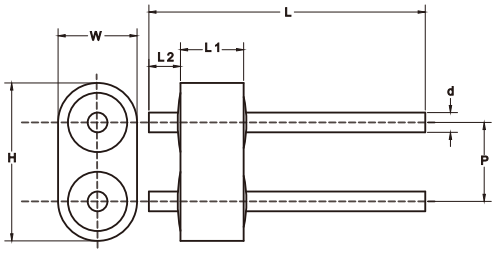


Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
ZL270127*402*6-001	Y5U	Silver	100	-	5A	4000pF*6	-	-	-	15	55	>70	>70

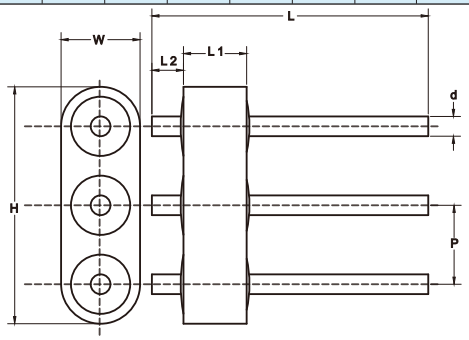
Miniature RF Filters

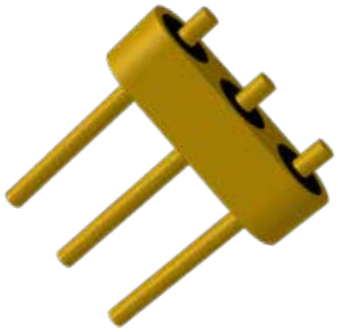


Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	H	W	d	L	L1	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HA1515-001	1.5	1.5	0.5	3	1.4	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12
HA2020-002	2	2	0.5	7	1.6	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12

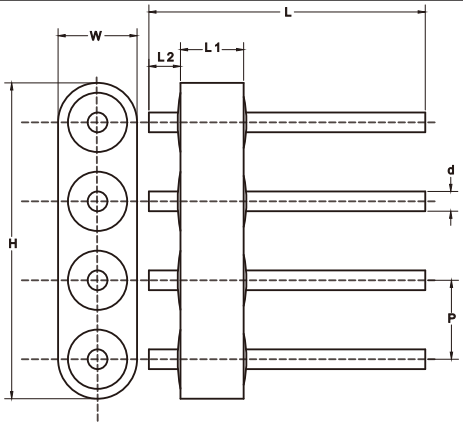


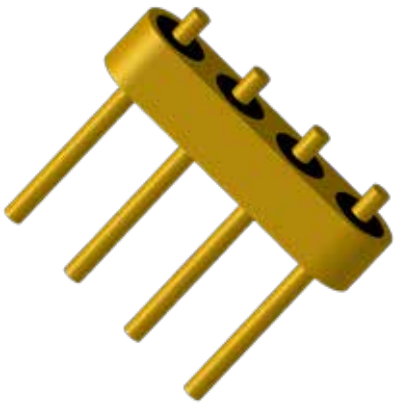
Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	H	W	P	d	L	L1	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HA2715-001	2.7	1.5	1.27	0.5	3	1.4	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12
HA4020-002	4	2	2	0.5	7	1.6	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12





Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	H	W	P	d	L	L1	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HA4015-001	4	1.5	1.27	0.5	3	1.4	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12
HA6020-002	6	2	2	0.5	7	1.6	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12

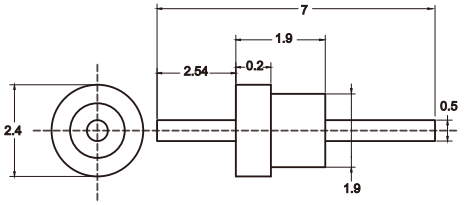




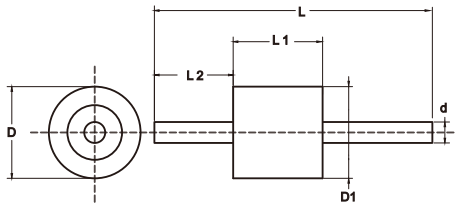
Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	H	W	P	d	L	L1	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HA5315-001	5.3	1.5	1.27	0.5	3	1.4	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12
HA8020-002	8	2	2	0.5	7	1.6	0.8	X7R	Gold	20	-	7A	10pF	-	-	-	-	-	5	12

Note: Some models can be gold bonding, please consult our sales staff for details.

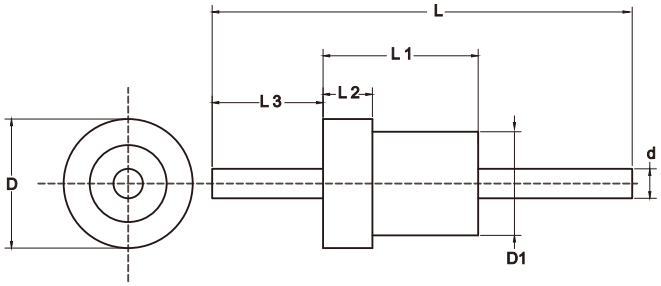
Hermetically Sealed Filters



Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HB2419-001	SL	Gold	200	-	7A	50pF	-	-	-	-	-	10	20
HB2419-002	SL	Gold	50	-	7A	5000pF	-	-	-	13	30	40	50

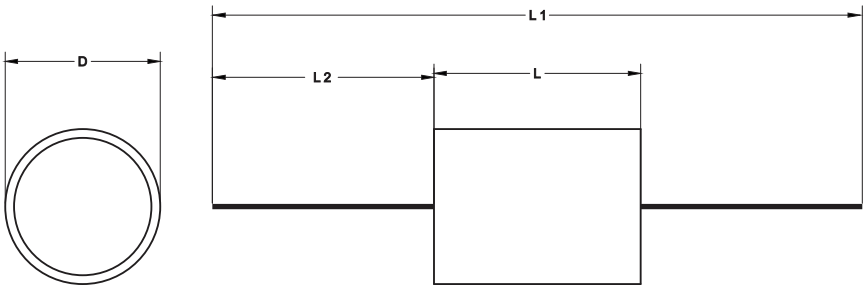


Part Num.	Size						Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	D	D1	d	L	L1	L2			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HB2020-001	2	2	0.7	11	2.5	5	SL	Gold	50	-	3A	100pF	-	-	-	-	3	20	27
HB2828-001	2.8	2.8	0.8	19	3	9	X7R	Gold	100	-	7A	0.01μF	-	-	4	21	35	50	58



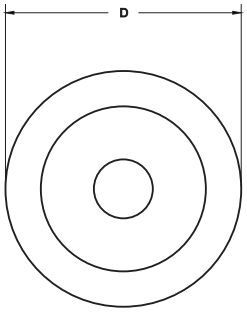
Part Num.	Size							Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
	D	D1	d	L	L1	L2	L3			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
H3630-006	3.6	3	0.8	10.2	2.8	0.5	3.9	KL	Gold	200	-	7A	100pF	-	-	-	-	3	20	27
H3630-004	3.6	3	0.8	10.2	2.8	0.5	3.9	X7R	Gold	100	-	7A	5000pF	-	-	-	13	30	40	50
H3630-005A	3.55	3.05	0.75	10.2	2.8	0.25	3.9	X7R	Gold	50	-	5A	0.027μF	-	-	10	30	41	55	60
H4033-022	4	3.3	0.8	16.8	2.8	0.5	6.8	SL	Gold	200	-	7A	25pF	-	-	-	-	-	8	15
H4033-006	4	3.3	0.8	16.8	2.8	0.5	6.8	SL	Gold	200	-	7A	100pF	-	-	-	-	3	20	27
H4033-005	4	3.3	0.8	16.8	2.8	0.5	6.8	X7R	Gold	100	-	7A	5000pF	-	-	-	13	30	40	50
H4033-004	4	3.3	0.8	16.8	2.8	0.5	6.8	X7R	Gold	50	-	7A	10000pF	-	-	4	21	35	50	58
H4033-033	4	3.3	0.75	15.9	2.8	0.5	6.7	X7R	Gold	50	-	7A	0.015μF	-	-	5	18	35	50	60
H4033-014	4	3.3	0.8	16.8	2.8	0.5	6.8	X7R	Gold	50	-	7A	0.027μF	-	-	10	30	41	55	60

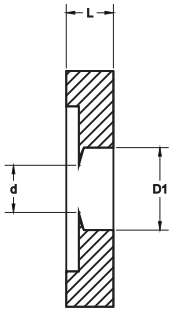
Obbligato Premium Audio Capacitors



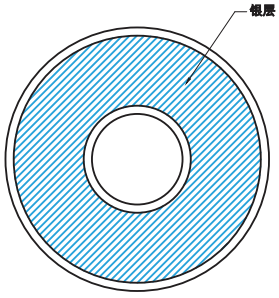
Part Num.	Size				Diel.	Plate	Rated Vol.		I	Cap.
	D	L	L1	L2			DC	AC		
TG1520-001	15	20	115	45	CBB20	-	630	-	7A	0.047μF
TG1520-002	15	20	115	45	CBB20	-	630	-	7A	0.1μF
TG1530-001	15	30	120	45	CBB20	-	630	-	7A	0.15μF
TG1530-002	15	30	125	45	CBB20	-	630	-	7A	0.22μF
TG1530-003	15	30	135	50	CBB20	-	630	-	7A	0.33μF
TG2030-001	20	30	135	50	CBB20	-	630	-	7A	0.47μF
TG2030-002	20	30	135	50	CBB20	-	630	-	7A	0.68μF
TG2030-003	20	30	185	75	CBB20	-	630	-	7A	1μF
TG2040-001	20	40	140	50	CBB20	-	630	-	7A	1.5μF
TG2040-002	20	40	200	80	CBB20	-	630	-	7A	2.2μF
TG3055-001	30	55	155	50	CBB20	-	630	-	7A	3.3μF
TG3055-002	30	55	200	70	CBB20	-	630	-	7A	4.7μF
TG3055-003	30	55	200	70	CBB20	-	630	-	7A	6.8μF
TG3055-004	30	55	300	120	CBB20	-	630	-	7A	10μF
TG3055-005	30	55	220	80	CBB20	-	630	-	7A	15μF
TG4565-001	45	65	210	70	CBB20	-	250	-	7A	22μF
TG4565-002	45	65	300	110	CBB20	-	250	-	7A	33μF
TG4565-003	45	65	290	110	CBB20	-	250	-	7A	47μF

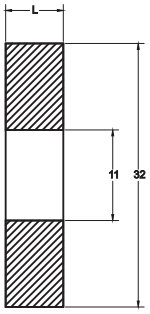
Discoidal Capacitor (Single)

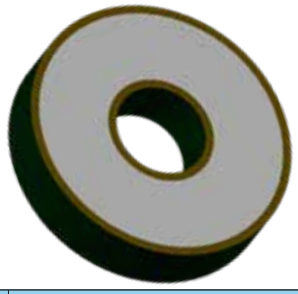




Part Num.	Size				Diel.	Plate	Rated Vol.		Cap.	Insertion Loss (dB)						
	D	D1	d	L			DC	AC		10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HX12-001	20	7	5	5.2	Y5V	Tin	-	500	4700pF	-	-	-	13	30	40	50
HX12-002	20	7	5	4	Y5V	Tin	-	500	6800pF	-	-	-	15	30	42	50
HX12-003	17	7	5	3.9	Y5V	Tin	-	500	4700pF	-	-	-	13	30	40	50

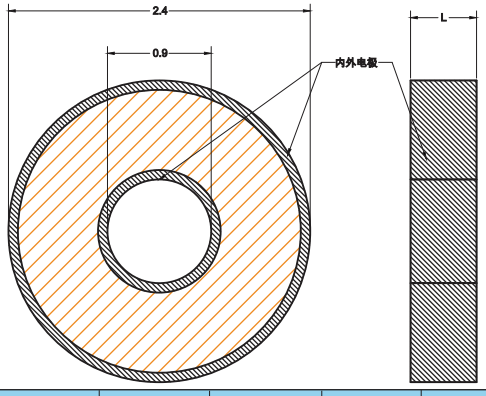






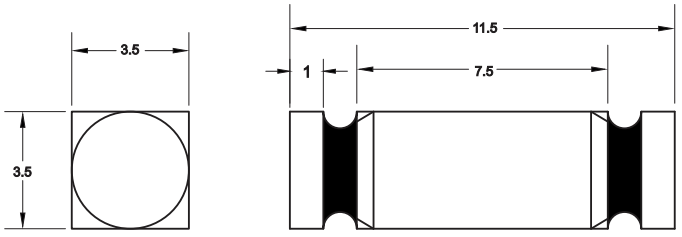
Part Num.	Size			Diel.	Plate	Rated Vol.		Cap.	Insertion Loss (dB)						
	D	d	L			DC	AC		10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
HZ320320-002	32	11	7	SL	Silver	1000	-	60pF～65pF	-	-	-	-	-	12	23
HZ320320-006	32	11	6.5	SL	Silver	1000	-	75pF	-	-	-	-	-	15	25
HZ320320-001	32	11	7	Y5U	Silver	1000	-	4700pF	-	-	-	13	30	40	50
HZ450125-001	45	12.5	10.5	SL	Silver	4000	-	145pF	-	-	-	-	4	20	28

Discoidal Capacitor (Multilayer)

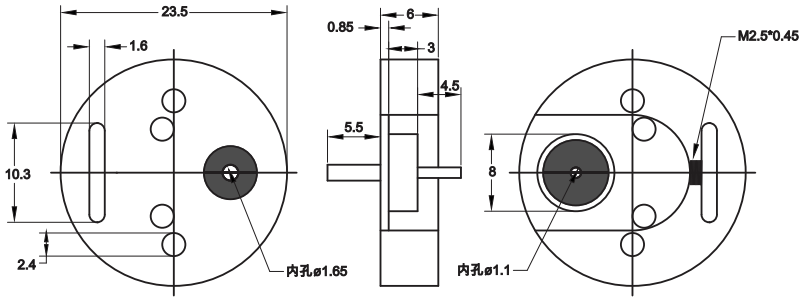


Part Num.	L	Diel.	Plate	Rated Vol.		Cap.	Insertion Loss (dB)						
				DC	AC		10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
D24-100V502-001	1	X7R	Silver	100	-	5000pF	-	-	-	13	30	40	50
D24-100V103-001	1	X7R	Silver	100	-	0.01μF	-	-	4	21	35	50	58
D24-100V153-001	1.2	X7R	Silver	100	-	0.015μF	-	-	5	18	35	50	60
D24-100V273-001	1.2	X7R	Silver	100	-	0.027μF	-	-	10	30	41	55	60

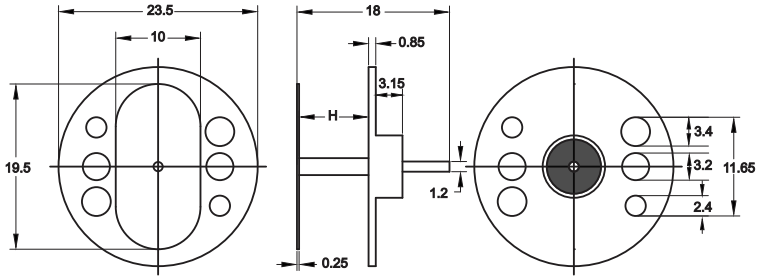
Special Feedthrough Filters



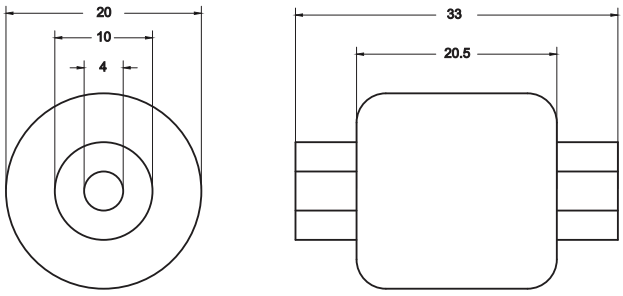
Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
T11535-001	X7R	Silver	100	-	10A	11000pF*2	-	-	9	37	>70	>70	>70



Part Num.	Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
			DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
T235115-001	X7R	Silver	100	-	15A	250pF	-	-	-	-	4	22	30



Part Num.	H	Diel.	Plate	Rated Vol.		I	Cap.	Insertion Loss (dB)						
				DC	AC			10 KHZ	100 KHZ	1 MHZ	10 MHZ	100 MHZ	1 GHZ	10 GHZ
T235180-002	8.2	DL	Silver	100	-	15A	150pF	-	-	-	-	4	20	28
T235180-001	7.8	X7R	Silver	100	-	15A	500pF	-	-	-	-	10	28	35



Part Num.	Diel.	Rated Vol.		I	Cap.
		DC	AC		
T200330-001	SL	15000	-	40A	200pF

Application Fields

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