Capability in Electronic Components

PRECISION DEVICES

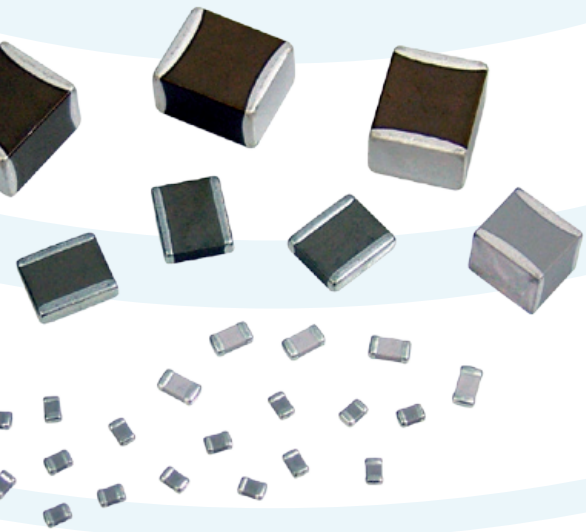
knowles®

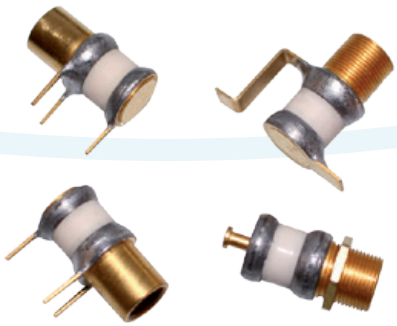
COMPEX • DLI • JOHANSON MFG
NOVACAP • SYFER • VOLTRONICS

Introduction to Know

Knowles Precision Devices is a premier global source for Capacitors, RF Filters, EMI Filters, Resonators, non-magnetic components and advanced dielectric materials.

An umbrella for the brands of Compex, DLI, Johanson MFG, Novacap, Syfer and Voltronics, Knowles Precision Devices serves a variety of markets including: military, aerospace/ avionics, medical equipment, implantable devices, EMI and connector filtering, oil exploration, instrumentation, industrial electronics, automotive, telecoms and data networks.





	COMPEX	DLI DIELECTRIC LABORATORIES
Capacitors: AEC-Q200		
Capacitors: Broadband Blocks		•
Capacitors: Cap Assemblies		
Capacitors: Detonation Pulse		
Capacitors: High Power		•
Capacitors: High Q		•
Capacitors: High Reliability		•
Capacitors: High Temperature		
Capacitors: High Voltage		
Capacitors: MLC - Leaded		•
Capacitors: MLC - SMD		
Capacitors: Non-Magnetic		•
Capacitors: Non-Magnetic Trimmers		
Capacitors: Planars and Discoidals		
Capacitors: Safety Certified		
Capacitors: Single Layer	•	•
Capacitors: Trimmers		
Dielectric Substrates		•
EMI Filters		
Non-Magnetic Hardware		
Non-Magnetic Inductors		
Microwave Couplers		•
Microwave Filters		•
RF: Gain Equalizers		•
Microwave Power Dividers		•
Microwave Resonators		•
RF: Bias Filter Networks		•
Thin Film: Build To Print	•	•
RF: Heatsink/Standoff	•	
RF: Mounting Shorts	•	
RF: Self Bias Networks		•

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Johanson	NOVACAP	SYFER	Voltronics
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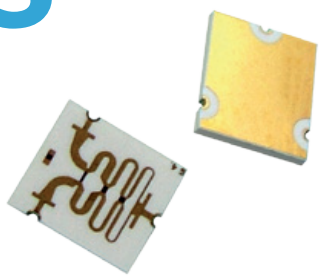
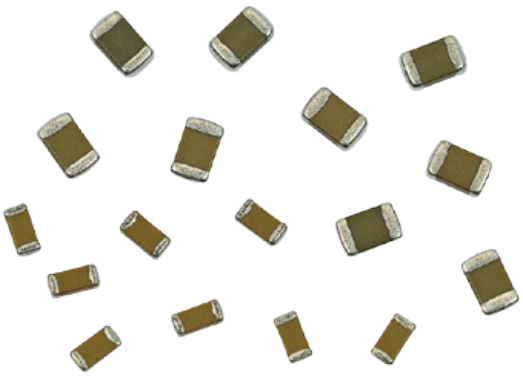
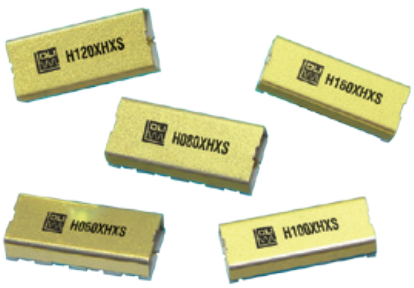
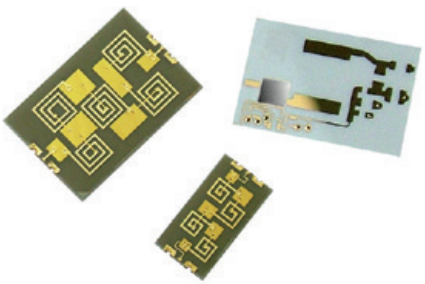
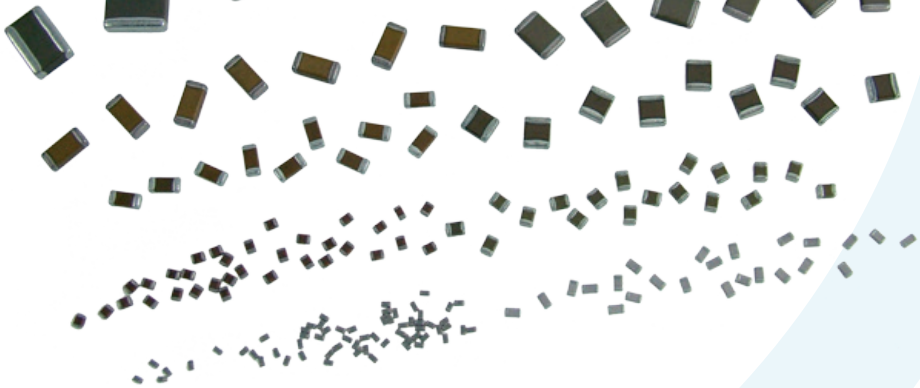
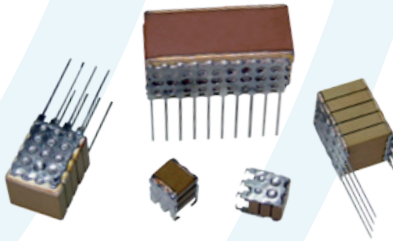












MLC capacitors

- Standard capacitor ranges
- High Q capacitors
- Ultra-low ESR capacitors
- FlexiCap™ capacitors
- TCC/VCC capacitors
- Open Mode capacitors
- Tandem capacitors
- High Capacitance capacitors
- StackiCap™ capacitors
- NC range
- Non-magnetic capacitors
- IECQ-CECC qualified capacitors
- AEC-Q200 qualified capacitors
- Safety Certified capacitors
- Specialty products
- Application specific

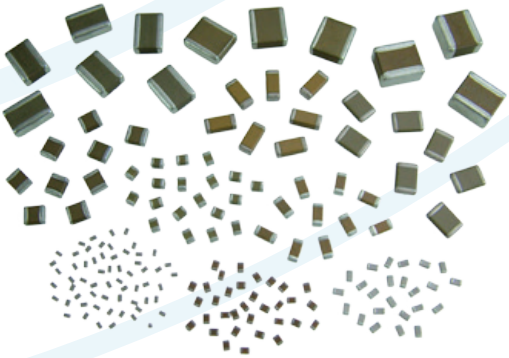
The Knowles Precision Devices MLC product group offers a wide range of standard and high voltage surface mount chips from 0402 to very large sizes, 3V to >10kV and in a variety of dielectrics. Termination options include the world famous FlexiCap™ polymer system that virtually eliminates flex cracking. Our components are often used in safety critical applications and are backed-up by product certifications including: IECQ-CECC, UL, TÜV and AEC-Q200.

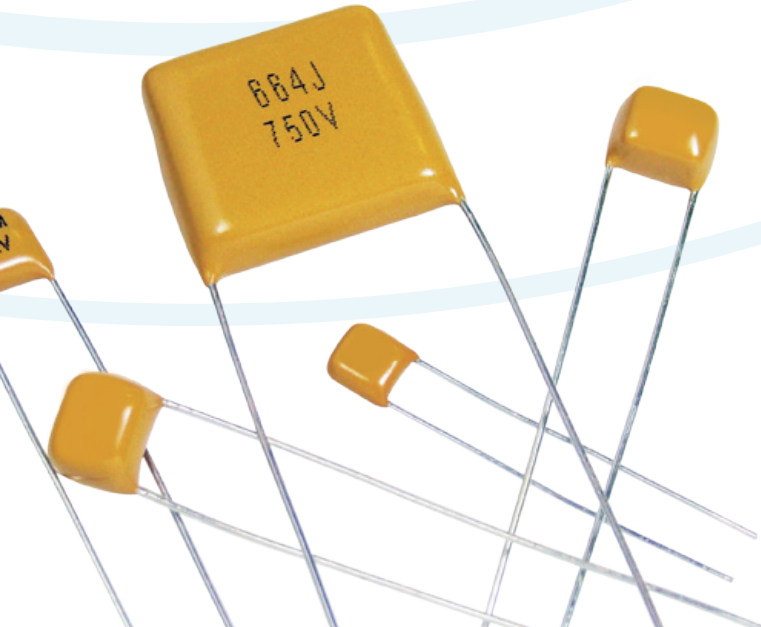
New products include ProtectiCap™ and StackiCap™ both significantly extending the range of capacitance and voltage values available in MLCs, a new series of high power RF chips and our ac series, developed specifically for ac applications.

MLC products tend to be based on standard case sizes and materials, often in higher volumes but we're always ready to help when customers have special requirements.

NOVACAP a Knowles Precision Devices brand

SYFER a Knowles Precision Devices brand





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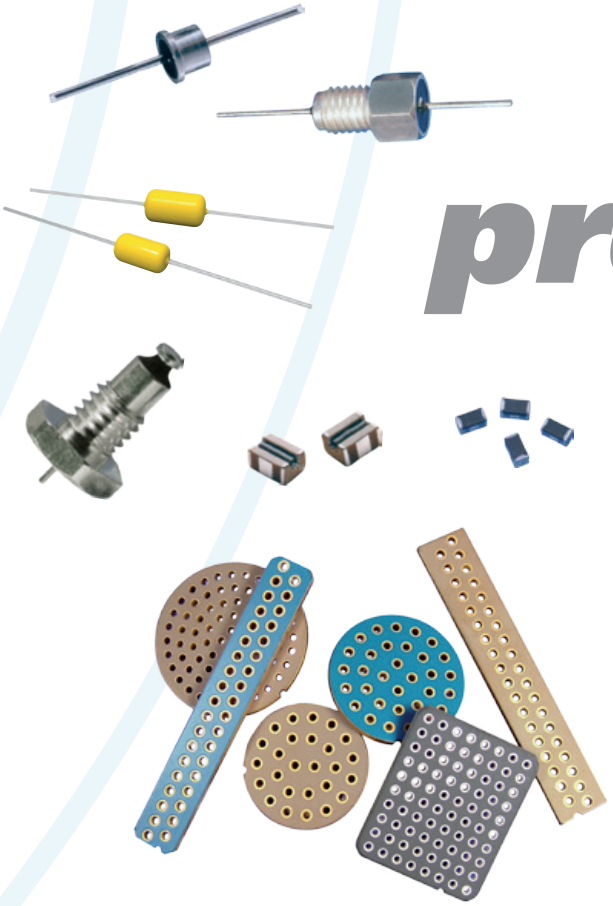

Hi-Rel products

The High Reliability product range includes MLCs made for stringent, safety critical requirements including Medical Implantable, Military, Space and Down-hole applications. This product group also offers a series of other technologies described with a "high", including high temperature, high energy, high CV, high Q and also leaded and stacked chips.

Solutions are often customer-specific, utilizing many material and design options and can result in non-standard case sizes providing the best combination of capacitance and reliability optimized for the available board space. The manufacturing process is widely scalable from small to large volumes.

We have the product knowledge, combined with extensive burn-in and reliability test capabilities to deliver to your most demanding Hi-Rel specifications.

EMI filters

We have a broad range of EMI filters in 3 categories; surface mount, panel mount and planar arrays. Surface mount products are available as C, Pi and X2Y devices, with current carrying capabilities up to 20A and are typically used to protect general purpose electronics.

Our panel mount devices are all built around multilayer discoidal elements, making them much more reliable than common tube-based designs. These components are frequently used in Defense and Aerospace applications requiring Hi-Rel capabilities.

Knowles is one of the world's leading manufacturers of capacitive and varistor planar arrays. They are usually tailored to specific customer requirements for high end connector and medical implant applications.

- Space grade surface mount capacitors
- MIL grade surface mount capacitors
- Medical Implant grade capacitors
- Radial Leaded capacitors
- StackiCap™ capacitors
- High Temperature capacitors
- High Energy capacitors
- EMI filter products
- Discoidal capacitors and Planar Arrays
- Special filters and assemblies
- Specialty products

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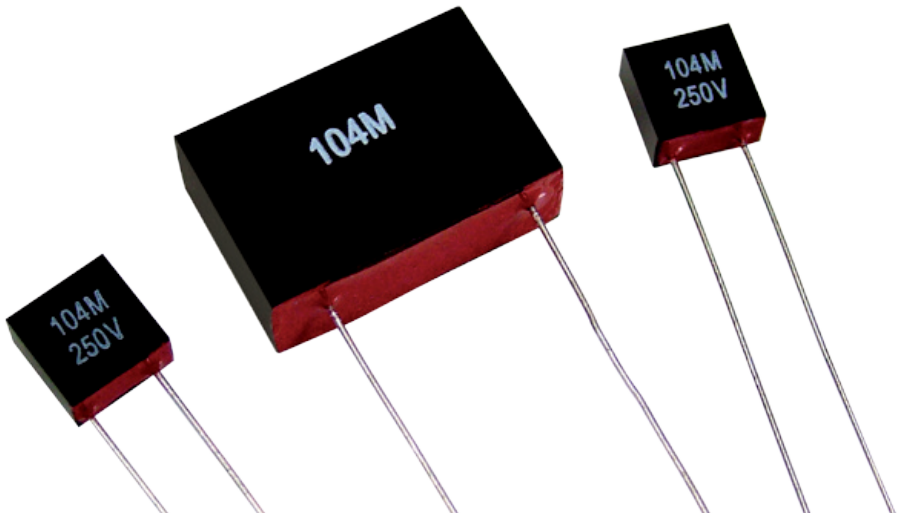

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Trimmer capacitors

Knowles Precision Devices is a world leader in the supply of precision, multi-turn trimmer capacitors used to optimize tuned circuits. Our trimmers offer high linearity and stability and employ extensive design and materials expertise to meet capacitance, voltage, frequency and mounting requirements. Many of our products are custom designs and include solutions using air, glass, sapphire and PTFE dielectrics that can be used from 1MHz to over 2GHz, voltages up to 20kV and down to cryogenic temperatures.

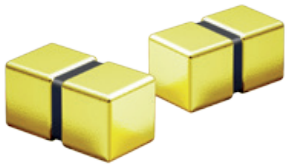
A range of standard half-turn trimmer products is also available providing the benefits of reduced cost in a low drift, high voltage and temperature stable product.

In addition Knowles PD also offers a complete line of non-magnetic components for the MRI and NMR industries, including trimmer and chip capacitors, coils, baluns and fasteners. We understand the importance of quality and performance in this specialized market and have all the non-magnetic components coil designers need.

- Half Turn Ceramic SM Chip Trimmers
- Precision Air PTFE Non-Magnetic Sapphire Trimmers
- Glass and Quartz Trimmers
- Precision Microwave Tuners
- Non-magnetic Capacitors
- Non-magnetic Variable Inductors
- Non-magnetic Fasteners and Hardware

Johanson a Knowles Precision Devices brand Voltronics a Knowles Precision Devices brand

Single Layer capacitors



We are one of the world's largest suppliers of Hi-Q single layer capacitors. Our range offers the broadest selection of material and device options; with over 35 specially developed high frequency dielectrics and 7 major product families we have the knowledge and experience to meet your needs, whether developing next generation military modules, point-to-point radios or satellite communication systems. We have products that specialize in high reliability products for Defense and Space applications and are proud of this heritage.

Additionally we provide components for fibre optic and telecom applications including: customer specified heat sinks, used as substrates for mounting heat emitting devices. The mounting surface can contain complex drive circuitry used to connect to the devices.

If you don't see the ideal part we are happy to make you what you want to your specification.

- SLC
- Hi-Rel
- Heatsinks

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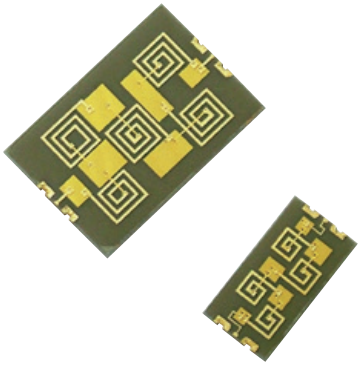
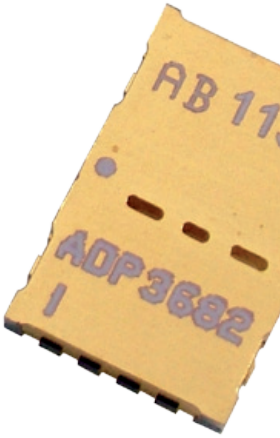


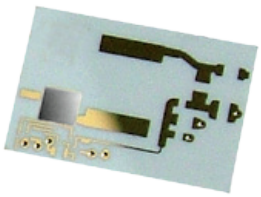


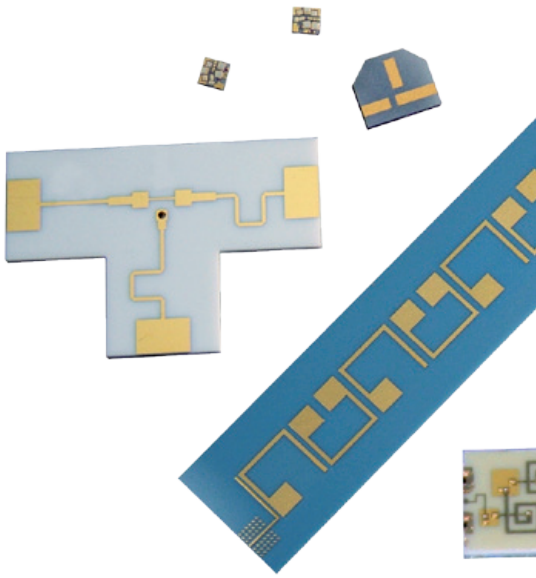
Thin Film Technology

Our growing range of thin film devices includes: filters, gain equalizers, resonators and integrated passive networks. Using in-house dielectrics, our filters are smaller, lighter and more temperature stable than many alternates and are widely used in high reliability Defense and Space applications. New products include a series of standard catalogue filters from 1 to 40 GHz.

Gain Equalizers incorporate precision thin film RC values on high K ceramics for superior RF performance repeatability and the desired gain slope. Standard catalogue values cover ranges from DC to 10GHz in product sizes 0402 or smaller.

If you prefer we offer Build-to-Print thin film services to manufacture your design in our facility. With our capabilities to ship RF-tested product you won't own the yield loss of other suppliers.





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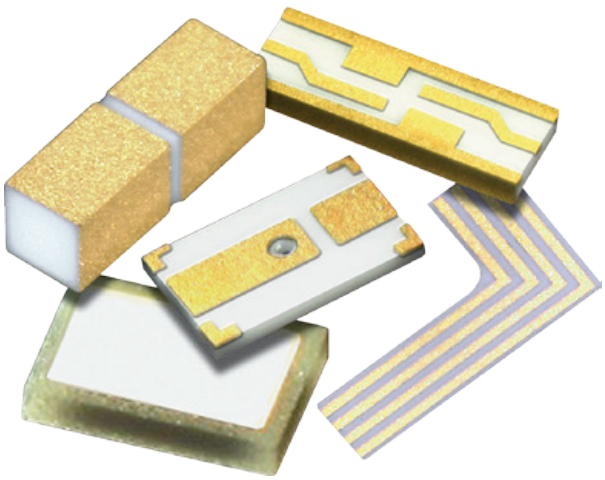

- Filters
- Equalizers
- Integrated Passive Devices
- Substrates
- Build-to-Print Custom Circuits
- Wilkinson Power Dividers
- Resistive Splitters
- Directional Couplers
- Heatsinks/Standoffs
- Submounts
- Mounting Shorts

www.knowlescapacitors.com

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