One world. One KEMET.

Why we're the one capacitance supplier you need.

The Capacitance Company

KEMET

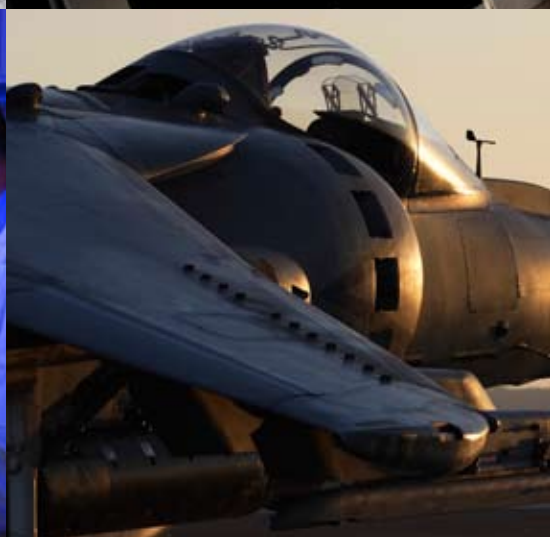
CHARGED.®









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One world. One source. One KEMET.

No bouncing from supplier to supplier to find what you need. No multiple web sites and phone calls to get answers.

When you partner with KEMET, our entire global organization seamlessly provides you with the coordinated action and service you need. We're your single, integrated source for capacitance solutions worldwide, offering 95% of possible dielectric solutions, to cover practically any application. With new, innovative products year after year after year. Global availability. Full design collaboration, with fast custom design and prototyping to give your new products a competitive edge. Plus consistent quality, reliability and on-time delivery.

All from one company that's easy to work with and totally dedicated to your success. For anything to do with capacitance, call *The Capacitance Company* – KEMET.

Looking for a hassle-free source for 95% of possible dielectric solutions?

KEMET is the place for one-stop dielectric shopping. We offer our customers the broadest selection of capacitor technologies in the industry, including tantalum, ceramic, aluminum, electrolytic, film and paper.

But the range of products is only the beginning. You simply won't find an electronic components manufacturer more determined to find new technological solutions to customer problems, or more committed to product quality and on-time delivery – in every case, lowering your total cost of ownership as much as we possibly can. It's how we've helped customers succeed for more than 90 years. And it's how we're helping them succeed today.

AMERICA	EMEA	ASIA-PACIFIC
Canada	Bulgaria	China
Mexico	Finland	Hong Kong
USA	France	India
	Germany	Indonesia
	Italy	Japan
	Portugal	Malaysia
	Sweden	Singapore
	Switzerland	Taiwan
	United Kingdom	

We're everywhere you need us to be.

The next time you board an airplane, boot up your computer or read about a breakthrough medical device, a piece of our technology is likely involved. KEMET customers include nearly all of the world's major electronics original equipment manufacturers, manufacturing services companies and electronics distributors. High Reliability versions of our capacitors are even in outer space, part of every important military and aerospace effort of the past 60 years, from the first Telstar satellite and Apollo 11 to the Patriot missile, International Space Station and Mars Pathfinder.

Our sales offices can't be quite as ubiquitous as our products, but we do pride ourselves on being where you need us. This map shows you our sales offices around the world.

As you can see, we're not only easy to work with, we're easy to find. And we're more than ready to be your single source capacitance solutions supplier.

One world. One source. One KEMET.

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For a complete listing of all KEMET sales offices, distributors and manufacturing representatives, please visit www.kemet.com.

Why *The Capacitance Company* is also the "Easy-To-Buy-From" company.

When you choose KEMET, you'll enjoy a level of responsiveness you just won't get from any other component manufacturer. You simply won't find an electronic components manufacturer more passionate about customer service. Our innovative service offerings and superior localized support are known throughout the industry, powered by our global, customer-focused sales organization and worldwide logistics capabilities. We're 100% committed to serving any customer, anywhere, and meeting customer needs when they need to be met.

Whether you need rush samples, technical assistance, in-person consultations or accelerated custom design, design collaboration and prototype services, we have a solution. If it's anything to do with capacitance, we can help – and help fast.

Working to make a better world.

At KEMET, we're proud to work with customers to develop products that truly make the world a better, safer, more connected place to live – from hand-held devices to automotive systems to the greenest energy technology.

As a company, KEMET is dedicated to economically, environmentally and socially sustainable development. We've adopted the Electronic Industry Code of Conduct (EICC), addressing all aspects of corporate responsibility. All of our commercial-grade products are available in RoHS-compliant versions with Pb-free terminations. Our manufacturing facilities have won numerous environmental excellence awards and recognitions. And our supply chain is certified to be sourced from areas that are neither environmentally protected nor under conflict.

After all, we believe that doing the right thing is in everyone's interest.

Which capacitor is right for you?

As *The Capacitance Company*, we make over 95% of possible dielectric solutions – the broadest selection of capacitor technologies in the industry. By offering a wide variety of dielectrics, dimensions, voltages, temperature characteristics and terminations, KEMET capacitors satisfy an expansive range of customer requirements and applications.

In fact, if the capacitor you need hasn't been invented, it's only because you haven't asked. We can quickly develop custom products and carry out early-stage manufacturing through our accelerated collaboration services. Available through our global innovation and manufacturing centers around the world, accelerated collaboration brings together the necessary people, equipment and facilities together to get the job done, on time and in budget.

Of course, when you're under pressure to design smaller and smaller products with greater and greater functionality, there's no time for the traditional back-and-forth with your suppliers. With KEMET, you get direct contact to the engineers and other professionals who can help you successfully solve your design problems, and in record time. We deal personally with customers to ascertain the new part types needed for their next-generation products. In many cases, we can go from start to samples in only four months.

We've helped some of the world's most prominent electronics companies slash time to market and gain significant windows of competitive advantage. We can do the same for you, too.

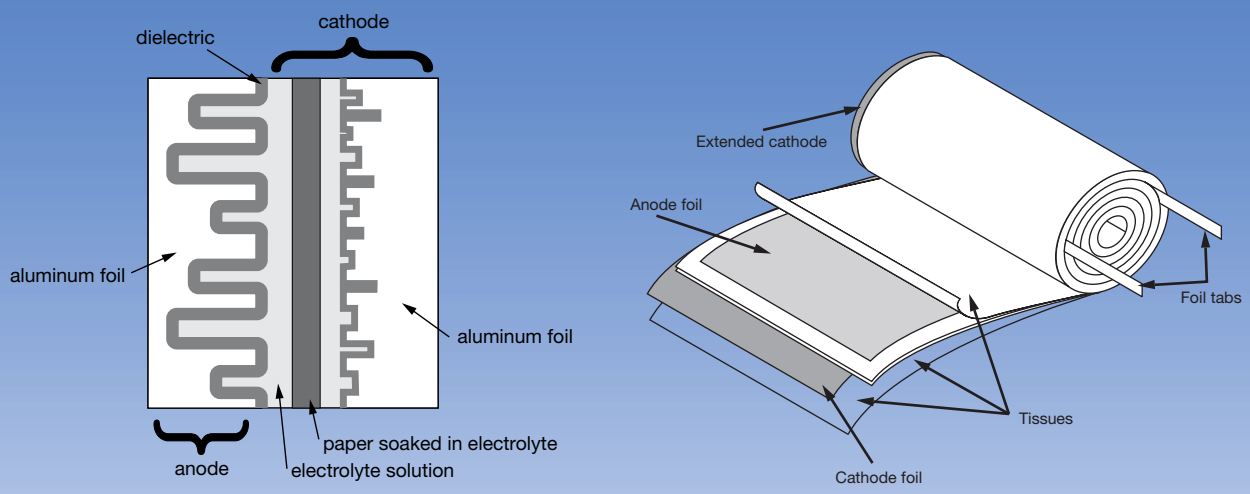
www.kemet.com

Aluminum Electrolytic Capacitors

Aluminum electrolytics offer some of the smallest sizes for a given capacitance and voltage. Commonly used for filtering and bulk energy storage, electrolytics are available in rated voltages exceeding 500 VDC. KEMET Electrolytic capacitors are utilized in a wide variety of demanding power electronics applications such as automotive, power generators and converters, welders, wind turbines, uninterruptible power supplies, and medical imaging.

Electrolytic capacitors consist of aluminum foil which is first etched to increase its surface area. Separate, carefully designed etching techniques are used for the anode and cathode foils. A layer of aluminum oxide, an excellent dielectric, is formed on the surface of the etched anode foil before the foils are wound together between special separator papers. At the same time, tabs are welded to the foils to form the connections. The wound assembly is impregnated with a liquid electrolyte. This electrolyte is a precision-made compound which fully impregnates the etched foil, providing a low ESR conductive path to the cathode foil with stable electrical and chemical properties. KEMET crafts its own electrolytes to match the etched foil characteristics and desired final properties. The assembly is packaged in such a way as to provide excellent vibration resistance and low thermal resistance.

KEMET offers a broad line of axial, snap-in and screw terminal electrolytic capacitors; however, it is often beneficial to optimize the capacitor to a specific requirement, particularly in automotive and power applications. KEMET's systems and production methods are designed with optimization in mind. By utilizing a "library" of foils, electrolytes, separator papers, and mechanical parts in carefully selected combinations, KEMET can swiftly design and build optimized electrolytic capacitors to match a given specification.



Aluminum electrolytic capacitor typical construction

Axial Electrolytic Capacitors

Series	Rated Temperature	Capacitance Range	Voltage Range (VDC)	Applications	Benefits
PEG226 PEH226	150°C	250µF - 4700µF	25 - 63	Automotive	• Extremely high ripple current • Up to 28A ripple (RMS, continuous load) • High vibration resistance
PEG225 PEH225	Up to 150°C	470µF - 6300µF	25 - 63	Automotive	• Extremely high ripple current • Up to 28A ripple (RMS, continuous load) • High vibration resistance • High CV
PEG220 PEH220	150°C	250µF - 4700µF	25 - 63	Automotive	• Very high ripple current • Up to 21A ripple (RMS, continuous load) • High vibration resistance
PEG124	105°C 125°C	1µF - 470µF 10µF - 4700µF	100 - 450 10 - 63	Electronic Ballast Industrial Automotive Telecom	• Long life > 30 years at 50°C • Low ESR • Low ESL
PEG126 PEH126	150°C	250µF - 4000µF	25 - 63	Automotive	• Low ESR • High ripple current • Intermittent specification • Resistance to vibrations • 150°C, 2000h (Ø20), 1500h (Ø16)
PEG127	150°C	33µF - 1300µF	25 - 63	Automotive	• High temperature rating • High ripple current • Up to 6.6A ripple (RMS, continuous load) • High vibration resistance • 150°C, 1600h

Screw Terminal Electrolytic Capacitors

Series	Temperature Range	Capacitance Range	Voltage Range (VDC)	Life Expectancy @ Rated Voltage, Rated Temperature	Benefits
ALS30/31	-40 to +85°C	100µF - 680000µF	25 - 500	40000 hours	• Case sizes & terminals for the European market • 20000 hours life at 85°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
ALS32/33	-40 to +85°C	220µF - 18000µF	350 - 500	40000 hours	• Case sizes & terminals for the Asian market • 20000 hours life at 85°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
ALS34/35	-40 to +85°C	150µF - 470000µF	25 - 500	40000 hours	• Case sizes & terminals for the American market • 20000 hours life at 85°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
PEH200	-40 to +85°C	100µF - 330000µF	25 - 550	60000 hours	• High CV value • Long life • Low ESR & ESL • Compact size
PEH169	-40 to +85°C	68µF - 470000µF	10 - 550	78000 hours	• High CV value • Long life • Low ESR & ESL • Compact size
ALS40/41	-40 to +105°C	150µF - 680000µF	25 - 450	15000 hours	• Compact size • 9000 hours life at 105°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
PEH169	-40 to +105°C	100µF - 330000µF	10 - 350	25000 hours	• High CV value • Long life • Low ESR & ESL • Compact size
PEH205	-55 to +125°C	1500µF - 390000µF	16 - 100	Up to 8000 hours (@ Ur, Ir, +125°C)	• High temperature +125°C • Long life • Low ESR & ESL • Compact size

Snap-In Electrolytic Capacitors




Series	Temperature Range	Capacitance Range	Voltage Range (VDC)	Life Expectancy @ Rated Voltage, Rated Temperature	Benefits
ALC10	-40 to +85°C	56µF - 82000µF	40 - 500	29000 hours	• Compact size • 18000 hours life at 85°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
ALC12	-40 to +85°C	150µF - 8200µF	200 - 450	9000 hours	• Compact size • 2000 hours life at 85°C (U_R, I_R applied) • Excellent surge voltage capability
PEH506	-40 to +85°C	68µF - 27000µF	35 - 450	6000 hours	• Long life grade • PCB mounting • Low ESR & ESL • High ripple current
ALC40	-40 to +105°C	47µF - 120000µF	25 - 450	14000 hours	• Compact size • 9000 hours life at 105°C (U_R, I_R applied) • High ripple current • Excellent surge voltage capability
ALC42	-40 to +105°C	120µF - 6800µF	200 - 450	11000 hours	• Compact size • 2000 hours life at 105°C (U_R, I_R applied) • Excellent surge voltage capability
PEH532	-40 to +105°C	68µF - 27000µF	35 - 500	2000 hours	• Long life grade • PCB mounting • Low ESR & ESL • High ripple current
PEH534	-40 to +105°C	150µF - 22000µF	35 - 500	4000 hours	• Long life grade • PCB mounting • Low ESR & ESL • High ripple current
PEH536	-40 to +105°C	47µF - 18000µF	35 - 500	6000 hours	• Long life grade • PCB mounting • Low ESR & ESL • High ripple current
PEH526/626	-40 to +125°C	820µF - 6800µF	25 - 80	4000 hours	• 125°C temperature rating • High vibration specification • Low ESR • High ripple current capability

Other Electrolytic Capacitors



Series	Temperature Range	Capacitance Range	Voltage Range	Life Expectancy @ Rated Voltage, Rated Temperature	Benefits
ALN20S	-40 to +85°C	10000µF	50 - 100VDC	29000 hours	• 4 pin solder tag • Long life • Slit foil technolgy
ALC10S	-40 to +85°C	10000µF	50 - 100VDC	29000 hours	• 2 pin solder tag • Long life • Slit foil technolgy
ALP/T 20	-40 to +85°C	22µF - 150000µF	40 - 450VDC	26000 hours	• Solder tag & DIN standard solder pin • Long life
ALP/T 22	-40 to +85°C	22µF - 150000µF	40 - 450VDC	26000 hours	• Solder tag & DIN standard solder pin • Long life
MS/MD	-20 to +60°C MS type -20 to +70°C MD types	25µF - 750µF	120 - 260VAC		• AC motor start capacitors • 6.3mm double amp tags (quick connect type) • VDE approved to EN60252-2

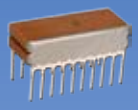
www.kemet.com

Multilayer Ceramic Capacitors (MLCCs)

KEMET Multilayer Ceramic Capacitors (MLCCs) offer tremendous performance, reliability and cost advantages for circuit designers. Our comprehensive line of surface mount and through-hole devices are utilized in a variety of computer, telecommunications, automotive, military, medical and consumer electronics. Primary applications include decoupling, filtering, bypassing and smoothing.

Ceramics are non-polar devices which offer unsurpassed volumetric efficiency, delivering the highest capacitance in the smallest package sizes in the market. Available in a wide range of sizes, KEMET MLCCs offer very low equivalent series resistance (ESR), exhibit excellent high frequency characteristics and are extremely reliable. KEMET is driving ceramic technology advancement, resulting in smaller case sizes, better performance and lower cost. These factors have accelerated the progression of readily available ceramics into markets and applications previously occupied by tantalum, aluminum and film capacitors, lowering the risk of material shortages.

MLCCs are monolithic devices that consist of laminated layers of specially formulated, ceramic dielectric materials interspersed with a metal electrode system. The layered formation is then fired at high temperature to produce a sintered and volumetrically efficient capacitance device. A conductive termination barrier system is integrated on the exposed ends of the chip to complete the connection. KEMET offers one of the broadest product portfolios of ceramic capacitors in the industry, providing customers the right combination of dielectric, termination system, form factor and screening.



- **Dielectrics**
  Ceramic MLCCs are offered in temperature and voltage stable C0G (NP0), temperature stable X8R, X7R and X5R as well as general purpose X8L, Z5U and Y5V dielectrics. KEMET provides dielectrics in both base metal electrodes (BME) and precious metal electrodes (PME) technologies. Military designated dielectrics such as BP, BX and BR, and a wide range of high temperature and high voltage dielectric solutions for extreme environments are available.

- **Terminations**
  KEMET offers a variety of termination systems including RoHS-compliant tin, tin-lead, gold and custom options. KEMET's Flex Mitigation products reduce risk of flex-related board failure and provide a benign failure mode.

- **Form Factors**
  Surface mount, through-hole, J-leads, L-leads, S-leads, stacked and modules are some of the form factors that KEMET produces. Customers can tailor a part for their requirements.

- **Screening**
  KEMET offers parts that meet varying testing and screening levels. This includes general purpose commercial grades, automotive grade (AEC-Q200), medical grades and parts qualified to many military specifications.

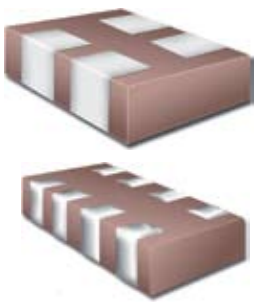
- **Environmental Compliance**
  KEMET's standard ceramic products meet RoHS criteria and are compatible with modern solder processes including multiple reflow passes.

Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

C0G, X7R, X5R, Z5U & Y5V Dielectrics • 4VDC–250VDC (Commercial & Automotive Grades)

Size Code EIA/Metric	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
0201/0603	C0G – 5.6pF - 100pF X5R – 0.01µF - 0.1µF	10 - 25 4 - 16	General (All Dielectrics) • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability C0G Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • No piezoelectric noise • Extremely low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +125°C • No capacitance decay with time • SnPb plated end metallization option available upon request (5% min) • COTS (Commercial-Off-The-Shelf) screening available X7R Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable Dielectric • SnPb end metallization option available upon request (5% min) • Telecom "Tip and Ring," 250VDC available • COTS (Commercial-Off-The-Shelf) screening available X5R Dielectric • -55°C to +85°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable Dielectric Z5U Dielectric • +10°C to +85°C operating temperature range Y5V Dielectric • -30°C to +85°C operating temperature range
0402/1005	C0G – 0.5pF - 2200pF X7R – 150pF - 0.1µF X5R – 0.012µF - 3.3µF Y5V – 0.022µF - 1.0µF	10 - 100 6.3 - 50 4 - 16 6.3 - 16	
0603/1608	C0G – 0.5pF - 0.015µF X7R – 180pF - 1.0µF X5R – 0.27µF - 10µF Y5V – 0.022µF - 1.0µF	10 - 200 6.3 - 200 4 - 25 6.3 - 25	
0805/2012	C0G – 0.5pF - 0.047µF X7R – 180pF - 2.2µF X5R – 0.47µF - 47µF Z5U – 6800pF - 0.1µF Y5V – 0.022µF - 10µF	10 - 200 6.3 - 250 4 - 25 50 - 100 6.3 - 50	
1206/3216	C0G – 10pF - 0.1µF X7R – 1000pF - 10µF X5R – 0.27µF - 100µF Z5U – 0.01pF - 0.22µF Y5V – 0.22µF - 22µF	10 - 200 6.3 - 250 6.3 - 50 50 - 100 6.3 - 50	
1210/3225	C0G – 10pF - 0.22µF X7R – 2200pF - 47µF X5R – 0.33µF - 100µF Z5U – 0.47µF - 1.0µF Y5V – 0.22µF - 22µF	10 - 200 6.3 - 250 6.3 - 35 50 - 100 6.3 - 50	
1808/4520	X7R – 4700pF - 0.18µF	50 - 200	
1812/4532	C0G – 470pF - 0.22µF X7R – 6800pF - 10µF Z5U – 0.082µF - 1.0µF	50 - 200 25 - 250 50 - 100	
1825/4564	C0G – 3900pF - 0.27µF X7R – 0.022µF - 2.2µF Z5U – 0.18µF - 2.2µF	50 - 200 25 - 250 50 - 100	
2220/5650	C0G – 6800pF - 0.47µF X7R – 0.82µF - 22µF	50 - 100 25 - 250	
2225/5664	C0G – 4700pF - 0.033µF X7R – 0.047µF - 2.2µF Z5U – 0.33µF - 2.2µF	50 - 200 50 - 250 50 - 100	

Capacitor Array • X7R & C0G Dielectric • 10VDC–200VDC (Commercial & Automotive Grades)



Size Code EIA/Metric	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
0508 Array (2 Capacitor)	C0G – 100pF - 2200pF X7R – 330pF - 0.22µF	10 - 100 10 - 100	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available. Saves both circuit board and inventory space • Reduces placement costs and increases throughput • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • EIA 0508 (2-capacitor) and 0612 (4-capacitor) case sizes • Non-polar device, minimizing installation concerns • Flexible termination option is standard on 0508 case size arrays • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb end metallization option available upon request (5% min)
0612 Array (4 Capacitor)	C0G – 10pF - 470pF X7R – 330pF - 0.1µF	10 - 200 10 - 200	

Flex Mitigation Solutions • Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

Open Mode Design • X7R Dielectric • 16VDC–200VDC (Commercial & Automotive Grade)

Size Code EIA/Metric	Capacitance Range	Voltage Range (VDC)	Benefits
0805/2012	1000pF - 0.68µF	16 - 200	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Open Mode/fail open design • Mid to high capacitance flex mitigation • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb end metallization option available upon request (5% min)
1206/3216	0.018µF - 4.7µF	16 - 200	
1210/3225	0.068µF - 6.8µF	16 - 200	
1812/4532	0.047µF - 1.0µF	25 - 200	

Floating Electrode Design (FE-CAP) • X7R Dielectric • 6.3VDC–3KVDC (Commercial & Automotive Grade)

Size Code EIA/Metric	Capacitance Range	Voltage Range (VDC)	Benefits
0402/1005	150pF - 1000pF	6.3 - 50	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Floating Electrode/fail open design • Low to mid capacitance flex mitigation • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb end metallization option available upon request (5% min)
0603/1608	180pF - 0.022µF	6.3 - 200	
0805/2012	180pF - 0.10µF	6.3 - 250	
1206/3216	1000pF - 0.12µF	6.3 - 250	
1210/3225	2200pF - 0.22µF	6.3 - 250	
1812/4532	6800pF - 0.22µF	6.3 - 50	

Flexible Termination System (FT-CAP) • X7R Dielectric • 6.3VDC–250VDC (Commercial & Automotive Grades)

Size Code EIA/Metric	Capacitance Range	Voltage Range (VDC)	Benefits
0603/1608	180pF - 0.47µF	6.3 - 200	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Superior flex performance (up to 5mm) • High capacitance flex mitigation • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb end metallization option available upon request (5% min)
0805/2012	180pF - 2.2µF 62pF - 8200pF	6.3 - 250 500 - 1000	
1206/3216	1000pF - 10.0µF 75pF - 0.015µF	6.3 - 250 500 - 2000	
1210/3225	2200pF - 22.0µF 130pF - 0.047µF	6.3 - 250 500 - 2000	
1808/4520	4700pF - 0.18µF 75pF - 0.056µF	50 - 200 500 - 3000	
1812/4532	6800pF - 10.0uF 150pF - 0.10uF	25 - 250 500 - 3000	
1825/4564	0.022µF - 2.2µF 330pF - 0.22µF	50 - 250 500 - 3000	
2220/5650	0.082µF - 22.0µF 330pF - 0.22µF	25 - 250 50 - 3000	
2225/5664	0.047µF - 2.2µF 470pF - 0.27µF	50 - 250 500 - 3000	

Flex Mitigation Solution • Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

Floating Electrode Design with Flexible Termination System (FF-CAP) • X7R Dielectric • 6.3VDC–250VDC (Commercial & Automotive Grade)

Size Code EIA/Metric	Capacitance Range	Voltage Range (VDC)	Benefits
0603/1608	180pF - 0.022µF	6.3 - 200	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Superior flex performance (up to 5mm) • Floating Electrode/fail open design • Low to mid capacitance flex mitigation • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb end metallization option available upon request (5% min)
0805/2012	180pF - 0.10µF	6.3 - 250	
1206/3216	1000pF - 0.12µF	6.3 - 250	
1210/3225	2200pF - 0.22µF	6.3 - 250	
1812/4532	6800pF - 0.22µF	6.3 - 50	

KPS Series • Leadframe Mounted • Stacked • X7R Dielectric • 10VDC–250VDC (Commercial & Automotive Grade)

Size Code EIA/Metric	Capacitance Range	Voltage Range (VDC)	Benefits
1210/3225	0.10µF - 47.0µF	10 - 250	• -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Reliable and robust termination system • Higher capacitance in the same footprint • Potential board space savings • Advanced protection against thermal and mechanical stress • Provides up to 10mm of board flex capability • Reduces audible, microphonic noise • Extremely low ESR and ESL • Pb-Free and RoHS-compliant • Capable of Pb-Free reflow profiles • Non-polar device, minimizing installation concerns • Tantalum and electrolytic alternative
1812/4532	0.10µF - 22.0µF	16 - 250	
2220/5650	0.10µF - 47.0µF	16 - 250	

Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Axial (Aximax) • Conformally Coated • C0G (NPO), X7R and Z5U Dielectrics • 25VDC–250VDC (Commercial & Automotive Grade)

Series Code	Dimensions L x H x T (inches max)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C410	0.170 x 0.100	C0G – 1.0pF - 4700pF X7R – 10pF - 1.0µF Z5U – 1000pF - 0.22µF	50 - 200 25 - 250 50 - 200	General (All Dielectrics) • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • 0.51 mm lead diameter C0G (NPO) Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • No piezoelectric noise • Low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +125°C • No capacitance decay with time X7R Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable dielectric Z5U Dielectric • +10°C to +85°C operating temperature range
C412	0.170 x 0.120	C0G – 120pF - 4700pF X7R – 0.015µF - 0.1µF Z5U – 0.12µF - 0.33µF	50 - 200 25 - 250 50 - 200	
C420	0.260 x 0.100	C0G – 390pF - 0.01µF X7R – 6800pF - 1.0µF Z5U – 0.27µF - 0.47µF	50 - 200 25 - 250 50 - 200	
C430	0.290 x 0.150	C0G – 1800pF - 8200pF X7R – 0.022µF - 4.7µF Z5U – 0.22µF - 1.0µF	50 - 200 25 - 250 50 - 200	
C440	0.400 x 0.150	C0G – 5600pF - 0.015µF X7R – 0.022µF - 4.7µF Z5U – 0.18µF - 2.2µF	50 - 200 25 - 250 50 - 200	

Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Radial (Goldmax) • Conformally Coated • C0G (NPO), X7R & Z5U Dielectrics • 25VDC–250VDC (Commercial & Automotive Grade)

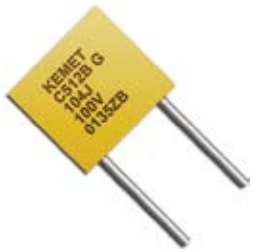
Series Code	Dimensions L x H x T (inches max)	Lead Spacing (inches)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C315	0.150 x 0.210 x 0.100	0.10	C0G – 1.0pF - 4700pF X7R – 100pF - 1.0μF Z5U – 1000pF - 0.1μF	50 - 200 25 - 250 50 - 200	General (All Dielectrics) • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • Several lead configuration options available (See catalog for details) • See High Voltage table for >250VDC availability • 0.51mm lead diameter (C31X-C34X) • 0.64mm lead diameter (C35X) C0G (NPO) Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • No piezoelectric noise • Low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +125°C • No capacitance decay with time X7R Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable dielectric Z5U Dielectric • +10°C to +85°C operating
C316	0.150 x 0.230 x 0.100	0.10			
C317	0.150 x 0.230 x 0.100	0.20			
C318	0.150 x 0.235 x 0.100	0.20			
C320	0.200 x 0.260 x 0.125	0.10	C0G – 1.0pF - 0.015μF X7R – 100pF - 10μF Z5U – 1000pF - 1.0μF	50 - 200 25 - 250 50 - 200	
C321	0.200 x 0.260 x 0.125	0.25			
C322	0.200 x 0.260 x 0.125	0.20			
C323	0.200 x 0.320 x 0.125	0.20			
C324	0.200 x 0.260 x 0.125	0.10			
C325	0.200 x 0.320 x 0.125	0.20			
C326	0.200 x 0.350 x 0.125	0.10			
C327	0.200 x 0.350 x 0.125	0.20			
C328	0.200 x 0.325 x 0.125	0.20			
C330	0.300 x 0.360 x 0.150	0.20	C0G – 10pF - 0.033μF X7R – 4700pF - 2.2μF Z5U – 0.10μF - 2.2μF	50 - 200 25 - 250 50 - 200	
C331	0.300 x 0.360 x 0.150	0.25			
C333	0.300 x 0.390 x 0.150	0.20			
C335	0.300 x 0.420 x 0.150	0.20			
C336	0.300 x 0.450 x 0.150	0.20			
C340	0.400 x 0.460 x 0.150	0.20	C0G – 0.01μF - 0.068μF X7R – 0.068μF - 4.7μF Z5U – 0.10μF - 4.7μF	50 - 200 25 - 250 50 - 200	
C346	0.400 x 0.590 x 0.150	0.20			
C350	0.500 x 0.560 x 0.200	0.40	C0G – 0.022μF - 0.12μF X7R – 0.18μF - 6.8μF Z5U – 0.18μF - 6.8μF	50 - 200 25 - 250 50 - 200	
C356	0.500 x 0.670 x 0.200	0.40			

Axial • Molded • C0G (NPO) & X7R Dielectrics • 50VDC–200VDC (Commercial Grade)

Series Code	Dimensions L x D (inches max)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C114	0.160 x 0.090	C0G – 1.0pF - 6800pF X7R – 10pF - 0.01μF	100 - 200 50 - 100	• -55°C to +125°C operating temperature range • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • 0.51mm lead diameter (C114 & C124) • 0.64mm lead diameter (C192, C202 & C222)
C124	0.250 x 0.090	C0G – 390pF - 1000pF X7R – 5600pF - 0.047μF	100 - 200 50 - 100	
C192	0.390 x 0.140	C0G – 680pF - 8200pF X7R – 0.012μF - 0.27μF	100 - 200 50 - 100	
C202	0.500 x 0.250	C0G – 5600pF - 0.033μF X7R – 0.56μF - 1.0μF	100 - 200 50 - 100	
C222	0.690 x 0.350	C0G – 0.027μF - 0.1μF X7R – 0.47μF - 3.3μF	100 - 200 50 - 100	

Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Radial • Molded • C0G (NPO) & X7R Dielectrics • 50VDC–200VDC (Commercial Grade)



Series Code	Dimensions L x H x T (inches)	Lead Spacing (inches)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C052/56	0.190 x 0.190 x 0.090	0.20	C0G – 1.0pF - 6800pF X7R – 10pF - 0.01μF	50 - 200	• -55°C to +125°C operating temperature range • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • 0.51mm lead diameter (C31X-C34X) • 0.64mm lead diameter (C35X)
C062/66	0.290 x 0.290 x 0.090	0.20	C0G – 390pF - 1000pF X7R – 5600pF - 0.047μF	50 - 200	
C512	0.480 x 0.480 x 0.140	0.40	C0G – 680pF - 8200pF X7R – 0.012μF - 0.27μF	50 - 200	
C522	0.480 x 0.480 x 0.240	0.40	C0G – 5600pF - 0.033μF X7R – 0.56μF - 1.0μF	50 - 200	

C³ Technology • Axial & Radial • C0G (NPO) & X7R Dielectrics • 50VDC–200VDC (Robust • MIL Screened)

Series Code	Form Factor	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
SCR	Radial	C0G (NPO)	1.0pF - 0.068μF	50 - 200	• -55°C to +125°C operating temperature range • C³ designs provide robust protection for extreme environments • Internal lead wire attachment • Non-coated • Axial and radial form factor • Available with screening to MIL-PRF-20, Group A (C0G) • Available with screening to MIL-PRF-39014, Group A (X7R) • Lead spacing options of .020 & .025 (inches) • Lead diameter options of 0.20 & 0.40 (inches) • Solder coated copper clad steel lead material (standard) • Gold plated copper clad steel lead material option
SRR	Radial	X7R	100pF - 6.8μF		
SCA	Axial	C0G (NPO)	1.0pF - 0.1μF		
SRA	Axial	X7R	100pF - 4.7μF		

High Voltage Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

High Voltage • C0G (NPO) & X7R Dielectrics • 500VDC–3KVDC (Commercial Grade)

Size Code EIA/Metric	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
0805/2012	C0G – 1.0pF - 220pF X7R – 10pF - 8200pF	500 - 1000	• -55°C to +125°C operating temperature range • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • DC voltage ratings of 500V, 630V, 1KV, 1.5KV, 2KV, 2.5KV & 3KV • Available capacitance tolerances of ±5%, ±10% & ±20% • Low ESR and ESL • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb plated end metallization option available upon request (5% min) • Flexible termination option available
1206/3216	C0G – 10pF - 1000pF X7R – 10pF - 0.015μF	500 - 2000	
1210/3225	C0G – 10pF - 3300pF X7R – 10pF - 0.047μF	500 - 2000	
1808/4520	C0G – 1.0pF - 2700pF X7R – 100pF - 0.056μF	500 - 3000	
1812/4532	C0G – 10pF - 3900pF X7R – 10pF - 0.10μF	500 - 3000	
1825/4564	C0G – 360pF - 8200pF X7R – 100pF - 0.22μF	500 - 3000	
2220/5650	C0G – 360pF - 8200pF X7R – 100pF - 0.22μF	500 - 3000	
2225/5664	C0G – 360pF - 1000pF X7R – 100pF - 0.27μF	500 - 3000	

High Voltage Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

Large Chip • High Voltage • C0G (NPO) & X7R Dielectrics • 500VDC–5KVDC (Robust • MIL Screened)

Case Size (EIA)	Dimensions (mm)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
1515	3.81 x 3.81	C0G – 12pF - 4700pF X7R – 270pF - 0.1μF	500 - 3000 500 - 2000	• -55°C to +125°C operating temperature range • DC voltage ratings of 500V, 1KV, 2KV, 3KV, 4KV & 5KV • Available capacitance tolerances of ±5%, ±10%, ±20%, 0/+100% & -20%/+80% • Low ESR and ESL • Non-polar device, minimizing installation concerns • Available with screening to MIL-PRF-49467, Group A & B • Several end metallization options available (See catalog for details) • Infared or vapor phase soldering process recommended
1812	4.57 x 3.05	C0G – 12pF - 2700pF X7R – 270pF - 0.056μF	500 - 3000 500 - 2000	
1825	4.57 x 6.35	C0G – 22pF - 8200pF X7R – 560pF - 0.15μF	500 - 3000	
2020	5.08 x 5.08	C0G – 22pF - 8200pF X7R – 560pF - 0.18μF	500 - 3000	
2225	5.59 x 6.35	C0G – 27pF - 0.012μF X7R – 680pF - 0.22μF	500 - 3000	
2520	6.35 x 5.08	C0G – 27pF - 0.01μF X7R – 680pF - 0.22μF	500 - 4000 500 - 3000	
3333	8.38 x 8.38	C0G – 27pF - 0.015μF X7R – 1200pF - 0.82μF	500 - 4000 500 - 3000	
3530	8.89 x 7.62	C0G – 27pF - 0.022μF X7R – 270pF - 0.56μF	500 - 4000	
4040	10.2 x 10.2	C0G – 18pF - 0.039μF X7R – 470pF - 0.82μF	500 - 4000	
4540	11.43 x 10.2	C0G – 18pF - 0.056μF X7R – 470pF - 1.2μF	500 - 5000	
5440	13.7 x 10.2	C0G – 27pF - 0.082μF X7R – 680pF - 1.5μF	500 - 4000	
5550	14.0 x 12.7	C0G – 27pF - 0.068μF X7R – 680pF - 1.8μF	500 - 5000	
6560	16.5 x 15.2	C0G – 47pF - 0.1μF X7R – 1200pF - 2.2μF	500 - 5000	

SM Series • Leadframe Mounted • High Voltage • C0G (NPO) & X7R Dielectrics • 500VDC–5KVDC (Robust • MIL Screened)

Series Code	Dimensions (mm)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
SM20	3.81 x 3.81	C0G – 12pF - 4700pF X7R – 270pF - 0.082μF	500 - 3000 500 - 2000	• -55°C to +125°C operating temperature range • DC voltage ratings of 500V, 1KV, 2KV,3KV, 4KV & 5KV • Available capacitance tolerances of ±5%, ±10%, ±20%, 0/+100% & -20%/+80% • "J" & "L" lead configurations available • Reduced microphonics • Reliable and robust termination system • Advanced protection against thermal and mechanical stress • Improved flex performance • Reduces audible, microphonic noise • Non-polar device, minimizing installation concerns • Available with screening to MIL-PRF-49467, Group A & B • Several end metallization options available (See catalog for details)
SM21	5.08 x 5.08	C0G – 22pF - 8200pF X7R – 560pF - 0.18μF	500 - 3000 500 - 3000	
SM22	6.35 x 5.08	C0G – 27pF - 0.01μF X7R – 680pF - 0.22μF	500 - 3000	
SM23	8.89 x 7.62	C0G – 27pF - 0.022μF X7R – 270pF - 0.56μF	500 - 4000	
SM24	11.43 x 10.2	C0G – 18pF - 0.056μF X7R – 470pF - 1.2μF	500 - 5000	
SM25	14.0 x 12.7	C0G – 27pF - 0.082μF X7R – 470pF - 1.8μF	500 - 5000	
SM26	16.5 x 15.2	C0G – 47pF - 0.1μF X7R – 1200pF - 2.7μF	500 - 5000	
SM30	7.62 X 3.81	C0G – 10pF - 0.015μF X7R – 150pF - 0.22μF	500 - 4000	
SM31	10.2 X 5.08	C0G – 10pF - 0.027μF X7R – 270pF - 0.39μF	500 - 5000	
SM33	17.08 X 7.62	C0G – 12pF - 0.12μF X7R – 220pF - 1.5μF	500 - 7000	
SM34	22.9 X 10.2	C0G – 22pF - 0.15μF X7R – 470pF - 1.5μF	500 - 10000	
SM35	27.9 X 12.7	C0G – 33pF - 0.22μF X7R – 820pF - 3.9μF	500 - 10000	
SM36	33.0 X 15.2	C0G –56pF - 0.33μF X7R – 1200pF - 5.6μF	500 - 10000	

High Voltage Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

High Voltage • Radial • Conformally Coated • C0G (NPO) & X7R Dielectrics • 500VDC–3KVDC (Commercial & Automotive Grade)

Series Code	Dimensions L x H x T (inches)	Lead Spacing (inches)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C315	0.150 x 0.210 x 0.100	0.10	C0G – 1.0pF - 180pF X7R – 10pF - 3300pF	500 - 1000	General (All Dielectrics) • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • DC voltage ratings of 500V, 1KV, 1.5KV, 2KV, 2.5KV & 3KV • Available capacitance tolerances of ±0.25pF, ±0.5pF, ±1pF, ±2pF, ±5%, ±10% & ±20% • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • Several lead configuration options available (See catalog for details) • 0.51mm lead diameter (C31X-C34X) • 0.64mm lead diameter (C35X) C0G (NPO) Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • No piezoelectric noise • Low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +125°C • No capacitance decay with time X7R Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable dielectric Z5U Dielectric • +10°C to +85°C operating temperature range
C316	0.150 x 0.230 x 0.100	0.10			
C317	0.150 x 0.230 x 0.100	0.20			
C318	0.150 x 0.235 x 0.100	0.20			
C320	0.200 x 0.260 x 0.125	0.10	C0G – 1.0pF - 3300pF X7R – 10pF - 0.047µF	500 - 2000	
C321	0.200 x 0.260 x 0.125	0.25			
C322	0.200 x 0.260 x 0.125	0.20			
C323	0.200 x 0.320 x 0.125	0.20			
C324	0.200 x 0.260 x 0.125	0.10			
C325	0.200 x 0.320 x 0.125	0.20			
C326	0.200 x 0.350 x 0.125	0.10			
C327	0.200 x 0.350 x 0.125	0.20			
C328	0.200 x 0.325 x 0.125	0.20			
C330	0.300 x 0.360 x 0.150	0.20	C0G – 10pF - 6800pF X7R – 10pF - 0.22µF	500 - 3000	
C331	0.300 x 0.360 x 0.150	0.25			
C333	0.300 x 0.390 x 0.150	0.20			
C335	0.300 x 0.420 x 0.150	0.20			
C336	0.300 x 0.450 x 0.150	0.20			
C340	0.400 x 0.460 x 0.150	0.20	C0G – 1.0pF - 0.015µF X7R – 1200pF - 0.68µF	500 - 3000	
C346	0.400 x 0.590 x 0.150	0.20			
C350	0.500 x 0.560 x 0.200	0.40	C0G – 100pF - 0.39µF X7R – 6800pF - 0.82µF	500 - 3000	
C356	0.500 x 0.670 x 0.200	0.40			

High Voltage Through-Hole Multilayer Ceramic Chip Capacitors (THD MLCCs)

High Voltage Goldmax Series • Radial • Conformally Coated • X7R Dielectric • 25VDC–500VDC (Commercial Grade)

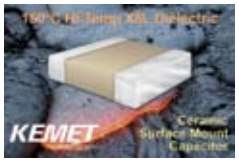
Series Code	Dimensions L x H x T (inches)	Lead Spacing (inches)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
C617	0.250 x 0.220 x 0.200	0.170	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF	500 - 3000 500 - 2000	General (All Dielectrics) • Meets MIL-PRF-49467 lead spacing requirements • Pb-Free and RoHS-compliant (excluding SnPb lead material option) • DC voltage ratings of 500V, 1KV, 1.5KV, 2KV, 2.5KV & 3KV • Available capacitance tolerances of ±0.25pF, ±0.5pF, ±1pF, ±2pF, ±5%, ±10% & ±20% • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated lead material allowing for excellent solderability • SnPb plated lead material option available upon request (60/40) • Several lead configuration options available (See catalog for details) • 0.64mm lead diameter • Group A inspection per MIL-PRF-49467 available upon request C0G (NPO) Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • No piezoelectric noise • Low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +125°C • No capacitance decay with time X7R Dielectric • -55°C to +125°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Temperature stable Dielectric
C622/ C623	0.320 x 0.280 x 0.250	0.220	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF	500 - 3000	
C627/ C628	0.370 x 0.300 x 0.250	0.275	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C630/ C631	0.450 x 0.220 x 0.200	0.300	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C637/ C638	0.470 x 0.400 x 0.270	0.375	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C640/ C641	0.550 x 0.280 x 0.250	0.400	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C642/ C643	0.500 x 0.560 x 0.200	0.400	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C647/ C648	0.570 x 0.500 x 0.270	0.475	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C657/ C658	0.670x 0.600 x 0.270	0.575	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		
C667/ C668	0.770 x 0.720 x 0.270	0.675	C0G – 1.0pF - 0.015μF X7R – 1200pF - 0.68μF		

High Voltage • Radial • C0G (NPO) & X7R Dielectric • 500VDC–10KVDC (Robust • MIL Screened)

Style/Case Size	Max Temp.	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
HV10 - HV16	+200ºC	C0G – 15pF - 0.015μF X7R – 820pF - 1.0μF	500 - 4000	• Ceramic high voltage • High temperature (+200°C) • Ideal for industrial, down hole, harsh environments • Radial
VCR/VRR	+200ºC	C0G – 10pF - 0.047μF X7R – 680pF - 1.2μF	500 - 5000	• High voltage • Ceramic cased high temperature (+200°C) • Radial
HV20 - HV36	+125ºC	C0G – 10pF - 0.33μF X7R – 680pF - 5.6μF	500 - 10000	• High voltage (125°C X7R, C0G) • Ceramic conformal coated • Radial
HV60 - HV66	+125ºC	C0G – 15pF - 0.047μF X7R – 820pF - 0.47μF	600 - 5000	• High voltage • Ceramic conformal coated (+125°C) • MIL-PRF-49467 equivalent • Radial
HS20 - HS36	+125ºC	C0G – 15pF - 0.18μF X7R – 820pF - 5.6μF	500 - 10000	• High voltage • Ceramic conformal coated (+125°C) • Space Quality • Radial

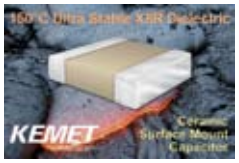
High Temperature Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

High Temperature (150°C) • X8L Dielectric • 10VDC–50VDC (Commercial & Automotive Grade)



Size Code EIA/Metric	Max Temp.	Capacitance Range	Voltage Range (VDC)	Benefits
0402/1005	150°C	0.012µF - 0.047µF	10 - 25	• -55°C to +150°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Available capacitance tolerances of ±5%, ±10% & ±20% • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb plated end metallization option available upon request (5% min)
0603/1608		0.047µF - 0.22µF	10 - 50	
0805/2012		0.15µF - 1.0µF	10 - 50	
1206/3216		0.47µF - 4.7µF	10 - 50	
1210/3225		0.39µF - 10µF	10 - 50	

High Temperature (150°C) • Ultra-Stable X8R Dielectric • 25VDC–100VDC (Commercial & Automotive Grade)



Size Code EIA/Metric	Max Temp.	Capacitance Range	Voltage Range (VDC)	Benefits
0402/1005	150°C	100pF - 1500pF	25 - 100	• -55°C to +150°C operating temperature range • Commercial and Automotive (AEC-Q200) grades available • Pb-Free and RoHS-compliant (excluding SnPb end • metallization option) • Available capacitance tolerances of ±1%, ±2%, ±5%, ±10% & ±20% • Extremely low ESR and ESL • High thermal stability • High ripple current capability • No capacitance change with respect to applied rated DC voltage • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability • SnPb plated end metallization option available upon request (5% min)
0603/1608		430pF - 0.01µF	25 - 100	
0805/2012		2200pF - 0.033µF	25 - 100	
1206/3216		6800pF - 0.1µF	25 - 100	
1210/3225		0.012µF - 0.18µF	25 - 100	
1812/4532		0.015µF - 0.22µF	50 - 100	

High Temperature (200°C) • C0G Dielectric • 10VDC–200VDC (Commercial Grade)

200°C

Size Code EIA/Metric	Max Temp.	Capacitance Range	Voltage Range (VDC)	Benefits
0603/1608	200°C	0.5pF - 0.01µF	10 - 200	• -55°C to +200°C operating temperature range • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Available capacitance tolerances of ±0.25pF, ±0.5pF, ±1%, ±2%, ±5%, ±10% & ±20% • No piezoelectric noise • Extremely low ESR and ESL • High thermal stability • High ripple current capability • Preferred capacitance solution at line frequencies and into the MHz range • No capacitance change with respect to applied rated DC voltage • Negligible capacitance change with respect to temperature from -55°C to +200°C • No capacitance decay with time • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization allowing for excellent solderability
0805/2012		0.5pF - 0.047µF	10 - 200	
1206/3216		1.0pF - 0.1µF	10 - 200	
1210/3225		1.0pF - 0.22µF	10 - 200	
1812/4532		0.015µF - 0.22µF	100 - 200	
2220/5650		0.47µF	50	

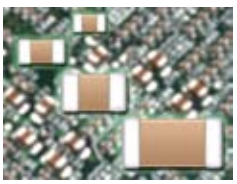
High Temperature Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

High Temperature (200°C - 260°C) • Axial & Radial • C0G (NPO) & X7R Dielectrics • 50VDC–5KVDC (Robust / MIL Screened)

Style/Case Size	Max Temp.	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
HT05 - HT16 HP05 - HP16	200°C	C0G – 22pF - 0.1μF X7R – 1000pF - 4.7μF	100, 200	• -55°C to +200°C operating temperature range • Ideal for industrial, down hole and harsh environments • Axial and radial form factors • Conformal coated option available (HP Series only)
HV10 - HV16		C0G – 15pF - 0.015μF X7R – 820pF - 1.0μF	500 - 4000	• -55°C to +200°C operating temperature range • High temperature (+200°C) • Ideal for industrial, down hole and harsh environments • Radial form factor
ACR/ARR/ ACA/ARA		C0G – 10pF - 0.15μF X7R – 1000pF - 4.7μF	50 - 100	• -55°C to +200°C operating temperature range • Ideal for down hole, jet engine controls and geophysical pressure probes • Axial and radial form factors
VCR/VRR		C0G – 10pF - 0.047μF X7R – 680pF - 1.2μF	500 - 5000	• -55°C to +200°C operating temperature range • Ideal for high voltage power supplies, high voltage meter • Multiplier and RF circuits • Radial form factor
TCR/TRR/ TCA/TRA	260°C	C0G – 10pF - 0.15μF X7R – 1000pF - 3.9μF	50 - 100	• -55°C to +260°C operating temperature range • Ideal for down hole, jet engine controls and geophysical pressure probes • Axial and radial form factors

Military Grade Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

MIL-PRF-55681 • Established Reliability • BP (NPO) & BX (X7R) Dielectrics • 50VDC–100VDC (Military Grade)



Size Code EIA	Style	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
0805	CDR01 CDR31	BP, BX	10pF - 0.018μF	50 - 100	• -55°C to +125°C operating temperature range • Established reliability • Non-polar device, minimizing installation concerns • 100% pure matte tin-plated end metallization option available • SnPb plated (70/30) end metallization option available • SnPb coated (60/40) end metallization option available
1206	CDR32	BP, BX	1.0pF - 0.039μF	50 - 100	
1210	CDR33	BP, BX	1000pF - 0.1μF	50 - 100	
1805	CDR02	BP, BX	220pF - 0.022μF	50 - 100	
1808	CDR03	BP, BX	330pF - 0.068μF	50 - 100	
1812	CDR04 CDR34	BP, BX	1200pF - 0.18μF	50 - 100	
1825	CDR05 CDR35	BP, BX	3900pF - 0.470μF	50 - 100	
2225	CDR06	BP, BX	6800pF - 0.47μF	50 - 100	

Military Grade Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

GR900 • High Reliability • BP (NPO) & BX (X7R) Dielectrics • 16VDC–200VDC (Military Grade)

Size Code EIA	Style	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
0504	C0504	BP, BX	10pF - 6800pF	50 - 200	• -55°C to +125°C operating temperature range • High reliability • Group A & B (optional) testing • In process inspection (per MIL-PRF-123) • Non-polar device, minimizing installation concerns • 100% pure matte tin plated end metallization option available • SnPb plated (70/30) end metallization option available • SnPb coated (60/40) end metallization option available • Gold plated end metallization option available
0805	C0805	BP, BX	10pF - 0.1µF	25 - 200	
1005	C1005	BP, BX	1.0pF - 0.022µF	50 - 200	
1206	C1206	BP, BX	1.0pF - 0.15µF	16 - 200	
1210	C1210	BP, BX	10pF - 0.47µF	16 - 200	
1805	C1805	BP, BX	220pF - 0.047µF	50 - 200	
1808	C1808	BP, BX	330pF - 0.1µF	50 - 200	
1812	C1812	BP, BX	330pF - 0.18µF	50 - 200	
1825	C1825	BP, BX	2700pF - 0.47µF	50 - 200	
2225	C2225	BP, BX	2700pF - 1.0µF	50 - 200	

MIL-PRF-123 • High Reliability • BR (X7R) & BX (X7R) Dielectrics • 6.3VDC–200VDC (Military Grade & Space Quality)

Size Code EIA	Style	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
0805	CKS51	BP, BX	1.0pF - 0.018µF	50 - 100	• -55°C to +125°C operating temperature range • High reliability • Non-polar device, minimizing installation concerns • Tin coated (Sn60) end metallization option available • SnPb plated (70/30) end metallization option available • Gold plated end metallization option available
1206	CKS55	BP, BX	1.0pF - 0.039µF	50 - 100	
1210	CKS52	BP, BX	300pF - 0.1µF	50 - 100	
1808	CKS53	BP, BX	300pF - 0.1µF	50 - 100	
1812	CKS56	BP, BX	1200pF - 0.18µF	50 - 100	
1825	CKS57	BP, BX	3900pF - 0.47µF	50 - 100	
2225	CKS54	BP	1100pF - 1.0µF	50	

DSCC Approved • High Reliability • BP (C0G/NPO), BR (X7R) & BX (X7R) Dielectrics • 6.3VDC–200VDC (Military Grade)

Size Code EIA	Style	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
0402	DSCC 03029	BR, BX	100pF - 2200pF	6.3 - 200	• Defense Supply Center, Columbus approved • Federal Stock Control Number, Cage Code 31433 • Meets US Department of Defense (USDoD) specifications per MIL-PRF-55681 • Meets USDoD standards per MIL-STD-202 & MIL-STD-1285 • High reliability • Non-polar device, minimizing installation concerns
0603	DSCC 03028	BR, BX	100pF - 0.1µF	6.3 - 200	
0805	DSCC 05006	BP, BR, BX	1.0pF - 0.018µF	10 - 200	
1206	DSCC 05007	BP, BR, BX	1.0pF - 0.047µF	10 - 200	

Military Grade Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

Commercial-Off-The-Shelf (COTS) for Military & High Reliability Applications • X7R and C0G Dielectrics • 6.3VDC–250VDC (COTS • MIL Screened)

Size Code EIA/Metric	Dimensions L x W (mm)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
0402/1005	1.0 x 0.5	C0G – 0.5pF - 2200pF X7R – 150pF - 0.1μF	10 - 100 6.3 - 50	• -55°C to +125°C operating temperature range • Voltage conditioning and post-electrical testing per • MIL-PRF-55681, Paragraph 4.8.3.1 • Destructive Physical Analysis (DPA) per EIA-469 • Humidity, steady state, low voltage (85/85) per MIL-STD 202, Method 103, Condition A • Certificate of compliance • Pb-Free and RoHS-compliant (excluding SnPb end metallization option) • Non-polar device, minimizing installation concerns • 100% pure matte tin plated end metallization allowing for excellent solderability • SnPb plated end metallization option available upon request (5% min)
0603/1608	1.6 x 0.8	C0G – 0.5pF - 0.015μF X7R – 180pF - 0.47μF	10 - 200 6.3 - 200	
0805/2012	2.0 x 1.25	C0G – 0.5pF - 0.047μF X7R – 180pF - 2.2μF	10 - 200 6.3 - 250	
1206/3216	3.2 x 1.6	C0G – 10pF - 0.1μF X7R – 1000pF - 10μF	10 - 200 6.3 - 250	
1210/3225	3.2 x 2.5	C0G – 10pF - 0.022μF X7R – 2200pF - 22μF	10 - 200 6.3 - 250	
1808/4520	4.5 x 3.2	X7R – 4700pF - 0.18μF	50 - 200	
1812/4532	4.5 x 3.2	C0G – 470pF - 0.22μF X7R – 6800pF - 10μF	50 - 200 25 - 250	
1825/4564	4.5 x 6.4	C0G – 3900pF - 0.027μF X7R – 0.022μF - 2.2μF	50 - 200 25 - 250	
2220/5650	5.6 x 5.0	C0G – 6800pF - 0.47μF X7R – 0.82μF - 22μF	50 - 200 25 - 250	
2225/5664	5.6 x 6.3	C0G – 4700pF - 0.033μF X7R – 0.047μF - 2.2μF	50 - 200 50 - 250	

Large Chip • High Voltage • C0G (NPO) & X7R Dielectrics • 500VDC–5KVDC (Robust • MIL Screened)

Case Size (EIA)	Dimensions (mm)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
1515	3.81 x 3.81	C0G – 12pF - 4700pF X7R – 270pF - 0.1μF	500 - 3000 500 - 2000	• -55°C to +125°C operating temperature range • DC voltage ratings of 500V, 1KV, 2KV, 3KV, 4KV & 5KV • Available capacitance tolerances of ±5%, ±10%, ±20%, 0/+100% & -20%/+80% • Low ESR and ESL • Non-polar device, minimizing installation concerns • Available with screening to MIL-PRF-49467, Group A & B • Several end metallization options available (See catalog for details) • Infared or vapor phase soldering process recommended
1812	4.57 x 3.05	C0G – 12pF - 2700pF X7R – 270pF - 0.056μF	500 - 3000 500 - 2000	
1825	4.57 x 6.35	C0G – 22pF - 8200pF X7R – 560pF - 0.15μF	500 - 3000	
2020	5.08 x 5.08	C0G – 22pF - 8200pF X7R – 560pF - 0.18μF	500 - 3000	
2225	5.59 x 6.35	C0G – 27pF - 0.012μF X7R – 680pF - 0.22μF	500 - 3000	
2520	6.35 x 5.08	C0G – 27pF - 0.01μF X7R – 680pF - 0.22μF	500 - 4000 500 - 3000	
3333	8.38 x 8.38	C0G – 27pF - 0.015μF X7R – 1200pF - 0.82μF	500 - 4000 500 - 3000	
3530	8.89 x 7.62	C0G – 27pF - 0.022μF X7R – 270pF - 0.56μF	500 - 4000	
4040	10.2 x 10.2	C0G – 18pF - 0.039μF X7R – 470pF - 0.82μF	500 - 4000	
4540	11.43 x 10.2	C0G – 18pF - 0.056μF X7R – 470pF - 1.2μF	500 - 5000	
5440	13.7 x 10.2	C0G – 27pF - 0.082μF X7R – 680pF - 1.5μF	500 - 4000	
5550	14.0 x 12.7	C0G – 27pF - 0.068μF X7R – 680pF - 1.8μF	500 - 5000	
6560	16.5 x 15.2	C0G –47pF - 0.1μF X7R – 1200pF - 2.2μF	500 - 5000	

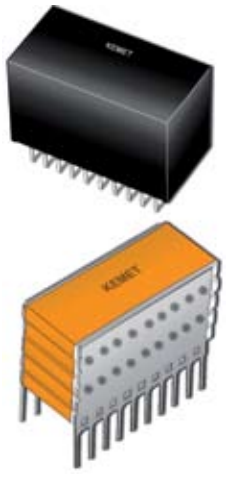
Military Grade Surface Mount Multilayer Ceramic Chip Capacitors (SMD MLCCs)

SM Series • Leadframe Mounted • High Voltage • C0G (NPO) & X7R Dielectrics • 500VDC–5KVDC (Robust • MIL Screened)

Series Code	Dimensions (mm)	Dielectric/Cap Range	Voltage Range (VDC)	Benefits
SM20	3.81 x 3.81	C0G – 12pF - 4700pF X7R – 270pF - 0.082µF	500 - 3000 500 - 2000	• -55°C to +125°C operating temperature range • DC voltage ratings of 500V, 1KV, 2KV, 3KV, 4KV & 5KV • Available capacitance tolerances of ±5%, ±10%, ±20%, 0/+100% & -20%/+80% • "J" & "L" lead configurations available • Reduced microphonics • Reliable and robust termination system • Advanced protection against thermal and mechanical stress • Improved flex performance • Reduces audible, microphonic noise • Non-polar device, minimizing installation concerns • Available with screening to MIL-PRF-49467, Group A & B • Several end metallization options available (See catalog for details)
SM21	5.08 x 5.08	C0G – 22pF - 8200pF X7R – 560pF - 0.18µF	500 - 3000 500 - 2000	
SM22	6.35 x 5.08	C0G – 27pF - 0.01µF X7R – 680pF - 0.22µF	500 - 3000	
SM23	8.89 x 7.62	C0G – 27pF - 0.022µF X7R – 270pF - 0.56µF	500 - 4000	
SM24	11.43 x 10.2	C0G – 18pF - 0.056µF X7R – 470pF - 1.2µF	500 - 5000	
SM25	14.0 x 12.7	C0G – 27pF - 0.082µF X7R – 470pF - 1.8µF	500 - 5000	
SM26	16.5 x 15.2	C0G – 47pF - 0.1µF X7R – 1200pF - 2.7µF	500 - 5000	
SM30	7.62 x 3.81	C0G – 10pF - 0.015µF X7R – 150pF - 0.22µF	500 - 4000	
SM31	10.2 x 5.08	C0G – 10pF - 0.027µF X7R – 270pF - 0.39µF	500 - 5000	
SM33	17.08 x 7.62	C0G – 12pF - 0.12µF X7R – 220pF - 1.5µF	500 - 7000	
SM34	22.9 x 10.2	C0G – 22pF - 0.15µF X7R – 470pF - 1.5µF	500 - 10000	
SM35	27.9 x 12.7	C0G – 33pF - 0.22µF X7R – 820pF - 3.9µF	500 - 10000	
SM36	33.0 x 15.2	C0G – 56pF - 0.33µF X7R – 1200pF - 5.6µF	500 - 10000	

Military Grade Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Stacked Capacitors • MIL-PRF-49470 • High Reliability • BX, BR & BQ • 50VDC–500VDC (Military Grade)



Case Code	Military Equivalent Styles	Lead type	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
3	M49470	Straight Formed "J" Formed "L"	BX, BR, BQ	2.2µF - 47µF	50 - 500	• 49470 B-Level reliability • -55°C to +125°C operating temperature range • Reliable and robust termination system • Higher capacitance in the same footprint • Potential board space savings • Advanced protection against thermal and mechanical stress • Reduces audible, microphonic noise • Extremely low ESR and ESL • Encapsulated or unencapsulated • Non-polar device, minimizing installation concerns • SnPb coated (60/40) lead material • DSCC 87106 equivalent available upon request
4				0.82µF - 15µF		
5				0.15µF - 5.6µF		

Military Grade Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Axial • MIL-PRF-20 • Established Reliability • C0G (NP0) Dielectric • 50VDC–200VDC (Military Grade)

Series Code	Military Equivalent Styles	Dimensions L x D (inches)	Dielectric	Capacitance range	Voltage Range (VDC)	Benefits
C114G	CC75, CCR75	0.16 x 0.09	CG	1.0pF - 680pF	50 - 200	• -55°C to +125°C operating temperature range • Ultra-stable C0G (NP0) Dielectric • Established reliability • Non-polar device, minimizing installation concerns • SnPb coated (60/40) lead material • Failure rating screening available 0.001 to 1.0%
C124G	CC76, CCR76	0.25 x 0.09		82pF - 1000pF	50 - 200	
C192G	CC77, CCR77	0.39 x 0.14		150pF - 5600pF	50 - 200	
C202G	CC78, CCR78	0.50 x 0.25		820pF - 0.027µF	50 - 200	
C222G	CC79, CCR79	0.69 x 0.35		3900pF - 0.082µF	50 - 200	

Military Grade Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Radial • MIL-PRF-20 • Established Reliability • C0G (NP0) Dielectric • 50VDC–200VDC (Military Grade)

KEMET Series	Military Equivalent Styles	Dimensions H x L x W (inches)	Dielectric	Capacitance range	Voltage Range (VDC)	Benefits
C052G/ C056G	CC05, CCR05	0.19 x 0.19 x 0.09	CG	1.0pF - 3300pF	50 - 200	• -55°C to +125°C operating temperature range • Ultra-stable C0G (NP0) Dielectric • Established reliability • Non-polar device, minimizing installation concerns • SnPb coated (60/40) lead material • Failure rating screening available 0.001 to 1.0% • Lead spacings 0.20 - 0.40"
C062G/ C066G	CC06, CCR06	0.29 x 0.29 x 0.09		360pF - 0.018µF	50 - 200	
C512G	CC07, CCR07	0.48 x 0.48 x 0.14		2200pF - 0.10µF	50 - 200	
C522G	CC08, CCR08	0.48 x 0.48 x 0.24		3900pF - 0.068µF	50 - 200	

Radial • GR900 • High Reliability • CG-BP (C0G/NP0) & BX (X7R) Dielectrics • 50VDC–200VDC (Military Grade)

KEMET Series	Dimensions H x L x W (inches)	Dielectric	Capacitance range	Voltage Range (VDC)	Benefits
C052B	0.19 x 0.19 x 0.09	CG, BP BX	1.0pF - 6800pF 470pF - 0.15µF	50 - 200	• -55°C to +125°C operating temperature range • High reliability • Solder coated copper, lead material standard • Group A & B (optional) testing • In process inspection (per MIL-PRF-123) • Non-polar device, minimizing installation concerns • Lead spacings 0.20 - 0.40"
C062B	0.29 x 0.29 x 0.09	CG, BP BX	270pF - 0.024µF 3300pF - 1.0µF	50 - 200	
C512B	0.48 x 0.48 x 0.14	CG, BP BX	2000pF - 0.15µF 0.039µF - 3.3µF	50 - 200	

Military Grade Through-Hole Multilayer Ceramic Capacitors (THD MLCCs)

Radial • MIL-PRF-123 • High Reliability • BP (C0G/NP0) & BX (X7R) Dielectrics • 50VDC–200VDC (Military Grade)

KEMET Series	Military Equivalent Styles	Dimensions H x L x W (inches)	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
C052Z	CKS05	0.19 x 0.19 x 0.09	BP BX	4.7pF - 3300pF 270pF - 0.01μF	50 - 200	• -55°C to +125°C operating temperature range • High reliability • Solder coated copper, lead material standard • Non-polar device, minimizing installation concerns • Lead spacings 0.20 - 0.40"
C062Z	CKS06	0.29 x 0.29 x 0.09	BP BX	270pF - 0.018μF 5600pF - 1.0μF	50 - 200	
C512Z	CKS07	0.48 x 0.48 x 0.14	BP BX	2200pF - 0.1μF 0.056μF - 1.0μF	50 - 200	

Axial • MIL-C-11015 & MIL-PRF-39014 • High Reliability • BX (X7R) & BR (X7R) Dielectrics • 50VDC–100VDC (Military Grade)

KEMET Series	Military Equivalent Styles	Dimensions H x L x W (inches)	Dielectric	Capacitance Range	Voltage Range (VDC)	Benefits
C114K C114T	CK12 (11015) CKR11 (39014	0.16 x 0.09	BX	10pF - 0.01μF	50 - 100	• -55°C to +125°C operating temperature range • High reliability • Non-polar device, minimizing installation concerns • SnPb coated (60/40) lead material • Failure rating screening available 0.001 to 1.0%
C124K C124T	CK13 (11015) CKR12 (39014)	0.25 x 0.09	BX	5600pF - 0.047μF	50 - 100	
C192K C192T	CK14 (11015) CKR14 (39014	0.39 x 0.14	BX	0.012μF - 0.27μF	50 - 100	
C202K C202T	CK15 (11015) CKR15 (39014)	0.50 x 0.25	BX, BR	0.056μF - 1.0μF	50 - 100	
C222K C222T	CK16 (11015) CKR16 (39014)	0.69 x 0.35	BR	0.47μF - 3.3μF	50 - 100	

Radial • MIL-C-11015 & MIL-PRF-39014 • High Reliability • BX (X7R) Dielectric • 50VDC–200VDC (Military Grade)

Series Code	Military Equivalent Styles	Dimensions H x L x W (inches)	Dielectric	Cap Range	Voltage Range (VDC)	Benefits
C052K / C056K C052T / C056T	CK05 (11015) CKR05 (39014)	0.19 x 0.19 x 0.09	BX	10pF - 0.1μF	50 - 200	• -55°C to +125°C operating temperature range • High reliability • Non-polar device, minimizing installation concerns • SnPb coated (60/40) lead material • Failure rating screening available 0.001 to 1.0% • Lead spacings 0.20 - 0.40"
C062K / C066K C062T / C066T	CK06 (11015) CKR06 (39014)	0.29 x 0.29 x 0.09	BX	1200pF - 1.0μF	50 - 200	

Surface Mount Inductors

Application	Construction	Series	Sizes	Inductance nH	Current Rating mA	Benefits
Filtering on Signal Line	Wire Wound	L-SWS	0806	1.0 - 100	80 - 610	• High Q, high inductance values narrow tolerance achieved with bottom surface electrodes
	Multilayer	L-SMS	0402 - 1206	0.047 - 33	1 - 300	• High Q, low inductance values, small case sizes
Noice Reduction on Power Supply Line	Wire Wound	L-PWS	0805 - 1207	1.0 - 1000	15 - 1075	• Available with super low DC resistance and high current ratings
		L-PWI	0805 - 1007	1.0 - 680	45 - 775	• High current
		L-PWF	0603	1.0 - 47	35 - 230	• High efficiency design with bottom suface electrodes
	Multilayer	L-PMS	0603, 0805	0.10 - 10	50 - 500	• Multi-layer block structure yields higher reliability
Power Inductor for Switching Regulator	Wire Wound	L-DWL	0805	1.0 - 47	100 - 620	• Low profile, high current
		L-DWF	0603	1.0 - 47	50 - 290	• High efficiency design with bottom surface electrodes
		L-DWS	0805 - 1007	1.0 - 1000	25 - 1200	• Low DC resistance
		L-DWI	0805 - 1210	1.0 - 100	65 - 1440	• High current
		L-DWD	3010 - 10050	0.9 - 220	220 - 9000	• High current, low profile, original magnetically shielded, shock-proof structure
	Multilayer	L-DMI	1008, 1206	1.0 - 4.7	700 - 1300	• Low profile, low DC resistance
Radio Frequency Inductor	Multilayer	L-RMS	0201 - 0805	1.0 - 470	40 - 300	• Designed for application above 100MHz, low inductance values, excellent Q and SRF properties

Ferrite Beads

Application	Construction	Series	Sizes	Impedance Ω	Current Rating mA	Benefits
EMI Suppression (Ferrite Beads)	Wire Wound	Z-PWS	0603 - 1806	8 - 100	2000 - 6000	• High current, several material combinations available to target specific frequency ranges
		Z-PWZ	0603 - 1812	30 - 2000	400 - 4000	• High current and impedance
	Multilayer	Z-SMS	0201 - 0805	10 - 2500	100 - 1500	• Wide range of material types and broad impedance range targeted for signal lines
		Z-PMS	0402 - 0805	33 - 390	1000 - 4000	• For power lines, low DC resistance

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EMI Filters

As electronics become pervasive in virtually all aspects of our lives, the generation of electromagnetic noise between equipment can be problematic. In order to maintain complete system functionality, it is increasingly important to limit these types of interference. KEMET's complete line of EMI filtering products address EMI issues across a multitude of applications.

Many geographical regions regulate equipment testing for EMI noise immunity and generation. These tests are often mandatory before the final product can be released into the marketplace. The permitted noise levels are, in such cases, clearly defined in international standards. If the product cannot meet the requirements, it is in often necessary to add an EMI filter to the design.

EMI filters consist of combinations of capacitive and inductive elements that will reduce the disturbance levels in the frequency band specified by the design. As *The Capacitance Company*, KEMET has an exceptional advantage of selecting capacitors of superior quality and functionality to best serve its EMI filter products.

KEMET offers a broad portfolio of EMI filters to accommodate a variety of applications:

Power and Small Signal Feed-Through Filters

- A wide range of current ratings from 0.1A to 800A in various configurations of capacitors and inductors
- Excellent stability properties and attenuation up to the GHz region
- Applications include screen rooms, power supplies, telecom systems, medical and military equipment

General Purpose Filters

- A variety of PCB mount and faston terminated filters for standard line voltage up to 16A
- Various configurations for moderate to high performance attenuation
- Applications include consumer goods, domestic appliances and business equipment, low power switch mode power supplies and digital equipment

Chassis Mount Filters

- Single and three phase filters with and without neutral connection, with various types of screw or flexible lead terminals and different geometries
- Current ratings from 1A to 1600A
- Voltage ratings from 250VAC to 600VAC and 1000VDC
- Single or multistage for alternative attenuation levels
- Applications include industrial frequency inverters, motor drives, switch mode power supplies and medical systems

Special Purpose Filters

- Power line filters for screen rooms
- DC filters for solar panel arrays
- Three phase filters for inverters for solar panel systems

For applications requiring customized solutions, KEMET's filter research and development team offers complete collaborative design services to meet your specific geometric and electrical specifications.

Feed-Through Filters

Power Feed-Through Filters

Series	Current Rating (A)	Benefits	Applications
FLLDH, FLLDU	16 - 300	• Single line, high performance • PI configuration • Excellent attenuation up to Ghz range • Rugged sealed construction	• Screen rooms • Power supplies • Telecom systems • Medical equipment
FLLCC	25 - 800	• Single line, high performance • C configuration	

Small Signal Feed-Through Filters

Series	Current Rating (A)	Capacitance	Benefits
AFCL 060	10	1.5nF - 47nF	• CL configuration • Film dielectric • Self-healing characteristics • Excellent temperature stability
AFCL 100	1 - 10	100nF - 820nF	• CL configuration • Film dielectric • Self-healing characteristics • Excellent temperature stability
AFPI 100	0.5 - 10	2x500nF	• PI configuration • Film dielectric • Self-healing characteristics • Excellent temperature stability
AFPI 160	16	2x2.5nF - 2x2000nF	
AFPI 190	6 - 30	2x18nF - 2x2000nF	
AFCC 100	5 - 20	15nF - 1400nF	• C configuration • Film dielectric • Self-healing characteristics • Excellent temperature stability
AFCC 160	16 - 25	2.5nF - 10000nF	
AFCC 190	10 - 63	18nF - 220nF	
AKCL 100	0.06 - 15	1.2μF	• CL configuration • Ceramic dielectric • Hermetic sealing • Other configurations on request

Cylindical Case General Purpose Filters

Series	Current Rating (A)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FNC	10 - 16	0.15 - 0.68	2x4.7 - 2x27	• Suited for consumer goods, appliances, vending machines, etc. • Compact design, faston terminations • Push-fit or stud-mount mounting

General Purpose PCB Mount Filters

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FAA, FAH	0.5 - 10	2x1 - 2x40	0.1 - 0.68, 2x0.1	2x2.2 - 2x4.7	• Compact PCB design • PCB or faston terminations • Medical versions available
FLH	0.5 - 6	2x1 - 2x24	0.033	2x2.5	• Compact PCB design • High performance • Medical versions available
FAMAV	3.3 - 16	2x1, 2x13	0.47	2x1 - 2x6.8	• High performance filter • High RF attenuation • Single or two stage designs • Medical versions available

EMI Filters for Light Fittings

Series	Current Rating (A)	Benefits
FLH...DK	1.4 - 7	• Complies to EN/IEC 60939 • Enables compliance to EN 55015 for light fittings for CE marking • No increase in ground current

Chassis Mount Single Phase Filters

Chassis Mount Single Phase General Purpose Filters

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FAI	1 - 30	2x0.5 - 2x10	0.015 - 0.1	2x2.2 - 2x3.2	• Single or multistage chassis mount filters • Metal enclosures, various terminations • Medical versions available • High symmetric and asymmetric attenuation
FAK	3 - 20	2x0.5 - 2x25	0.15 - 0.47	2x1 - 2x5.6	
FAM	1 - 40	2x0.2 - 2x20	0.1 - 1	2x1 - 2x22	
FAR	0.5 - 8.5	2x2 - 2x40	0.15 - 0.47	2x2.2 - 2x3.3	
FAS	1 - 10	2x0.05 - 2x22	0.22 - 1.0	2x4.7 - 2x22	

Chassis Mount Single Phase General Purpose Filters • Multistage

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FBK	10 - 30	2x0.6 - 2x0.8	2x0.33 - 2x0.47	2x4.7 - 2x10	• Multistage chassis mount filters • Metal enclosures, various terminations • Medical versions available • General, high and very high performance
FBR	1 - 16	2x2.8 - 2x22	2x0.33 - 2x1	2x4.7	
FBS	1 - 16	2x0.043 - 2x22	2x0.33 - 2x1	2x4.7	

Chassis Mount Single Phase High Performance Filters • Low Profile

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FLLE2…FP	10 - 25	4x3 + 2x0.036	1 + 0.47 + 1	4x22	• Very low profile • High attenuation • Multistage design • Residential or light industrial environments • Motor drive

Chassis Mount Single Phase High Performance Filters

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FLLE2…AN	8 - 63	2x1 - 2x10	2.2 - 4.4 & 0.68 - 1	2x10 - 2x33 & 2x47 - 2x94	• General applications • High attenuation • Industrial environments • Motor drive
FLLE2…AI,...AS	6 - 20	2x1 - 2x2.4	2x0.68 - 4x2.2	2x4.7 - 2x33	• Very high symmetric and asymmetric attenuation • Single or two stage designs • Frequency converters

Single Phase Power Line Filters

Series	Current Rating (A)	Benefits	Applications
FLLE2…SR	1 - 100	• High attenuation • Multistage design	• Shielded rooms and secure areas • Direct mounting via pipe outlet

Chassis Mount DC EMI Filters for Photo Voltaic Inverters

New series

Series	Current Rating (A)	Benefits
FLLE2…PV	25 - 1600	• Solar panel inverters

Chassis Mount Three Phase Filters

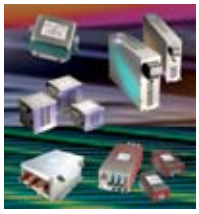
Chassis Mount Three Phase and Neutral Filters • General Purpose

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FTR	13 - 100	3x0.1 - 4x0.1	3x0.01 - 3x1	4x4.7 - 4x22	• High symmetric and asymmetric attenuation • Single or two stage designs • Compact design • Screw or flexible lead termination

Chassis Mount Three Phase and Neutral Filters • High Performance

Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FLLD3…AB	25 - 63	4x0.5 - 4x2	3x2.2	2x15 - 3x4.7	• High symmetric and asymmetric attenuation • Screw or terminal block connectors
FLLD3…AD	16 - 25	4x1.1 - 4x1.8	3x1	15	• High symmetric and asymmetric attenuation • Screw or faston terminations • Low profile
FLLD3…AW	3 - 20	4x0.2 - 4x1.5	3x0.1	4.7 - 22	• Good high frequency attenuation • Screw or faston terminations • Low profile and compact
FLLD3…BM,...ZS	4 - 25	4x0.04 - 3x4	4x0.04 - 3x13.2	1x22 - 4x33	• High symmetric and asymmetric attenuation • Good broadband attenuation • Compact, low profile

Chassis Mount Three Phase Filters • High Performance • High Voltage



Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FLLD3…AN,…HN	8 - 450	3x0.075 - 3x7.6	3x2.2 - 3x10 & 3x1 - 3x10	3x10 - 3x280 & 2x1	• 440VAC - 520VAC • High attenuation • 600VAC version • Industrial environments
FLLD3…HNR2	8 - 450				
FLLD3…SN,…SH	8 - 300	0.27 - 0.5/ phase	9x1 - 9x22	6x110 - 6x340	• 480VAC-520VAC • Slim design
FLLD3…FP	8 - 17	6x4.5 + 3x0.036	3x1.5 - 9x1	2x0.47	• Low profile
FLLD3…SC	8 - 130	0.27 - 0.5	9x1 - 9x2.2	6x110	• 520VAC • Slim design
FLLD3…BN	7 - 180	3x0.3 - 3x2	3x5.6 + 3x3.3	1x3.3	• 520VAC • Slim design • Industrial environments • Motor run

Chassis Mount Three Phase Filters • High Current • High Voltage

New series

Series	Current Rating (A)	Benefits
FLLD3…PV	150 - 1600	• 690VAC • Compact high current filter • Photo voltaic inverters

Chassis Mount Three Phase and Neutral Filters • High Performance, High Voltage

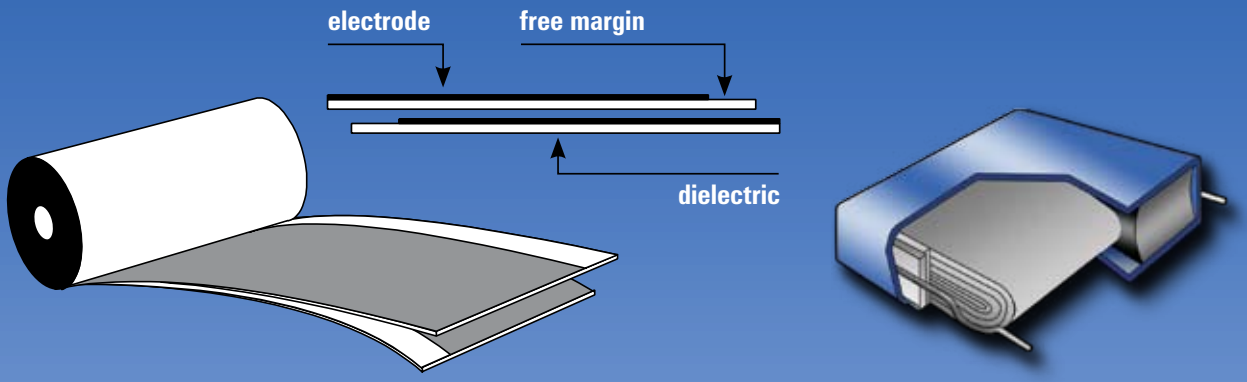
Series	Current Rating (A)	L(mH)	Capacitance x (μF)	Capacitance y (nF)	Benefits
FLLD4…DN	8 - 64	4x1 - 4x1.78	6x2.2 - 6x4.7	2x0.1	• 520VAC • Low earth leakage • Compact light weight • Screw terminals • Industrial environments

Film Capacitors

With over 50 years of experience manufacturing plastic film capacitors, KEMET also designs and builds custom equipment for film capacitor production, continuously innovating and improving the production capability, quality, and efficiency. Because films are exceptionally thin – less than 1μm in some cases – extreme precision and process control is required to manufacture quality capacitors for demanding applications.

In the most common type of film capacitor, the electrodes are vacuum deposited, or metallized onto a roll of precision plastic film. The metallization is not deposited near one edge. Two films, one with the unmetallized edge on the left and one on the right, are laid on top of each other and wound into a roll. In many cases, the roll is flattened. Next, several metal layers are sprayed on the ends. These become the electrodes onto which wires are welded before encapsulation.

Another variation has the two films in a stack of layers much like a multilayer ceramic capacitor. These can either have leads attached and be encapsulated for through-hole capacitors, or left unencapsulated for surface mount capacitors. KEMET offers several variations on this basic construction using all the commonly available plastic films to meet a broad range of application requirements. KEMET commonly customizes film capacitors for specific applications when a standard part is not available.



Dielectric Material	Abbreviation	Min. film thickness (µm)	Dielectric constant at 1 kHz, +23°C	Operating Temperature (°C) Nomal/(Extended)	Temperature coefficient (ppm/°C)	Dissipation factor at 1 kHz, +23°C	Insulation time constant(s) at +23°C	Dielectric absorption %
Polyester	PET	0.9	3.3	-55 to +100 (+125)	+400 (±200)	0.5%	25,000	0.5
Polyethylene Naphthalate	PEN	1.4	3.0	-55 to +125 (+150)	+200 (±150)	0.4%	25,000	1.2
Polyphenylene Sulfide	PPS	1.2	3.0	-55 to +125 (+175)	0 (-50) -55 to +100 550 (±50) +100 to +150 0 (+50) +150 to +200	0.06%	50,000	0.05
Polypropylene	PP	2.4	2.2	-55 to +105 (+125)	-200 (-100, +50) almost liner	0.03%	100,000	0.01
Paper Impregnated	P	8.0	5.5	-40 to +115	+1200 (±200)	0.8%	15,000	N/A

Properties of common dielectrics used in film capacitors

AC Line EMI Capacitors • Class X

	Series	Class	Capacitance Range	Rated Voltage (VAC)	Benefits
New series 	F861 Polypropylene Metallized Film	X2	0.001µF - 45 µF	310	• Test voltage (factory test) 1900VDC • Climactic category 40/110/56 • Max. dV/dt 500 V/µS • Lead spacing 7.5 - 52.5 • Approvals: ENEC, UL, cUL
New series 	F871 Polypropylene Metallized Film	X1	0.001µF - 12 µF	330	• Test voltage (factory test) 2500VDC • Climactic category 40/110/56 • Max. dV/dt 500 V/µS • Lead spacing 10 - 37.5 • Approvals: ENEC, UL, cUL
New series 	F872 Polypropylene Metallized Film	X1	0.001µF - 5.6 µF	480	• Test voltage (factory test) 3000VDC • Climactic category 40/110/56 • Max. dV/dt 750 V/µS • Lead spacing 10 - 37.5 • Approvals: ENEC, UL, cUL
New series 	F873 Polypropylene Metallized Film	X1	0.01µF - 1.8 µF	760	• Test voltage (factory test) 4250VDC • Climactic category 40/110/56 • Max. dV/dt 300 V/µS • Lead spacing 22.5 - 37.5 • Approvals: ENEC, UL, cUL
	R46-125ºC Polypropylene Metallized Film	X2	0.01µF - 1.0 µF	275 (ENEC) 310 (UL)	• Test voltage (factory test) 2200VDC • Climactic category 40/125/56 • Max. dV/dt 500 V/µS • Lead spacing 10 - 22.5 • Approvals: ENEC
	PME271M Impregnated Metallized Paper	X2	0.001µF - 0.6µF	275	• Test voltage (factory test) 2150VDC • Climatic category 40/110/56/B • Max. dU/dt 400-1200 V/µs • Lead spacing 10.2, 15.2, 20.3, 22.5, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, • UL 1283, UL 1414, CSA No.1
	PME271E Impregnated Metallized Paper	X1	0.01µF - 0.22µF	300	• Test voltage (factory test) 2150VDC • Climatic category 40/110/56/B • Max. dU/dt 400-1200 V/µs • Lead spacing 15.2, 20.3, 22.5, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283
	PHE820M Polyester Metallized Film	X2	0.01µF - 2.2µF	275	• Test voltage (factory test) 2150VDC • Climatic category 40/100/56/B • Max. dU/dt 100 V/µs • Lead spacing 15, 22.5, 27.5, 37.5mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, UL 1414, CSA No. 8, CSA No. 1
	PHE820E Polyester Metallized Film	X2	0.01µF - 2.2µF	300	• Test voltage (factory test) 2150VDC • Climatic category 40/100/56/B • Max. dU/dt 100 V/µs • Lead spacing 15, 22.5, 27.5, 37.5mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, UL 1414, CSA No. 8, CSA No. 1
	R46+R Polypropylene Metallized Film	X2	0.22µF - 10µF 0.22µF - 10µF	275 300	• Interference suppression and across-the-line applications • Climatic category (IEC 60068-1) 40/110/56 • Pulse rise time (dv/dt) 100 to 200 V/µs • Pitch p = 22.5, 27.5, 37.5mm • Discharge resistor 470kΩ to 10MΩ • Approvals: ENEC IEC 60384-14, cULus (UL 1283, CSA-C22.2 No. 8)
	R49+R Polypropylene Metallized Film	X1	0.33µF, 6.8µF	330	• Interference suppression and across-the-line applications • Climatic category (IEC 60068-1) 40/110/56 • Pulse rise time (dv/dt) 100 V/µs to 200 V/µs • Pitch p = 27.5mm, 37.5mm • Discharge resistor 470kΩ to 10MΩ • Approvals: ENEC IEC 60384-14, cULus (UL 1283, CSA-C22.2 No. 8)

AC Line EMI Capacitors • Class X



Series	Class	Capacitance Range	Rated Voltage	Benefits
PME278 Impregnated Metallized Paper	X1	0.001μF - 0.15μF	440VAC	• Test voltage (factory test) 2700VDC • Climatic category 40/110/56/B • Max. dU/dt 600-2000 V/μs • Lead spacing 10.2, 15.2, 20.3, 22.5, 25.4mm • Approvals: ENEC, EN/IEC 60384-14
R47 Polypropylene Metallized Film	X2	4700pF - 2.2μF	520VAC	• Interference suppression and across-the-line applications • Climatic category (IEC 60068-1) 40/085/56 • Pulse rise time (dv/dt) 150 to 750 V/μs • Pitch p = 10, 15, 22.5, 27.5, 37.5mm • Approvals: ENEC IEC 60384-14, cULus (UL 1283, UL 1414)
PME264 Impregnated Metallized Paper	X2	0.001μF - 0.1μF	660VAC	• Test voltage (factory test) 3000VDC • Climatic category 40/085/56/B • Max. dU/dt 600-2000 V/μs • Lead spacing 15.2, 20.3, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283

Class X • Series Designated "Not for New Design" but Still Available

Series	
R46 (Standard version, 275VAC & 300VAC), R47 (440VAC), R49 (Standard version) PHE840M, PHE840E, PHE841, PHE844, PHE845	

AC Line EMI Capacitors • Class Y

New series

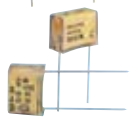
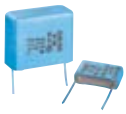



Series	Class	Capacitance Range	Rated Voltage	Benefits
F881 Polypropylene Metallized Film	Y2	0.001μF - 1.0μF	300VAC	• Test voltage (factory test) 4000VDC and 2500VAC • Climactic category 40/110/56 • Max. dV/dt 800 V/μS • Lead spacing 10 - 37.5 • Approvals: ENEC, UL, cUL
SMP253 Impregnated Metallized Paper	Y2	0.001μF - 0.0047μF	250VAC	• SMD, size 5045 • Test voltage (factory test) 3000VDC • Climatic category 40/100/56/B • Max. dU/dt 2000 V/μs • Approvals: ENEC, EN/IEC 60384-14, UL 1414, CSA No. 1
PME271Y Impregnated Metallized Paper	Y2	0.001μF - 0.1μF	250VAC	• Test voltage (factory test) 3000VDC • Climatic category 40/100/56/B • Max. dU/dt 400-2000 V/μs • Lead spacing 10.2, 15.2, 20.3, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, CSA No. 8
PME271Y (A-E) Impregnated Metallized Paper	Y2	0.001μF - 0.15μF	300VAC	• Test voltage (factory test) 3000VDC • Climatic category 40/115/56/B • Max. dU/dt 400-2000 V/μs • Lead spacing 10.2, 15.2, 20.3, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, CSA No. 8
PME295 Impregnated Metallized Paper	Y1	0.47nF - 4.7nF	440VAC (ENEC) 480VAC (UL)	• Test voltage (factory test) 4000VAC • Climatic category 40/115/56/B • Max. dU/dt 2000 V/μs • Lead spacing 15.0mm • Approvals: ENEC, EN/IEC 60384-14 • UL 1283, UL 1414, cUL No. 8, cUL No. 1

Class Y • Series Designated "Not for New Design" but Still Available

Series	
PHE850, R41	

DC Film Capacitors for AC Series Power Supply


Series	Dielectric/ Electrodes/Class	Capacitance Range	Rated Voltage	Benefits
PME271M	Impregnated metallized paper Class X2	0.001µF - 0.6µF	275VAC	• Best long-term stability • Climatic category 40/110/56/B • Max. dU/dt 400-1200 V/µs • Lead spacing 10.2, 15.2, 20.3, 22.5, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, UL 1414, CSA No. 1
PME271E	Impregnated metallized paper Class X1	0.01µF - 0.22µF	300VAC	• Best long-term stability • Climatic category 40/110/56/B • Max. dU/dt 400-1200 V/µs • Lead spacing 15.2, 20.3, 22.5, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283
PHE820M	Polyester metallized film Class X2	0.01µF - 2.2µF	275VAC	• 2-section series construction • Climatic category 40/100/56/B • Max. dU/dt 100 V/µs • Lead spacing 15, 22.5, 27.5, 37.5mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, UL 1414, CSA No. 8, CSA No. 1
PHE820E	Polyester metallized film Class X2	0.01µF - 2.2µF	300VAC	• 2-section series construction • Climatic category 40/100/56/B • Max. dU/dt 100 V/µs • Lead spacing 15, 22.5, 27.5, 37.5mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283, UL 1414, CSA No. 8, CSA No. 1
R752	Polypropylene metallized film	0.033µF - 6.8µF	230VAC 400VDC	• 1-section with humidity protection • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 70 to 1000V/µs • Pitch p = 10, 15, 22.5, 27.5, 37.5mm
R75L	Polypropylene metallized film	0.010µF - 10µF	250VAC 560VDC	• 1-section with humidity protection • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 90 to 1500V/µs • Pitch p = 10, 15, 22.5, 27.5 37.5mm
R603	Polyester metallized film	0.15µF - 6.8µF	300VAC 560VDC	• 2-section series construction • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 100 to 200V/µs • Pitch p = 22.5, 27.5 37.5mm
R47	Polypropylene metallized film Class X2	4700pF - 2.2µF	520VAC 1000VDC	• 2-section series construction • Climatic category (IEC 60068-1) 40/085/56 • Pulse rise time (dv/dt) 150 to 750 V/µs • Pitch p = 10, 15, 22.5, 27.5, 37.5mm • Approvals: ENEC IEC 60384-14, cULus (UL 1283, UL 1414)

RC Combination Arc Suppressors




Series	Dielectric/ Electrodes	Capacitance Range	Rated Voltage	Benefits
PMR205	Impregnated metallized paper	0.1µF - 1.0µF R: 22Ω - 680Ω	125VAC 250VDC	• Test voltage (factory test) 375VDC • Climatic category 40/085/56/B • Lead spacing 15.2, 20.3, 25.4mm
PMR209	Impregnated metallized paper	0.047µF - 0.47µF R: 22Ω - 470Ω	250VAC 630VDC Class X2	• Test voltage (factory test) 1800VDC • Climatic category 40/085/56/B • Lead spacing 15.2, 20.3, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1283
PMR210	Impregnated metallized paper	0.022µF - 0.1µF R: 100Ω	250VAC Class X1	• Test voltage (factory test) 3000VDC, 2000VAC • Climatic category 40/085/56/B • Lead spacing 15.2, 20.3, 25.4mm • Approvals: ENEC, EN/IEC 60384-14, UL 1414
PMZ2035	Impregnated metallized paper	0.1µF R: 150Ω	440VAC Class X1	• Test voltage (factory test) 1800VDC • Climatic category 40/085/56/B • Lead spacing 25.4mm • Approvals: ENEC, EN/IEC 60384-14
1.43/F43	Polypropylene metallized film	0.25µF - 1.0µF 0.25µF - 1.0µF 0.022µF - 0.5µF 0.010µF - 1.0µF	250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC 275VAC, 560VDC Class X2	• RC spark suppression • Climatic category (IEC 60068-1) 55/105/56 • Climatic category (IEC 60068-1) 40/100/56 (275VAC) • Pitch p = 15, 22.5, 27.5mm • Resistor value: 10Ω to 1kΩ • Approvals: ENEC IEC 60384-14, UL 1414 (only for 275VAC)

Low Voltage Noise Suppression Capacitors with Integrated Varistor or Suppression Diodes

Series	Dielectric/Electrodes	Capacitance Range	Rated Voltage (VDC)	Benefits
F5A	Polyester metallized film capacitor with integrated ceramic varistor	0.1µF - 2.2µF 0.1µF - 1.5µF	5 - 63 (p=5mm) 5 - 63 (p=10mm)	• DC motors suppression mainly in automotive applications • Climatic category (IEC 60068-1) 55/125/56 • Varistor voltage range 8VDC to 82VDC • Pitch p = 5mm, 10mm
F5B	Polyester metallized film capacitor with integrated bidirectional suppressor diode	0.1µF - 1.2µF 1.5µF - 2.2µF 0.1µF - 1.5µF	5 - 63 (p=5mm) 5 - 50 (p=5mm) 5 - 63 (p=10mm)	• DC motors suppression mainly in automotive applications for very high performance peak reduction • Climatic category (IEC 60068-1) 55/125/56 • Diode breakdown voltage range 10VDC to 78VDC • Pitch p = 5mm, 10mm

General Purpose Film Capacitors • Radial and Axial

New series

Series	Class	Capacitance Range	Rated Voltage	Benefits
F611 & F612	Polyester metallized film, radial	0.001µF - 330µF	50 - 1000	• Climactic category 55/105/56 • Max. dV/dt 400 V/µS • Lead spacing 5, 7.5, 10, 15, 22.5, 27.5, 37.5mm
F622	Polyester metallized film, radial	0.001µF - 2.2µF	50 - 630	• Climactic category 55/125/56 • Max. dV/dt 800 V/µS • Lead spacing 5mm
PME261	Impregnated metallized paper, radial	0.0082µF - 1.0µF 0.001µF - 0.15µF 0.001µF - 0.1µF	220VAC, 400VDC 300VAC, 630VDC 500VAC, 1000VDC	• Test voltage (factory test) 800VDC/1250VDC/2000VDC • Climatic category 40/070/56 • Max. dU/dt 220-2000 V/µs • Lead spacing 10.2, 15.2, 20.3, 25.4mm
A50	Polyester metallized film, axial	0.47µF - 10.0µF 0.33µF - 10.0µF 0.10µF - 10.0µF 0.047µF - 10.0µF 0.010µF - 3.3µF 1000pF - 1.0µF 1000pF - 0.47µF	50VDC, 30VAC 63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC 1000VDC, 250VAC	• DC multipurpose applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 1.0 to 50 V/µs • Length L = 11 to 33mm

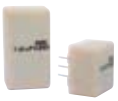
Series Designated "Not for New Design" but Still Available

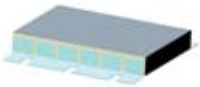
Series	
MMK, R60, R66, R82, RSB	

Stable High Temperature Capacitors • PPS Film

Series	Class	Capacitance Range	Rated Voltage	Benefits
SMR	Metallized	0.001µF - 22µF 0.001µF - 22µF 0.001µF - 12µF 0.001µF - 3.9µF 0.001µF - 1.8µF	50VDC, 30VAC 63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC	• Climatic category 55/150/56 • Max. dU/dt 2-40 V/µs • Lead spacing 5, 7.5, 10, 15, 22.5, 27.5mm

Metallized Polyester • High Current for High Frequency SMPS and DC/DC Converters





Series	Type	Capacitance Range	Rated Voltage	Benefits
MDK	Through-hole, multiple leads	0.033µF - 15µF 0.033µF - 10µF 0.033µF - 1.5µF 0.033µF - 0.47µF 0.033µF - 0.18µF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• For high frequency output filtering • Metallized Polyester (PET) • Climatic category 55/125/56 • Lead spacing 10mm, 15mm
MDC	SMD, multiple leads	0.033µF - 15µF 0.033µF - 10µF 0.033µF - 1.5µF 0.033µF - 0.47µF 0.033µF - 0.18µF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• For high frequency output filtering • Metallized Polyester (PET) • Climatic category 55/125/56 • Lead spacing 10mm, 15mm
MDS	SMD, low profile, multiple leads	0.033µF - 6.8µF 0.033µF - 5.6µF 0.033µF - 0.68µF 0.033µF - 0.33µF 0.033µF - 0.10µF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• For high frequency output filtering • Metallized Polyester (PET) • Climatic category 55/125/56 • Lead spacing 10, 15mm
JSN	SMD, multiple leads, through-hole also available	10µF - 68µF 10µF - 33µF 10µF - 15µF	100VDC, 63VAC 160VDC, 90VAC 250VDC, 160VAC	• DC/DC and AC/DC converters applications • Climatic category (IEC 60068-1) 55/125/56 • Pulse rise time (dv/dt) 27 to 40V/µs • Size from 60.80 to 60.160 (naked components)

Polypropylene Film Capacitors • Radial & Axial

New series

Series	Construction	Capacitance Range	Rated Voltage	Benefits
F461-F464	Single metallized film, radial	0.001µF - 56µF	160 - 2500VDC 90 - 900VAC	• DC or AC applications • Climactic category 55/105/56 • Max. dV/dt 9500 V/µS • Lead spacing 5, 7.5, 10, 15, 22.5, 27.5, 37.5mm
R74	Single metallized film, radial	0.010µF - 0.15µF 2200pF - 3.3µF 1000pF - 2.2µF 470pF - 0.018µF 470pF - 1.0µF 1000pF - 0.47µF	250VAC, 630VDC 400VAC, 1300VDC 500VAC, 1600VDC 600VAC, 2000VDC (Mini) 700VAC, 2000VDC 900VAC, 2200VDC	• AC applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 180 to 10000V/µs • Pitch p = 10, 15, 22.5, 27.5, 37.5mm
R74 @ 125°C	Single metallized film, radial	1000pF - 0.10µF 680pF - 0.068µF	500VAC, 1600VDC 700VAC, 2000VDC	• AC applications • Climatic category (IEC 60068-1) 55/125/56 • Pulse rise time (dv/dt) 1200 to 9500V/µs • Pitch p = 10, 15, 22.5mm
R71	Single metallized film, radial	0.010µF - 22µF 0.010µF - 22µF 0.010µF - 15µF 0.22µF - 10µF	420VDC, 220VAC 520VDC, 250VAC 630VDC, 275VAC 1000VDC, 275VAC	• PFC (Power Factor Correction) application • Climatic category (IEC 60068-1) 40/110/56 • Pulse rise time (dv/dt) 60 to 400V/µs • Pitch p = 10, 15, 22.5, 27.5, 37.5mm
PHE429	Single metallized film, radial	0.1µF - 0.47µF 0.047µF - 0.15µF	420VDC, 220VAC 630VDC, 275VAC	• Climatic category 55/110/56 • Max. dU/dt 150-250 V/µs • Lead spacing 15mm
A70	Single metallized film, axial	0.022µF - 4.7µF 0.010µF - 3.3µF 6800pF - 1.5µF 1000pF - 0.68µF	160VDC, 90VAC 250VDC, 200VAC 400VDC, 220VAC 630VDC, 250VAC	• Multipurpose applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 1 to 30 V/µs • Length L = 11 to 33mm
R76	Double metallized film, radial	6800pF - 15.0µF 2700pF - 8.2µF 680pF - 0.012µF 3900pF - 5.6µF 220pF - 3300pF 470pF - 2.2µF 3300pF - 1.2µF 100pF - 0.68µF	250VDC, 180VAC 400VDC, 250VAC 630VDC, 250VAC 630VDC, 400VAC 1000VDC, 400VAC 1000VDC, 600VAC 1600VDC, 650VAC 2000VDC, 700VAC	• DC and pulse applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 100 to 9500V/µs • Pitch p = 7.5, 10, 15, 22.5, 27.5, 37.5mm
R77	Double metallized film, radial	0.027µF - 0.10µF 0.010µF - 0.10µF 5600pF - 0.10µF 1000pF - 0.10µF 1000pF - 0.027µF 1000pF - 0.018µF	250VAC, 630VDC 300VAC, 800VDC 400VAC, 1000VDC 500VAC, 1300VDC 700VAC, 1600VDC 900VAC, 2000VDC	• AC applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 900V/µs to 9500V/µs • Pitch p = 15, 22.5, 27.5mm

Polypropylene Film Capacitors • Radial & Axial

	Series	Construction	Capacitance Range	Rated Voltage	Benefits
	PHE450	Double metallized film, radial	330pF - 10µF 330pF - 5.6µF 330pF - 3.3µF 330pF - 2.2µF 2.7nF - 1.0µF 1.0nF - 0.68µF 1nF - 0.33µF 1nF - 0.033µF	250VDC, 180VAC 400VDC, 250VAC 630VDC, 300/400VAC 1000VDC, 375/600VAC 1600VDC, 650VAC 2000VDC, 700VAC 2500VDC, 900VAC 3000VDC, 1000VAC	• Multipurpose applications • Climatic category 55/105/56/B • Max. dU/dt 200-2500 V/µs • Lead spacing 7.5, 10, 15, 22.5, 27.5, 37.5mm
	R73	Polypropylene film/foil, radial	0.047µF - 0.15µF 0.033µF - 0.10µF 0.015µF - 0.047µF 0.010µF - 0.047µF 0.010µF - 2.2µF 3300pF - 1.5µF 2200pF - 0.82µF 1000pF - 0.56µF 100pF - 0.22µF	100VDC, 63VAC 160VDC, 90VAC 250VDC, 125VAC 400VDC, 160VAC 630VDC, 300VAC 1000VDC, 400VAC 1250VDC, 450VAC 1600VDC, 450VAC 2000VDC, 500VAC	• High current applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 2400 to 54000V/µs • Pitch p = 15, 22.5, 27.5, 37.5mm
	PHE448	Film/foil, radial	1.5nF - 22nF 0.1nF - 3.3nF	1600VDC, 650VAC 2000VDC, 700VAC	• Climatic category 55/105/56 • Max. dU/dt 15000-25000 V/µs • Lead spacing 15mm • High current applications
	PFR	Film/foil, radial	100pF - 22000pF 100pF - 10000pF 100pF - 6800pF 100pF - 6800pF 100pF - 4700pF 100pF - 680pF	63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 220VAC 630VDC, 250VAC 1000VDC, 250VAC	• Climatic category 55/100/56 • Max. dU/dt 1000 V/µs • Lead spacing 5mm • Timing, integration
	A72	Film/foil, axial	4700pF - 0.010µF 2200pF - 0.015µF 47pF - 0.010µF 0.015µF - 0.33µF 3300pF - 0.10µF 2200pF - 0.068µF 1000pF - 0.047µF	100VDC, 63VAC 250VDC, 125VAC 400VDC, 160VAC 630VDC, 300VAC 1000VDC, 400VAC 1500VDC, 450VAC 2000VDC, 500VAC	• High current applications • Climatic category (IEC 60068-1) 55/105/56 • Pulse rise time (dv/dt) 1800 to 27000V/µs • Length L = 11 to 33mm

Series Designated "Not for New Design" but Still Available

Series	
R74, R75, R79, PHE426	

SMD Film Capacitors

Metallized Polyester Dielectric

	Series	Type	Capacitance Range	Rated Voltage	Benefits
	MMC	2220 - 6560 2824 - 6560 2220 - 6560 2220 - 6560 2824 - 6560	1nF - 15000nF 1nF - 4700nF 1nF - 3300nF 1nF - 1000nF 1nF - 470nF	50VDC, 30VAC 63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC	• Encapsulated winding construction • Climatic category 55/100/56 • Max. dU/dt 5-50 V/µs
	MDC	SMD, multiple leads	0.033µF - 15µF 0.033µF - 10µF 0.033µF - 1.5µF 0.033µF - 0.47µF 0.033µF - 0.18µF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• For high frequency output filtering • Metallized Polyester (PET) • Climatic category 55/125/56 • Lead spacing 10mm, 15mm
	MDS	SMD, low profile, multiple leads	0.033µF - 6.8µF 0.033µF - 5.6µF 0.033µF - 0.68µF 0.033µF - 0.33µF 0.033µF - 0.10µF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• For high frequency output filtering • Metallized Polyester (PET) • Climatic category 55/125/56 • Lead spacing 10mm, 15mm
	JSN	SMD, multiple leads, through-hole also available	10µF - 68µF 10µF - 33µF 10µF - 15µF	100VDC, 63VAC 160VDC, 90VAC 250VDC, 160VAC	• DC/DC and AC/DC converters applications • Climatic category (IEC 60068-1) 55/125/56 • Pulse rise time (dv/dt) 27 to 40V/µs • Size from 60.80 to 60.160 (naked components)

SMD Film Capacitors

Metallized PEN Dielectric

	Series	Type	Capacitance Range	Rated Voltage	Benefits
	GMC	2220 - 6560 2824 - 6560 2220 - 6560 2220 - 6560 2824 - 5045 4036 - 6560	1nF - 5600nF 1nF - 4700nF 1nF - 2200nF 1nF - 680nF 1nF - 330nF 22nF - 150nF	50VDC, 30VAC 63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 300VAC	• Encapsulated winding construction • Metallized Polyethylene Naphthalate (PEN) • Climatic category 55/125/56 • Max. dU/dt 5-50 V/μs
	GPC	2824 - 6560	0.47nF - 1000nF 0.47nF - 1000nF 0.47nF - 680nF 0.47nF - 470nF 0.47nF - 220nF 0.47nF - 150nF 0.47nF - 68nF	63VDC, 40VAC 100VDC, 63VAC 160VDC, 100VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 300VAC 1000VDC, 350VAC	• Encapsulated winding construction • Double sided metallized film as electrode • Climatic category 55/125/56 • Max. dU/dt 100-2200 V/μs
	LDE*	1206 - 6054 1206 - 6054 1206 - 6054 1206 - 6054 2220 - 6054 2220 - 6054 2220 - 6054	1000pF - 4.7μF 1000pF - 4.7μF 1000pF - 4.7μF 1000pF - 1.5μF 0.015μF - 0.47μF 1000pF - 0.27μF 1000pF - 0.1μF	50VDC, 40VAC 63VDC, 40VAC 100VDC, 63VAC 250VDC, 120VAC 400VDC, 160VAC** 630VDC, 200VAC 1000VDC, 250VAC	• Unencapsulated winding construction • Climatic category (IEC 60068-1) 55/125/56 • Max. dU/dt 100-300 V/μs
	GMW	2220	1nF - 470nF 1nF - 220nF 1nF - 68nF 1nF - 15nF 1nF - 6.8nF	63VDC, 40VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC 630VDC, 220VAC	• Unencapsulated winding construction • Climatic category 55/125/21 • Max. dU/dt 20-50 V/μs

* for Rated Voltage ≥ 250VDC available special version ITU & Telcordia compliant.
** 400VDC/230VAC for 30 minutes (occasionally).

Metallized PPS Dielectric

	Series	Type	Capacitance Range	Rated Voltage	Benefits
	SMC	2824 - 6560	1nF - 3300nF 1nF - 1500nF 1nF - 470nF 1nF - 220nF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC	• Encapsulated winding construction • Climatic category 55/125/56 • Max. dU/dt 2-40 V/μs
	SPC	2824 - 6560	0.47nF - 680nF 0.47nF - 330nF 0.47nF - 150nF 0.47nF - 100nF	100VDC, 63VAC 250VDC, 160VAC 400VDC, 250VAC 630VDC, 350VAC	• Encapsulated winding construction • Double sided metallized film as electrode • Climatic category 55/125/56 • Max. dU/dt 150-2000 V/μs
	LDB	1206 - 1210 1206 - 1812	0.012μF - 0.1μF 3300pF - 0.1μF	16VDC 50VDC	• Unencapsulated chip construction • Special tolerances 2% to 5% • Climatic category (IEC 60068-1) 55/125/56
	SMW	2220 - 2824	1nF - 560nF 1nF - 180nF 1nF - 68nF 1nF - 22nF	50VDC, 30VAC 100VDC, 63VAC 250VDC, 160VAC 400VDC, 200VAC	• Unencapsulated winding construction • Climatic category 55/125/56 • Max. dU/dt 8-20 V/μs

Metallized Impregnated Paper Dielectric • Class Y

	Series	Type	Capacitance Range	Rated Voltage	Benefits
	SMP253	5045	1nF - 4.7nF	250VAC	• Encapsulated winding construction • EMI Capacitor, Class Y2 • Climatic category 40/100/56/B • Max. dU/dt 2000 V/μs

Power Electronics and AC Film Capacitors • Metallized Polypropylene

Series	Type	Capacitance Range	Rated Voltage	Benefits
C4C	Axial	0.1μF - 2.5μF 0.047μF - 1.5μF 0.022μF - 0.68μF 6800pF - 0.22μF	850VDC, 450VAC 1200VDC, 500VAC 2000VDC, 630VAC 3000VDC, 750VAC	• Snubber applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 200 to 2100V/μs • Length L = 33 to 58mm
C4G	Axial	1μF - 40μF 0.47μF - 20μF 0.47μF - 10μF 0.47μF - 6.8μF 0.15μF - 4.0μF	250VDC, 160VAC 400VDC, 250VAC 600VDC, 330VAC 700VDC, 400VAC 850VDC, 450VAC	• Switching applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 15 to 210V/μs • Length L = 20.5 to 58mm
C4H	Axial flat	0.1μF - 1.0μF 0.047μF - 0.68μF 0.022μF - 0.33μF 6800pF - 0.1μF	850VDC, 450VAC 1200VDC, 500VAC 2000VDC, 630VAC 3000VDC, 750VAC	• Snubber applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 190 to 2100V/μs • Length L = 33 to 58mm
C4M	Axial flat	1μF - 20μF 0.47μF - 6.8μF 0.47μF - 4.7μF 0.47μF - 3.0μF	250VDC, 160VAC 400VDC, 250VAC 600VDC, 330VAC 700VDC, 400VAC	• Switching applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 15 to 80V/μs • Length L = 20.5 to 58mm
C4AS	Box	0.15μF - 5.0μF 0.15μF - 4.7μF 0.1μF - 3.5μF 0.033μF - 1.5μF 0.022μF - 0.82μF	850VDC, 500VAC 1000VDC, 600VAC 1200VDC, 630VAC 2000VDC, 700VAC 3000VDC, 750VAC	• Snubber applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 469 to 3360V/μs • Pitch p = 27.5, 37.5, 52.5mm • Terminals: Tinned copper 2 or 4 wires
C4AT	Box	1.0μF - 60μF 1.0μF - 40μF 1.0μF - 33μF 0.68μF - 20μF 0.47μF - 15μF 0.22μF - 10μF	250VDC, 160VAC 400VDC, 250VAC 450VDC, 275VAC 600VDC, 350VAC 700VDC, 400VAC 850VDC, 450VAC	• Switching applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 15 to 148V/μs • Pitch p = 27.5, 37.5, 52.5mm • Terminals: Tinned copper 2 or 4 wires
C4AE	Box	30μF - 100μF 15μF - 55μF 12μF - 40μF 8.0μF - 25μF	450VDC 700VDC 900VDC 1100VDC	• DC link applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 10 to 21V/μs • Pitch p = 37.5, 52.5mm • Terminals: Tinned copper 2 or 4 wires
C4AF	Box	2.5μF - 75μF 2.0μF - 55μF 1.2μF - 35μF 0.82μF - 25μF 0.5μF - 14μF	250VAC 300VAC 350VAC 400VAC 450VAC	• AC filter applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 12 to 62V/μs • Pitch p = 27.5, 37.5, 52.5mm • Terminals: Tinned copper 2 or 4 wires
C4BS	IGBT box	0.47μF - 5.0μF 0.47μF - 4.0μF 0.33μF - 3.3μF 0.10μF - 1.5μF 0.047μF - 0.82μF	850VDC, 550VAC 1000VDC, 600VAC 1200VDC, 630VAC 2000VDC, 700VAC 3000VDC, 750VAC	• Snubber-IGBT applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 469 to 3361V/μs • Box length L = 32 to 57.5mm • Terminals: Tinned brass lugs
C4BT	IGBT box	4.7μF - 60μF 3.3μF - 40μF 2.5μF - 20μF 1.5μF - 15μF 1.0μF - 10μF	250VDC, 160VAC 400VDC, 250VAC 600VDC, 330VAC 700VDC, 400VAC 850VDC, 450VAC	• Switching-IGBT applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 27 to 148V/μs • Box length L = 32 to 57.5mm • Terminals: Tinned brass lugs
C4DC	Flat cylindrical plastic case (low inductance)	1.5μF - 6.0μF 1.0μF - 4.0μF 0.5μF - 4.0μF	850VDC, 500VAC 1000VDC, 600VAC 1400VDC, 700VAC	• Snubber-GTO applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 380 to 1000V/μs • Diameter D = 60 to 90mm • Height H = 51 to 64mm • Hole M8 threaded (M6 on request)
C4DR	Flat cylindrical plastic case (low inductance)	25μF - 220μF 12μF - 100μF 7.5μF - 70μF 4.0μF - 60μF 2.5μF - 25μF 1.0μF - 15μF	400VDC, 160VAC 600VDC, 220VAC 700VDC, 250VAC 850VDC, 330VAC 1200VDC, 440VAC 1500VDC, 500VAC	• Clamper-GTO applications • Climatic category (IEC 60068-1) 40/85/56 • Pulse rise time (dv/dt) 12 to 400V/μs • Diameter D = 60 to 90mm • Height H = 51 to 99mm • Hole M8 threaded (M6 on request)
C4DE	Flat cylindrical plastic case (low inductance)	175μF - 380μF 100μF - 220μF 68μF - 140μF 47μF - 100μF	400VDC 600VDC 800VDC 1000VDC	• DC link applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 15 to 37V/μs • Diameter D = 84mm • Height H = 40, 51, 64mm • Terminals: M6 or M8 threaded bolt (also available with threaded female connections)

Power Electronics and AC Film Capacitors • Metallized Polypropylene








Series	Type	Capacitance Range	Rated Voltage	Benefits
C4E	Rectangular box, metal or plastic	According to customer request	According to customer request	• Custom and standard "brick" DC link capacitors for energy conversion, AC motor drives and hybrid / electric vehicles
C44A	Aluminum case	15µF - 330µF 10µF - 100µF 5µF - 100µF 3µF - 60µF 1.0µF - 22µF 1.0µF - 15µF	400VDC, 250VAC 600VDC, 330VAC 700VDC, 400VAC 850VDC, 450VAC 1200VDC, 500VAC 1500VDC, 630VAC	• General purpose applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 10 to 400V/µs • Diameter D = 45 to 85mm, Height H = 80 to 200mm • Terminals: Tinned brass fastons or screws
C44B	Aluminum case	0.10µF - 1.5µF 0.047µF - 0.68µF 0.10µF - 4.0µF	1200VDC, 500VAC 2000VDC, 630VAC 2400VDC, 1000VAC	• Snubber applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 500 to 750V/µs • Diameter D = 25 to 65mm, Height H = 60 to 200mm • Terminals: Tinned brass fastons or screws
C44E	Aluminum case	150µF - 400µF 100µF - 200µF 100µF - 120µF 50µF - 60µF	400VDC, 250VAC 600VDC, 380VAC 750VDC, 440VAC 1200VDC, 550VAC	• AC filter applications • Climatic category (IEC 60068-1) 25/70/21 • Pulse rise time (dv/dt) 10 to 30V/µs • Diameter D = 76 to 85mm, Height H = 137 to 270mm • Terminals: Tinned brass fastons or screws
C44H	Aluminum case	15µF - 120µF 15µF - 56µF 30µF - 55µF	400VDC, 250VAC 600VDC, 330VAC 700VDC, 400VAC	• UPS filtering applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 15 to 30V/µs • Diameter D = 45 to 75mm, Height H = 61 to 150mm • Terminals: Tinned double faston 6.3 mm
C44P-C20A	Aluminum case	200µF - 600µF 100µF - 600µF 100µF - 300µF 22µF - 150µF 15µF - 150µF 10µF - 100µF	400VDC, 250VAC 500VDC, 330VAC 750VDC, 440VAC 750VDC, 550VAC 900VDC, 640VAC 1100VDC, 780VAC	• AC filter applications • Climatic category (IEC 60068-1) 25/70/56 • Pulse rise time (dv/dt) 15 to 30V/µs • Diameter D = 65 to 116mm, Height H = 115 to 280mm • Terminations: Plastic insulator with screw terminals M10 • Safety device
C44U	Aluminum case	120µF - 550µF 75µF - 600µF 50µF - 500µF 50µF - 550µF	700VDC 900VDC 1100VDC 1300VDC	• DC link applications • Climatic category (IEC 60068-1) 40/85/21 • Pulse rise time (dv/dt) 6 to 31V/µs • Diameter D = 76, 85mm, Height H = 55 to 140mm • Terminals: Tinned brass screws
C93	Aluminum case	50µF - 100µF 10µF - 100µF	400VDC, 320VAC 600VDC, 415VAC	• PFC and filter applications • Pulse rise time (dv/dt) 30V/µs • Diameter D = 40 to 75mm, Height H = 78 to 150mm • Terminals: Tinned brass fastons or screws • Safety device - IMQ, UL approvals
C9T	Aluminum case	3x30.8µF - 3x184.8µF 3x26.2µF - 3x157µF 3x19.2µF - 3x115µF 3x27.9µF - 3x66.8µF	415VAC 450VAC 525VAC 690VAC	• PFC & AC filter applications - Three phase execution • Pulse rise time (dv/dt) 30V/µs • Diameter D = 60 to 116mm, Height H = 150 to 280mm • Terminals: Tinned brass fastons or screws • Safety device - UL approval

Capacitors for AC Lighting Applications • Metallized Polypropylene

Series	Type	Capacitance Range	Rated Voltage	Benefits
C3B	Cylindrical plastic case	2μF - 50μF	250VAC	• Lighting applications • Temperature Range -25/+85°C • Diameter D = 25mm to 50mm, Height H = 48mm to 133mm • Terminals: Unipolar wires, push in connector • Mechanical connection: With/without bolt, quick fitting • Type of capacitor (ENEC03): Type A
C95	Cylindrical Aluminum case	2.0μF - 60μF 2.5μF - 6.8μF	250VAC 450VAC	• Lighting applications • Temperature Range -25/+85°C and -25/+100°C • Diameter D = 25mm to 50mm, Height H = 55mm to 120mm • Terminals: Faston 2.8mm, push in connector • Mechanical connection: With/without bolt, quick fitting • Type of capacitor (ENEC03): Type B

Capacitors for AC Motor Run Applications • Metallized Polypropylene

Series	Type	Capacitance Range	Rated Voltage	Benefits
C27	Cylindrical plastic case	1μF - 70μF 1μF - 100μF 1μF - 120μF	420VAC cl.A 470VAC cl.B 420VAC cl.B 470VAC cl.C 275VAC cl.B 425VAC cl.D	• Climatic category (IEC60068-1) -25/85/21 or -25/100/21 • Class of Safety Protection: P0 • Diameter (D) D = 25 to 60mm • Height (H) H = 55 to 120mm • Terminals: Faston, unipolar wires, bipolar cable • Mechanical connection: With/without bolt, quick fitting
C28	Cylindrical plastic case	2μF - 11μF	420VAC cl.A 470VAC cl.B	• Climatic category (IEC 60068-1) -25/85/21 • Class of Safety Protection: P2 • Diameter (D) D = 25 to 35mm • Height (H) H = 55 to 74mm • Terminals: Faston, unipolar wires, bipolar cable • Mechanical connection: With/without bolt, quick fitting
C87	Cylindrical aluminum case	1μF - 80μF 1μF - 120μF 1μF - 130μF	420VAC cl.A 470VAC cl.B 420VAC cl.B 470VAC cl.C 280VAC cl.B	• Climatic category (IEC60068-1) -25/85/21 or -25/100/21 • Class of Safety Protection: P2 • Diameter (D) D = 25 to 60mm • Height (H) H = 48 to 133mm • Terminals: Faston, bipolar cable • Mechanical connection: With/without bolt
C24	Box plastic case	0.2μF - 9.0μF 0.47μF - 20.0μF 0.4μF - 15.0μF 0.1μF - 3.0μF 0.68μF - 30.0μF 0.33μF - 10.0μF	460VAC C24.6 275VAC C24.K 350VAC C24.B 650VAC C24.7 230VAC C24.2 400VAC C24.4 (valid 2009)	• Climatic category (IEC60068-1) -40/85(100)/21 • Class of Safety Protection: P0 • Pitch (p) p = 22.5, 27.5, 37.5mm • Pulse rise time (dv/dt) 30 to 50V/μs

www.kemet.com

Tantalum Capacitors

Tantalum capacitors are the leading choice when high capacitance is needed in the smallest possible size. KEMET has been the foremost manufacturer of tantalum capacitors for over 50 years, and is constantly introducing new innovations to meet changing demands. Offered in a variety of standard sizes, KEMET tantalum capacitors are fully RoHS-compliant and compatible with modern solder processes including multiple reflow passes.

KEMET tantalum capacitors offer many advantages including low ESR, surge current robustness and multiple operating temperature ranges. KEMET also offers a complete line of military and Commercial-Off-The-Shelf (COTS) products as well as enhanced testing for space applications. While many applications use surface mount technology, a complete line of through-hole tantalum capacitors are available for down-hole, military and other demanding environments.

KEMET's traditional MnO_2 tantalum capacitors consist of a sintered anode of tantalum metal. This anode is porous, thus providing increased surface area. An oxide layer is then formed, and this oxide layer becomes the capacitor dielectric. The oxidized anode is impregnated with magnesium dioxide to form the cathode.

Tantalum polymer capacitors are a newer variation which replaces the magnesium dioxide cathode with a solid conductive polymer cathode. KEMET polymer tantalum capacitors are recommended when very low ESR, increased temperature stability, or benign failure mode is critical.

Tantalum Surface Mount Products

Standard Tantalum	Low ESR		High Temperature	High Reliability Commercial-Off-The-Shelf COTS)	MIL-PRF (CWR Series)	Fused	Automotive Grade
T491 Commercial	MnO_2	Polymer	T498 150°C Rated	T493 Military/ Aerospace COTS/Low ESR Option CWR11 Case Sizes	T409 CWR09 Style MIL-PRF-55365/4	T496 Series	T491 Commercial
	T494 Commercial (≥80 mΩ)	T520 105°C Rated Polymer (≥6 mΩ)	T499 175°C Rated	T497 High Grade COTS CWR09/19/29 Case Sizes	T419 CWR19 Style MIL-PRF-55365/11		T494 Commercial (≥80 mΩ)
	T495 Surge Robust (≥30 mΩ)	T521 High Voltage Polymer (≥45 mΩ)			T429 CWR29 Style MIL-PRF-55365/8		T495 Surge Robust (≥30 mΩ)
	T510 High Capacitance (≥10 mΩ)	T525 125°C Rated Polymer (≥25 mΩ)			T492 CWR11 Style MIL-PRF-55365/8		T498 150°C Rated
		T528 Low ESL Facedown Terminal Polymer (≥5 mΩ)					T499 175°C Rated
		T530 High Capacitance 125°C Rated Polymer (≥4 mΩ)					T525 125°C Rated Polymer (≥25 mΩ)

Tantalum Through-Hole Products

Hermetically Sealed	Radial Dipped	Molded Axial	Molded Radial
Polar T110/T140 Series CSR13 Case Sizes	T35X Series Standard Radial Dipped	T32X Series CX01/05 Style MIL-PRF-49137/1 & 5	T330/T340 Series Standard Molded Radial
Polar T2XX Series CSR/CSS Style MIL-PRF-39003	T363/T369 Series CX02/12 Style MIL-PRF-49137/2		T370 Series CX06 Case Sizes
Miniature T222 Series CSR09 Style MIL-PRF-39003/2	T368 Series High Capacitance		T37X Series CX06 Style MIL-PRF-49137/6
GR500 High Reliability Series	T396/T398 Series "Fail Safe" Insertion		

DSCC Drawings
T495 - DSCC Drawing 95158E
T496 - DSCC Drawing 04053A
T525 - DSCC Drawing 04051
T530 - DSCC Drawing 04052

Tantalum Surface Mount Capacitors

Series	Case Size KEMET/EIA	Dimensions L x W x H (mm)	Capacitance Range	Benefits
T409 T419 T429	A B C D E F G H X	2.54 x 1.27 x 1.27 3.81 x 1.27 x 1.27 5.08 x 1.27 x 1.27 3.81 x 2.54 x 1.27 5.08 x 2.54 x 1.27 5.59 x 3.43 x 1.78 6.73 x 2.79 x 2.79 7.24 x 3.81 x 2.79 6.93 x 5.41 x 2.74	0.22µF - 6.8µF 0.47µF - 22µF 0.68µF - 10µF 1.0µF - 33µF 1.5µF - 68µF 3.3µF - 100µF 4.7µF - 150µF 6.8µF - 330µF 15µF - 150µF	• MIL-PRF-55365/4 & 11 (CWR09/19/29) • 4 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • 100% surge current test available • Tape and reel packaging • Termination options available
T491	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 X/7343-43 E/7260-38	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0 7.3 x 6.0 x 3.6	0.10µF - 220µF 0.15µF - 150µF 0.47µF - 330µF 1.5µF - 680µF 6.8µF - 1000µF 470µF - 1000µF	• Industrial/commercial grade • 2.5 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T491 Low Profile	R/2012-12 S/3216-12 T/3528-12 U/6032-15 V/7343-20	2.0 x 1.3 x 1.2 3.2 x 1.6 x 1.2 3.5 x 2.8 x 1.2 6.0 x 3.2 x 1.5 7.3 x 4.3 x 2.0	1.0µF - 10µF 1.0µF - 22µF 3.3µF - 100µF 6.8µF - 100.µF 1.0µF - 330µF	• Low profile • 2.5 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T492	A/3216-18 B/3528 -21 C/6032-28 D/7343-31	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8	0.10µF - 4.7µF 0.47µF - 15µF 1.5µF - 33µF 4.7µF - 100µF	• MIL-PRF-55365/8 (CWR11) • 4 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging • 100% surge current test available • Termination options available
T493	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 X/7343-43 E/7260-38	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0 7.3 x 6.0 x 3.6	0.10µF - 33µF 0.15µF - 100µF 0.47µF - 220µF 1.5µF - 330µF 4.7µF - 330µF 47µF -68µF	• Commercial-Off-The-Shelf (COTS) • 4 - 50 Volts • ±20%, ±10% capacitance tolerance • CECC qualified • Tape and reel packaging • Low ESR, surge tested, Weibull graded, termination options
T494	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 X/7343-43 E/7260-38	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0 7.3 x 6.0 x 3.6	0.10µF - 100µF 0.15µF - 220µF 0.47µF - 330µF 1.5µF - 680µF 6.8µF - 1000µF 470µF -1000µF	• Low ESR, Industrial grade • 2.5 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T494 Low Profile	R/2012-12 S/3216-12 T/3528-12 U/6032-15 V/7343-20	2.0 x 1.3 x 1.2 3.2 x 1.6 x 1.2 3.5 x 2.8 x 1.2 6.0 x 3.2 x 1.5 7.3 x 4.3 x 2.0	1.0µF - 10µF 1.0µF - 22µF 3.3µF - 100µF 6.8µF - 100µF 1.0µF - 330µF	• Low profile, low ESR • 4 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T495	A/3216-18 B/3528-21 C/6032-28 D/7343-31 X/7343-43 E/7260-38	3.6 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0 7.3 x 6.0 x 3.6	0.47µF - 6.8µF 0.47µF - 150µF 2.2µF - 330µF 6.8µF - 470µF 4.7µF - 1000µF 100µF - 1000µF	• Low ESR, surge robust series • 2.5 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS compliant • Available DSCC Drawing 95158
T495 Low Profile	T/3528-12 V/7343-20	3.5 x 2.8 x 1.2 7.3 x 4.3 x 2.0	10µF - 100µF 68µF - 220µF	• Low profile, low ESR, surge robust • 2.5 -16 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T496	B/3528 -21 C/6032-28 D/7343-31 X/7343-43	3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0	0.15µF - 22µF 0.47µF - 150µF 2.2µF - 330µF 10µF - 470µF	• Fail-safe fused series • 2.5 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant • Available DSCC Drawing 04053

Tantalum Surface Mount Capacitors

Series	Case Size KEMET/EIA	Dimensions L x W x H (mm)	Capacitance Range	Benefits
T497	A B C D E F G H X	2.54 x 1.27 x 1.27 3.81 x 1.27 x 1.27 5.08 x 1.27 x 1.27 3.81 x 2.54 x 1.27 5.08 x 2.54 x 1.27 5.59 x 3.43 x 1.78 6.73 x 2.79 x 2.79 7.24 x 3.81 x 2.79 6.93 x 5.41 x 2.74	0.33µF - 4.7µF 0.68µF - 15µF 0.47µF - 0.68µF 1.5µF - 33µF 2.2µF - 68µF 4.7µF - 68µF 6.8µF - 150µF 15µF - 150µF 15µF - 33µF	• High grade Commercial-Off-The-Shelf (COTS) • 4 - 50 Volts • ±20%, ±10% capacitance tolerance • 100% accelerated steady state aging • 100% thermal shock • Surge current testing available • Tape and reel packaging • RoHS-compliant • Termination options available
T498	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 X/7343-43	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0	0.33µF - 4.7µF 2.2µF - 33µF 1.5µF - 47µF 10µF - 100µF 22µF - 220µF	• 150°C maximum high temperature • 6 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T499	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 X/7343-43	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0	0.15µF - 4.7µF 0.47µF - 33µF 1.5µF - 68µF 3.3µF - 150µF 33µF - 220µF	• 175°C maximum high temperature • 6 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T510	X/7343-43 E/7260-38	7.3 x 4.3 x 4.0 7.3 x 6.0 x 3.6	22µF - 1000µF 47µF - 1000µF	• Low ESR (<10-120mΩ) • 4 - 25 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging • RoHS-compliant
T520	A/3216-18 B/3528 -21 C/6032-28 D/7343-31 Y/7343-40 X/7343-43 M/3528-15 T/3528-12 U/6032-15 W/7343-15 V/7343-20	3.2 x 1.6 x 1.6 3.5 x 2.8 x 1.9 6.0 x 3.2 x 2.5 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0 max 7.3 x 4.3 x 4.0 3.5 x 2.8 x 1.5 3.5 x 2.8 x 1.2 max 6.0 x 3.2 x 1.5 max 7.3 x 4.3 x 1.5 max 7.3 x 4.3 x 1.9 max	10µF - 100µF 33µF - 330µF 68µF - 330µF 15µF - 1000µF 330µF - 1000µF 330µF - 1000µF 150µF - 330µF 15µF - 100µF 33µF - 220µF 33µF - 470µF 15µF - 470µF	• KEMET organic with polymer cathode • 2 - 25 Volts • ±20% capacitance tolerance • RoHS-compliant • Low ESR (6 to 80mΩ) • High ripple handling • 100% surge current test • 100% accelerated steady state aging
T521	D/7343-31 V/7343-20 X/7343-43	7.3 x 4.3 x 2.8 7.3 x 4.3 x 1.9 max 7.3 x 4.3 x 4.0	33µF - 47µF 15µF - 68µF 33µF - 100µF	• KEMET organic with polymer cathode • Highest voltage polymer tantalum • 16 - 35 Volts • Low ESR • RoHS-compliant • Suitable for 28V power rail • 100% surge current test • 100% accelerated steady state aging
T525	T/3528-12 B/3528-21 D/7343-31 Y/7343-40	3.5 x 2.8 x 1.2 3.5 x 2.8 x 1.9 7.3 x 4.3 x 2.8 7.3 x 4.3 x 4.0	33µF - 100µF 33µF - 150µF 47µF - 680µF 330µF - 470µF	• KEMET organic with polymer cathode • 2.5 - 16 Volts • ±20% capacitance tolerance • 125°C maximum operating temperature • RoHS-compliant • Available DSCC Drawing 04051
T528	I/3216-10 M/3528-15 Z/7343-17 W/7343-15 K/3528-10	3.2 x 1.6 x 1.0 3.5 x 2.8 x 1.5 7.3 x 4.3 x 1.7 max 7.3 x 4.3 x 1.15 max 3.5 x 2.8 x 1.0 max	33µF - 100µF 100µF - 220µF 150µF - 330µF 150µF - 330µF 150µF - 220µF	• Face down termination organic • Low profile • Low ESL < 0.7nH @ 20MHz • 2.5 - 10 Volts • ±20% capacitance tolerance • RoHS-compliant
T530	D/7343-31 Y/7343-40 X/7343-43	7.3 x 4.3 x 2.8 7.3 x 4.3 x 1.9 7.3 x 4.3 x 4.0	150µF - 680µF 220µF - 1000µF 150µF - 1500µF	• KEMET organic with polymer cathode • 2.5 - 10 Volts • Ultra-low ESR (≤ 4mΩ available) • ±20% capacitance tolerance • RoHS-compliant • Available DSCC Drawing 04052

Aluminum Surface Mount Capacitors

Series	Case Size	Dimensions D x H (inches)	Capacitance Range	Benefits
A700	V/7343-20	7.3 x 4.3 x 1.9	8.2µF - 150µF	• Organic polymer for counter-electrode material • Pb-Free • Extremely low ESR (7mΩ–28mΩ) • 2 - 10 Volts • ±20% capacitance tolerance • Tape and reel packaging
	D/7343-31	7.3 x 4.3 x 2.8	56.0µF - 220µF	
	X/7343-43	7.3 x 4.3 x 4.0	100.0µF - 470µF	

Tantalum Hermetic Seal • Polar • T110/T140 Series

Case Size	Dimensions D x L (inches)		Capacitance Range	Benefits
	Uninsulated	Insulated		
A	0.125 x 0.250	0.135 x 0.286	0.0047µF - 12µF	• 6 - 125 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available • Available RoHS-compliant • CECC-qualified
B	0.175 x 0.438	0.185 x 0.474	0.39µF - 100µF	
C	0.279 x 0.650	0.289 x 0.686	2.7µF - 470µF	
D	0.341 x 0.750	0.351 x 0.786	8.2µF - 1200µF	

Tantalum Hermetic Seal • Polar • T2XX Series • (CSR/CSS Styles)

Case Size	Dimensions D x L (inches)		Capacitance Range	Benefits
	Uninsulated	Insulated		
A	0.125 x 0.250	0.135 x 0.286	0.0047µF - 12µF	• 6 - 100 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available • MIL-PRF-39003/01/03/04/06/09/10 • 100% surge current test available • See www.kemet.com for QPL information
B	0.175 x 0.438	0.185 x 0.474	0.39µF - 100µF	
C	0.279 x 0.650	0.289 x 0.686	2.7µF - 470µF	
D	0.341 x 0.750	0.351 x 0.786	8.2µF - 1200µF	

Tantalum Hermetic Seal • Miniature • T222 Series • (CSR09)

Case Size	Dimensions D x L (inches)		Capacitance Range	Benefits
	Uninsulated	Insulated		
A	0.085 x 0.245	0.090 x 0.250	0.047µF - 2.7µF	• 6 - 75 Volts • ±20%, ±10%, ±5% capacitance tolerance • MIL-PRF-39003/02 approved • 100% surge current test available • See www.kemet.com for QPL information
B	0.127 x 0.375	0.138 x 0.390	0.22µF - 18µF	

Tantalum Molded Capacitors • Axial • T32X Series (CX01 & CX05)

Series	Dimensions D x L x W (inches)	Capacitance Range	Benefits
A	0.095 x 0.260 x 0.020	0.10µF - 10µF	• 2 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available • MIL-PRF-49137/1 & 5 (CX01 & CX05) approved • Miniature - polar type • See www.kemet.com for QPL information • Available RoHS-compliant
B	0.110 x 0.290 x 0.020	0.33µF - 33µF	
C	0.180 x 0.345 x 0.020	1.2µF - 68µF	
D	0.180 x 0.420 x 0.020	2.7µF - 68µF	
E	0.280 x 0.530 x 0.025	5.6µF - 220µF	
F	0.300 x 0.710 x 0.025	12.0µF - 330µF	

Tantalum Molded Capacitors • Radial • T330 Series

Series	Dimensions D x L x W (inches)	Capacitance Range	Benefits
A	0.345 x 0.230 x 0.105	0.10µF - 22µF	• 6 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available (A - C case only)
B	0.225 x 0.285 x 0.170	0.10µF - 22µF	
C	0.325 x 0.325 x 0.170	2.7µF - 68µF	
D	0.375 x 0.600 x 0.195	6.8µF - 220µF	

Tantalum Molded Capacitors • Radial • T340 Series

Series	Dimensions D x L x W (inches)	Capacitance Range	Benefits
A	0.287 x 0.185 x 0.165	0.10µF - 15µF	• 3 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available (A - D case only) • Available RoHS-compliant
B	0.327 x 0.283 x 0.157	0.39µF - 47µF	
C	0.413 x 0.287 x 0.169	2.7µF - 100µF	
D	0.413 x 0.484 x 0.287	6.8µF - 220µF	
E	0.413 x 0.484 x 0.484	22.0µF - 330µF	
F	0.413 x 0.484 x 0.287	6.8µF - 220µF	

Tantalum Dipped Capacitors • Radial • T35X Series

Series	Dimensions D x H (inches)	Capacitance Range	Benefits
A	0.175 x 0.280 - 0.400	0.10µF - 10µF	• 3 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available • Six lead configurations available • 0.10, 0.20, 0.25, and 0.125 lead spacing available • Available RoHS-compliant **Note:** "H" dimension is the range for all T35X Series. For specific "H" dimensions, refer to www.kemet.com
B	0.175 x 0.300 - 0.410	0.39µF - 15µF	
C	0.196 x 0.330 - 0.440	1.8µF - 22µF	
D	0.196 x 0.340 - 0.450	1.2µF - 33µF	
E	0.216 x 0.350 - 0.460	1.5µF - 47µF	
F	0.236 x 0.390 - 0.500	2.7µF - 68µF	
G	0.250 x 0.400 - 0.510	3.9µF - 100µF	
H	0.300 x 0.400 - 0.520	5.6µF - 150µF	
J	0.330 x 0.500 - 0.580	6.8µF - 220µF	
K	0.350 x 0.530 - 0.630	10.0µF - 330µF	
L	0.350 x 0.630 - 0.730	15.0µF - 470µF	
M	0.400 x 0.670 - 0.760	22.0µF - 680µF	

Tantalum Dipped Capacitors • Radial • T363 and 369 Series (CX02 & CX09)

Series	Dimensions D x H (inches)	Capacitance Range	Benefits
A	0.175 x 0.350	0.10µF - 6.8µF	• 6 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available • MIL-PRF-49137 (CX02/CX12) approved (CX12 available A & B case) • See www.kemet.com for QPL information
B	0.250 x 0.450	1.5µF - 68µF	
C	0.350 x 0.610	6.8µF - 150µF	
D	0.400 x 0.740	22.0µF - 330µF	

Tantalum Dipped Capacitors • Radial • T368 Series

Series	Dimensions D x H (inches)	Capacitance Range	Benefits
C	0.250 x 0.400 x 0.420	5.6 - 150µF	• 6 - 50 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available
D	0.250 x 0.460 x 0.520	18.0 - 330µF	

Tantalum Molded Capacitors • Radial • T37X Series (CX06)

Series	Dimensions H x W x T (inches)	Capacitance Range	Benefits
C	0.225 x 0.185 x 0.075	0.68µF - 15µF	• 3 - 35 Volts • ±20%, ±10%, ±5% capacitance tolerance • Tape and reel packaging available (D - E case only) • MIL-PRF-49137/6 (CX06) approved • See www.kemet.com for QPL information
D	0.290 x 0.220 x 0.110	2.2µF - 47µF	
E	0.310 x 0.230 x 0.130	6.8µF - 68µF	
F	0.475 x 0.375 x 0.150	10.0µF - 220µF	

Tantalum Dipped Capacitors • Radial • T396 and T398 Series

Series	Dimensions W x T x H (inches)	Capacitance Range	Benefits
A	0.280 x 0.190 x 0.310/0.355	0.10µF - 10µF	• 3 - 50 Volts • ±20%, ±10% capacitance tolerance • Tape and reel packaging available • Three lead design, fail-safe insertion • Available RoHS-compliant **Note:** "H" dimension is for both T396/T398
B	0.280 x 0.190 x 0.320/0.365	0.47µF - 15µF	
C	0.280 x 0.200 x 0.360/0.390	2.2µF - 22µF	
D	0.280 x 0.200 x 0.370/0.390	3.3µF - 33µF	
E	0.280 x 0.230 x 0.380/0.415	1.5µF - 47µF	
F	0.280 x 0.240 x 0.410/0.430	3.3µF - 68µF	
G	0.280 x 0.250 x 0.420/0.440	4.7µF - 100µF	
H	0.280 x 0.270 x 0.420/0.440	22.0µF - 150µF	
J	0.300 x 0.300 x 0.460/0.480	6.8µF - 220µF	
K	0.340 x 0.340 x 0.500/0.500	10.0µF - 330µF	
L	0.340 x 0.340 x 0.560/0.580	15.0µF - 470µF	
M	0.360 x 0.360 x 0.620/0.620	22.0µF - 680µF	

Tantalum High Reliability Capacitors • GR500 Series

For specific GR500 High Reliability information, please refer to www.kemet.com. See T2XX information above for case size dimensions.

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