

Multilayer ceramic chip capacitors

World's smallest automotive-grade MLCCs in the mega cap class

- Portfolio of MEGACAP Type MLCCs expanded to include 1608 to 3216 packages (EIA 0603 to 1206)
- High-reliability, automotive-grade MLCCs with lead frames available in miniaturized case sizes

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TDK Corporation has expanded its CKG series of MEGACAP Type MLCCs to include miniature 1608 to 3216 (EIA 0603 to 1206) packages. Until now these MLCCs were available only in 3225 to 5750 packages (EIA 1210 to 2220). With dimensions of only 1.9 x 1.3 x 1.5 mm³ the new 1608 components are the world's smallest automotive-grade MLCCs in the mega cap class.

The new MLCCs in the smaller case sizes have a capacitance of 10 μ F and rated voltages from 16 V to 25 V. The high-reliability, automotive-grade MLCCs with lead frames offer superior thermal shock and mechanical stress resistance. These components are designed for applications in automobiles, base stations and wherever highest reliability is essential. Mass production is scheduled to start in July 2013.

Until now it was extremely difficult to create MEGACAP Type MLCCs with lead frames in such miniature case sizes. Thanks to TDK's fully-automated high-precision assembly process customers can count on a stable supply of high-quality components. The new manufacturing technologies can also be applied to larger sizes.

The number of electronic control units (ECU) deployed in and near the engine compartment where extreme temperature conditions exist has increased significantly. The capacitors used in such harsh environments need to be extremely heat resistant and reliable. TDK has developed products with outstanding resistance to extreme temperatures, vibrations, and shock. The advanced structural design of the CKG series of MEGACAP Type MLCCs enables a very wide operating temperature range of -55 to +150 °C and optimal reliability for use in ECUs.

With the new miniaturized MEGACAP Type MLCCs TDK again reconfirms its position as a market leader for electronic components with outstanding reliability.

Main applications

- High temperature and high reliability automotive applications such as ECUs for powertrain (engine and gear), braking (ABS, ESP), and power steering applications
- Power supply units for base stations, etc.
- Suppression of capacitor acoustic noise in computers, etc.

Main features and benefits

- MEGACAP Type MLCCs now available in miniature 1608 to 3216 packages (EIA 0603 to 1206), thus including the world's smallest automotive-grade MLCCs in the mega cap class (1608)
- Superior thermal shock resistance with a reduced tendency toward capacitor cracking and fewer mounting solder cracks than standard MLCCs
- Superior mechanical stress resistance

Key data

MEGACAP Type	Dimensions [mm]	Rated Voltage [V]	Rated capacitance [μF]
CKG16A*	1.9 x 1.3 x 1.5	16	10
CKG20A*	2.3 x 1.7 x 1.9	25	10
CKG31A*	3.5 x 2.1 x 2.5	25	10
CKG32A	3.5 x 3.0 x 3.4	25 to 630	0.047 to 10
CKG45A	4.8 x 3.7 x 3.4	16 to 630	0.10 to 22
CKG45B	4.8 x 3.7 x 6.0	16 to 630	0.22 to 47
CKG57A	6.0 x 5.5 x 3.4	16 to 630	0.22 to 47
CKG57B	6.0 x 5.5 x 6.0	16 to 630	0.47to 100

* New case sizes

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems which are marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2012, TDK posted total sales of USD 9.9 billion and employed about 79,000 people worldwide.

About TDK-EPC Corporation

TDK-EPC Corporation, a TDK group company, is the manufacturer of TDK's electronic components, modules and systems and is headquartered in Tokyo, Japan. TDK-EPC was founded on October 1, 2009 from the combination of the electronic components business of TDK and the EPCOS Group. The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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