Multilayer Ceramic Capacitors

TDK expands automotive MLCC lineup with the industry's highest capacitance at 100V in 2012/3216 sizes

- New 100V automotive types with 2.2µF in 2012 size and 4.7µF in 3216 size (achieving high capacitance)
- Enabling space-saving designs and a reduction in number of components
- Qualified based on AEC-Q200

March 26, 2024

TDK Corporation (TSE: 6762) has expanded its CGA series of multilayer ceramic capacitors (MLCCs) to 2.2µF in 2012 size (2.0 x 1.25 x 1.25mm – L x W x T) and 4.7µF in 3216 size (3.2 x 1.6 x 1.6 mm – L x W x T), with the industry's highest capacitance*, as 100V products for automotive applications. Mass production of the product series began this month, March 2024.

Many automotive manufacturers are adopting a 48V electrical architecture for several reasons, including automotive fuel efficiency (power efficiency). This has increased the demand for miniaturized high-capacitance 100V products, which are useful for smoothing and decoupling in power lines.

Thanks to optimized product design, the 100V products of the CGA series achieve smaller size and higher capacitance. TDK will expand its lineup further to meet customers' needs.

*As of March 2024, according to TDK

Glossary

- Smoothing: Suppressing and minimizing voltage fluctuations of pulsating voltage in rectified current by charging and discharging high capacitance capacitors
- Decoupling: Suppressing voltage fluctuations of IC power lines by inserting capacitors between the power line and the ground and by temporarily supplying current when the electrical load abruptly changes
- AEC-Q200: Automotive Electronics Council standard for passive automotive components

Main applications

- Smoothing and decoupling of the power lines for various kinds of 48V products for automobiles

Main features and benefits

- Higher capacitance of 2.2µF in 2012 size and 4.7µF in 3216 size enables space-saving designs and a reduction in number of components
- High reliability qualified based on AEC-Q200

Type	Outer dimensions [mm]	Temperature characteristics	Rated voltage [V]	Capacitance [µF]
CGA4J1X7R2A225K125AC	2.0 x 1.25 x 1.25	X7R	100	2.2
CGA5L1X7R2A475K160AC	3.2 x 1.6 x 1.6	X7R	100	4.7

Samples may be purchased from the product page displayed after clicking Type.

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK‘s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2023, TDK posted total sales of USD 16.1 billion and employed about 103,000 people worldwide.

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