

## Multilayer ceramic capacitors

# TDK announces new MLCCs with world-class capacitance for automotive applications

- Downsized MLCCs with top-tier capacitance of 22 $\mu$ F in 2012 size and 47 $\mu$ F in 3216 size, for smoothing and decoupling
- Enables space-saving designs and a reduction in number of components
- AEC-Q200 compliant

September 29, 2020

TDK Corporation (TSE: 6762) has developed new products in its CGA series of multilayer ceramic capacitors (MLCC) for automotive applications, achieving world-class capacitance\* of 22 $\mu$ F in 2012 size (2.0 x 1.25 x 1.25 mm) and 47 $\mu$ F in 3216 size (3.2 x 1.6 x 1.6 mm). Volume production began in September 2020.

Advanced driver-assistance systems (ADAS) are becoming increasingly important for improving safety. At the same time, a growing number of features supporting autonomous driving have been established. The ICs used to control these features are therefore continuously providing more functionality, and a growing number of smoothing and decoupling MLCCs are used for noise suppression. From the viewpoint of space-saving substrate designs, the demand for downsized, high capacitance MLCCs continues to increase.

The new CGA series achieves smaller sizes and higher capacitance than our conventional products, allowing a reduction in the number of MLCC components, and enabling space-saving designs. TDK will continue to extend the product range and serve the growing range of automotive applications.

\* As of September 2020, according to TDK research

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### Glossary

- AEC-Q200: Automotive Electronics Council standard for passive automotive components.
- Smoothing: Suppressing and smoothing 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.
- ADAS: Advanced Driver-Assistance Systems.

### Main applications

- Smoothing and decoupling of power lines for electronic control units (ECU) in automotive applications.

### Main features and benefits

- World's highest-class capacitance (22 $\mu$ F in 2012 size, 47 $\mu$ F in 3216 size).

- Downsizing with high capacitance to enable the reduction of the number of components and space-saving designs.
- High reliability due to AEC-Q200 compliance.

## Key data

| Type            | Dimensions [mm]   | Temperature characteristics | Rated voltage [V] | Capacitance [μF] |
|-----------------|-------------------|-----------------------------|-------------------|------------------|
| CGA4J1X7T0J226M | 2.0 x 1.25 x 1.25 | X7T                         | 6.3               | 22               |
| CGA5L1X7T0G476M | 3.2 x 1.6 x 1.6   | X7T                         | 4                 | 47               |

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## 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 2020, TDK posted total sales of USD 12.5 billion and employed about 107,000 people worldwide.

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