

EMC Components

TDK announces new miniaturized, common-mode filters for high-temperature automotive applications

- Maximum operating temperature: 125°C
- The conductive resin-based electrode is highly durable

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TDK Corporation (TSE:6762) today announced the development of its KCZ1210AH series of miniaturized common-mode filters for automotive applications. The series is extremely compact, measuring 1.25 (L) x 1.0 (W) x 0.5 mm (H), which contributes to a smaller footprint on substrate and provides a noise control function for different transmission signal lines for automobiles.

With an increase in advanced driver-assistance systems (ADAS), demands for automotive cameras are rapidly growing. Forward sensing cameras and cameras for around view monitors utilize common-mode filters as anti-noise products. However, as the conventional multilayer common-mode filter operates within a temperature range of -40 and +105°C, it cannot be used for ADAS cameras and was principally used in automotive accessories.

TDK's series uses proprietary materials technology and structural design to achieve a temperature range from -55 to +125°C; it also has a rated current max of 100 and a rated voltage max of 5. By adopting a conductive resin-based electrode, it controls product cracks due to thermal shock and increases durability against mechanical stresses, such as substrate strains.

TDK is working to enhance its inductive devices for ADAS and will expand its line of miniaturized common-mode filters supporting higher-speed differential signals. Mass-production of this series will begin in September 2021.

Main applications

- High-speed interface (USB2.0, LVDS, etc.)
- Advanced driver-assistance systems (ADAS)

Main features and benefits

- Operable at 125°C, the maximum temperature
- Adoption of a conductive resin-based electrode reduces mechanical and thermal stresses

Key data

Type	Common-mode Impedance [Ω] @100MHz	DC resistance (1 line) [Ω] max.	Rated current [mA] max.	Rated voltage [V] max.
KCZ1210AH900HR	90±25%	1.75	100	5

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 2021, TDK posted total sales of USD 13.3 billion and employed about 129,000 people worldwide.

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Further information on the products can be found under
https://product.tdk.com/system/files/dam/doc/product/emc/emc/cmf_cmc/catalog/cmf_automotive_signal_kcz1210ah_en.pdf.

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