EMC Components

TDK announces new miniaturized common-mode chokes for automotive CAN-FD

- Implements great signal mode transfer characteristics
- Compact, low-profile and operates in a wide temperature range from -40°C to + 150°C

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TDK Corporation (TSE:6762) announces the development of its new ACT1210D Series common-mode choke for automotive CAN-FD, which will begin mass production in April 2021.

Automotive LANs are roughly categorized into 4 systems such as body, safety, powertrain and multimedia/information and telecommunications. This product supporting CAN and CAN-FD enables a fivefold data transmission speed of 5 Mbps. Currently, CAN is the most widely used standard for body and other systems, keeping a maximum data transmission speed of 1 Mbps.

While meeting the demands of CiA and IEC standards, the ACT1210D Series common-mode choke also boasts a compact low-profile body (3.2 (L) x 2.5 (W) x 2.5 mm (H)) and noise suppression capabilities. Its unique structural design provides signal mode transfer characteristics (Ssd21) that increase communication quality. The manufacturing process involves a highly automated and extremely precise winder and a wire connection method using the laser welding of metal terminals to achieve high reliability.

Over recent years, demand for the handling of high-speed, large-capacity camera footages in ADAS has increased. TDK offers a wide range of automotive communication products and a 1000BASE-T1 Ethernet standard lineup to deliver optimal performance for these applications. Moving forward, TDK will continue catering to customers' needs by providing comprehensive product services for common-mode chokes for automotive communication.

Glossary

- LAN: Local Area Network, a private communication network.
- CAN: Controller Area Network, one of the communication protocols for automotive LANs.
- CiA: CAN in Automation, an industry organization of automotive and electronic component manufacturers.
- IEC: International Electrotechnical Commission, an international standards organization for all electrical, electronic and related technologies.

Main applications

- CAN, CAN-FD systems

Main features and benefits

- Implements great signal mode transfer characteristics, increasing communication quality
- A compact, low-profile size of 3.2 (L) x 2.5 (W) x 2.5 mm (H) to facilitate space savings
- Wide temperature range from -40°C to + 150°C, contributing to environmentally-resistant design

Key data

Type	Common-mode Inductance [µH] @100 KHz, 100 mV	DC resistance [Ω] max.	Insulation resistance [MΩ] min.	Rated current [mA] min.	Rated voltage [V] max.
ACT1210D-101-2P	100 ± +50%/-30%	3	10	115	80

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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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_act1210d_en.pdf.

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