

Inductors

TDK launches highly durable inductor for automotive A2B®, supporting temperatures of up to 150 °C

- Suitable for high temperature environments; supports a wide operation range of -55 °C and +150 °C
- Conductive resin of the external electrode makes the series highly durable against mechanical stress and thermal shocks common in automotive applications
- Achieves inductance tolerance of $\pm 8\%$ within the same lot

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TDK Corporation (TSE: 6762) has announced its latest inductor KLZ2012-A series (2.0 mm (L) x 1.25 mm (W) x 1.25 mm (H)). These multilayer inductors are designed for automotive audio bus (A2B) applications with a wide operation range, high durability, and superior inductance tolerance. Mass production of the product series began this month, January 2024.

With the recent rapid evolution of advanced driver-assistance systems (ADAS) and autonomous driving technologies, automobiles are equipped with a variety of sensors such as cameras, radars and LiDAR, leading to a dramatic increase in electronic equipment. Moreover, automotive infotainment systems not only provide streaming services of music, videos and other multimedia content, navigation and internet connectivity inside vehicles, but they also communicate with outside systems. A2B is a technology designed to reduce the weight of cable harnesses consisting of a wide variety of these telecommunication buses, aiming at its final goal of increased fuel efficiency of automobiles.

The new KLZ2012-A series supports operation at up to 150 °C, which is critical for its application in high-temperature automotive environments. Additionally, thanks to the conductive resin of the external electrode, it is durable against mechanical stresses and thermal shocks. As A2B is a differential signal interface, it needs to reduce variability in nodes. KLZ2012-A series achieves inductance tolerance of $\pm 8\%$ or less within the same lot, contributing to the reduction of spurious harmonics generated by variability in inductance.

TDK will continue to expand its lineup of inductors with improved magnetic saturation and contribute to the market needs of the various telecommunication buses using A2B.

Glossary

- A2B: An abbreviation of "Automotive Audio Bus" developed by Analog Devices, Inc. It is pronounced as Ay-Two-Bee

Main applications

- Automotive A2B such as sensors, audio lines

Main features and benefits

- Supports a wide operation range between -55 °C and +150 °C
- Increased durability against mechanical stress and thermal shocks due to conductive resin of external electrode
- Achieves inductance tolerance of $\pm 8\%$ within the same lot

Key data

Type	Inductance [μH] @2MHz	DC resistance [Ω]	Rated current Isat.1 [mA] max.
KLZ2012MHR3R3ATD69	3.3 ±20% *	0.20±30%	350

* The Inductance tolerance within the same lot is guaranteed to be ±8% of the center value.

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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