

Inductors

TDK offers extremely compact and reliable CLT power inductors for ADAS/AD power management

July 26, 2022

TDK Corporation (TSE:6762) presents the CLT32 series power inductors with extremely compact dimensions and excellent electrical values thanks to their new design. The nine types cover an inductance range of 17 nH to 440 nH and are designed for 13.5 A to 60 A saturation currents. With a compact footprint of 3.2 x 2.5 mm and an insertion height of 2.5 mm, these are the most compact SMT power inductors in their performance class. They are constructed for a temperature range of -40 °C to 165 °C including self-heating.

These AEC-Q200 certified components are designed with a solid copper coil over-molded with a ferromagnetic plastic compound. The coil ends already function as terminals which significantly increases reliability - especially for automotive applications. Due to the solid copper coil, these products can achieve an exceptionally low R_{DC} value, keeping losses to a minimum. The ohmic resistance is only 0.39 mΩ at an inductance value of 17 nH.

The compact and highly robust CLT32 inductors are ideal for use in safety-relevant automotive applications in ADAS/AD. High-performance processors used in these fields require currents in the double-digit ampere range. Power Management ICs (PMICs) are used as power supplies that provide these high currents. Here, power inductors for stabilization are key components at the outputs. The CLT32 series is designed for switching frequencies of up to 10 MHz and already meets future requirements placed on DC/DC converters with high clock rates.

Main applications

- PMICs for supplying high-performance processors for ADAS/AD
- DC/DC converters with high clock rates

Main features and benefits

- Extremely compact size of 3.2 x 2.5 x 2.5 mm
- High saturation current of up to 60 A
- Operating temperature of up to 165 °C
- High reliability due to the innovative design without internal connections
- Extremely low R_{DC}
- Certified according to AEC-Q200
- Suitable for switching frequencies up to 10 MHz

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 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 people worldwide.

You can download this text and associated images from www.tdk-electronics.tdk.com/en/220726 download.

Further information on the products can be found under <https://www.tdk-electronics.tdk.com/en/clt32>
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