

Inductors

Compact high-current chokes for 48-V automotive power systems

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TDK Corporation presents the new BCEM series of EPCOS high-current chokes designed specifically for buck-boost converters in 48-V automotive power systems. These innovative SMD inductors have very compact dimensions of only 27.5 mm x 29.5 mm x 14.5 mm thanks to their ERU27 ferrite cores with flat windings. The new chokes feature inductance values of 3 μ H to 11 μ H and are designed for saturation currents of up to 50 A and operating temperatures of between -40 °C and +150 °C. The components are suited for switching frequencies from 100 kHz to 200 kHz, are RoHS-compatible and are qualified to AEC-Q200.

The new components are used as storage chokes in buck-boost converters of vehicles linking the 12-V and 48-V levels. Six or eight-phase interleaved converters are used in order to keep the ripple currents as low as possible and transfer high power levels. Since each of the converters needs a storage choke, the compact dimensions of the new high-current chokes along with their current capability are especially beneficial.

Main applications

- Buck-boost converters for 48-V automotive power systems

Main features and benefits

- High saturation currents of up to 50 A
- Compact dimensions of 27.5 mm x 29.5 mm x 14.5 mm
- RoHS-compatible
- Qualified to AEC-Q200

About TDK Corporation

TDK Corporation is a leading electronics company based in Tokyo, Japan. It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK's portfolio includes electronic components, modules and systems* marketed under the product brands TDK and EPCOS, power supplies, magnetic application products as well as energy devices, flash memory application devices, and others. TDK focuses on demanding markets in the areas of information and communication technology and consumer, automotive and industrial electronics. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2014, TDK posted total sales of USD 9.6 billion and employed about 83,000 people worldwide.

* The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites, inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors.

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