

Inductors

SMT current sense transformers for automotive electronics

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TDK Corporation presents two new EPCOS SMT current sense transformers for automotive electronics. The first type (B78417A2185A003) is based on an EP7 ferrite core and has dimensions of only 10.6 mm x 12.2 mm x 11 mm. It is designed to measure pulse currents of up to 20 A. The DC resistance is 1.3 m Ω on the primary side and 3.7 Ω on the secondary side. The second SMT current sense transformer (B78419A2251A003) contains an EP10 ferrite core and measures 12.8 mm x 13.6 mm x 14.4 mm. The measurement range of the larger type extends to 30 A. Its DC resistance is 0.5 m Ω on the primary side and 2.7 Ω on the secondary side.

Both transformers have a turn ratio of 1:100 and are suitable for the wide temperature range from -40 to +150 °C. The test voltage between the primary and secondary sides is 2800 V DC. The creepage and clearance distances meet the requirements for basic insulation according to IEC 60664. The new transformers are qualified to AEC-Q200.

The SMT current sense transformers are designed for use in emerging 48-V automotive power systems as well as for all xEV applications, where the components can be used to measure the currents of the electric drives.

Main applications

- Current measurement in 48-V automotive power systems and in all xEV applications
- Recording the currents of electric drives

Main features and benefits

- Rated currents up to 20 A and 30 A, respectively
- Creepage and clearance distances according to IEC 60664 (basic insulation requirements)
- Extensive temperature range from -40 °C to +150 °C
- Qualified to AEC-Q200

Key data

Type	Dimensions [mm]	Max. current [A]	Turn ratio	Temperature range [°C]
B78417A2185A003	10.6 x 12.2 x 11	20	1:100	-40 to 150
B78419A2251A003	12.8 x 13.6 x 14.4	30		

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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