Inductors
Miniaturized series of gate-drive transformers

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TDK-EPC, a group company of TDK Corporation, has developed a new series of EPCOS EP5 SMT pulse transformers. They are used to couple gate-drive circuits to MOSFETs and IGBTs operating at switching frequencies within a range of 150 kHz to several MHz. These transformers are available with a wide range of turns ratios, polarities and outputs.

Thanks to the use of miniaturized EP5 cores, these transformers have dimensions of only 8.1 x 6.7 x 5.4 mm³. As several transformers are usually used in a circuit, the size reduction of the transformers results in significant space savings on the circuit board. Thanks to a special winding technology, parasitic capacitances between windings are only 25 to 95 pF, depending on the type. Stray inductances are likewise low. They range between 0.9 and 2.5 µH. Short-term dielectric strength is tested to 1500 V DC for all types of the B82804A* series. These components are designed for ambient temperatures of up to 85 °C and operating temperatures of up to 125 °C. Their terminal configuration and pin assignment correspond to the industry standard.

The main applications of these new transformers are half- and full-bridge converters as well as in frequency converters or inverters.

Glossary

- MOSFET: metal oxide semiconductor field effect transistors, which are characterized by low losses.
- IGBT: insulated gate bipolar transistors, which are used mainly in high-power converters. Their advantage is their low forward voltage at high current.

Main applications

- Coupling of gate-drive circuits in half and full-bridge converters as well as in frequency converters or inverters.

Main features and benefits

- Compact dimensions of only 8.1 x 6.7 x 5.4 mm^3
- Low parasitic capacitances of only 25 to 95 pF

Key data

Ordering code	Inductance [µH]	Outputs	Turns ratio	Stray inductance [µH]
B82804A0304A225	300	2	2.5:1:1	0.9
B82804A0324A220	317	2	2:1:1	0.6
B82804A0264A210	264	2	1:1:1	0.3
B82804A0354A110	350	1	1:1	1.0
B82804A0694A115	690	1	1.5:1	2.5
B82804A0474A125	473	1	2.5:1	1.5

About TDK-EPC Corporation

TDK-EPC Corporation (TDK-EPC), a TDK group company, is a leading manufacturer of electronic components, modules and systems headquartered in Tokyo, Japan. TDK-EPC has emerged from the combination of the electronic components business of TDK and the EPCOS Group and markets its products under the product brands, TDK and EPCOS.

The product portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites and inductors, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors. With this product spectrum TDK-EPC offers a broad range of products and solutions of outstanding value from a single source and focuses on demanding markets in the areas of information and communication technology and automotive, industrial and consumer electronics. The company has design and manufacturing locations and sales offices in Asia, Europe, and in North and South America.

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