

## Transformers

# World's smallest SMD Pulse Transformer for LAN Applications

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- Size of 3.2 x 3.2 x 2.8 mm<sup>3</sup> with 30 percent less volume and smaller footprint than existing products
- More stable product quality thanks to automated winding process

June 25, 2013

TDK Corporation announces the world's smallest SMD pulse transformers for LAN applications. With dimensions of only 3.2 x 3.2 x 2.8 mm<sup>3</sup>, the new ALT3232M has 30 percent lower volume and footprint than previous products. The inductance of the new transformer is 150 µH, its insertion loss is in the frequency range from 100 kHz to 100 MHz at 2.5 dB, and its parasitic winding capacitance is only 25 pF at 100 kHz. Series production will start in July 2013.

The number of pulse transformers used in LAN applications is increasing in response to the raised transmission speed of Ethernet networks, namely from 100 to 1000 Mbps. In addition, several transformers are usually placed on a circuit board, so that minimized component dimensions are of crucial importance.

LAN interfaces are not only used in computers and other IT equipment, but increasingly also in LCD TV sets and other audiovisual appliances. They transmit the pulse-shaped signals at high transmission speeds and at the same time provide electrical insulation between input and output.

By applying technology that has proved its worth in the production of SMD common mode filters, TDK was able to devise an automated winding process suitable for mass production. This reduces characteristics variations that tend to occur with manual winding, and thereby offers enhanced reliability and quality.

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### Main applications

- LAN interfaces in notebooks, digital home appliances, etc.
- Various types of communication equipment

### Main features and benefits

- Reduced size and smaller footprint contribute to space saving
- Increased reliability and more stable product quality thanks to automated winding process

## Key data

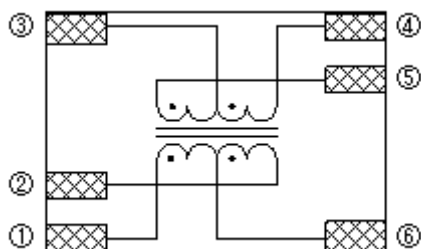
Type	Winding ratio ①⑥②:⑤③④	Inductance (min.)* [μH]	Insertion loss (max.)** [dB]	Parasitic capacitance (max.)*** [pF]
ALT3232M	1 : 1	150	2.5	25

\* DC bias 8 mA, ①-② ⑤-④ tolerance ±20%

\*\* 0.1 MHz -100 MHz, ①②-⑤④

\*\*\* 100 kHz, ①-⑤

## Terminal layout diagram



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## 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 which are 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 2013, TDK posted total sales of USD 9.1 billion and employed about 80,000 people worldwide.

## About TDK-EPC Corporation

TDK-EPC Corporation, a TDK group company, is the manufacturer of TDK's electronic components, modules and systems and is headquartered in Tokyo, Japan. TDK-EPC was founded on October 1, 2009 from the combination of the electronic components business of TDK and the EPCOS Group. 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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