

EMC components

World's smallest common-mode filter for high-speed interfaces

- Footprint 75 percent smaller than existing products
- High 7.0 GHz cutoff frequency

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TDK Corporation has developed the world's smallest* common-mode filter, which measures in at only 0.45 mm x 0.30 mm x 0.23 mm and is 75 percent smaller than current 0806 filters (IEC). Besides its miniature dimensions, the new TCM0403S-350-2P thin-film common-mode filter offers excellent performance. With a high cutoff frequency of 7.0 GHz the filter suppresses common-mode noise without distorting high-speed differential signals. It is thus compatible with various high-speed interfaces such as MIPI, USB 2.0, and USB 3.0. The excellent common-mode attenuation at 2.4 GHz improves the wireless LAN reception sensitivity in smartphones, conventional mobile phones and other compact portable devices. Mass production will begin in July 2012.

The milestone in miniaturization was realized using TDK's leading-edge thin-film patterning technology combined with compact, high-precision coil pattern and terminal formation processes. Thanks to its much smaller footprint, the new filter supports the high-density mounting of electronic components and contributes to significant space-saving in electronic devices.

* As of June 2012, according to TDK investigations

Glossary

- MIPI: the Mobile Industry Processor Interface is an open standard supported by the MIPI Alliance, which consists of nearly 200 members companies in the mobile device industry.

Main applications

- Smartphones, conventional mobile phones, and other mobile devices
- Electronic devices with high-speed interfaces such as MIPI, USB 2.0, and USB 3.0

Main features and benefits

- Footprint is approximately 75 percent smaller than current standard products with a footprint of 0.85 mm x 0.65 mm.
- High 7.0 GHz cutoff frequency for compatibility with high-speed interfaces
- Excellent common-mode attenuation at 2.4 GHz for improved wireless LAN reception sensitivity

Key data

Type	Dimensions [mm]	Impedance [Ω]	Cutoff frequency [GHz]	DC resistance [Ω]
TCM0403S-350-2P	0.45 x 0.30 x 0.23	35 (typical)	7.0 (typical)	3.0

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 current product line includes passive components, magnetic application products as well as energy devices, flash memory application devices, and others. TDK today 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 2012, TDK posted total sales of USD 9.9 billion and employed about 79,000 people worldwide.

About TDK-EPC Corporation

TDK-EPC Corporation, a TDK group company, is a leading manufacturer of electronic components, modules and systems, headquartered in Tokyo, Japan. TDK-EPC was founded in 2009 from the combination of the passive components business of TDK and the EPCOS Group. The portfolio includes ceramic, aluminum electrolytic and film capacitors, ferrites and inductors, magnets, high-frequency components such as surface acoustic wave (SAW) filter products and modules, piezo and protection components, and sensors. The company markets the product brands TDK and EPCOS.

You can download this text and associated images from www.global.tdk.com/news_center/press/aah40600.htm.

Further information on the products can be found under www.tdk.co.jp/tefe02/e9712_tcm.pdf.

Contacts for regional media

Region	Contact		Phone	Mail
Japan	Mr. Yoichi OSUGA	TDK Corporation Tokio, Japan	+813 5201-7102	pr@jp.tdk.com
ASEAN	Ms. Tomoko KAMEDA	TDK Singapore (Pte) Ltd. Singapore	+65 6273 5022	asean.inquiry@sg.tdk.com
Greater China	Ms. Clover XU	TDK China Co., Ltd. Shanghai, China	+86 21 61962307	pr@cn.tdk.com
Europe	Mr. Frank TRAMPNAU	TDK Electronics Europe GmbH Dusseldorf, Germany	+49 211 9077 127	trampnau@eu.tdk.com
America	Ms. Sara M. REYNOSO	TDK Corporation of America Irving, TX, USA	+1 972-409-4519	sara.reynoso@us.tdk.com