

## Common-Mode Filters

### Combined filter functionality in thin-film technology

- World's first\* component with common-mode and differential mode noise suppression

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TDK-EPC, a group company of TDK Corporation, presents the world's first\* common-mode filter that combines common-mode noise suppression and GSM band differential noise suppression in a single component. The new TDK TCD0806B-350-2P common-mode filter is designed for high-speed differential transmission on MIPI lines in smartphones, conventional mobile phones and other mobile devices. Mass production has started in September 2011.

Measuring 0.85 x 0.65 x 0.40 mm<sup>3</sup>, the product has the same dimensions as its predecessor (TCM0806G), but thanks to its proprietary thin-film circuit and materials technologies, can handle not only conventional common mode noise but also differential mode noise.

The simultaneous suppression of common-mode and differential mode noise in the GSM band (800 MHz) results in significantly improved reception sensitivity for smartphones and other mobile phones. Moreover, manufacturers can reduce the number of components needed and footprint requirements, thus enabling even smaller mobile devices.

The cutoff frequency of the new filter is 3.0 GHz. The typical common-mode impedance is 35 Ω, and rated current capability is 100 mA.

\* As of October 2011, according to TDK investigations.

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#### Glossary

- MIPI: The Mobile Industry Processor Interface is an open standard promoted by the MIPI Alliance.
- EMI: Electromagnetic interference refers mainly to interference caused by unwanted emissions produced by electronic devices. Together with EMS (electromagnetic susceptibility) which indicates how likely a device is to be affected by external electromagnetic waves, dealing with EMI is one of the main requirements for EMC (electromagnetic compatibility).

#### Main applications

- Noise suppression for high-speed differential transmission in mobile devices and other consumer equipment.

#### Main features and benefits

- Combines common-mode noise suppression and differential mode noise suppression in a single component.
- Reduces the number of components needed and their footprint requirements.

## Key data

Product designation	TCD0806B-350-2P
Common-mode impedance [ $\Omega$ ]	35 (typ.)
Cutoff frequency [GHz]	3.0
Rated voltage [V]	10
Rated current [mA]	100
Size [mm]	0.85 x 0.65 x 0.40

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## 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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