

RF components

Thin-film technology enables world's smallest band pass filters with bottom terminals

- 50 percent smaller footprint than existing multilayer ceramic band pass filters

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TDK-EPC, a group company of TDK Corporation, presents the new TFSB series of TDK thin-film band pass filters, which with a footprint of 1.0 x 0.5 mm² and an insertion height of just 0.3 mm are the world's smallest*. Thanks to their innovative terminal configuration on their bottom surface the footprint of the low-profile 1005 components is about 50 percent less than for conventional filters. The new filters are designed for the 2.4 GHz and 5 GHz bands, making them suitable for Bluetooth and WLAN applications in smartphones and other mobile phones. Mass production has started in September 2011.

The new filters achieve low-loss signal transmission and high attenuation of unwanted signals, resulting in a high signal quality. The band pass filters were developed by using a thin-film micro-wiring technology that TDK developed for the manufacturing of magnetic heads for hard disk drives. This technology enables the successful combination of outstanding performance characteristics with small dimensions and a low-profile form factor, making the product ideal for RF modules designed for smartphones and other advanced mobile phones. The operating temperature range of the product is -40 to +85 °C.

TDK-EPC is continually expanding its portfolio of RF components based on TDK's innovative thin-film technology. In addition to the new band pass filters, this product family also includes capacitors, baluns, couplers and diplexers.

* As of October 2011, according to TDK investigations.

Main applications

Band pass filters in the 2.4 GHz and 5 GHz bands for WLAN and Bluetooth in smartphones as well as in conventional mobile phones, Bluetooth modules, Bluetooth headsets etc.

Main features and benefits

- Application of thin-film technology developed for HDD heads results in world's smallest* band pass filters with dimensions of only 1.0 x .05 x 0.3 mm³
- Bottom positioning of the terminals enables 50 percent footprint reduction, compared to similar ceramic filters.

Key data

Product designation	TFSB series	
Frequency band [MHz]	2400 to 2500	4900 to 5850
Max. insertion loss [dB]	3.0	1.5
Operating temperature range [°C]	-40 to +85	-40 to +85
Max. rated power [dBm]	27	27
Dimensions [mm]	1.0 x 0.5 x 0.3	1.0 x 0.5 x 0.3

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.

You can download this text and associated images from www.global.tdk.com/news_center/press/aah36400.htm

Further information on the products can be found under www.tdk.co.jp/tefe02/e751_filmbpf_tfsb01.pdf.

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