

EMC components

Extremely miniaturized multilayer chip beads with excellent noise attenuation

- Nearly 80 percent smaller in volume and 65 percent in area than existing types with comparable performance
- High impedance values over wide frequency range

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TDK Corporation has developed a miniaturized multilayer chip bead series in case size 0603 (EIA 0201) that is nearly 80 percent smaller in volume and 65 percent in area than existing MMZ1005-E types with comparable performance. The new MMZ0603-E series of multilayer chip beads combines compact dimensions of just 0.6 x 0.3 x 0.3 mm³ with excellent electrical characteristics. The MMZ0603-E series is currently available in two high-impedance versions, one rated for 600 Ω and the other for 1000 Ω at 100 MHz. Both types offer even higher impedance values at 1 GHz of 1000 Ω and 1800 Ω, respectively.

Thanks to its very good impedance values, a single component can cover a very wide frequency range, ensuring highly efficient noise attenuation. The MMZ0603-E multilayer chip bead is therefore very well suited for eliminating noise in compact mobile devices, especially in smartphones that must operate with multiple communication frequency bands.

The significant advance in the miniaturization of chip beads was made possible by TDK's Gigaspira[®] production technology, which creates a micro-coil winding that is perpendicular to the terminal electrodes, effectively suppressing stray capacitance from the terminals. With the new high-performance MMZ0603-E series in case size 0603, which is fast becoming the dominant form factor for passive components in smartphones, TDK is meeting these market needs. Mass production started in February 2013.

Main applications

- Mobile devices such as smartphones, tablet PCs, audio players, and digital cameras
- Compact devices with wireless connectivity such as Bluetooth, WLAN, GPS, etc.
- Data storage devices such as HDDs

Main features and benefits

- Miniature dimensions of 0.6 x 0.3 x 0.3 mm³ result in significant space savings on the PCB
- High impedance over wide frequency range in a single component

Key data

Type	Impedance at 100 MHz [Ω] ±25%	Impedance at 1 GHz [Ω] ±40%	DC resistance [Ω] max.	Rated current [mA] max.
MMZ0603S601E	600	1000	1.60	150
MMZ0603S102E	1000	1800	2.60	125

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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