Press Information

EMC Components

TDK launches ultra-small noise suppression filters for audio lines with high noise attenuation in the 5-GHz band

– The filters achieve industry-leading* noise attenuation in the high-frequency range exceeding 5 GHz
– A newly developed low-distortion ferrite material significantly reduces audio distortion by minimizing performance variations in the audio line of small consumer devices
– Reduces attenuation of audio signals with lower resistance than conventional products, achieving a wide dynamic range

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TDK Corporation (TSE:6762) has announced its latest noise suppression filters of the MAF0603GWY series. These measure only 0.6 mm x 0.3 mm x 0.3 mm (L x W x H) for use in small consumer devices like smartphones and wearables. Mass production of the new product series is set to begin in April 2026.

Electromagnetic noise radiated from audio lines in smartphones, wearable devices, and the like interferes with the built-in antenna and can reduce the receiver sensitivity. The common countermeasure is chip beads. While effective at suppressing noise, they have the drawback of degrading the audio quality on the audio line, which users may find annoying.

The new MAF0603GWY series of noise suppression filters resolves this drawback by employing a newly developed, proprietary low-distortion ferrite material. It introduces just minimal change to audio-line characteristics and significantly reduces audio distortion, eliminating the sound-quality degradation that occurs when chip beads are used. It provides industry-leading high attenuation in the 5-GHz band (impedance up to 3220 Ω at 5 GHz), effectively suppressing noise. Compared with conventional products, it also features lower resistance to reduce attenuation of audio signals and realizes a wide dynamic range.

TDK will continue to contribute to the industry by offering a broad lineup of noise suppression filters and technical support that reconcile audio-quality preservation with electromagnetic-noise countermeasures for mobile and wearable devices with communication functions.

* As of April 2026, according to TDK.

Main applications

– High-frequency noise countermeasures for smartphones, tablets, and wearable devices: Bluetooth, Wi-Fi (2.4 GHz, 5 GHz, 6 GHz), 5G (Sub-6), next-generation communication standards (6G), etc.

Main features and benefits

– The filters achieve industry-leading* noise attenuation in the high-frequency range exceeding 5 GHz
– A newly developed low-distortion ferrite material significantly reduces audio distortion by minimizing performance variations in the audio line
– Reduces attenuation of audio signals with lower resistance than conventional products, achieving a wide dynamic range

Type	Impedance (typ.) [Ω]@ 900 MHz	Impedance (typ.) [Ω]@ 5 GHz	DC resistance (typ.) [Ω]	DC resistance (max.) [Ω]	Rated current (max.) [A]
MAF0603GWY211AT000	210	1370	0.89	1.30	0.15
MAF0603GWY301AT000	300	1890	1.15	1.50	0.14
MAF0603GWY551AT000	550	3220	1.81	2.20	0.125

About TDK Corporation

TDK Corporation (TSE:6762) is a global technology company and innovation leader in the electronics industry, based in Tokyo, Japan. With the tagline “In Everything, Better” TDK aims to realize a better future across all aspects of life, industry, and society. For over 90 years, TDK has shaped the world from within; from the pioneering ferrite cores to cassette tapes that defined an era, to powering the digital age with advanced components, sensors, and batteries, leading the way towards a more sustainable future. United by TDK Venture Spirit, a start-up mentality built on visions, courage and mutual trust, TDK’s passionate team members around the globe pursue better—for ourselves, customers, partners, and the world. Today, the state-of-the-art technologies of TDK are in everything, from industrial applications, energy systems, electric vehicles, to smartphones and gaming, at the core of modern life. TDK’s comprehensive, innovative-driven portfolio includes cutting-edge passive components, sensors and sensor systems, power supplies, lithium-ion and solid-state batteries, magnetic heads, AI and enterprise software solutions, and more—featuring numerous market-leading products. These are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics, TDK-Lambda, TDK SensEI, and ATL. Positioning the AI ecosystem as a key strategic area, TDK leverages its global network across the automotive, information and communication technology, and industrial equipment sectors to expand its business in a wide range of fields. In fiscal 2025, TDK posted total sales of USD 14.4 billion and employed about 105,000 people worldwide.

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