

Wireless Power Transfer

TDK's new dramatically thinner pattern coils set to revolutionize wireless charging

- Industry-leading 0.76 mm thickness achieved via unique pattern coil technology
- Significantly larger charging area supported
- Compliant with Qi wireless charging standard

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TDK Corporation (TSE: 6762) has introduced a thin pattern coil to support the wireless charging of next generation mobile devices. Mass production began in May 2022.

The WCT38466-N0E0SST101 product was developed without employing conventional lithographic exposure/etching techniques. Instead, TDK's game-changing process technology was leveraged, in combination with plating technology using the nano dispersion of the organic compound polypyrrole, developed by Achilles Corporation. Although wireless charging coils have generally been produced by winding wires, this new approach has made it possible to manufacture them using a thick copper pattern on a thin film. This, along with the application of TDK's proprietary magnetic materials has enabled coil thickness reduction down to 0.76 mm - which is approximately one-fifth of the thickness of traditional 3.8 mm diameter wound wire coils. Furthermore, the use of TDK's original optimal coil shape pattern means that the new coils cover a larger charging area, resulting in greater user convenience.

The wireless transfer of power to mobile devices, such as smartphones, has considerable appeal. Uptake of demand for wireless charging is being seen in home, office, retail and automotive environments. With their dramatically thinner diameters, the TDK coils, which are compliant with the Wireless Power Consortium's widely-adopted Qi standard, will open up new opportunities for wireless charging deployment. In addition, while it was previously necessary for three coils to be incorporated into wireless charging systems, now only one coil will be required, thereby enabling system miniaturization.

TDK will continue to progress the development of wireless power transfer technology, aiming to make it ubiquitous to future society.

Main applications

- Wireless charging of mobile devices (smartphones)

Main features and benefits

- A thickness of 0.76 mm
- A coil that enables a larger charging area
- Compliant with the Qi wireless charging standard

Type	Outer dimensions [mm]	Inductance [μ H]	Resistance (at 100 kHz) [ohm]
WCT38466-N0E0SST101	85 x 67 x 0.76	10.6	0.139

About TDK Corporation

TDK Corporation is a world leader in electronic solutions for the smart society based in Tokyo, Japan. Built on a foundation of material sciences mastery, TDK welcomes societal transformation by resolutely remaining at the forefront of technological evolution and deliberately “Attracting Tomorrow.” It was established in 1935 to commercialize ferrite, a key material in electronic and magnetic products. TDK’s comprehensive, innovation-driven portfolio features passive components such as ceramic, aluminum electrolytic and film capacitors, as well as magnetics, high-frequency, and piezo and protection devices. The product spectrum also includes sensors and sensor systems such as temperature and pressure, magnetic, and MEMS sensors. In addition, TDK provides power supplies and energy devices, magnetic heads and more. These products are marketed under the product brands TDK, EPCOS, InvenSense, Micronas, Tronics and TDK-Lambda. TDK focuses on demanding markets in automotive, industrial and consumer electronics, and information and communication technology. The company has a network of design and manufacturing locations and sales offices in Asia, Europe, and in North and South America. In fiscal 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 people worldwide.

About Achilles Corporation

Achilles Corporation is a plastics processing manufacturer established in 1947. Its business areas include Syunsoku and other brands of shoes and businesses in various other fields, such as construction/civil engineering, manufacturing/facilities, electricity/electronics, vehicles, agriculture/livestock, medical/disaster prevention and lifestyle/leisure. The company provides diverse products that globally support our daily lives, industries and the front lines of healthcare. The company began researching and developing the control of static electricity using polypyrrole in 1980s and established a plating technology using the nano dispersion of polypyrrole in 2007. Since then, the company has been continuing to advance these technologies. In addition to its competence in technology that it has cultivated since its foundation, Achilles utilizes its comprehensive capabilities accompanied by its strengths of expanding business in extended fields, and with these capabilities it provides innovative products and services to customers and seeks to be a company that creates comfortable living spaces that are friendly to humans and the environment.

In the fiscal year ended March 2022, Achilles Corporation posted consolidated sales of 75.9 billion yen. More information can be found at <https://www.achilles.jp>

You can download this text and associated images from https://www.tdk.com/en/news_center/press/20220621_01.html. Further information on the products can be found under

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