

 Press Information

Aluminum Electrolytic Capacitors

TDK adds vibration-resistant axial and soldering-star capacitors for 125 V and upgrades 63 V series

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TDK Corporation (TSE: 6762) has expanded its axial/soldering star-aluminum electrolytic capacitor lineup with 125 V-rated components to the B43693/B43793 series (125 V to 250 V) and upgraded the 63-V series of existing B41687/B41787 (25 V to 63 V). This complements the product spectrum, addressing the increasing demand for compact and high-ripple-current DC-link capacitor banks with battery voltages ranging from 48-V battery systems to 120 V. These are frequently used in applications such as small xEVs and micromobility platforms, as well as industrial systems like forklifts, electric boats, and humanoid robots.

The B43693/B43793 series eliminates the need for connecting capacitors in series by supporting higher DC-link voltages within a single component. This can simplify capacitor-bank design and enhance system robustness and efficiency. Supporting ripple currents of up to 21.6 A, the components operate at temperatures of up to +140 °C. Capacitance values range from 56 µF to 650 µF, housed in can sizes from 16 x 25 mm to 21 x 49 mm (diameter x length). The 125-V variant is generally used for 96-V system designs constrained by space, exposed to high thermal stress, and subject to dynamic load conditions requiring stable energy buffering.

The B41687/B41787 series shares the same axial/soldering-star construction, providing design standardization across voltage classes. They operate at up to +150 °C and offer capacitance values from 510 µF to 4800 µF.

All four series are characterized by low equivalent series resistances (ESR) and high ripple current capabilities, reducing power losses and improving thermal efficiency within the DC-link stage of inverters, for example. Their mechanical design supports harsh environmental conditions, offering standard vibration resistance up to 20 g, with options for up to 60 g upon request. Axial-lead and soldering star terminals provide flexible mounting configurations, including horizontal and vertical mounting on PCBs and busbars.

Furthermore, by optimized mounting to a heat sink, 125-V capacitors of the B43693/B43793 series achieve more than double the standard ripple currents, allowing customers to drastically reduce the size and cost of capacitor banks. For example, the specified ripple current of an 18 x 30 mm component jumps from 5.2 A (at +105 °C ambient temperature) to 11.1 A when the aluminum case is maintained at +105 °C via a heat sink. This offers designers critical advantages in power density, reduced ESR, fewer pieces per bank, and consequently lower assembly costs without sacrificing reliability.

Glossary

- *g*: Earth's gravitational acceleration (9.81 m/s²)

Main applications

- Automotive electronics
- Micromobility inverters
- Industrial electronics
- Forklifts
- Humanoid robots

Main features and benefits

- High ripple current capability
- Useful life of 2500 h at an ambient temperature of +125 °C
- Vibration resistance up to 20 *g*, up to 60 *g* available upon request
- PCB area/volume saving
- RoHS-compatible

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, InvenSense, Micronas, Tronics, TDK-Lambda, TDK SenseEI, 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 2026, TDK posted total sales of USD 16.6 billion and employed about 107,000 people worldwide.

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