

 Press Information

## Power Capacitors

# TDK introduces ModCap UHP for high-current DC link applications with +105 °C operation without derating

January 15, 2026

TDK Corporation (TSE: 6762) announces the new ModCap UHP (B25648A) series of DC link capacitors, setting a new benchmark for power electronic applications. 'UHP' stands for 'Ultra-High Performance', and this series enables continuous operation at hotspot temperatures of up to +105 °C without power derating. Compared to previous ModCap generations, which required derating starting at +90 °C, the new design enables higher current density and a longer lifetime in challenging conditions.

By combining a new high-temperature dielectric with a modular design, the ModCap UHP series extends the lifetime of capacitors to 200,000 hours at +105 °C and supports a 20 % higher current density. With a DC voltage rating of 1350 V to 1800 V and a capacitance ranging from 470 µF to 880 µF, the series is optimized for SiC semiconductor-based inverters that require low inductance (ESL of 8 nH) and high-frequency performance.

These capacitors target fast-growing sectors, including renewable energy (solar and wind power, electrolyzer), energy storage, and inverters for railway and industrial drives. Their cubic design (205 x 90 x 170 mm; L x W x H) simplifies busbar integration, thereby increasing power density in compact converters and reducing the need for additional snubber capacitors.

Beyond performance, the ModCap UHP advances sustainability and safety. The dielectric film is ISCC-certified bio-circular BOPP, while the housing complies with UL94 V-0 and EN 45545-2 HL3 R23 fire standards. UL recognition is pending.

For ModCap, TDK offers a set of different engineering tools, including a [SPICE library](#), the web-based [Capacitor Life and Rating Application \(CLARA\)](#), and the web-based [CAP Thermal](#) for thermal simulation.

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### Main applications

DC link applications with SiC power switches in

- Renewable energy converters (solar, wind, hydrolyzer, ESS)
- Auxiliary drives in traction applications
- Industrial motor drives

## Main features and benefits

- High temperature operation (+105 °C without derating)
- High frequency performance, fully compatible with SiC semiconductors
- Modular design
- High current density
- Self-healing technology
- Overvoltage capability
- Very low ESL (8 nH)
- ISCC certification, bio circular BOPP

Ordering code	Rated DC voltage $U_N$ [V]	Rated capacitance $C_N$ [ $\mu$ F]	Rated current $I_N$ [A] (at +75 °C)	Surge current $I_S$ [kA]
B25648A1887K003	1350	880	205	205
B25648A1647K003	1600	640	190	175
B25648A1477K003	1800	470	180	150

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## 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 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 2025, TDK posted total sales of USD 14.4 billion and employed about 105,000 people worldwide.

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