

 Press Information

Film Capacitors

TDK introduces compact Y1 safety capacitors for operations up to 500 V (AC) and +125 °C

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TDK Corporation (TSE: 6762) has introduced the compact B3201*A5/B5/C5 series of Y1 safety capacitors designed to suppress EMI in demanding automotive and industrial applications. The metallized polypropylene (MKP) film capacitors are rated for AC voltages of 500 V and DC voltages of up to 1500 V. Featuring a maximum operating temperature of up to +125 °C (with derating), they combine a space-saving footprint with AEC-Q200 Rev. E compliance and high robustness under severe ambient conditions. Typical applications include xEV power electronics, on-board chargers, EV charging infrastructure, industrial drives, power supplies, renewable energy converters, and energy storage systems.

This series offers capacitance values ranging from 0.47 to 33 nF and is available with lead spacings of 15 and 22.5 mm. The smaller B32012 variants measure 5.0 x 10.5 x 18.0 mm, and the B32013 types extend the capacitance range to 33 nF. The compact dimensions help developers implement reliable line-to-ground filtering where PCB space is limited. Parallel wire leads support conventional through-hole mounting. The components are available untaped or in ammo-pack and reel configurations.

The capacitors are rated for continuous operation at 500 V (AC) and 1500 V (DC), respectively, at temperatures of up to +110 °C. At operating temperatures above +110 °C and up to the maximum of +125 °C, the operating voltage must be derated by 1.5% per degree Celsius. Operation within this elevated temperature range is limited to a maximum of 1000 hours.

For applications exposed to heat and humidity, the B3201*A5/B5/C5 series is tested at +85 °C, 85% relative humidity, and 500 V (AC) for 500 hours (THB test). Their self-healing MKP construction supports reliable operation under electrical stress, while the plastic case and epoxy resin sealing meet UL 94 V-0 flammability requirements. The series is approved according to IEC/EN/UL 60384-14, CSA E60384-14, and GB/T 6346.14.

Main applications

- xEV power electronics and on-board chargers
- EV charging infrastructure
- Industrial drives and frequency converters
- Telecom, datacom, and server power supplies
- Solar PV inverters and renewable energy systems
- Uninterruptible power supplies (UPS) and energy storage systems (ESS)

Main features and benefits

- Y1 safety class for line-to-ground EMI suppression
- Rated AC voltage of 500 V
- Maximum operating temperature of +125 °C
- Compact dimensions for space-constrained PCB layouts
- AEC-Q200 Rev. E compliant
- THB performance at +85 °C, 85% RH, and 500 V AC for 500 hours
- Good self-healing properties
- ENEC, UL, CSA, and CQC approvals
- RoHS-compatible

Type	Capacitance [nF]	Lead spacing [mm]	Dimensions (W x H x L, min.) [mm]	Dimensions (W x H x L, max.) [mm]
B32012*A5/B5/C5	0.47 ... 10	15	5.0 x 10.5 x 18.0	11.0 x 18.5 x 18.0
B32013*A5/B5/C5	5.6 ... 33	22.5	6.0 x 15.0 x 26.5	14.0 x 23.5 x 26.5

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.

You can download this text and associated images from www.tdk-electronics.tdk.com/en/26021. Further information on the products can be found at www.tdk-electronics.tdk.com/en/emi_capacitors.

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