

Power Supplies

20A models added to 1/16th brick footprint DC-DC buck converter series, enhancing performance with a 28-60V input

TDK Corporation (TSE 6762) announces an expansion to the TDK-Lambda i7A series of non-isolated buck (step-down) DC-DC converters with the industry-standard 1/16th brick pinout. 20A output models with a 500W maximum rating are now available, offering a trimmable 3.3 - 32V* output capability and operation from 28V up to 60V input. An adjustable over-current limit is also available as an option, reducing stress on the converter or load when exposed to excessive overcurrent conditions and facilitating fine-tuning based on actual system requirements.

The 20A i7A models can be used to derive additional high-power outputs at a lower cost and higher efficiency than isolated DC-DC converters. These very compact products are suited for use in mobile robotics, drones, medical, industrial, test and measurement, communications, computing, and portable battery-powered equipment.

Efficiencies of up to 96% dramatically minimise internal losses and allow the 20A i7A models to operate in ambient temperatures of -40°C up to +125°C, even with low airflow conditions. The i7A's design provides low output ripple and excellent response to dynamic loads. Minimal external components are required, compared to discrete solutions, saving cost and printed circuit board space.

Like the i7A 33A, 45A and 60A versions, the 20A offers a choice of three mechanical configurations, measuring just 34mm wide and 36.8mm in length. The 11.5mm high open-frame model is suitable for applications requiring a low profile and weighs just 25g. The baseplate version can be conduction-cooled to a cold plate and is 12.7mm high. Models with an integral heatsink, which are for convection or forced air cooling, are 24.9mm high.

The i7A standard features include output voltage adjustment, positive remote sense, negative logic remote on-off, input under-voltage, over-current and over-temperature protection. Evaluation boards are available for simplified qualification.

All models have safety certification to the IEC/UL/CSA/EN 62368-1 standards, with CE and UKCA marking to the Low Voltage and RoHS Directives.

More information on the i7A 20A models can be found at [i7A Series Datasheet \(tdk.com\)](https://www.tdk.com/i7A-Series-Datasheet)

Main applications

- Robotics, drones, medical, industrial, test and measurement, and portable battery-powered equipment

Main features and benefits

- Up to 500W in a 1/16th brick footprint
- Wide 28 to 60Vdc input range (step-down topology)

- High efficiency - Up to 96%
- Adjustable current limit option
- Minimal derating requirements in low airflow environments

Key data

| Model | | i7A48020A033V-xxx-R |
|-----------------------|-----|--|
| Input voltage range | Vdc | 28 to 60 |
| Output voltage | Vdc | 3.3 to 32* |
| Maximum output power | W | 500 |
| Efficiency | % | Up to 96 |
| Safety Certifications | - | IEC/UL/CSA/EN 62368-1, CE Marked to the LV & RoHS Directives |
| Size (W x L x H) | mm | 34 x 36.8 x 11.5 (open frame models) |
| Construction / Weight | g | Open frame (25), baseplate (50) or integral finned heatsink (70) |

*See datasheet for operating conditions

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 2024, TDK posted total sales of USD 14.6 billion and employed about 101,000 people worldwide.

About TDK-Lambda Corporation

TDK-Lambda Corporation is a trusted, innovative leader and global supplier of highly reliable power conversion products for industrial and medical equipment worldwide. TDK-Lambda Corporation is aligned for fast responses to any customer need with R&D, manufacturing, sales and service locations in five key geographic regions, namely Japan, EMEA, Americas, China and ASEAN. For more details, please pay a visit to: www.jp.lambda.tdk.com/en/

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