Power Supplies

1/16th brick footprint DC-DC buck converter series expanded with 60A models and adjustable current limit

July 2023

TDK Corporation (TSE 6762) announces the expansion of the TDK-Lambda i7A series of non-isolated buck DC-DC converters, with the industry-standard 1/16th brick pinout. The 60A output models have a 400W maximum rating, offering 0.8 - 8V adjustable outputs from a 12V nominal input. In addition, an option to adjust the over current limit is now available on all input voltage and output current models. Not only does this feature help reduce stress on the converter when exposed to excessive overload conditions but it facilitates over-current limit fine-tuning based on actual system needs.

The 60A i7A models can be used to derive additional high-power outputs from a 9 to 18Vdc power supply, 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, measurement, communications, computing, and portable battery-powered equipment.

Efficiencies of up to 97% dramatically minimize internal losses and allow the 60A i7A to operate in ambient temperatures of -40°C 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 33A and 45A versions, the 60A provides 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. 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 60A standard features include output voltage adjustment, + 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 i7A60A series, including distributor inventory, can be obtained from the TDK-Lambda Americas website at https://www.us.lambda.tdk.com.

Main applications

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

Main features and benefits

- Up to 750W in a 1/16th Brick Footprint
- Wide 9 to 18Vdc Input Range
- High Efficiency - Up to 97%
- Adjustable Current Limit Option to Protect Against High Capacitive Loads
- Minimal Derating Requirements in Low Airflow Environments

Key data

Model		i7A12060A008V-xxx
Input voltage range	Vdc	9 to 18
Output voltage	Vdc	0.8 to 8
Maximum output power	W	400
Efficiency	%	Up to 97
Safety Certifications	-	IEC/UL/CSA/EN 62368-1, CE Marked to the LV & RoHS Directives
Size (W x H x L)	mm	34 x 36.8 x 11.5 (open frame models)
Construction / Weight	9	Open frame (25g), baseplate (50g) or integral finned heatsink (70g)

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 2023, TDK posted total sales of USD 16.1 billion and employed about 103,000 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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