

Power Supplies

Ruggedized 250W DC-DC buck converters offer conduction cooling with wide range inputs and outputs

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TDK Corporation (TSE:6762) announces the introduction of the 250W rated TDK-Lambda RGA series of ruggedized non-isolated DC-DC converters. Capable of operating from an input voltage of 9 to 40V or 9 to 53V, the step-down converter delivers output voltages that can be adjustable from 3.3 to 15V, 3.3 to 24V or 3.3 to 40V with output currents of up to 20A. The series is designed to be used in harsh environment applications including robotics, AGVs (Automated Guided Vehicles), communications, COTS, industrial and portable battery-powered equipment.

In a 1/16th brick form factor, measuring 35.6 x 25.6 x 13mm, the converters are encapsulated to provide a higher resistance to shock and vibration. The five-sided aluminum case reduces radiated EMI and enables conduction cooling to a cold-plate for fan-less operation.

The RGA models comprises of three voltage and current combinations to support operation from 12V, 18V, 24V, 36V and 48V power sources. The wide input ranges can assist with inventory reduction programs with one part number covering multiple nominal voltages.

With efficiencies of up to 98%, power losses are minimized allowing the products to operate in harsh environments of -40°C to +110°C case temperature. The need for external output capacitance is reduced due to an optimized dynamic voltage response, thus reducing board space requirements.

The basic feature models include an output voltage adjustment pin, negative logic remote on-off, remote sense, input under-voltage, over-current and thermal protection. Full feature models are equipped with a power good signal, output voltage sequencing and the ability to synchronize the operating frequency to minimize system noise.

All models carry the CE and UKCA mark for the Low Voltage and RoHS Directives and are designed to the IEC/UL/CSA/EN 62368-1 safety standards. Evaluation boards are available for quick and easy testing.

More information on the RGA series, including distributor inventory, can be obtained from the TDK-Lambda Americas website at <https://www.us.lambda.tdk.com>.

Main applications

- Harsh environments including robotics, AVGs (Automated Guided Vehicles), communications, COTS, industrial and portable battery powered equipment.

Main features and benefits

- High efficiency (Up to 98%)
- Up to 9 – 53V inputs and 3.3 – 40V outputs
- Up to 250W or 20A outputs
- Basic and full featured versions

Key data

Model		RGA
Input voltage range	Vdc	9 to 40 or 9 to 53
Output voltage range	Vdc	3.3 to 15, 3.3 to 24 or 3.3 to 40
Maximum output power	W	250 (20A maximum output current)
Efficiency	%	Up to 98
Optional features	-	Power good, output sequencing and frequency synchronization
Size (L x W x H)	mm	35.6 x 25.6 x 13.0
Shock & Vibration		MIL-STD-810G 516.6, Procedure I & IV; 514.6 Procedure I

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 2022, TDK posted total sales of USD 15.6 billion and employed about 117,000 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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