

Power Supplies

Ruggedized 300W DC-DC buck-boost converters offer conduction cooling with wide range inputs and outputs

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TDK Corporation (TSE:6762) announces the introduction of the 300W rated TDK-Lambda RGC series of ruggedized non-isolated DC-DC converters. Operating from an input voltage of 9 to 53V, the step-up/step down converters deliver output voltages that can be adjustable from 9.6 to 48V or 5 to 28V with output currents of up to 12.5A. 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.

With a 1/16th brick pinout and measuring 38.1 x 39.4 x 13.0mm, the converters are encapsulated to provide shock and vibration performance to MIL-STD-810G. The five-sided aluminum case reduces radiated EMI and enables conduction cooling to a cold-plate for fan-less operation.

The RGC series comprises of two voltage and current combinations to support operation from 12V, 18V, 24V, 36V and 48V power sources. The wide input and output voltage ranges can assist with inventory reduction programs with one part number covering multiple voltages. With efficiencies of up to 97%, power losses are minimized allowing the products to operate in harsh environments with a case temperature of -40°C to +115°C.

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. The full feature models are equipped with a power good signal, current monitoring 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 RGC 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 97%)
- Up to 9 to 53V inputs and 5 to 48V outputs
- Up to 300W and 12.5A outputs
- Basic and full featured versions

- Buck-Boost topology to maintain the output regulation when input varies

Key data

Model		RGC
Input voltage range	Vdc	9 to 53
Output voltage range	Vdc	9.6 to 48 or 5 to 28
Maximum output power	W	300 (12.5A maximum output current)
Efficiency	%	Up to 97
Optional features	-	Power good, current monitoring and frequency synchronization
Size (L x W x H)	mm	38.1 x 39.4 x 13.0 (Mounting tab excluded)
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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