

Ericsson's digital 40A voltage regulator enhances control and improves efficiency

Ericsson Power Modules' BMR451 is a digitally controlled, non-isolated voltage regulator rated at 40A. Featuring a high current density of 7.90A/cm³ (129A/in³), it is the second digitally controlled POL regulator from the company, following on from the recently released 20A rated BMR450. As with the BMR450, due to its high power density and the flexibility offered by the many different features embedded within the product, and offering the ability to monitor vital parameters through the open standard PMBus interface, the BMR451 suits a very wide range of applications in information communication and technologies - but is not limited to those applications.

The BMR451 is suited to new applications or applications being upgraded to reduce energy consumption, and/or migrating from passive energy monitoring to active energy management and control. Because intermediate bus architecture is not limited to ICT applications, due to its high power density, and low profile (less than 8.5mm) the BMR451 is a perfect product for any application where board space and good thermal performance are crucial, such as process control in industrial environment, sealed-box, test equipment, or even transportation applications. Smaller voltage regulators are easier to locate close to FPGAs, DSPs and other processors, reducing power losses and parasitic inductance issues.

Factors driving the need for this type of product are the reduction of energy consumption by improving product efficiency, but also the requirement by designers to permanently access strategic data from all of the power chain; from the front-end rectifier to point-of-load.

Compared to existing products, Ericsson's BMR451 offers an unprecedented level of monitoring functions (read-back data) through the open standard interface, PMBus. For designers and system architects, having access through PMBus to strategic information such as load current, load status, temperature, voltage deviations, and many other parameters make it possible to monitor down to core functions level, without adding external components or circuitry.

Besides cost saving and simplicity resulting from less external components and embedded control, system architects now have the possibility to monitor, through the power delivered to each voltage regulator, how low level functions perform.

The PMBus read-mode compliant BMR451 measures just 30.85 x 20 x 8.2mm (1.215 x 0.787 x 0.323in), offers a 4.5V to 14V input voltage range, a 0.6V to 3.6V output voltage range and an MTBF figure of 2.6 million hours. Through hole and surface mount versions are available.

Another important benefit of having a digital controller is the possibility for customers to buy tailor-made preset modules that perfectly fit their applications' requirement e.g. ramp-up time, output voltage, alarms, etc. The BMR451 also features a complete range of standard functions such as remote on/off, over-temperature protection, output over-current/over-voltage protection, input under-voltage protection, and remote control monitoring that can be used for redundancy control.

The BMR451 has a unique serial number that relates to its chipset. This offers an unprecedented level of traceability, as well as simplifying on-board part identification when performing board diagnostics during the full lifetime of the final equipment.

"It is with much pride, and with great recognition for our development team who have worked from fundamental research through to the production of commercial products, that we launch the 40A, digitally controlled BMR451," said Patrick Le Fèvre, Marketing and Communication Director at Power Modules. "With this product, combined with the recently released 20A rated BMR450, and our very successful PMBus compliant 400W isolated quarter-brick BMR453, we are now making it possible for customers to enter a new era of applications that are optimized for energy-efficiency, offering them an unprecedented level of flexibility to monitor and control through the open standard PMBus, energy consumption down to component level".

Technologies employed by the BMR451 include digital PWM associated with the most recent components such as ultra low resistance MOSFETs, new ferrites, but also PCB layout optimization. In this respect the BMR451 features a brand new layout concept, Digital Point of Load interconnect (DiPOL connect), reducing power losses within the unit and in interconnections to end-users' boards.

Ericsson Power Modules is a leading company that has conducted fundamental research in a new technology - so called 'digital power' - and contributed to the elaboration of the open standard PMBus. Ericsson's BMR453 was the industry's first dc/dc converter to use the full benefits of digital power and PMBus. The addition of this second voltage regulator, the BMR451, will result in an unprecedented amount of benefits for its customers and its customers' customers. These products added to its MicroTCA power modules will contribute to reduce energy consumption, which is an important concern for all of us.

An evaluation kit is available to help designers evaluate the modules. It comprises evaluation board, operating manual, a CD containing a graphic user interface (GUI), and cables.

Notes to editors:

Ericsson's standard multimedia content is available at the broadcast room:

www.ericsson.com/broadcast_room

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Ericsson is advancing its vision of 'communication for all' through innovation, technology, and sustainable business solutions. Working in 175 countries, more than 70,000 employees generated revenue of USD 27.9 billion (SEK 188 billion) in 2007. Founded in 1876 and headquartered in Stockholm, Sweden, Ericsson is listed on OMX Nordic Exchange Stockholm and NASDAQ.

For more information, visit www.ericsson.com or www.ericsson.mobi.

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About Ericsson Power Modules

Ericsson Power Modules is a supplier of world-class DC/DC power modules for distributed power architectures. With its global design, development, manufacturing and sales network Ericsson Power Modules is a leading supplier of power solutions to meet the customer demand for high performance.