

Ericsson's industry first 240W wide-input range 1/8 brick has digital interface for greater control

Ericsson Power Modules' BMR454 DC/DC converter delivers double the power of most conventional eighth-brick modules that address a similar range of applications; a wide input voltage range of 36 to 75V, and a tightly regulated output. The BMR454 eighth-brick family delivers up to 240W with an efficiency rating up to 95% at full load and in an industry first, a PMBus interface is included.

The parameters of the BMR454 can be monitored via PMBus, and they can also be adjusted - tailored by the customer or Ericsson - into an endless number of combinations. Exhibiting versatility, the module can be used as an intermediate bus converter (IBC) in front of a range of regulators, or as a traditional DC/DC module powering applications such as hard drives, fans and others. Indeed, the most important application areas are 48V information and communication technology applications such as radio base stations, servers, routers, and a broad range of systems powered by 48V DC.

The modules can be used for improved system efficiency, as output voltage and other parameters can be adjusted online to improve efficiency at specified load conditions. Additionally, vital parameters such as input voltage, output voltage, output current and temperature can be monitored online. The module's output voltage can be adjusted between 8.1V -13.2V with a tight output tolerance of +/-2 percent.

Offering a power density figure of more than 18W/cm² (117W/in²), the BMR454 is pin compatible with its big brother, the BMR453, making it possible for designers to upgrade to higher power when upgrading boards with new functionalities.

The module has a high efficiency figure of typically 95 percent at 53V input and 12V output at full load of 20A. The module also offers high efficiency from light load to full load conditions as a result of its flattened power curve. For safety and reliability, the BMR454 features a 1500VDC input to output isolation figure.

The modules are also offered without the PMBus connector, providing exactly the same footprint as a traditional IBC. In such a configuration the customer still enjoys the benefits offered by the built-in digital controller, and high efficiency across the complete range of operation.

Factors driving the demand for this type of product are system flexibility, improved control and monitoring, high power density (240W/eight-brick size), and the need for good thermal derating. By using PMBus, the module can be configured in an endless number of combinations. Almost all electrical parameters can be changed to exactly meet the customer's needs. Output power delivered to the load is easily monitored through PMBus, making it easier for systems architects to monitor power consumption.

"Following the market launch of the internationally acclaimed BMR453 (four times Best Product of the Year awarded in China and US, and three times finalist in Europe), the addition of an eighth-brick based on digital control using Ericsson Power Modules' leading, proven technology, and the ability to offer customers a broad range of products to improve energy management, will contribute to reduce CO₂ emissions." Said Patrick Le Fèvre, Director of Marketing and Communication.

"Thanks to the BMR454 and BMR453's power intelligence, for the first time it is possible - and easily executed - to build a dynamic power solution, bridging the gap between the power supply and the system."

Improving time to market and time to customer, the module's configuration flexibility is the key. A new configuration is very easy to download and can be implemented both at the customer's site and in a manufacturing plant.

The electrical design is based on a full bridge topology into a centre-tapped half bridge topology. Both transformer and output inductor are integrated into the PCB, which combined with the selection of low thermal impedance MOSFETs provides an excellent thermal performance.

Besides the high level electrical and thermal performances inherent in its original design, the combination of a built-in digital controller and PMBus interface position the BMR454 as the most suitable products for systems integrators when considering forthcoming regulations. By having the possibility to access real-time information such as output power delivered to the load, combined with a flattened efficiency curve, it is easy to extract relevant information to report to a centralized energy management controller, simplifying for example, computer server manufacturing in order to comply with Data Measurement Accuracy figures as specified by the US Environmental Protection Agency in the forthcoming ENERGY STAR Computer Server specification.

Three versions of the module are currently available. The BMR4540100/002 is rated at 9V/20A, the BMR4540000/001 is rated at 12V/20A and finally, the BMR4540001/001 is also rated at 12V/20A, but supplied without a digital interface.

Notes to editors:

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

www.ericsson.com/broadcast_room

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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.