

DC/DC module uses latest 'industry footprint' for improved reliability in quarter brick format

Ericsson Power Modules has announced the PKM-C family of DC/DC modules designed to respond to the new high-current demand in distributed power architectures. Complying with the de-facto, quarter brick standard, the first module in the family, PKM4118GC PINB utilizes a new, enhanced footprint called 'Double-P' to improve thermal behavior. Accordingly, the module contributes to better reliability and efficiency of end-users' host equipments.

The module is suitable for a broad range of applications where the output current required on-board is in the range 50A – 80A. Such applications include high-density telecom and datacom equipment, routers, optical transceivers, and multi-processors.

The Double-P footprint incorporates two extra power pins so that in line with customers' demands, the maximum current per pin is below 50A, with a preference for a maximum of 40A. The need for the new footprint was further fuelled by the increased complexity of soldering processes of multilayer boards over 16 layers coupled with the thermal relief requirements of high density DC/DC converters integrated with multiprocessors. The conclusion being that two extra pins improve manufacturability, performance, efficiency and reliability.

Ericsson Power Modules' PKM-C Double-P design offers a number of benefits. The two extra power pins offer better distribution of current from the DC/DC module to the end-user board. Weak solder joints are less likely due to the aforementioned complexity of the process when assembling heavy copper multilayer boards and high current DC/DC modules. The design improves the thermal coupling between DC/DC converter and motherboard and overall efficiency is improved due to lower parasitic resistance at the interconnections. Overall, the design contributes to long-term reliability based on better conductivity, cooler operation and lower operating temperatures.

The project to add two extra power pins to an established footprint has been undertaken in close collaboration with other DC/DC module manufacturers, resulting in multiple sources and a new reference standard. In this respect, the trend to share technical information between manufacturers – who are by nature competitors – is a major step forwards in the power industry. The project run by Ericsson Power Modules is already being hailed as a business model by the power industry.

By enhancing the power conduction and lowering the thermal resistance between the module and the motherboard, long term stability is significantly improved. The direct effect is to lower the operational cost of the overall system due to higher reliability and improved availability.

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Reader Inquiry reference:

Press Release Reference: E0048(A)

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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.