

Ericsson's 1/8 brick DC/DC converter optimized for power amps and cold-wall cooling environments

Designed to operate in sealed enclosures where cooling is not based on conventional forced-air cooling and fans, but via passive cold-wall technology in applications such as power-amplifiers and transceivers, Ericsson Power Modules' PKB4513PINBLC is a 50W eighth-brick DC/DC converter that powers 12V intermediate bus architectures.

Optimized to comply with low height and low-thermal resistance building practices, the PKB4513PINBLC is suitable for a very large range of applications and systems that use cold-wall cooling technology. This is largely facilitated by its wide input voltage range of 35 to 60V, 2250Vdc input to output isolation, and its application specific mechanical design where all the heat dissipating components are assembled on the top-side. With this latter feature, the converter becomes a homogeneous component with the rest of circuitry, simplifying the thermal interconnection between heat dissipating components and the system cold-wall, without an additional baseplate.

The converter's low profile (8.73mm) makes it suitable for use in chassis with a 10mm inner height. Avoiding adding a baseplate and matching customers' components height results in excellent homogeneity, simplify the assembling process and reducing cost while increasing reliability. Further, by reducing thermal resistance between dissipating components and the cooling plate, the modules' performance is optimized, significantly reducing component stress, resulting in a high MTBF of greater than 1.6 million hours.

The most important application areas for the PKB4513PINBLC are antennas and equipments such as power-amplifiers, combiners, monitoring, local repeaters and other applications embedded in sealed enclosures that are cooling plate (cold-wall) cooled. Its accurate, 12V output voltage and tight regulation make the PKB4513PINBLC suitable for a large range of applications that employ a 12V intermediate bus architecture.

Exhibiting versatility, the converters are able to operate over a wide temperature range of -40 to 120 degrees C. Output power is 45W, and efficiency is 91.8 percent – both figures are maximum. Output current is 4A maximum.

To save energy, a large number of outdoor applications are not using fans and forced-air cooling and instead, using cold-wall technology to drain inner dissipated power and heat to an external heatsink cooled by natural convection, or in some cases, water cooling.

Because cold-wall is a growing technology for other applications where forced-air cooling is gradually being replaced by water-cooling or natural convection, the demand for products like PKB4513PINBLC is expanding to other segments such as servers, data-centers, routers and others in Information and Communication Technologies that operate from 48V supplies.

By optimizing from the beginning the layout and topology to accommodate the final product's cold-wall mounting technique, the PKB4513PINBLC results in a smaller and cheaper solution than conventional products, reducing cost while increasing reliability.

Combining an efficient power-train with simplified topology and an optimized layout, the PKB4513PINBLC complements the large family of Ericsson Power Modules DC/DC converters that power Intermediate Bus Architectures. The converter now also enables cold-wall applications

to benefit from the high flexibility offered by intermediate bus combined with high-efficient point-of-load technology.

The products are compatible with the relevant clauses and requirements of the RoHS directive 2002/95/EC and have a maximum concentration value of 0.1% by weight in homogeneous materials for lead, mercury, hexavalent chromium, PBB and PBDE and of 0.01% by weight in homogeneous materials for cadmium.

Optimized to deliver high performance levels in applications using cold-wall cooling methods, Ericsson's PKB4513PINBLC is the very best product to power mid-power radio applications.

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.