

Product note

New LoPak for 1200V applications

Familiar package for higher power ratings

The new 1200 V LoPak modules carry the same DNA for high reliability and robustness as the entire family of Hitachi Energy high-power semiconductors.

Building on its experience of high-performance, high-reliability devices for voltages above 3.3 kV, Hitachi Energy expands its product portfolio by introducing a family of 1200 V power modules to complement the existing 1700 V family, starting with a 1200 V, 900 A x 2 module using an upgraded LoPak module package.

Benefits

For the active Front End, or machine-side converter, that connects the DC-link to the motor, Hitachi Energy's LoPak modules are a popular choice. Even at lower voltages, engineers not only want to create new inverter designs but would also like the ability to upgrade their existing designs to handle higher power using the same module package. This allows a faster time-to-market, less disruption of

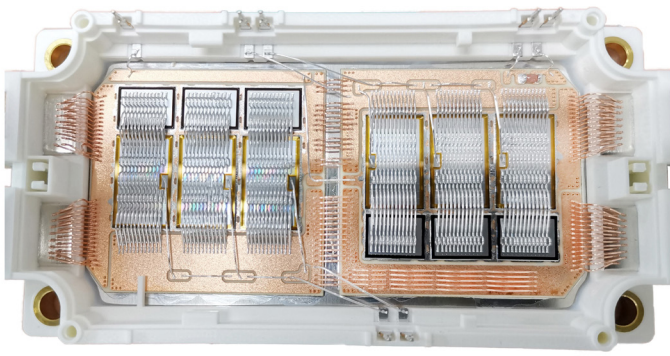


manufacturing lines, and potentially lower unit costs. These new modules feature the next generation of ultra-low-loss, rugged Trench IGBT technology used to fabricate the silicon switch and optimized diodes.

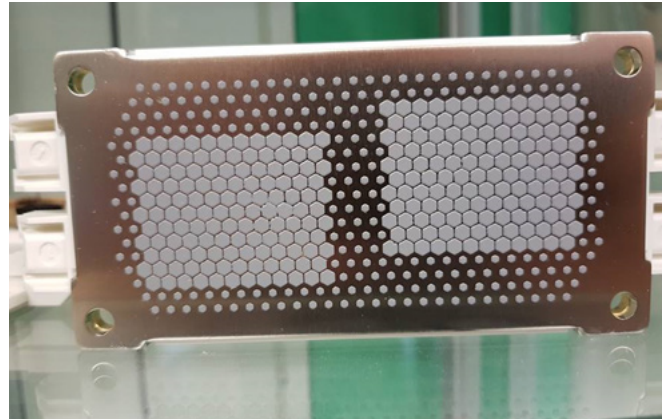
Features LoPak 1200 V power modules

- Special treated Cu-baseplate, controlled bow and reduced airgap to heatsink
- Spacers for substrate solder, homogeneous solder thickness and less delamination
- Press-fit auxiliary connections, press-fit auxiliary pins allow a solder-free connection to the gate-driver PCB

- Copper wire bonds for high current terminal and substrate inter-connects
- Maximum junction temperature of 175 °C



Inside the 1200 V, 2 x 900 A LoPak module



LoPak module base plate with TIM (Pre-Applied Thermal Interface Material)

Housing improvements

In addition to the standard use of a copper (Cu) baseplate, press-fit connectors for the control terminals, and an option for pre-applied TIM (Pre-Applied Thermal Interface Material) on the baseplate, the improved LoPak housing includes:

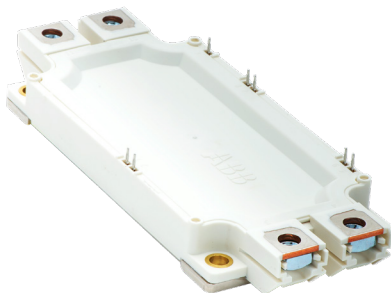
- A new Cu pattern on the DBC substrate to place the chips in the best locations to minimize the temperature interactions, stray inductance/capacitance/resistance of the package, and to optimize the current sharing between the IGBT/diode pairs.
- Use of Cu bond wire for the DBC/DBC and DBC/power terminal connections and an increased number of wires.

Typical applications

- Wind power converters
- Variable speed drives
- Power supplies
- Power quality
- UPS
- Renewable energies

Ratings LoPak

Availability	Voltage (V)	Current (A)	Housing
Phase leg IGBT	1200	2 x 600	LoPak
Phase leg IGBT, samples available	1200	2 x 900	LoPak



LoPak 1200 V

Samples now available

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