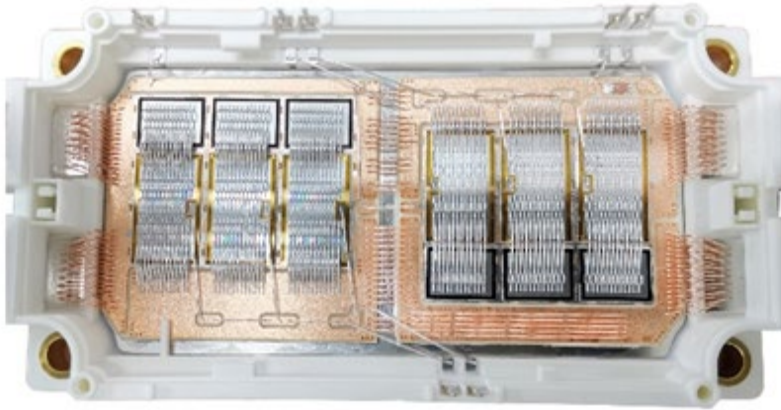


PRODUCT NOTE

## 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 ABB Power Grids' high-power semiconductors.

01 1200 V, 2x 900 A  
LoPak module,  
samples now available

Building on its experience of high-performance, high-reliability devices for voltages above 3.3 kV, Hitachi ABB Power Grids has expanded 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 ABB Power Grids' 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 heat sink

- 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

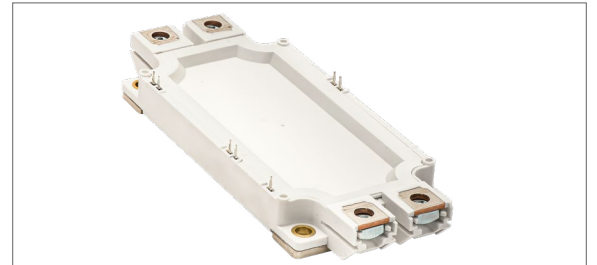
- Maximum junction temperature of 175 °C



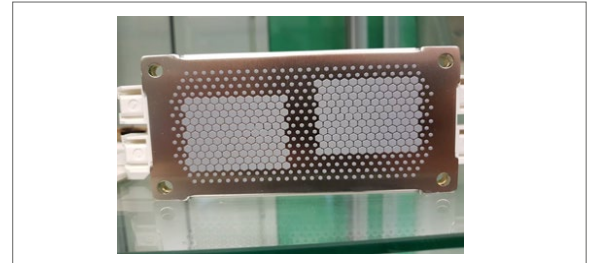
### Housing improvements

In addition to the standard use of a copper (Cu) base plate, press-fit connectors for the control terminals, and an option for pre-applied TIM on the base plate, 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.



1200 V, 900 A x 2 LoPak module



LoPak module base plate with TIM

### 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

### Typical applications

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