

IGBT Modules Offer 1200-V, 900-A Ratings For Medium Power Drives

[Infineon Technologies'](#) new IGBT7 chip for its well-known Easy housing platform is now taking the state-of-the-art TRENCHSTOP IGBT7 to the arena of medium power in the industry-standard package, EconoDUAL 3. In this chip technology, the FF900R12ME7_B11 and FF900R12ME7P_B11 1200-V modules provide a nominal current of 900 A enabling a 30% higher inverter output current for the same frame size compared with the former technology (see the figure).

While specific improvements of the modules' chip and housing are directly aimed at industrial drive applications, they are also suited for use in commercial, construction and agricultural vehicles (CAV), servo drives, as well as solar and UPS inverters.

Based on the new micro-pattern trench technology, the TRENCHSTOP IGBT7 chip performs with much lower static losses compared to the IGBT4. Its on-state voltage is reduced by up to 30% for the same chip area. This brings significant loss reduction in the application, especially for industrial drives, which usually operate at moderate switching frequencies.

Additionally, the oscillation behavior and the controllability of the IGBT have been improved. The power modules feature a maximum allowed overload junction temperature of 175°C.

Another improvement concerns the freewheeling diode (FWD) which has also been optimized for drive applications. The forward-voltage drop of the emitter-controlled seventh-generation diode (EC7) is now 100 mV lower than the forward-voltage drop of the EC4 diode, with reduced oscillation tendency during diode turn-off.

The higher power density of the EconoDUAL 3 helps to avoid paralleling of modules, which leads to a simplification of the inverter design and lower costs. Moreover, the new technology can be implemented in the same footprint, facilitating the upgrade of existing inverter system designs.

The EconoDUAL 3 module comes with an improved housing for handling higher currents and temperatures. It is available with pre-applied thermal interface material (TIM) for lowest thermal resistance and longest lifetime. The PressFIT housing enables a fast and cost-efficient assembly, according to the vendor.

The 900-A modules are the first from Infineon's new EconoDUAL 3 portfolio featuring the TRENCHSTOP IGBT7. Additional module types and current classes will follow this year. The FF900R12ME7_B11 is available now and the FF900R12ME7P_B11 with pre-applied TIM will be available sometime this month. More information is available at www.infineon.com/econodual3 and www.infineon.com/igbt7.

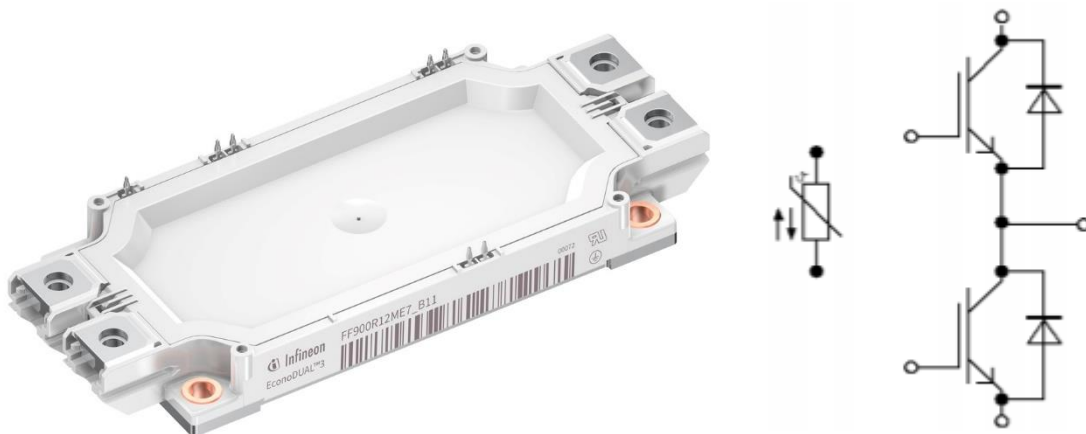


Figure. By implementing the TRENCHSTOP IGBT7 chip in the industry-standard EconoDUAL 3 package, shown on left, the 1200-V FF900R12ME7_B11 module provides a nominal current of 900 A. This enables a 30% higher inverter output current for the same frame size compared with the company's previous technology, IGBT4. The company also offers a version with pre-applied thermal interface material, the FF900R12ME7P_B11. Additional module types and current classes are planned.