

IGBT Power Modules Provide Higher Density And Lower Cost For Industrial Drives

Incorporating [Infineon Technologies'](#) TRENCHSTOP IGBT7 chip and emitter-controlled EC7 diode, the 1200-V TRENCHSTOP IGBT7 modules are said to provide higher power density, lower system cost, and reduced system size in industrial drive applications. The three initial offerings in this product family include the 10-A FP10R12W1T7_B11, the 25-A FP25R12W1T7_B11 and the 100-A FS100R12W2T7_B11 (see the table). The first two devices are offered in the industry-standard EasyPIM housing, while the third device is offered in the EasyPACK 2B (see the figure).

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 20%. This brings significant loss reduction in the application, especially for industrial drives, which usually operate at moderate switching frequencies. The power modules also feature a maximum allowed overload junction temperature of 175°C and are marked by softer switching and an improved controllability.

Packaged in the well-known Easy housing, the 1200-V TRENCHSTOP IGBT7 modules are designed with the same pin out as TRENCHSTOP IGBT4 modules, which eases migration from the older devices. More importantly, the new modules enable a higher output current in the same package, or a similar output current in a smaller package. As a result, designers can realize more compact inverter designs where needed. All module types are equipped with Infineon's PressFit mounting technology for low ohmic resistance and reduced process time.

Single-piece pricing from DigiKey is \$37.90 for a 10-A PIM and \$78.56 for the 100-A six-pack module. More information is available on the [FP10R12W1T7_B11](#), [FP25R12W1T7_B11](#) and [FS100R12W2T7_B11](#) product pages. Also, links to additional technical specs and product data sheets are [here](#).

Table. Key electrical specifications for the 1200-V TRENCHSTOP IGBT7 modules.

Model	Configuration	$I_{C(nom)}/I_{F(nom)}$	$V_{CE(SAT)}$ at $T_J = 25^\circ C$	V_F at $T_J = 25^\circ C$	Housing	Dimensions (L x W) (mm)
FP10R12W1T7_B11	PIM	10 A	1.6 V	1.72 V	Easy1B	62.8 x 33.8
FP25R12W1T7_B11	PIM	25 A	1.6V	1.83 V	Easy1B	62.8 x 33.8
FS100R12W2T7_B11	Sixpack	100 A	1.5 V	1.72 V	Easy2B	56.7 x 62.8



Figure. Packaged in the well-known Easy housing, the 1200-V TRENCHSTOP IGBT7 modules are designed with the same pin out as TRENCHSTOP IGBT4 modules, which eases migration from the older devices. However, the new modules enable a higher output current in the same package, or a similar output current in a smaller package. The TRENCHSTOP IGBT7 chip performs with much lower static losses than the IGBT4. Its on-state voltage is reduced by 20%.