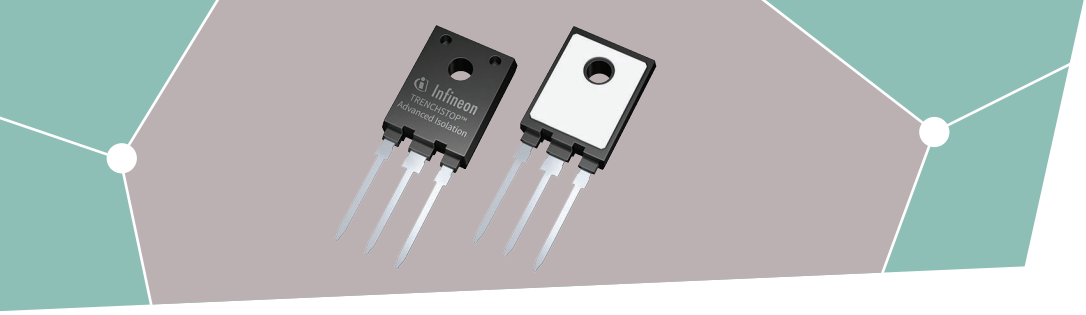


Product Brief

TRENCHSTOP™ advanced isolation

Fully isolated TO-247 package with industry leading IGBTs

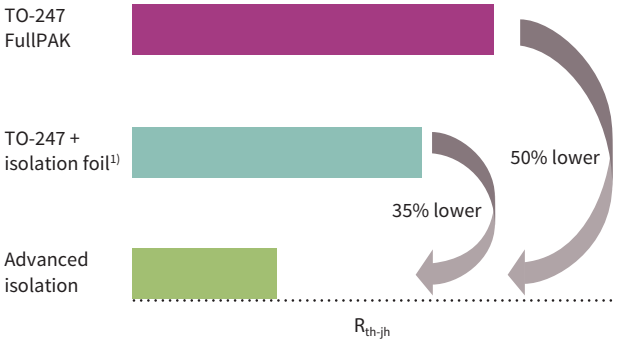
Power semiconductors are often mounted on a shared heatsink for cooling, but then require electrical isolation. Today's options, like fully insulated packages (FullPAKs) or standard TO packages used with isolation material, are expensive, difficult to handle and inadequate for the heat dissipation needs of the latest high power density IGBTs.

TRENCHSTOP™ advanced isolation solution breaks the limits reached by traditional packaging and isolation techniques. This new isolated package enables the highest power density, the best performance and the lowest cooling effort thanks to an effective and reliable thermal path from the IGBT die to the heatsink.

In additional to providing 100 percent electrical isolation, TRENCHSTOP™ advanced isolation also eliminates the need for thermal grease or thermal interface sheets. The new package delivers at least 35 percent lower thermal resistivity, helping designers to increase power density, as well as lower system complexity and assembling costs.

This new package solution allows industrial and home appliance designs to fully utilize the high performance of TRENCHSTOP™ IGBTs with no compromises for isolation and cooling.

Thermal resistivity of package & isolation types



1) Isolation material: standard polyimide based reinforced carrier insulator with 152 µm thickness, 1.3 W/m-K thermal conductivity

Key features

- 2500 V_{RMS} electrical isolation, 50/60 Hz, t = 1 min
- 100 percent tested isolated mounting surface
- Lowest $R_{th(jh)}$
- Low coupling capacitance, 38 pF
- No need for isolation foils or thermal interface material

Key benefits

- Up to 35 percent reduction in assembly time reduces manufacturing costs
- Increased power density
- Improved reliability from higher yield and no isolation foil misalignment
- Less EMI filter design effort
- Decreased heatsink size

www.infineon.com/advanced-isolation

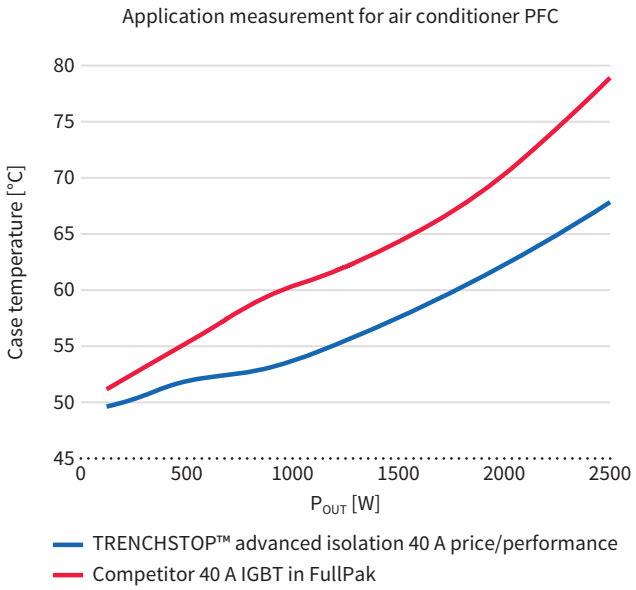
TRENCHSTOP™ advanced isolation

Fully isolated TO-247 package with industry leading IGBTs

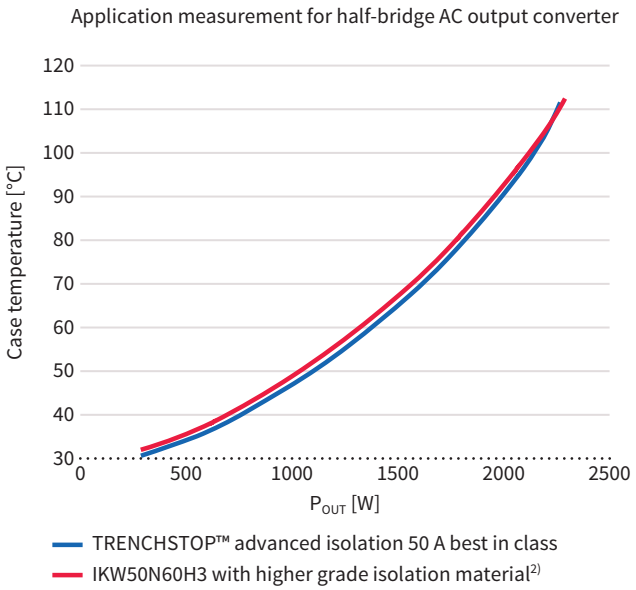
A full portfolio is available in two versions. The price/performance version is intended as a replacement of FullPAKs or solutions using TO-247 packages plus standard isolation materials[1]. The best-in-class version has been optimized as a substitute for TO-247 packages plus higher grade isolation materials[2]. A range of current classes from 40 A to 90 A are offered with 600 V HighSpeed 3 or TRENCHSTOP™ IGBTs co-packed with Rapid diodes.

Thermal performance comparison

TRENCHSTOP™ advanced isolation vs. FullPAK



TRENCHSTOP™ advanced isolation vs. standard TO247 + isolation foil



1) Standard isolation material: standard polyimide based reinforced carrier insulator with 152 µm thickness, 1.1 W/m-K thermal conductivity
2) Higher grade isolation material: standard polyimide based reinforced carrier insulator with 152 µm thickness, 1.3 W/m-K thermal conductivity

For more information please visit www.infineon.com\advanced-isolation

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