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650-V High-Frequency IGBTs Boost Performance With High-Speed Technology

STMicroelectronics' HB2 650-V IGBT series delivers efficiency and performance gains for medium- and high-speed applications such as PFC converters, welders, uninterruptible power supplies (UPSs), and solar inverters, leveraging ST's latest trench field stop (TFS) technology. The series also includes automotive-eligible devices meeting AEC-Q101 Rev. D.

Joining the STPOWER portfolio, the HB2 series has outstanding conduction performance thanks to a low V_{CEsat} of 1.55 V. At the same time, dynamic behavior is enhanced due to reduced gate charge that enables fast switching at low gate current. Outstanding thermal performance helps maximize reliability and power density, while the new products are also positioned as a very competitive choice in the market, according to the vendor.

The HB2 series IGBTs can be specified with either a full-rated or half-rated diode, or a protection diode to prevent accidental reverse bias, giving extra freedom to optimize the behavior for specific application needs.

The first of these devices, the 40-A STGWA40HP65FB2, is available now in the TO-247 long-lead package (see the figure), priced from $2.95 for orders of 1000 pieces. For more information see http://www.st.com/igbt-hb2-series.

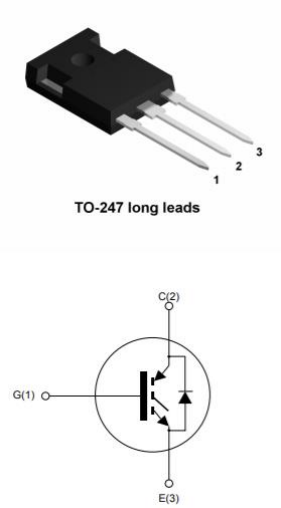

Figure. The HB2 series 650-V IGBTs represent an evolution of the advanced proprietary trench gate field-stop structure. The performance of the HB2 series is optimized in terms of conduction, thanks to a better $V_{CE(sat)}$ behavior at low current values, as well as in terms of reduced switching energy. A diode used for protection purposes only is co-packaged in antiparallel with the IGBT. The result is a product specifically designed to maximize efficiency for a wide range of fast applications.