



Toshiba announces new IGBT device based upon latest generation semiconductor process

New device enhances efficiency in applications such as power factor correction (PFC)

Düsseldorf, Germany, 9th March 2023 – Toshiba Electronics Europe GmbH (“Toshiba”) has launched a new 650V-rated discrete IGBT intended for use within power factor correction (PFC) circuits within air conditioners, home appliances, and power supplies for industrial equipment, and many other use cases.

The new GT30J65MRB is a 60A-rated N-channel IGBT device housed in a TO-3P(N) package and based upon Toshiba’s latest generation technology with an optimized internal trench structure. This significantly enhances switching losses which are typically 0.35mJ for turn-off (@ 175°C) – an improvement of at least 40% when compared to previous generation devices. This level of improvement is mirrored in the forward voltage of the built-in diode which typically measures just 1.20V, thereby enhancing efficiency of end equipment.

Using previous generation IGBTs, the PFC stage of air conditioners would have an operating frequency below 40kHz. The improved switching loss of the new GT30J65MRB allows the upper limit to increase to 60kHz thereby enhancing efficiency and allowing associated passive devices to reduce in size / weight.

The demand for switching devices that offer low losses and increased switching frequencies is growing due to the increasing use of inverters in air conditioners and the need to reduce power consumption in large-scale power supplies for industrial equipment. Toshiba will continue to expand its product lines to meet market trends and contribute to the efficiency of equipment.

Volume shipments start today.

For more information please visit <https://toshiba.semicon-storage.com/eu/semiconductor/product/igbts-iegts/igbts/detail.GT30J65MRB.html>

All images are available from the following link: <https://tinyurl.com/4wbmxt9f>

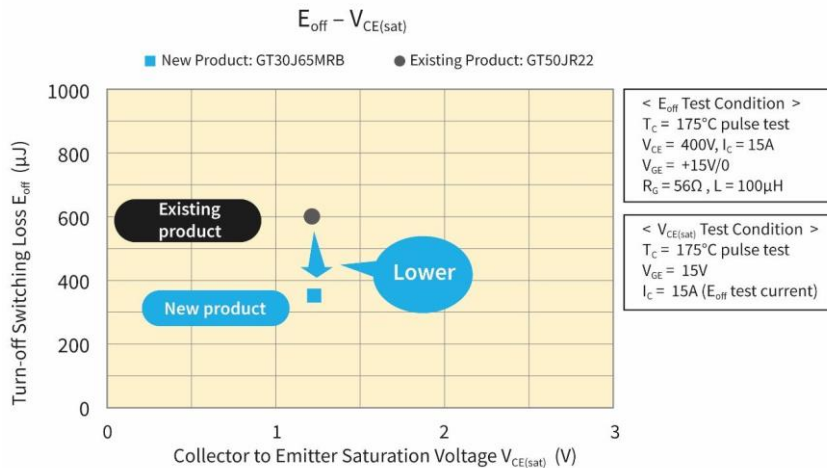


Figure 1. Turn-off switching loss E_{off}

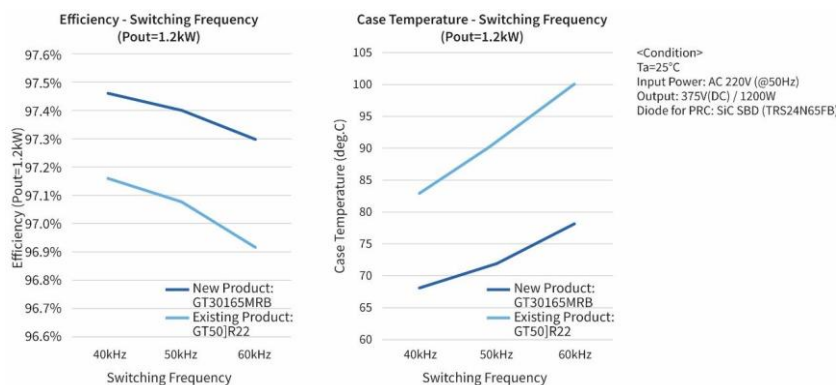


Figure 2. Efficiency and case temperature

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About Toshiba Electronics Europe

[Toshiba Electronics Europe GmbH](#) (TEE) is the European electronic components business of [Toshiba Electronic Devices and Storage Corporation](#). TEE offers European consumers and businesses a wide variety of innovative hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer and white goods applications. Next to HDDs, the company's broad portfolio encompasses power semiconductors and other discrete devices ranging from diodes to logic ICs, optical semiconductors as well as microcontrollers and application specific standard products (ASSPs) amongst others.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services. The company president is Mr. Tomoaki Kumagai.

For more company information visit TEE's website at www.toshiba.semicon-storage.com.

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