



Toshiba launches third generation 650V silicon carbide (SiC) MOSFETs

New devices will enhance efficiency and reduce size in industrial applications

Düsseldorf, Germany, 30th August 2022 – Toshiba Electronics Europe GmbH ("Toshiba") has launched a total of five new third-generation 650V silicon carbide (SiC) MOSFET devices for industrial equipment.

These highly efficient and versatile products will be used in a variety of demanding applications including switch mode power supplies (SMPS) and uninterruptible power supplies (UPS) for servers, data centers and communication equipment. They will also find applications in renewable energy, including photovoltaic (PV) inverters and bi-directional DC-DC converters, such as those used for electric vehicle (EV) charging.

The new TW015N65C, TW027N65C, TW048N65C, TW083N65C and TW107N65C are based upon Toshiba's advanced third generation SiC process which optimizes the cell structures used in second-generation devices.

As a result of this advancement, a key figure of merit (FoM) calculated as the product of drain-source on-resistance ($R_{DS(on)}$) and gate-drain charge (Q_g) to represent both static and dynamic losses has improved by about 80%. This significantly reduces losses and allows power solutions with higher power densities and lower running costs to be developed.

In common with earlier devices, the new third-generation MOSFETs include a built-in SiC Schottky barrier with a low forward voltage (V_F) of -1.35V (typ.) to suppress fluctuation in $R_{DS(on)}$, thereby enhancing reliability.

The new devices are able to handle currents (I_D) up to 100A and feature $R_{DS(on)}$ values as low as 15m Ω . All devices are housed in an industry standard TO-247 package.

Shipments of the new MOSFETs starts today.

Further information is available here:

[TW015N65C](#), [TW027N65C](#), [TW048N65C](#), [TW083N65C](#) and [TW107N65C](#)

###

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 web site at www.toshiba.semicon-storage.com.

Contact details for publication:

Toshiba Electronics Europe GmbH, Hansaallee 181, D-40549 Düsseldorf, Germany
Tel: +49 (0) 211 5296 0 Fax: +49 (0) 211 5296 79197
Web: www.toshiba.semicon-storage.com/eu/company/news.html

Contact details for editorial enquiries:

Michelle Shrimpton, Toshiba Electronics Europe GmbH
Tel: +44 (0)193 282 2832
E-mail: MShrimpton@teu.toshiba.de

Issued by:

Birgit Schöninger, Publitek
Tel: +49 (0) 4181 968098-13
Web: www.publitek.com
E-mail: birgit.schoeniger@publitek.com

August 2022

Ref. 7395(A)