New Toshiba 1200V SiC Schottky barrier diodes achieve typical low forward voltage of 1.27V

10 new third-generation 1200V through-hole power devices to reduce power loss in industrial equipment

Düsseldorf, Germany, 25th September 2024 – Toshiba Electronics Europe GmbH ("Toshiba") enhances its silicon carbide (SiC) diode portfolio with ten new 1200V Schottky barrier diodes (SBDs). The TRSxxx120Hx series, comprising five products housed in TO-247-2L packages and five in TO-247 packages, helps designers improve the efficiency of industrial equipment, including photovoltaic (PV) inverters, electric vehicle (EV) charging stations, and switching power supplies.

By implementing an enhanced junction barrier Schottky (JBS) structure, the TRSxxx120Hx series allows a very low forward voltage (V_F) of just 1.27V (typ). The merged PiN-Schottky incorporated into a JBS structure reduces diode losses under high current conditions. The TRS40N120H of the new series accepts a forward DC current ($I_{F(DC)}$) of 40A (max) and a non-repetitive peak forward surge current (I_{FSM}) of 270A (max), with the maximum case temperature (T_C) of all devices being +175°C.

Combined with the lower capacitive charge and leakage current, the products help improve system efficiency and simplify thermal design. For instance, at a reverse voltage (V_R) of 1200V, the TRS20H120H diode housed in the TO-247-2L package provides a total capacitive charge (Q_C) of 109nC and reverse current (I_R) of 2µA.

Follow the link to read more about the new TRSxxx120Hx series of 1200V SiC Schottky barrier diodes.

Volume shipments of the new devices start today.

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About Toshiba Electronics Europe
Toshiba Electronics Europe GmbH (TEE) offers European consumers and businesses a wide variety of 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.

In addition, TEE also offers Toshiba's SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications and Silicon Nitride (SiN) ceramic substrates used in power semiconductor modules, inverters, and converters for their heat dissipation characteristics and strength.

TEE has its headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing marketing, sales and logistics services.
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Contact details for publication:
Toshiba Electronics Europe GmbH, Hansaallee 181, D-40549 Düsseldorf, Germany
Tel: +49 (0) 211 5296 0
Web: www.toshiba.semicon-storage.com/eu/company/news.html

Contact details for editorial enquiries:
Michelle Shrimpton, Toshiba Electronics Europe GmbH
Tel: +44 (0)7464 493526
E-mail: MShrimpton@teu.toshiba.de

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

September 2024 **Ref. 7575(A1)E**