



### **Toshiba launches 600V super junction N-channel power MOSFET series with ultra-low $R_{DS(on)}$**

The first device in the 600V DT MOSVI series supports energy conservation by reducing power loss in switching power supplies

**Düsseldorf, Germany, 20 June 2023** – Toshiba Electronics Europe GmbH (“Toshiba”) has introduced a new series of N-channel power MOSFETs. The first product in the 600V DT MOSVI series is the TK055U60Z1, which is based on Toshiba’s latest-generation process with a super junction structure.

The new MOSFET features an  $R_{DS(on)}$  of only 55m $\Omega$  – a 13% improvement over similar devices in the company’s established DT MOSIV-H series. In addition, the  $R_{DS(on)} \times Q_{gd}$ , which is the figure of merit for MOSFET performance, is improved by approximately 52%. Target applications include high-efficiency switching power supplies in data centers, power conditioners for photovoltaic generators, and uninterruptible power systems.

The new product employs the popular TOLL package, which features a Kelvin connection for the signal source terminal. As a result, the source wire’s inductance has less impact, reducing switching oscillation, which enhances switching performance when the MOSFET operates at high gating speeds. The applied pin shaping ensures proper solder connections, increases mounting reliability and makes visual inspection easier.

The maximum channel temperature ( $T_{ch}$ ) of the new product is 150°C. The typical  $R_{DS(on)}$  of 47m $\Omega$  is specified at a gate-source voltage of 10V.

Typical total gate charge ( $Q_g$ ), gate-drain charge ( $Q_{gd}$ ) and input capacitance ( $C_{iss}$ ) are 65nC, 15nC and 3680pF, respectively. These factors will allow the new device to switch at the fastest possible speeds.

Toshiba will continue expanding its 600V DTMOSEVI series lineup, and the already released 650V DTMOSEVI series products, to support energy conservation by reducing power loss in switching power supplies.

For more information on TK055U60Z1 power MOSFET, please visit

<https://toshiba.semicon-storage.com/eu/semiconductor/product/mosfets/400v-900v-mosfets/detail.TK055U60Z1.html>

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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](http://www.toshiba.semicon-storage.com).

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