



DTMOSVI 600V, 0.047Ω super junction power MOSFET in DFN8×8 package

Optimised gate design and compact package will help engineers reduce the size of end equipment and improve efficiency

Düsseldorf, Germany, 27th November 2025 – Toshiba Electronics Europe GmbH ("Toshiba") launches a 600V N-channel super junction power MOSFET in the DTMOSVI 600V process and housed in a compact DFN8×8 package. The TK057V60Z offers a drain-source voltage (V_{DS}) of 600V with a drain current (I_D) capability up to 40A. The typical drain-source on-resistance ($R_{DS(ON)}$) is as low as 0.047Ω (0.057Ω max.), and the typical gate drain charge (Q_{gd}) can be as low as 15nC. The high-efficiency device and compact package maximise power density in industrial equipment. Applications include switched-mode power supplies for data centre servers, uninterruptible power supplies, and photovoltaic power conditioners.

In the DTMOSVI 600V series, which includes the TK057V60Z, Toshiba has optimised the gate design and manufacturing process to achieve approximately a 36% reduction in the figure-of-merit (FoM), defined as $R_{DS(ON)} \times Q_g$, and approximately a 52% reduction in $R_{DS(ON)} \times Q_{dg}$, compared to the existing generation DTMOSIV-H series with the same voltage rating. These improvements reduce conduction loss, drive loss, and switching loss, providing significant efficiency improvements in power supply circuits. Furthermore, the adoption of the small surface-mount DFN8×8 package enables engineers to reduce the size of their end equipment. A Kelvin source pin enables proper gate control and helps avoid the impact of parasitic inductance at the power source pin.

Toshiba offers tools that support circuit design for switching power supplies. Alongside the G0 SPICE model, which quickly verifies circuit function, highly accurate G2 SPICE models are now [available](#) that accurately reproduce transient characteristics.

Toshiba will continue to expand its DTMOSVI 600V series product lineup to improve the efficiency of power supplies in industrial equipment.

For further information, please visit Toshiba's website: [TK057V60Z1](#)

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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 offers SCiB™ battery cells and modules with lithium titanium oxide (LTO) for heavy-duty applications.

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.

Visit Toshiba's websites at www.toshiba.semicon-storage.com and www.scib.jp/en for further company and product information.

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