



Toshiba launches 1.4m Ω 80V N-channel power MOSFET for high efficiency industrial power equipment

The U-MOS11-H generation supports low loss performance and high drain current capability in a compact 4.9 x 6.1mm package

Düsseldorf, Germany, 30th June 2026 – Toshiba Electronics Europe GmbH (“Toshiba”) has introduced the TPM1R408RH, an 80V N-channel power MOSFET based on the company’s latest U-MOS11-H process technology. Designed for high-efficiency industrial switched-mode power supplies for data centre and communications base station equipment, the new device combines ultra-low on-resistance ($R_{DS(ON)}$) with fast switching performance to help designers improve system efficiency and reduce power losses.

Compared with the TPM1R908QM, an 80V product with the previous-generation U-MOS X-H process, the TPM1R408RH achieves approximately 26% lower $R_{DS(ON)}$ of 1.4m Ω (max.) at a gate-source voltage (V_{GS}) of 10V and drain current (I_D) of 50A, helping to minimise conduction losses in demanding power designs.

To further improve efficiency, the new MOSFET improves the trade-off between $R_{DS(ON)}$ and total gate charge (Q_g), achieving 80nC. The figure-of-merit (FOM) [$R_{DS(ON)} \times Q_g$] is approximately 45% lower (1.4m Ω x 80nC = 112m Ω ·nC) compared with the TPM1R908QM (1.9m Ω x 108nC = 205.2m Ω ·nC). These characteristics reduce switching losses and suppress spike voltage generated between the drain and source during switching, helping to reduce electromagnetic interference (EMI) and enable high-speed switching in switched mode power supplies (SMPS).

The TPM1R408RH supports a drain-source voltage of 80V and a maximum drain current (I_D) of 288A ($T_c = 25^\circ\text{C}$), making it suitable for high-current industrial applications. The device is housed in Toshiba’s compact SOP Advance(E) package, which reduces package resistance by approximately 65% and thermal resistance by approximately 15% compared with the existing SOP Advance(N) package, supporting space-efficient system designs.

Toshiba also 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](#) which reproduce transient characteristics are now available.

Toshiba will continue to expand its lineup of power MOSFETs that improve power supply efficiency, thereby helping to reduce power consumption in equipment.

Follow this link to find out more: [TPM1R408RH](#)

###

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.

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, Pretzl Group Ltd.
Tel: +49 (0) 172 617 8431
Web: www.pretzl.com
E-mail: birgit.schoeniger@pretzl.com