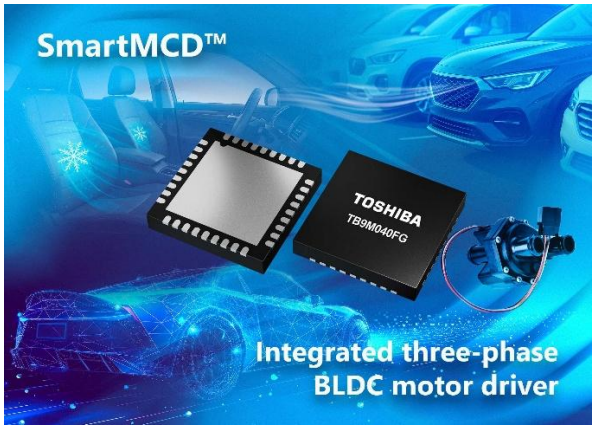

Toshiba samples TB9M040FTG SmartMCD™ device integrating MCU and MOSFETs for direct drive of compact automotive BLDC motors

Enables cost-efficient, space-saving designs in the sub-40W power range

Düsseldorf, Germany, 18th May 2026 – Toshiba Electronics Europe GmbH ("Toshiba") has started shipping engineering samples of the TB9M040FTG, a new addition to its SmartMCD™ series. The device integrates a microcontroller (MCU) with power MOSFETs for three-phase brushless DC (BLDC) motor drive, enabling direct control of small automotive motor systems operating below 40W.

As vehicle electrification continues to expand, demand for compact three-phase BLDC motors used in applications such as electric valves, HVAC dampers, small pumps, fans, and grille shutters is increasing. These applications require highly integrated solutions to reduce component count and thereby minimise ECU size.

The TB9M040FTG addresses these requirements by integrating a 32-bit Arm® Cortex®-M23 core, flash memory, a three-phase BLDC motor driver with built-in MOSFETs, a 5V power supply for optional components/sensors, a LIN transceiver, all within a compact 6mm × 6mm (typ.) VQFN36 package.

To further enhance performance, the device incorporates Toshiba's Vector Engine (VE) co-processor, which accelerates field-oriented control (FOC) processing with very short FOC cycle times, reduces CPU load, and helps minimise software size. It also features back electromotive force (BEMF) detection, enabling sensorless square-wave control.

The device is AEC-Q100 Grade 0 qualified and ASIL-B capable, making it suitable for a wide range of automotive applications with medium functional safety requirements.

Integrated protection features include undervoltage, overvoltage, and overcurrent detection, as well as thermal shutdown, charge pump voltage monitoring, and drain-source voltage (Vds) detection for both high- and low-side MOSFETs.

Toshiba will continue to expand its SmartMCD™ series, supporting the development of compact, efficient automotive motor control systems.

For more information about the TB9M040FTG, visit: https://toshiba.semicon-storage.com/eu/semiconductor/product/automotive-devices/detail.TB9M040FTG.html

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Notes to editor:
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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

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