



Toshiba now sampling automotive gate driver IC for brushless DC motors

Cost-optimised gate driver supporting single shunt measurement

Düsseldorf, Germany, 28th November 2024 – Toshiba Electronics Europe GmbH (“Toshiba”) now provides engineering samples of its TB9084FTG, a MOSFET gate driver IC for three-phase brushless DC (BLDC) motors with a power rating of several hundred watts. The new device supports the trend of automotive OEMs replacing brushed DC motors with quieter, longer-lasting BLDC motors to drive body system applications like powered sliding passenger doors, power tailgates, and adjustable seats. The device can also drive BLDC motors to enhance the power performance of electric pumps and fans.

The main functions of the gate driver IC that were optimised include the 6-channel gate-driver structure, the additional gate-driver output to control the external MOSFET for reverse polarity protection, and the operational amplifier for one-channel motor current sensing, SPI communication, and the motor emergency stop function. Protection circuitry includes power supply under-voltage detection, charge pump overvoltage detection, thermal shutdown, and MOSFET drain-source voltage (V_{DS}) monitoring.

The TB9084FTG is housed in a compact P-VQFN36-0606-0.50 package, measuring just 6mm×6mm, contributing to the miniaturisation of equipment. The operating temperature range is from -40 to +150°C, and the IC conforms to the AEC-Q100 (Grade 0) qualification. In addition, this package features a wettable flank structure, which facilitates automated optical inspection (AOI) to ensure the solder joint reliability.

Toshiba will further expand its lineup of gate driver ICs by optimising product functions based on market research. The company will continue to introduce new products to the market and contribute to the electrification and safety improvement of automotive equipment.

Follow this link for more information on Toshiba's products for automotive BLDC motor driver ICs: [Automotive Brushless Motor Driver ICs](#)

Read more about the new product on Toshiba's website: [TB9084FTG](#)

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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.

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

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