



Toshiba sampling automotive gate driver IC for brushed DC motors

Streamlined design helps optimise DC motor applications

Düsseldorf, Germany, 02nd October 2024 – Toshiba Electronics Europe GmbH (“Toshiba”) has today started to provide engineering samples of TB9103FTG, a MOSFET gate driver IC for automotive brushed DC motors. The new product supports latch and lock motor applications that do not require speed control such as powered boot lids and sliding doors, and drive motors for electric windows and seat adjusters.

Manually opened doors, windows and adjustable car seats have mostly been replaced with electrical systems. This electrification trend increases the need for more electric motors in all vehicle classes. Furthermore, some motor applications do not need rotational speed control, so drivers with simple control functions and performance will suffice in price sensitive segments.

With its cost optimised and streamlined gate driver functions, the TB9103FTG meets the needs of brushed DC motor applications that do not require speed control, opening the way to a more compact system design. The device features a built-in charge pump circuit, which uses a capacitor and switches to increase the voltage to deliver power to the external MOSFETs for driving the motors. It also has a gate monitoring function that prevents through-current by automatically controlling the output timing of the gate signal to the high-side and low-side external MOSFETs. With low-power standby and built-in sleep functions, the device also contributes to reduced power consumption.

The new IC offers flexibility, serving as either a single-channel H-bridge or two half-bridge channels. It's not just suited for motor control; when used with an external MOSFET, it can replace mechanical relays and switches. This leads to quieter operation and improves equipment reliability.

The operating temperature range is from -40 to +125 °C, which is suitable for automotive applications, and the IC will conform to the AEC-Q100 Grade 1 qualification standard for automotive electronics.

For more information on the TB9103FTG, which is housed in a 4.0mm×4.0mm (typ.) P-VQFN24-0404-0.50-003 package, please visit: <https://toshiba.semicon-storage.com/eu/semiconductor/product/automotive-devices/detail.TB9103FTG.html>

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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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October 2024

Ref. 7582(A)E