



Toshiba teams with MikroElektronika to accelerate automotive motor control development

TB9053 10A driver integrated on DC Motor 26 Click Board™ for faster time to market

Düsseldorf, Germany, 25 July 2023 – Toshiba Electronics Europe GmbH (“Toshiba”) has collaborated with MikroElektronika (MIKROE) to integrate its TB9053 DC-motor driver IC into the DC Motor 26 Click Board™ to accelerate development of automotive applications.

The TB9053 provides a dual H-bridge output stage that can drive two motors at up to 5A or a single motor up to 10A. Protection and diagnostic features are built-in, as well as additional circuitry to save external components such as charge-pump capacitors. The high feature integration of the TB9053, in its thermally enhanced QFN40 package, simplifies design, enables compact electronic control units (ECUs), and ensures enhanced reliability.

Now featured on the MIKROE DC Motor 26 Click Board, the TB9053 is easily designed into automotive subsystems such as throttle valves, engine valves, powered mirrors, grille shutters, and door opening/closing mechanisms. It can also be used for powering seat heaters.

The DC Motor 26 Click Board connects directly to microcontroller development boards that support the industry-standard mikroBUS™ interface. The motor can be controlled through the mikroBUS™ socket using a PWM signal (CLK) or the TB9053’s SPI serial interface. PWM or SPI control is selected by user-accessible switches that also govern selection of single- or dual-motor modes. Additional header pins allow motor forward, reverse, brake, drive and stop commands depending on the control mode. The board accepts a 3.3V or 5V input voltage and allows a separate supply for the TB9053 to power the motors at a voltage from 4.5V to 28V.

The built-in diagnostic capabilities of the TB9053 allow ongoing performance and functional observation. Current monitoring and current limiting features are also incorporated. If the IC detects overtemperature, overcurrent, or under-voltage, a series of red LEDs indicate the fault to the user.

The Click Board comes with a software library from MIKROE that contains easy-to-use functions and example code to accelerate development. Users can also take advantage of the MIKROE Software Development Kit, mikroSDK, which contains open-source software libraries, a unified API, and software development tools to accelerate time to market.

For further information on the TB9053 please visit <https://toshiba.semicon-storage.com/eu/semiconductor/product/automotive-devices/detail.TB9053FTG.html>

For further information about the DC Motor 26 Click Board, please visit <https://www.mikroe.com/dc-motor-26-click>

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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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