



Toshiba launches H-bridge driver IC supporting low-voltage, large current drive

New solution realises 1.8V, 4.0A motor control with two dry-cell batteries

Düsseldorf, Germany, 12th December 2018 – Toshiba Electronics Europe (“Toshiba”) today announced the launch of an addition to its line-up of dual H-bridge driver ICs for DC brushed motors and stepping motors. The new TC78H653FTG delivers the low voltage (1.8V) and high current (4.0A) essential for motor-based equipment powered by dry-cell batteries such as mobile devices, electronic products for the home and USB drives.

The new driver IC is suitable for a wide range of applications including motor applications that are driven by relatively low voltage batteries in the range 1.8V to 7.0V, mobile devices with motors (cameras, electric toothbrushes, printers) using 3.7V lithium-ion batteries, products for the home, such as electronic locks, smart meters, and toys using two 1.5V dry batteries, as well as devices based on a 5V USB power supply.

In recent years, as advances in the IoT and wireless technologies find increasingly wide use, demand for applications that can be remotely operated via smartphones and other tools is increasing, and with it interest in battery-powered motor control ICs such as the TC78H653FTG. In fact, this trend is stimulating demand for driver ICs capable of driving devices at voltages as low as 1.8V which can be an operating level of nominal 1.5V or 1.2V batteries that are partially depleted through use.

Until now, mainstream motor control ICs have been H-bridge devices constructed with bipolar transistors, allowing stable operation at low voltage. However, the associated high levels of current consumption are a challenge that shortens battery life and increases current losses in the IC. In turn, this leads to insufficient motor torque, as the voltage applied to the motor is lowered.

Toshiba's new dual-H-bridge TC78H653FTG uses Toshiba's specialized DMOS process for low voltage drives to achieve a longer battery life with a stable low voltage operation. A built-in standby function with negligible current consumption further prolongs battery lifetimes. The device can deliver up to 4.0A and is capable of two-channel operation in small mode. Improved motor torque is also realized by reducing IC losses output through low on-resistance values of 0.22Ω (small mode) and 0.11Ω (large mode).

The new device is housed in a tiny 3.0mm x 3.0mm QFN16 package that occupies less than one-third of the area of the previous solution, the TC78H651FNG.

Follow the link below for more information on the new H-bridge motor driver:

<https://toshiba.semicon-storage.com/eu/product/linear/motordriver/detail.TC78H653FTG.html>

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About Toshiba Electronics Europe

[Toshiba Electronics Europe GmbH](#) (TEE) is the European electronic components business of [Toshiba Electronic Devices and Storage Corporation](#). TEE offers European consumers and businesses a wide variety of innovative hard disk drive (HDD) products plus semiconductor solutions for automotive, industrial, IoT, motion control, telecoms, networking, consumer and white goods applications. The company's broad portfolio encompasses integrated wireless ICs, power semiconductors, microcontrollers, optical semiconductors, ASICs, ASSPs and discrete devices ranging from diodes to logic ICs.

TEE has headquarters in Düsseldorf, Germany, with branch offices in France, Italy, Spain, Sweden and the United Kingdom providing design, manufacturing, marketing and sales. Company president is Mr. Tomoaki Kumagai

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