



Toshiba's New Three-phase Brushless Motor Drivers Realise High Speed Rotation for Small Motors

New products employ one-sensor sensing allowing operation in confined spaces

Düsseldorf, Germany, 16 November 2017 – Toshiba Electronics Europe today announced the launch of two new three-phase brushless motor drivers. TC78B015FTG is for 12V power supply applications and TC78B015AFTG supports applications using 24V. The new ICs support high-speed rotation of small fan motors and are ideally suited to home appliance and industrial equipment applications.

Ideally, cooling fans, such as those found in servers, combine minimum size with a high rotation speed thereby ensuring maximum cooling capability. Toshiba's new driver ICs are within small WQFN 36 (5mm x 5mm x 0.8mm) packages that can be mounted on the limited PCB space found in small motors.

The new ICs also reduce the external component count by incorporating a one-sensor drive and current detection resistor-free system. One-sensor driving reduces the number of hall sensors from three to one and ensures more reliable motor operation than a comparable sensorless drive. The resistor-free current detection system can reduce the power supply rating and eliminate the large resistors previously required. All of these innovations contribute to reduced demand for space on wiring boards.

High speed rotation is achieved with a 150-degree commutation system. Rotation is faster and more stable than with a sine-wave commutation system, and vibration is lower than in a conventional 120-degree commutation system. Adoption of low on-resistance (upper + lower: 0.24Ω (typ.)) reduces heat generation due to the increased motor current found in high frequency drives.

The TC78B015FTG operates with a supply in the range 6V to 22V and the TC78B015AFTG requires a supply in the range 6V to 30V. Both devices support output currents up to 3A and support Hall devices as well as offering a range of protection functions including thermal shutdown, overcurrent detection and motor lock detection.

Mass production of both new driver ICs has commenced.

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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.

Formed in 1973 in Neuss, Germany, TEE has headquarters in Düsseldorf, Germany, with branch offices in Germany, France, Italy, Spain, Sweden and the United Kingdom providing design, manufacturing, marketing and sales. Company president is Mr. Akira Morinaga.

For more company information visit TEE's web site at www.toshiba.semicon-storage.com.

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