Toshiba Unveils Bipolar Two-Channel Stepping Motor Driver

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Driver features maximum ratings of 40V and 2.0A, can run two stepping motors independently

Toshiba America Electronic Components, Inc. (*TAEC*)

A high-speed, highly efficient, and multi-stepper or brushed DC motor controllable driver is desirable for use in such applications as printers, surveillance cameras, office automation equipment, banking terminals (including ATMs and banknote identification machines) and home appliances. In parallel, end-product form factor is continually shrinking in response to the trend toward miniaturization, and there’s a growing need to reduce both heat generated within equipment and overall power consumed per unit.

Deepak Mithani, senior director, Mixed-Signal Business Unit, System LSI Group at TAEC, noted, “The heat generated by the ICs themselves prevented previous products from achieving continuous operation in the driving current range of 1.5A motors used in a wide range of equipment. Our new product can simultaneously drive two channels by cutting output resistance in half, which, in turn, significantly reduces heat generation.”

In addition to driving stepping motors, the TC78S122FNG provides an interface for driving brushed DC motors. This enables the use of stepping motors and brushed DC motors together in six combinations. These include two 1.5A stepping motors, one 1.5A stepping motor with two 2.0A brushed DC motors, or four 2.0A brushed DC motors. The channels can also be paralleled to double the power handling; thus, the TC78S122FNG can be used to drive one 3.0A stepping motor or two 4.0A brushed DC motors.

The TC78S122FNG stepper motor driving function offers single-, half-, or quarter-step driving capability for various torque-speed tradeoff flexibility. With its built-in sleep function, the new product can stop the regulator circuit for the IC’s internal logic at stand-by, allowing it to consume microamps of standby power. The new product also incorporates thermal shutdown and overcurrent shutdown circuits that can enhance equipment safety and reliability.

Integrated in a space-saving two-in-one chip, the TC78S122FNG offers maximum voltage of 40V in a HTSSOP package. Thermal management of the equipment and the module can be simplified by adopting the small, high-thermal-conductivity HTSSOP package, contributing to reduced IC size and cost. Toshiba also plans to release the IC in an even more compact QFN package later this year.

**Availability**

Samples of the TC78S122FNG stepping motor driver have begun shipping. Mass production is scheduled to begin in July 2016.

*About TAEC*

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1 Compared with Toshiba's previous product, TB62212.

Information in this press release, including product pricing and specifications, content of services and contact information, is current and believed to be accurate on the date of the announcement, but is subject to change without prior notice. Technical and application information contained here is subject to the most recent applicable Toshiba product specifications.

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