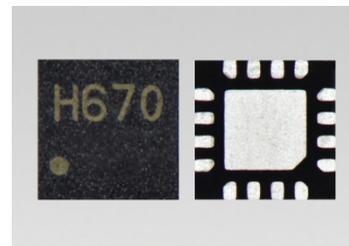


Toshiba Launches Compact, Low Power, High Resolution Micro-stepping Motor Driver IC

Toshiba Electronic Devices & Storage Corporation ("Toshiba") has launched "TC78H670FTG," the latest addition to its line-up of micro-stepping motor driver ICs. The new IC has a maximum rating of 18V/2.0A ^[Note 1] and can drive motors with a wide range of operating voltages. Mass production starts today.

The new IC can drive a 128 micro-stepping motor with a power supply ranging from 2.5V to 16V. Its wide range of applications includes USB-powered, battery-powered, and standard 9-12V system devices, and it can also be used a 1.8V interface, allowing connection to various hosts and microcontrollers.

Toshiba's newest DMOS process ensures that TC78H670FTG realizes excellent figure-of-merit low ON resistance. The process also contributes to the IC's ultra-low standby current. The IC is housed in a compact QFN16 package and eliminates use of a current sense resistor by incorporating a current detection part that contributes to lower cost, a smaller component footprint, and PCB routing space savings.



Three features

- Compact package (QFN16 3.0mm×3.0mm) and low ON resistance ($R_{on}=0.48\Omega$ (typ.) @VM=12V)
- Allows connection to wide range of applications with interface of 1.8V to 5.0V.
- Operates motors smoothly and quietly, and reduces vibration; improved rotation angle accuracy achieved by micro-stepping control

Applications

Cameras, security cameras, portable printers, handheld scanners, pico-projectors, and smartphones

[Note 1]: Actual motor drive current depends on the use environment and such factors as ambient temperature and power supply voltage.

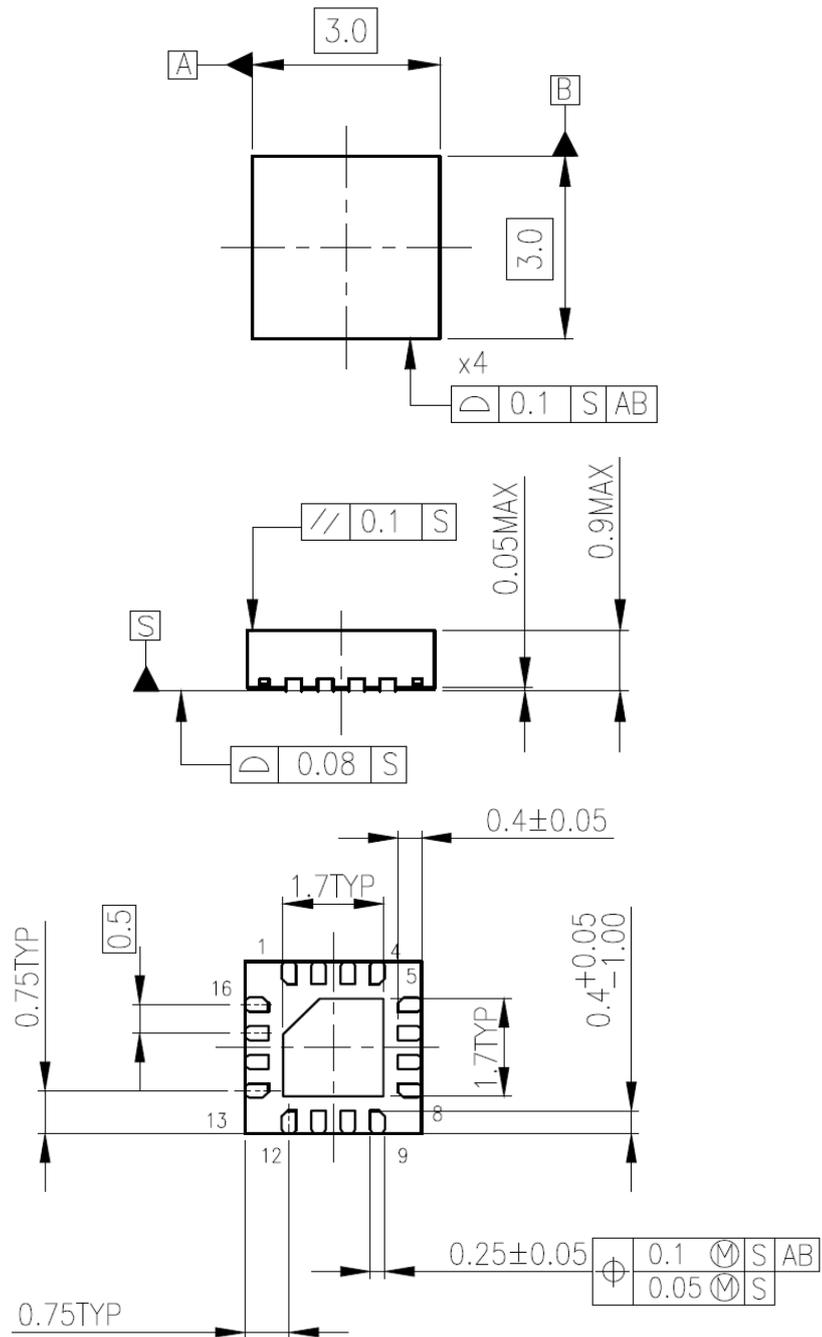
Product specifications

Part number	TC78H670FTG
Supply voltage (Operating range)	2.5V to 16V
Output voltage / current (Maximum ratings)	18V/2A
Number of H-bridge channels	2 channels
Motor to apply	Stepping motor
Output on-resistance (Upper + lower)	0.48Ω (typ.)@VM=12V, Ta=25°C
Safety function	Over current detection, thermal shut down, under voltage lockout, and motor load open
Package	QFN16 (Size: 3.0 mm × 3.0 mm)
Features	Current consumption in standby mode: 0.1μA or less Supports 1.8V I/F Eliminates current sense resistor Supports up to 1/128 micro-stepping control

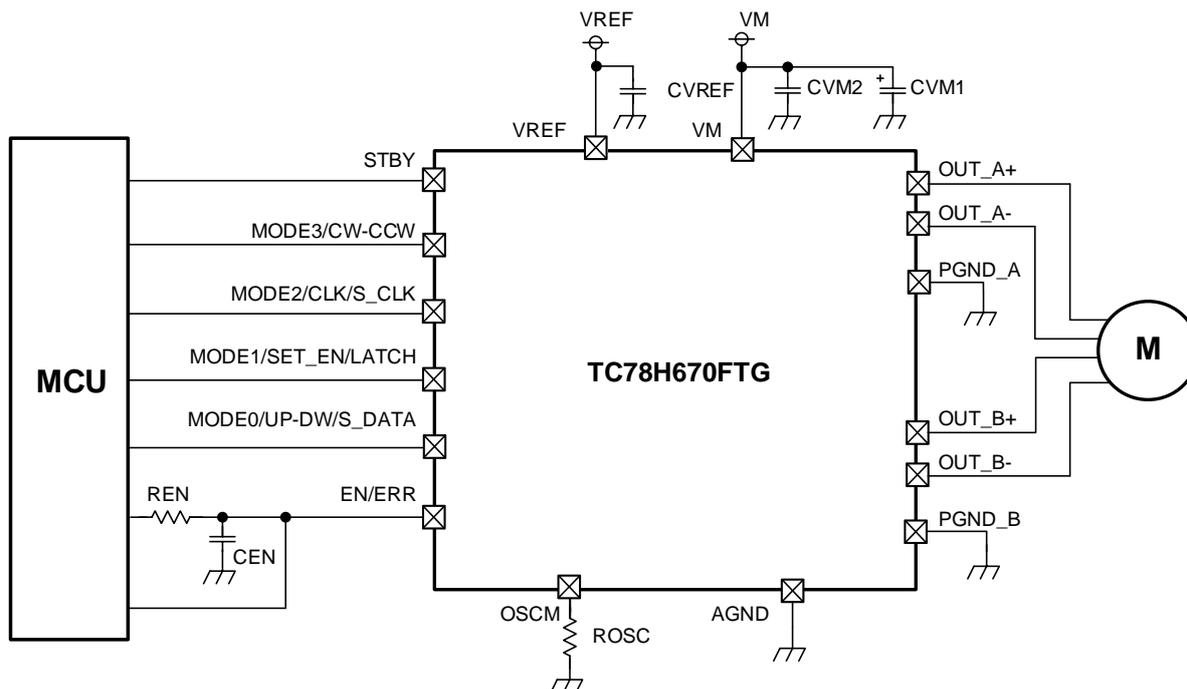
Package Dimension

Unit: mm

P-VQFN16-0303-0.50-001



Application Circuit Example



Note: The application circuits shown in this document are provided for reference purposes only. Thorough evaluation is required, especially at the mass production design stage. Providing these application circuit examples does not grant any license for industrial property rights.

Before creating and producing designs and using, customers must also refer to and comply with the latest versions of all relevant information of this document and the instructions for the application that Product will be used with or for.

TOSHIBA ELECTRONIC DEVICES & STORAGE CORPORATION

<https://toshiba.semicon-storage.com/>

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