

TC78H660FNG

# Toshiba Launches Dual H-bridge Motor Driver IC with PWM Control for Mobile Devices and Home Appliances

Toshiba Electronic Devices & Storage Corporation ("Toshiba") has launched an H-bridge motor driver "TC78H660FNG," housed in a TSSOP16 package with a widely used pin-assignment. It is Toshiba's latest addition to its line-up of drivers for brushed DC motors and stepping motors for applications that include mobile devices and home appliances.

Toshiba's new-generation DMOS process allows TC78H660FNG to achieve a low ON resistance of  $0.48\Omega$  at its maximum rating of  $18V/2.0A$  <sup>[Note 1]</sup> and reduces heat generation.

The new driver has a regulator for driving internal circuits, and can drive a motor with a single power supply ranging from 2.5V to 16V. Its wide range of applications include mobile devices powered by a 3.7V Lithium-ion battery, 5V USB powered devices, and 12V system devices for home appliances. It also supports a low 1.8V interface.



## Features

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- Single power drive, Simple PWM control
- Low ON resistance reduces heat generation  
 $R_{on}=0.48\Omega$  (upper + lower: typ.) @ $V_M=12V$
- Low current consumption  
Ultra-low standby current:  $0.1\mu A$  or less @ $T_a=25^\circ C$

## Applications

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Battery-powered mobile devices, including robots and toys; home appliances including refrigerators, smart meters, etc.

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

## Product Specifications

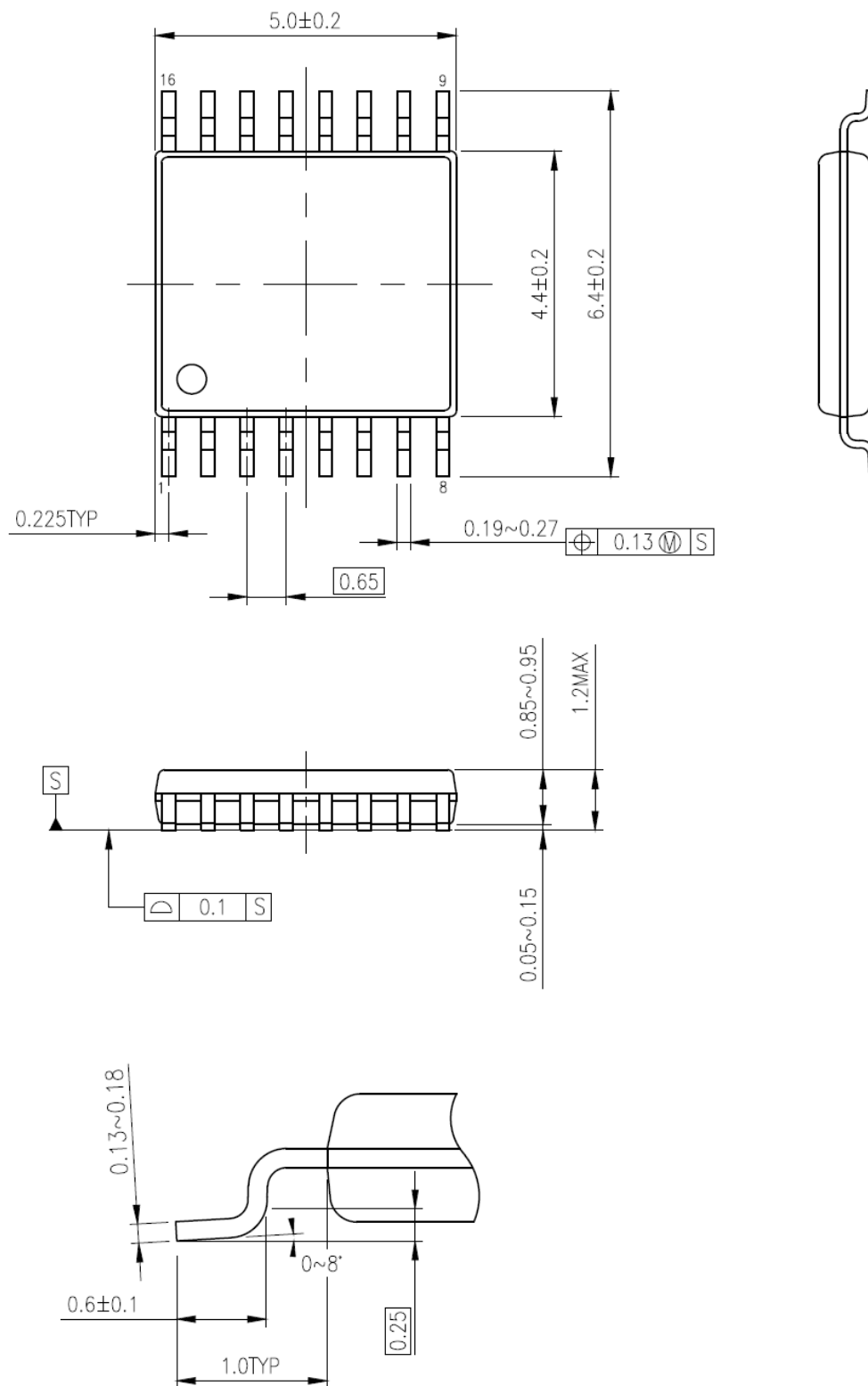
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<b>Part number</b>	TC78H660FNG
<b>Supply voltage (Operating range)</b>	2.5V to 16V
<b>Output voltage (Absolute maximum rating)</b>	18V @Output ON 20V @Output OFF
<b>Output current (Absolute maximum rating)</b>	2A
<b>Number of H-bridge channels</b>	2ch
<b>Supported motor</b>	Brushed DC motors (dual-motor control is possible) Bipolar stepping motors
<b>Output on-resistance (upper + lower)</b>	0.48Ω (typ.) @VM=12V, Ta=25°C
<b>Safety function</b>	Over current detection, thermal shut down, under voltage lockout, Flag output function for over current detection and thermal shut down
<b>Features</b>	<ul style="list-style-type: none"><li>• Current consumption in standby mode: 0.1μA or less</li><li>• Single power drive</li><li>• Support for a 1.8V I/F</li><li>• Direct PWM control or constant current control without current sense resistor</li></ul>
<b>Package</b>	TSSOP16 (Size: 5.0 mm × 6.4 mm)

# Package Dimensions

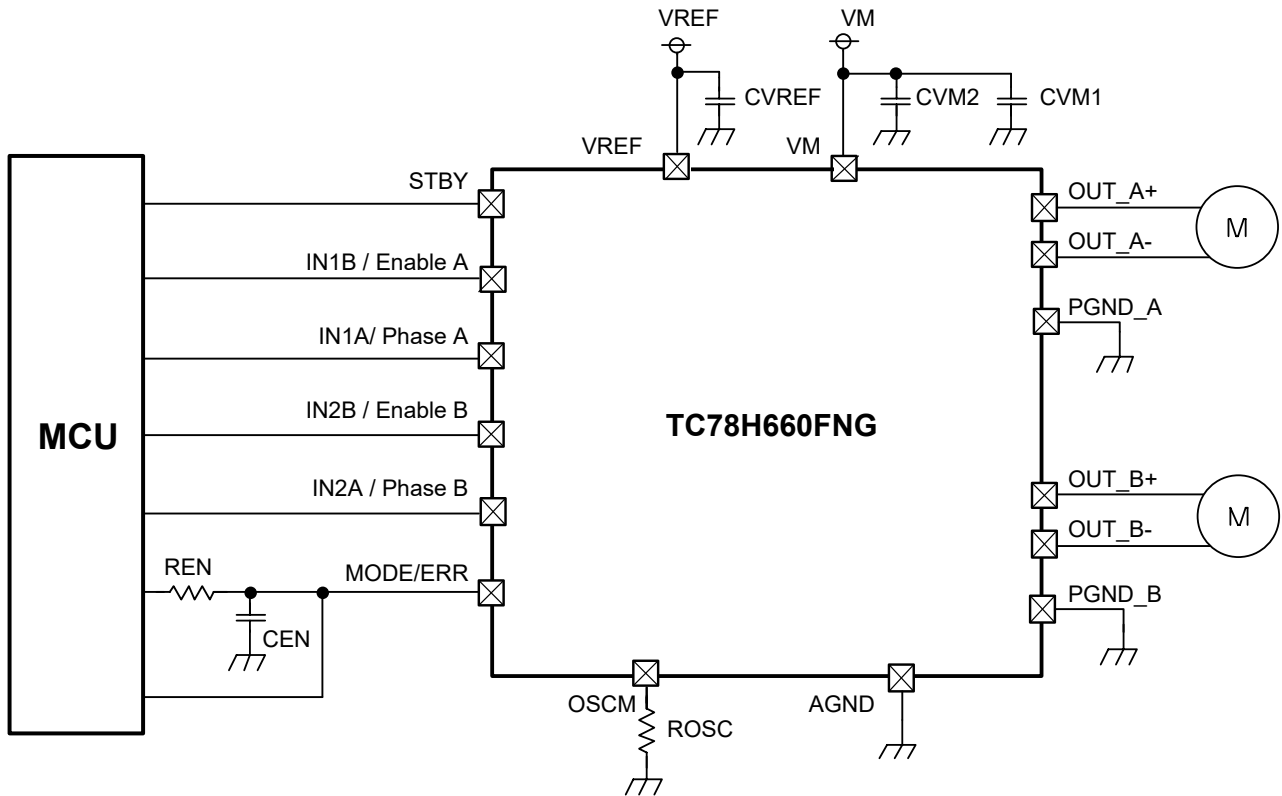
P-TSSOP16-0505-0.65-001

Unit: mm



Weight: 56.5mg (typ.)

# 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.

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