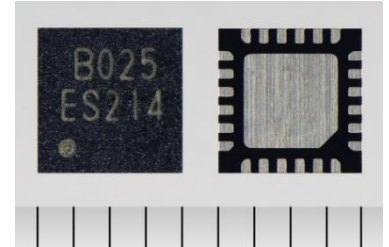


12 V Three-Phase Brushless Fan Motor Driver IC with Rotation Speed Control (Closed Loop Control) Function

TC78B025FTG is a 1-Hall sine-wave PWM driver IC for three-phase brushless motors. DMOS outputting realizes low-on resistance of 0.2 Ω (total of high and low sides). A non-volatile memory (NVM) and a closed loop speed control function are incorporated. Elimination of external microcomputers contributes to cost reduction.



Three Features

- Built-in rotation speed control circuit: Rotation speed control function uses the speed-feedback method to suppress rotation speed fluctuations caused by changes in power supply voltage and load.
- High efficiency drive: Our original motor drive technology (InPAC^[Note1]) realizes efficiency driving across a wide rotation range without adjustment burden.
- Board space saving and size reduction: A small package (4mm×4mm) is adopted. Also, a 1-Hall drive and a current detection resistor-free system (ACDS^[Note2]) contribute to elimination of external components.

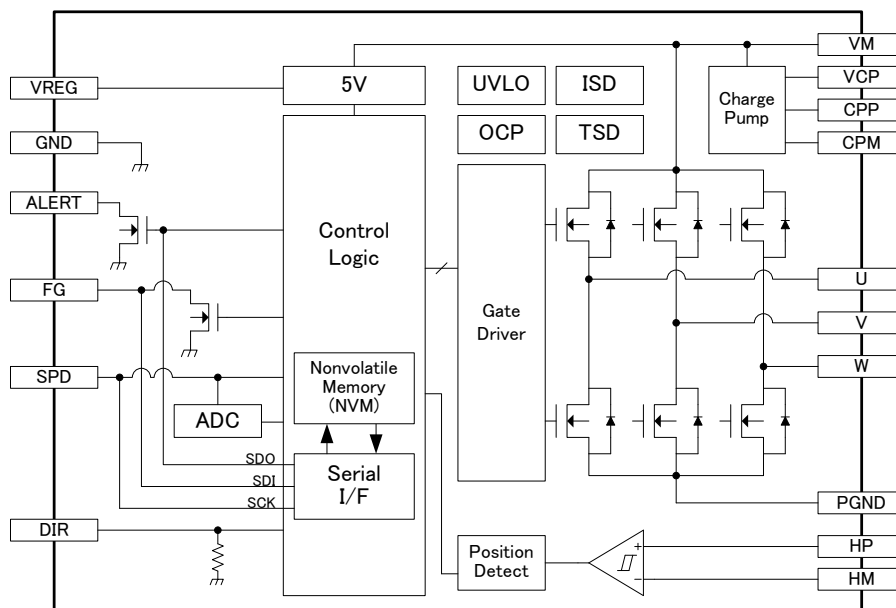
Note 1: Intelligent Phase Control, our new control technology that automatically adjusts the phase between the motor voltage and motor current, enabling efficient motor driving over a wide range of rotation speeds.

Note 2: Advanced Current Detection System, a current control method that does not require a current detection resistor.

Applications

Cooling fans for servers, game machines, etc.

Block Diagram



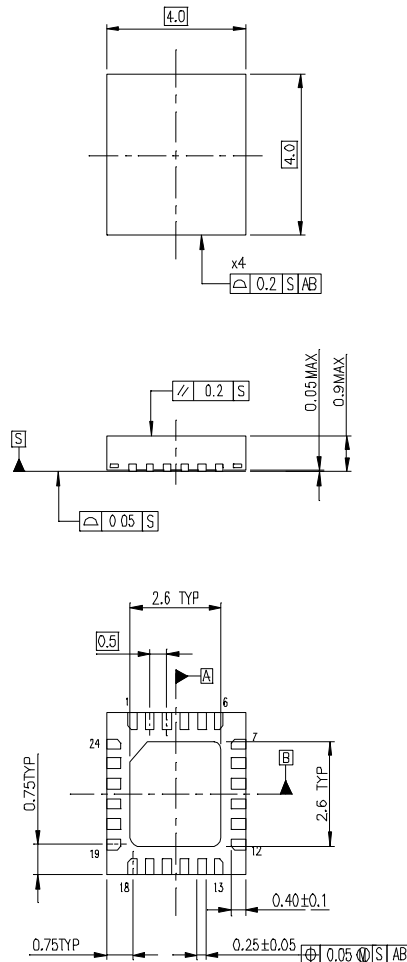
Note: Some of the functional blocks, circuits, or constants in the block diagram may be omitted or simplified for explanatory purposes.

Product Specifications

Part number	TC78B025FTG
Power supply voltage (Operating range)	4.5 V to 16 V
Output current (Operating range)	3.5 A (Peak)
Drive mode	Sine-wave drive
Other features	Output ON resistance (total of high and low sides): 0.2 Ω (typ.)
	Standby function
	Supports speed control by PWM signal input or analog voltage input
	Supports Hall element and Hall IC
	Error detection functions: thermal shutdown, over current protection, and motor lock detection
Package	VQFN24 (4mm \times 4mm \times 0.9mm)

P-VQFN24-0404-0.50-002

Unit:mm



Package dimensions

This product is under development as of the release date of this document. Please note that the development may stop or change without any prior notice for any reason. At this time, we are unable to provide samples or sell mass production versions of this product. Due to the ongoing development of the product, the product descriptions listed herein may differ from the specifications of sample or mass production versions of this product that may be released. In particular, we neither guarantee any of the characteristics, features and performance data outlined in this document nor shall any deviation between the information contained in this document and the final specifications of the product entitle you to any compensation claim. Please contact our sales representatives for details of development progress and the latest versions of relevant product information.

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