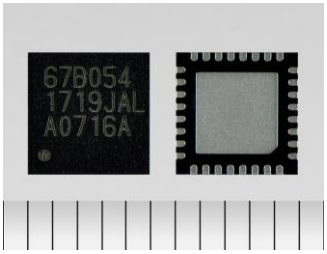
New Sine-wave Controller IC for Three-Phase Brushless Motor Fan, Allowing Easy Switching to Multipolar Motor

TB67B054FTG is a new three-phase brushless fan motor controller IC for home appliances such as air conditioners and air purifiers that realizes high efficient drive and noise reduction. Mass production will start in the end of November, 2017.
When a motor is upgraded from existing 8-pole rotor to 12-pole rotor type, the new product can control the rotation speed with a current microcontroller by using a rotation-control signal that outputs 2 pulses in one cycle. It allows customers to shorten the development term.



Three features

- **Realizes low vibration and noise with a sine-wave PWM drive**
- **Possible to upgrade from 8-pole rotor to 12-pole rotor motor without changing the rotation–control system**
  Since the rotation-control signal outputs 2 pulses in one cycle, the current rotation-control system for 8-pole rotor can be applied to 12-pole rotor.
- **Small surface-mounting type package**
  A small 32-pin QFN package (mounting area: 5 mm×5 mm) is adopted. The mounting area is 68% smaller than for current products in 30-pin SSOP type packages (mounting area: 32.8 mm×13.5 mm), contributing to space-saving in mounting and board layout.

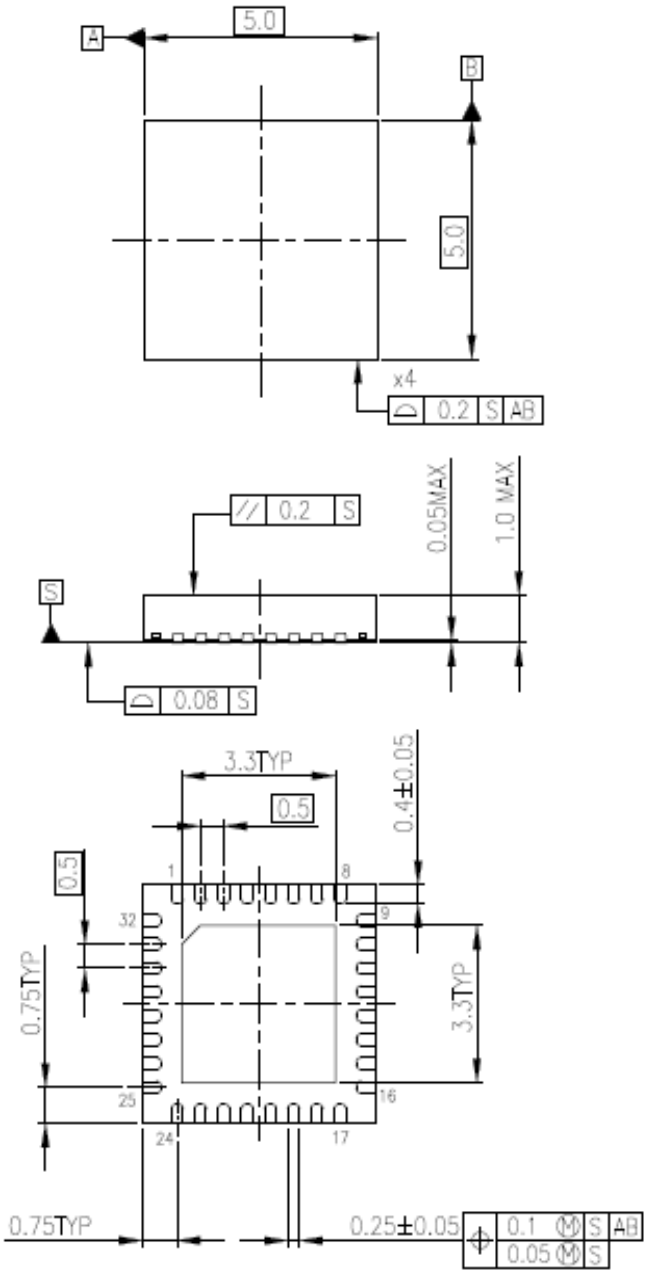
Applications

- Fans for home appliances (air conditioners, air purifiers, hot-water supply machines, ventilation fans, electric fans, etc.)
- Fans for industrial equipment (Refrigeration showcases and others)

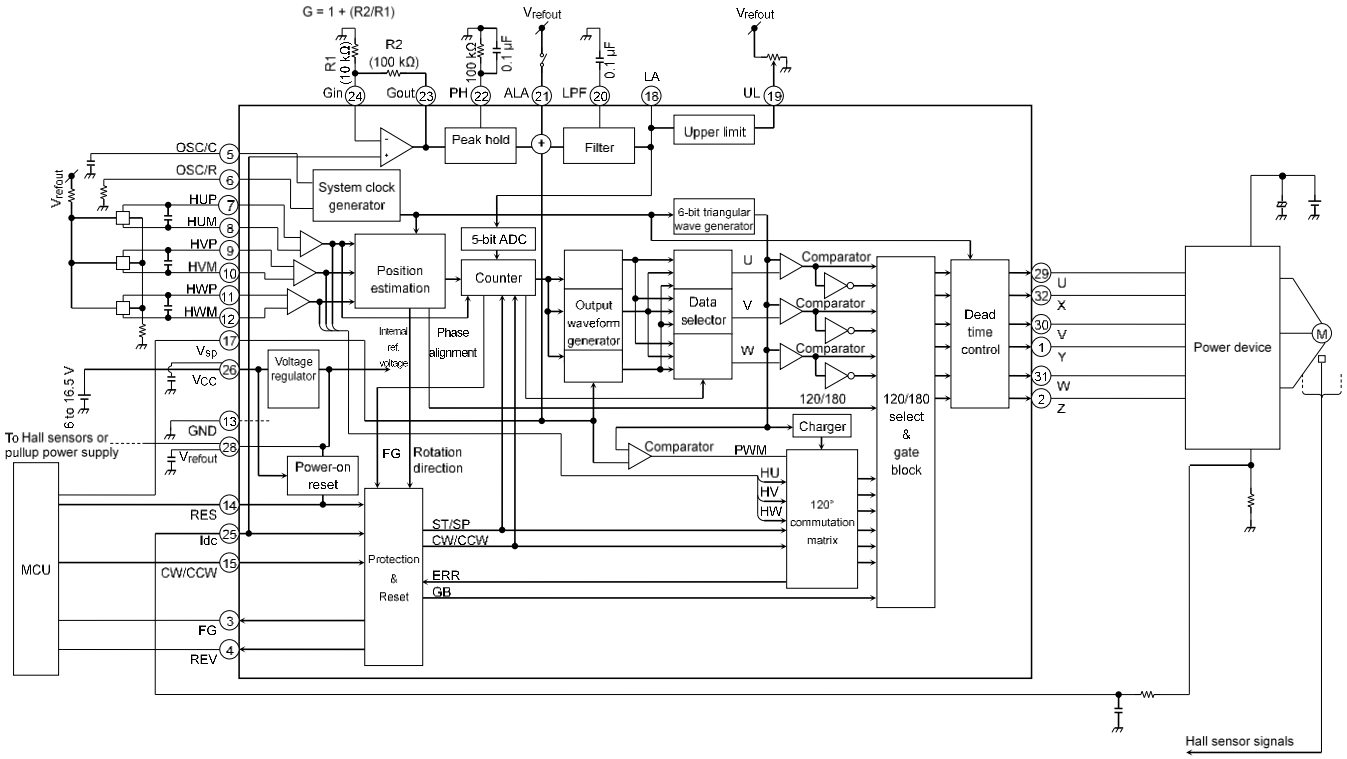
Main specifications of product

Part number	Current product TB6584FNG/AFNG	New product TB67B054FTG
Power supply voltage (Absolute maximum ratings)	18 V	
Power supply voltage (Operation range)	6 V to 16.5 V	
Rotation speed output signal (FG output signal)	3 pulses per one cycle	2 pulses per one cycle
Package	SSOP30 (Mounting area: 10.2 mm×7.6 mm)	QFN32 (Mounting area: 5 mm×5 mm)

Package dimensions



Application circuit example



Note: The application circuit shown above is provided for reference purposes only and not guaranteed for mass production.