

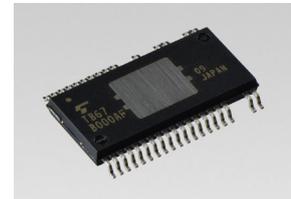
TB67B000AHG/AFG

Toshiba Launches 600V Sine-wave PWM Driver IC for Three-Phase Brushless Fan Motors

Toshiba Electronic Devices & Storage Corporation ("Toshiba") launches "TB67B000AHG" a new three-phase brushless fan motor driver for home appliances such as air-conditioners and air-purifiers, and for industrial equipment. This driver adds a high-voltage version to the "TB67B000 series" which realizes highly efficient fan motor drive and noise reduction in a single package. Toshiba's newly developed 600V TB67B000AHG driver IC is pin-compatible with the current 500V TB67B000HG and can easily replace it. Toshiba is also developing "TB67B000AFG" housed in a small 34-pin HSSOP ^[Note 1] package.



TB67B000AHG (HDIP30)



TB67B000AFG (HSSOP34)

Three features

- **600V rating ensures product reliability**
Ensures products with greater resilience to voltage fluctuations than the current 500V TB67B000HG. Pin compatibility realizes easy replacement of the current IC.
- **Realizing sine-wave PWM drive with a rating of 600V/2A in a single package**
Sine-wave motor control IC and IGBT (rating of 600V/2A) are integrated in a single package. This reduces the size of mounting area and board layout, and contributes to overall system cost reduction.
- **Low noise and low vibration**
Use of a sine-wave drive system with a smooth current waveform reduces noise, and achieves less vibration than motors with a rectangular wave drive system.

Applications

- Home appliances (air-conditioners, air-purifiers, water heaters, ventilation fans, and electric fans)
- Industrial equipment (refrigerating showcase)

[Note 1]: Shrink Small Outline Package with Heat Sink

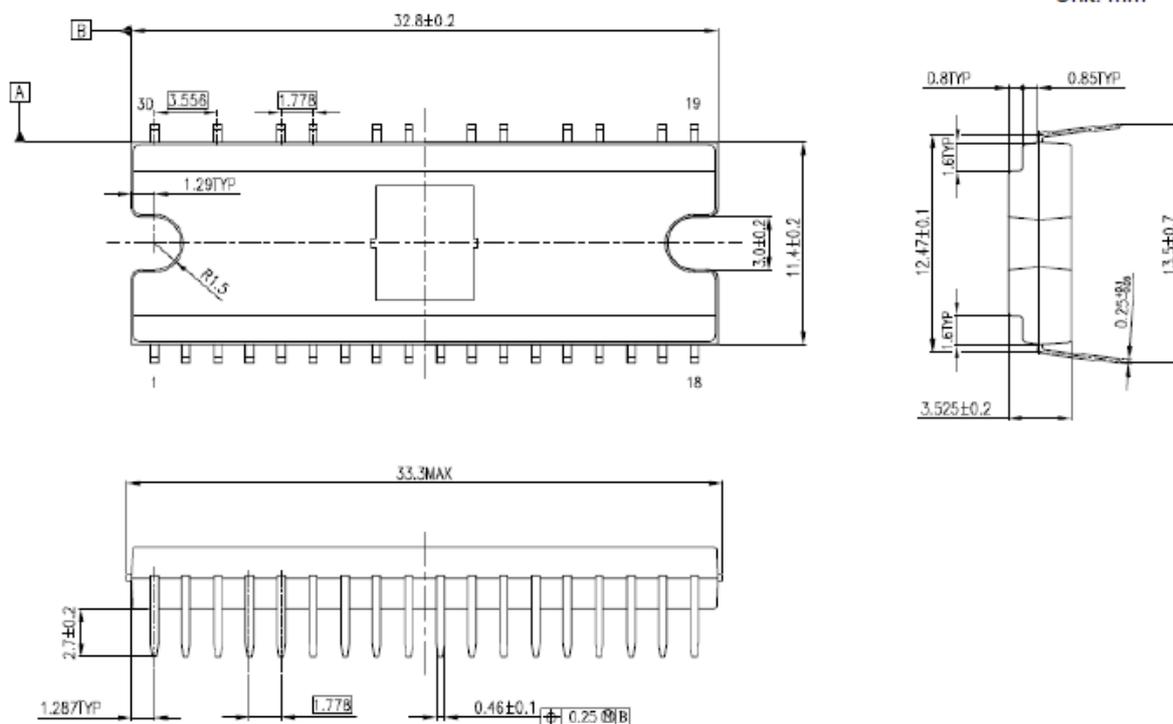
Product specifications

Product name	New product TB67B000AHG	Under development TB67B000AFG	Current product TB67B000HG	Current product TB67B000FG
Power supply voltage (absolute maximum ratings)	For motor operation: 600V		For motor operation: 500V	
	For controller: 18V			
Package	HDIP30 (Mounting area: 32.8 mm × 13.5 mm)	HSSOP34 (Mounting area: : 17.5 mm × 11.93 mm)	HDIP30 (Mounting area: 32.8 mm × 13.5 mm)	HSSOP34 (Mounting area: 17.5 mm × 11.93 mm)
Power supply voltage (operation range)	For motor operation: 50V to 450V			
	For controller: 13.5V to 16.5V			
Output current (operation range)	2A			
Driving method	Sine-wave PWM drive / Trapezoidal commutation			
PWM frequency	14 kHz to 23 kHz			
Lead angle control	Sine-wave PWM drive:		0° to 58° / 32 steps	
	Trapezoidal commutation:		0° to 28° / 16 steps	
Input voltage for rotational speed command	Motor operation: 2.1V to 5.4V			
Features	<ul style="list-style-type: none"> • Built-in IGBT three-phase bridge • Built-in oscillation circuit (resistor connected externally) • Built-in bootstrap diode • Built-in error detection functions: current limiter, thermal shutdown, under voltage lockout, and motor lock detection 			
	Built-in regulator circuit (5V / 35 mA , 5V / 30 mA)		Built-in regulator circuit (5V / 35 mA , 7V / 30 mA)	

Package dimensions

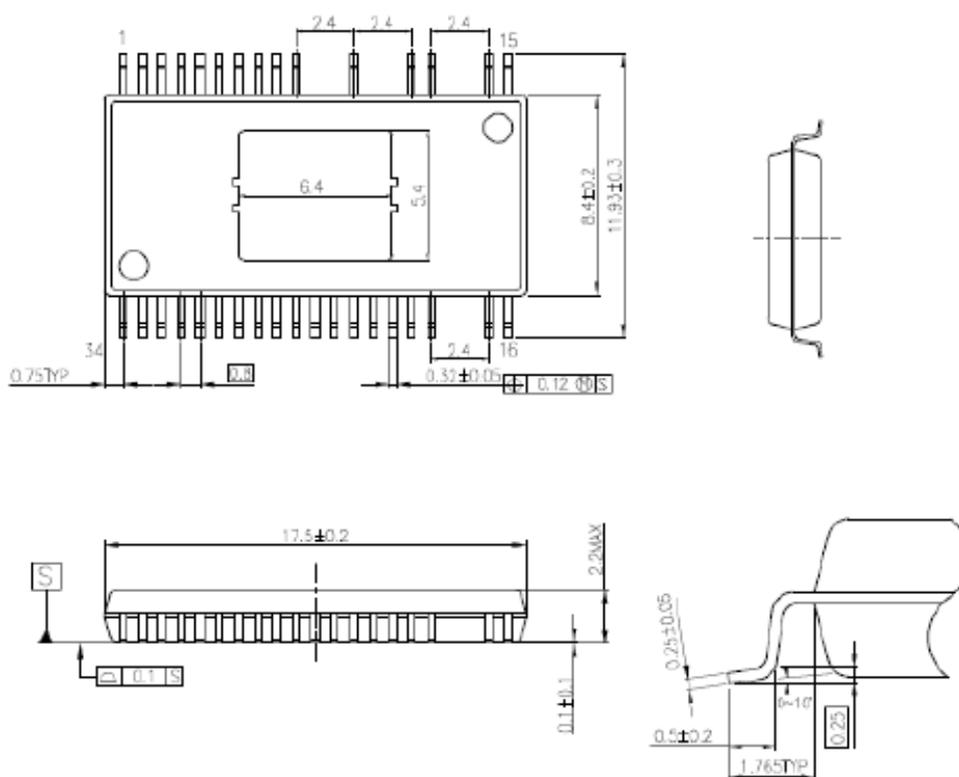
TC67B000AHG

Unit: mm

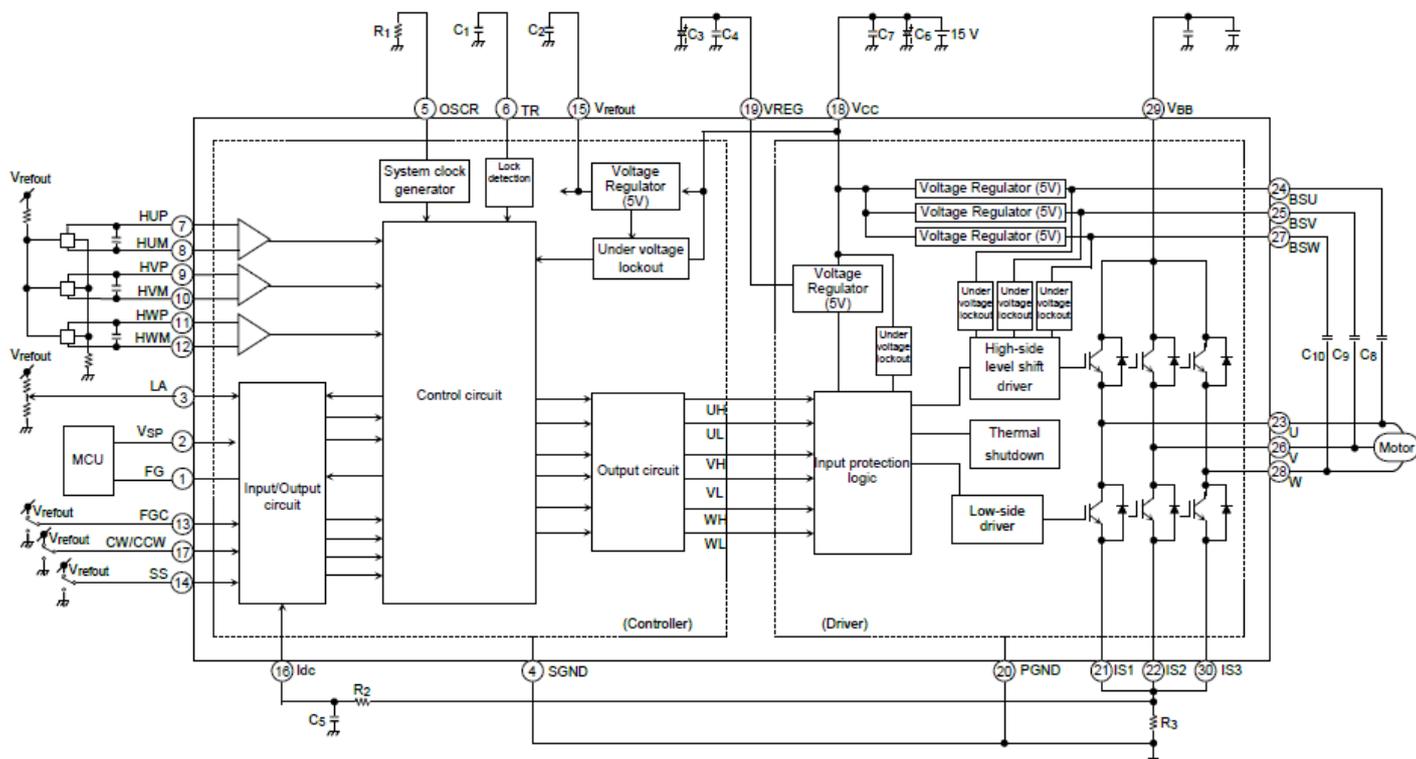


TC67B000AFG

Unit: mm



Application circuit example



Note: The pin numbers of TB67B000AHG are shown in the above figure. For the pin numbers of TB67B000AFG, refer to the technical datasheet.

Note: The application circuit is provided for reference purposes only. Especially, thorough evaluation is required on the phase of mass production design. Providing these application circuit examples does not grant a 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.