

> **Starter Kit**

Item	Function	VM (peak)	IO (max)	Output control signal	Sine-wave current	Sensor-less	Package	Lead angle control	Pb free
TB6539FG /NG	Controller	-	20mA	H:VM L:0V	✓	-	NDIP24 / SSOP30	Manual	Pb free
TB6551FG	Controller	-	2mA	H:5V L:0V	✓	-	SSOP24	Manual	Pb free
TB6556FG	Controller	-	2mA	H:5V L:0V	✓	-	SSOP30	Auto	Pb free
TB6571FG	ControllerP redriver	30V	20mA	H:VM+8V L:0V	✓	-	QFP52	Auto	PB free
TB6581HG	Driver	500V	1A	-	✓	-	HZIP25	Manual	Pb free
TB6585FG	Driver	45V	1,8	-	✓	-	HSOP36	Auto	Pb free
TB6586FG /AFG	Controller	16V	35mA	H:5V L:0V	120/150° drive	-	SSOP24	Manual	Pb free
TB6537PG /FG	Controller	-	20mA	H:5V L:0V	-	✓	DIP18 / SSOP24	Manual	Pb free
TB6575FNG	Controller Predriver	-	20mA	H:5V L:0V	120/150° drive	✓	SSOP24	Manual	Pb free
TB6588FG	Driver	50V	2.5A	-	-	✓	HSOP36	Manual	Pb free

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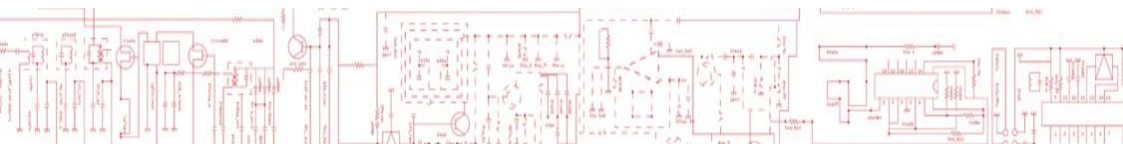
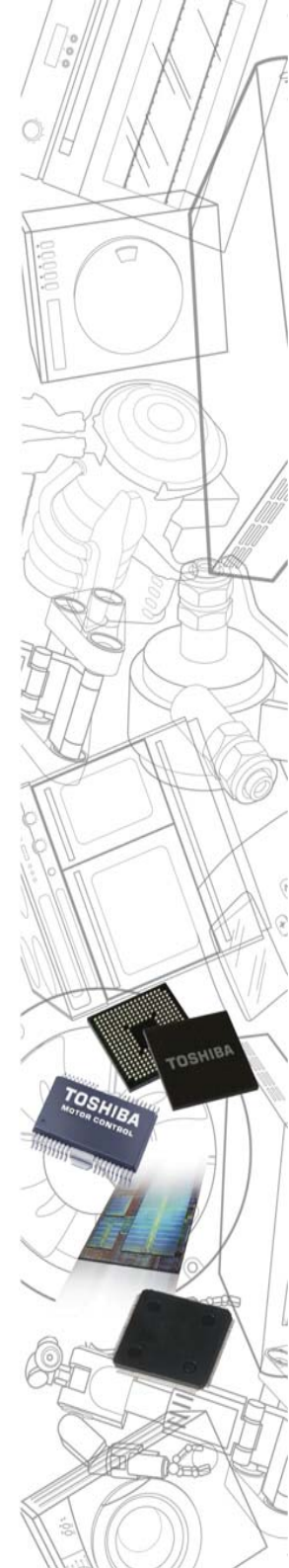
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**Motor Control**

> **TB6585FG**

- > **3-phase BLDC Motor Control and Driver**
- > **Low PD by BiCD process**
- > **Low noise drive by sinusoidal wave current**
- > **High voltage (45V) / high current (1.8A)**
- > **Integrated Hall amplifiers**



**3-phase BLDC Motor PWM Controller & Driver**  
Monolithic Bi-CMOS Integrated Circuit; 42V /1.8A ...

> **Introduction**

The TB6585FG ASSP (application specific standard product) integrates commutation logic, sine wave PWM generation, Hall sensor amplification, motor drive power stage and protection functionality into a single, 36-pin HSOP package.

Designed for powers up to 45W and operating across a wide 4.5V to 36V input range, the new IC can deliver a maximum current of 1.8A.

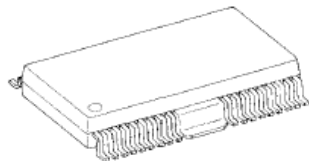
Toshiba's new device is a complete motor driver solution that uses an analogue signal input to modify PWM duty cycle and control forward or reverse motor rotation speed. A triangular waveform generated on-chip is combined with the buffered and amplified inputs from three Hall Effect sensors to generate a modulated waveform. This is then used to produce the three synchronised commutation waveforms needed to drive the motor.

By providing sinusoidal waveforms to drive motor phases Toshiba's TB6585FG helps to minimise electrical and acoustic noise when switching between positive and negative polarities in the driver circuit. This not only promotes more efficient operation, but also helps to reduce vibrations and, so, enhance reliability. The ability to control lead angle allows the designer to tune the delay between current and voltage phases and further improve efficiency in the target application.

The TB6585FG offers configurable modes for improving motor start-up characteristics and has built-in protection against overcurrent conditions. The ability to detect excessive commutation frequency and low rotation speed further improves design flexibility.

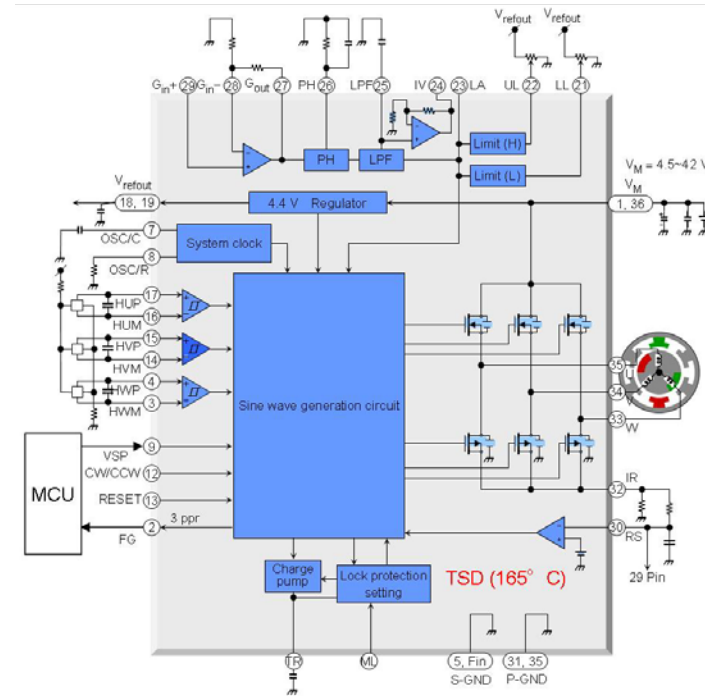


> **Package**



**TB6585FG**  
**HSOP36-P-450-0.65**

> **Application Example**



> **Features**

- > Sine-wave PWM drive
- > Triangular wave generator
- > Hall amplifier
- > Lead angle control
- > Current limit control input ( $V_{RS} = 0.5V$  (typ.))
- > Rotation pulse output (3 pulse/electrical degree 360°)
- > Operating supply voltage range:  $V_M = 4.5$  to 42V
- > Reference supply output:  $V_{refout} = 4.4V$  (typ.), 20 mA (max.)
- > Output current:  $I_{out} = 1.8A$  (max.), 1.2A (typ.)
- > Output On resistance:  $R_{on}$  (P-channel and N-channel) = 0.7  $\Omega$  (typ.)

