FT310N

Sensorless BLDC Motor Controller
With N-channel MOSFETs Driver

Description

The FT310N is a Three-Phase sensorless Brushless DC motor controller with N-channel MOSFETs driver that provides commutation and PWM current control.

FT310N Sensorless BLDC drive chip allows for the removal of rotor position sensors such as Hall Sensors, and simplification of the motor structure. This provides for savings in cost yet improving the reliability of the motor system. As the number of connection between the motor and drive is reduced, the assembling is simplified and testing of the motor system is straightforward. Being sensorless, the motor driver can be installed out of the motor body, and this allows for flexibility in the design and extension of its application.

FT310N has robust starting capability. Robustness of starting is preserved whilst configuration of starting parameters is largely simplified with tuning of a few external resistors.

Feature

- Position sensorless BLDC controller (No hall sensor required)
- With gate driver for N-channel MOSFETs
- Two speed control can be selected(direct-PWM and analog control)
- Low power standby mode
- FG (Frequency detection) and RD (Lock detection) output
- Current limit
- Over current protection
- Built-in lock protection and automatic recovery circuit

  (External capacitor not necessary)
- Built-in thermal shutdown protection(TSD)
- Built-in under voltage lock out (UVLO)

Specifications

Absolute Maximum Ratings (@Ta=25℃)

Parameter	Symbol	Condition	Ratings	Unit
Power supply voltage	V_{CC} max		24	V
Output current	I_{OUT} max	Peak (startup and lock rotor)	100	mA
Logic input pin withstand voltage	V_{logic} max		6.5	V
RD/FG output pin withstand voltage	V_{FG} max		VCC+0.7	V
RD/FG output current	I_{FG} max		10	mA
Power dissipation	Pd max1	Independent IC	1	W
Operating temperature	Topr		-40 ~ +125	℃
Storage temperature	Tstg		-65 ~ +150	℃

Recommended Operating Conditions

Parameter	Symbol	Condition	Ratings	Unit
Power supply voltage	V_{CC}		6~20	V