

Motor Driving and Positioning

MLX81339

The MLX81339 is a versatile 3-phase BLDC motor control IC designed for a wide range of applications.

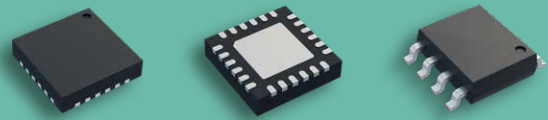
It efficiently drives small, sensorless 3-phase fan and pump motors up to 40W.

It also serves as a robust BLDC or Bipolar Stepper motor control IC for precise positioning in automated valves, flaps, and small robotic motors, all with a minimal PCB design.



Key features

- ✓ Operating range:
 - Supply voltage range from 5.5 V to 26 V
 - Junction temperature from -40 °C to 150 °C
- ✓ Integrated motor bridge driver
 - 350 mOhm per phase (HS+LS+Shunt)
 - programmable peak current limit up to 3 A
 - up to 20W motors at 12V, 40W at 24V
- ✓ Extensive flexibility
 - 81339: full application customizing by customer
 - 80339: fast codefree configuration by customer
- ✓ Protections & Diagnostics
 - Undervoltage, Overvoltage, Overcurrent, Overtemperature detection & protection
- ✓ Package RoHS compliant
 - QFN24 4x4 mm²
 - SO8-ep 6x5 mm²



3-phase fan driver

Sensorless speed control:

- from 1 m-RPM and up to 100k m-RPM motors
- silent & efficient FOC (Field-Oriented-Control)
- configurable FOC current & speed parameters
- overmodulation option for maximum speed and power

ECU communication options:

- legacy PWM/FG interface for existing solutions
- digital I2C or UART interface for smarter control



Applications

3-phase fan and pump motors

- server cooling fans
- bldc residential fans, ceiling fans
- bldc air purifiers and humidifier fans
- bldc washer and dishwashers pumps
- bldc cordless garden and power tools
- bldc 3-phase seat fans
- bldc small automotive fans and blowers



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