

Motor Driving and Positioning

MLX81339

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

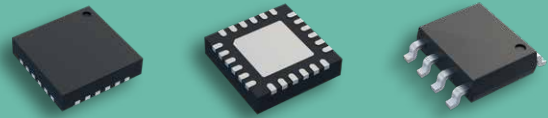
It efficiently drives small, sensorless 3-phase fan and pump motors up to 40W.

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



Automated positioning

Sensorless or sensed position control:

- supports accurate geared positioning motors
- reliable startup, runs from low to maximum speed
- silent & efficient FOC (Field-Oriented-Control)
- configurable current, speed, motor stop parameters

ECU communication options:

- digital I2C, UART, SPI interface for smarter control



Applications

BLDC or Bipolar Stepper motor control

- Geared positioning motors
- thermal gas expansion valves
- water cooling valves
- robotic hand motor drivers with position sensors
- automotive grille shutter, thermal valve, hvac flap



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