

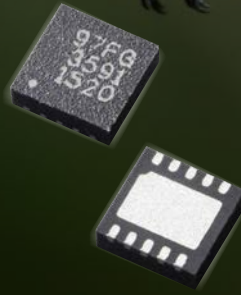
# Melexis

INSPIRED ENGINEERING

MLX90297-S

12V PWM

SINGLE-COIL  
FAN DRIVER



The hummingbird's beating wings flap at extremely high frequencies, typically around 50 times per second. This allows it to fly at speeds exceeding 15 m/s, to fly backwards or to seemingly be suspended in the air in perfect balance. What better animal to reflect the motor/control driver and actuator capacities?

## BRINGING 12V CAPABILITY TO TINY FAN APPLICATIONS

### MLX90297-S

The MLX90297-S is the shrunk version of the MLX90297-A. It offers the same one-chip fan driver functionality for driving single-coil brushless DC motors, into the Ultra-Thin (0.4mm) DNF8 package, with a footprint of only 5mm<sup>2</sup>. The motor speed can be controlled in a highly efficient way through PWM switching of the output half-bridge drivers. The speed control is done through a PWM input signal. The speed transfer curve can be configured by tuning external resistors.

### KEY FEATURES

- ✓ All-in-one single coil fan driver with low BOM cost
- ✓ High magnetic sensitivity
- ✓ Wide operating voltage range from 3.0 V to 18 V
- ✓ Wide PWM input frequency range from 100 Hz to 100 KHz
- ✓ Soft start: Suppresses start peak current while ensuring reliable fan start-up
- ✓ Minimum speed setting
- ✓ Resistor configurable speed curve with minimum speed setting and adjustable slope
- ✓ Soft switching: Optimum low noise performance at any rotation speed
- ✓ Integrated current limiting of the output driver: Reduces BOM (no shunt required), safe operation with low motor coil resistance
- ✓ Built-in PWM input resistor: Reduces BOM and wire-break protection
- ✓ Integrated protection: Locked rotor, brown-out, thermal shutdown, FG/RD output short circuit
- ✓ High ESD protection: 9,000 V human body model
- ✓ Package options: UTDFN8 2.5x2.0, 0.4mm height



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