

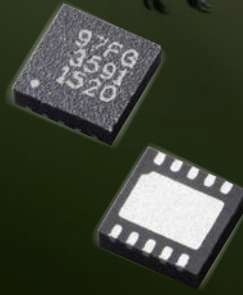
Melexis

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 5mm². 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



The above information is "as is" and believed to be correct and accurate. Melexis disclaims any and all liability in connection with or arising out of the furnishing, application or use of the information or products; any and all liability, including without limitation, special, consequential or incidental damages; and any and all warranties, express, statutory, implied, or by description, including warranties of fitness for particular purpose, non-infringement and merchantability. Melexis reserves the right to change it at any time and without notice. Users should obtain the latest version of the information to verify it is current. Users must further determine the suitability of a product for its application, including the level of reliability required and determine whether it is fit for a particular purpose. Export control regulations may apply and export might require a prior authorization from competent authorities. Melexis' products are intended for use in normal commercial applications. Unless otherwise agreed upon in writing, the products are not designed, authorized or warranted to be suitable in applications requiring extended temperature range and/or unusual environmental requirements. High reliability applications, such as medical life-support or life-sustaining equipment are specifically not recommended by Melexis. Melexis' products are sold under the Melexis' Terms of Sale, which can be found at <https://www.melexis.com/en/legal/terms-and-conditions>.

FOR MORE INFORMATION: WWW.MELEXIS.COM/MLX90297-S

Melexis