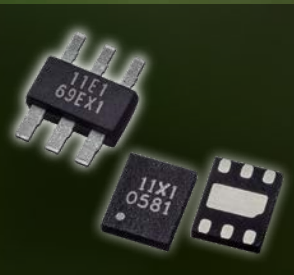




The hummingbird's beating wings flap at extremely high frequencies, typically around 50 times per second. This allows it to fly at speeds exceeding 15 m/s, to fly backwards or to seemingly be suspended in the air in perfect balance. What better animal to reflect the motor/control driver and actuator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

MLX90411-K

## SINGLE-COIL FAN DRIVER



## LOW NOISE FAN DRIVER FOR SMART APPLICATIONS UP TO 15 W

### MLX90411-K

The MLX90411 operates over a supply voltage range from 3.2 V to 32 V, and is robust up to 40 V, making it suitable for any fan, blower or pump applications operating from 5 V, 12 V and 24 V, as well as portable applications with up to seven Li-ion cells ~29 V. With a current limit up to 1A, the MLX90411 can drive applications up to 15 W in a safe way without risk of overheating the device or the motor coil. The closed-loop speed control and adaptive low noise commutation enable industry standard efficiency with lowest acoustic noise. Additionally the closed loop speed control reduces the design effort to adjust existing fan- and pump-tooling to meet target operating points with high accuracy, and improve the response time to new end-customer requests.



### KEY FEATURES

- ✓ All-in-one fan driver, including high-sensitivity Hall-effect sensor
- ✓ Up to 1A motor current
- ✓ Adaptive commutation for best in class efficiency over the full speed range for any fan design
- ✓ Commutation options
  - Maximum torque
  - Very low acoustic noise
- ✓ PWM control input
  - Standby mode
  - Open loop / closed loop speed control (+/- 1.5%)
- ✓ Protections and diagnostics
  - Locked Rotor Protection (LRP) (Programmable)
  - Temperature Shutdown (TSD)
  - Over Voltage protection (OVP) (Programmable)
  - Short circuit protection (OCP)
- Current limit (CL)
- FG/RD open drain diagnostics output (Programmable)
- ✓ Certifications
  - UL/VDE/CE ready
  - JEDEC package
- ✓ I2C programming
  - Fast prototyping
  - End-of-line programming
- ✓ Package
  - Straight-lead SOT package (ZE)
  - Tiny UDFN 2.5 x 2.0 x 0.4 mm (LD)

APPLICATION VISUALS

Refrigerator fan



Intense Pulse Light (IPL) Depilator



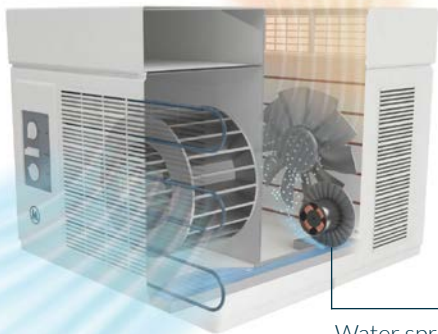
Printer



Toilet fan



Water spreader in mobile air-conditioner



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