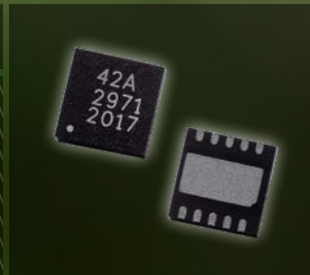




MLX90412-K

SINGLE-COIL FAN & PUMP 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?

LOW NOISE FAN & PUMP DRIVER FOR SMART APPLICATIONS UP TO 35 W

MLX90412-K

The MLX90412-K operates over a supply voltage range from 3.5 V to 32 V, and is robust up to 40 V, making it suitable for any fan, blower or pump applications operating from 12 V and 24 V power supplies, as well as portable applications with up to seven Li-ion cells ~29 V. With a current limit up to 2.2A, the MLX90412 can drive applications up to 35 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 2.2 A 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 qualified package
- ✓ I2C programming
 - Fast prototyping
 - End-of-line programming
- ✓ Package
 - Exposed pad DFN10 3x3 with wettable flanks
 - small (9mm²) footprint, for minimal PCB size
 - < 1mm height

APPLICATION VISUALS

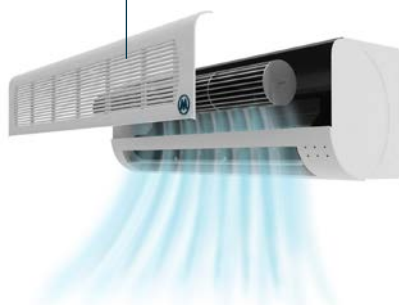


Generic fan

Generic pump



Interior unit
Airconditioner



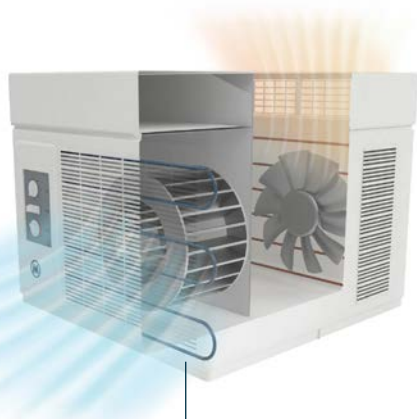
Toilet pump

Smart cleaner robot
operating 28 V



Dryer fan

Drain pumps in
condenser dryer,
washing machine
and dish washer



Window air-conditioner



Robot lawn mower

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