

## A3980

Automotive DMOS microstepping driver IC with built-in translator

The new A3980 from Allegro MicroSystems is a complete DMOS microstepping motor driver integrated circuit with a built-in translator for easy operation.

The new device is designed to operate bipolar stepper motors in full, half, eighth and sixteenth step modes, at up to 35 V and  $\pm 1$  A, respectively, making it suitable for automotive stepper applications such as engine management and headlamp positioning.

An internal fixed off-time current regulator operates in slow, fast or mixed decay modes, resulting in reduced audible motor noise, increased step accuracy and reduced power dissipation.

The built-in translator means that simply inputting one pulse on the step input causes the motor to take one microstep. There are no phase sequence tables, high-frequency control lines or complex interfaces to program. As a result, the A3980 is ideally suited to applications where a complex microprocessor is unavailable or overburdened.

Internal synchronous rectification control circuitry is provided to improve power dissipation during PWM (pulse-width-modulated) operation.

Internal circuit protection includes thermal shutdown with hysteresis, overvoltage and undervoltage lockout, and crossover current protection.

Special power-up sequencing is not required. Two diagnostic fault flags provide indication of short circuits or open circuits on the motor windings.

The device operates over a logic supply voltage range from 3.0 to 5.5 V, and has low typical 'on' resistance outputs of 0.67 ohm (source) and 0.54 ohm (sink).

The A3980 is supplied in a low-profile (1.1 mm) 28L eTSSOP package with exposed power tab.

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