

## A3992: DMOS Dual Full-Bridge Microstepping Driver

Allegro announces a new DMOS full-bridge microstepping PWM motor driver to complement their existing serial controlled microstepping driver family. Targeted at the office automation and industrial markets, Allegro's A3992 solution offers several key features to include: over-current protection (OCP), synchronous rectification for low power dissipation, patented programmable mixed, fast and slow current decay modes and low on resistance DMOS outputs in a thermally efficient surface mount package.

Designed for Pulse Width Modulated (PWM) current control of bipolar microstepping stepper motors, the A3992 is capable of continuous output currents to  $\pm 1.5$  A and operating voltages to 50 V. Internal fixed off-time PWM current control timing circuitry can be programmed via the serial interface to operate in slow, fast and mixed decay modes.

The desired load current level is set via the serial port with two six bit linear DAC's in conjunction with a reference voltage. The six bits of control allow maximum flexibility in torque control for a variety of step methods, from microstepping to full step drive. Load current is set in 1.56% increments of the maximum value.

Synchronous Rectification circuitry allows the load current to flow through the low  $R_{dson}$  of the DMOS output driver during current decay. This feature will eliminate the need for external clamp diodes in most applications, saving cost and external component count, while minimizing power dissipation. Internal circuit protection includes thermal shutdown with hysteresis, under voltage lockout, over current and crossover current protection. Special power up sequencing is not required.

Allegro's A3992 is supplied in a low profile (1.1mm) 24L eTSSOP (suffix 'LP') with exposed power tab and a 24-lead plastic DIP with a copper batwing tab (suffix 'B'). The power tab is at ground potential and needs no electrical isolation. The A3992SLP-T has a 14/16week typical lead-time to market.