

## A3969: Dual Full-Bridge PWM Motor Driver

The A3969 is designed to drive both windings of a two-phase bipolar stepper motor. The device includes two H-bridges capable of continuous output currents of  $\pm 650$  mA and operating voltages to 30 V. Motor winding current can be controlled by the internal fixed-frequency, pulse-width modulated (PWM), current-control circuitry. The peak load current limit is set by the user's selection of a reference voltage and current-sensing resistors.

The fixed-frequency pulse duration is set by a user-selected external RC timing network. The capacitor in the RC timing network also determines a user-selectable blanking window that prevents false triggering of the PWM current-control circuitry during switching transitions.

To reduce on-chip power dissipation, the H-bridge power outputs have been optimized for low saturation voltages. The sink drivers feature the Allegro® patented Satlington® output structure. The Satlington outputs combine the low voltage drop of a saturated transistor and the high peak current capability of a Darlington.

For each bridge, a PHASE input controls load-current polarity by selecting the appropriate source and sink driver pair. For each bridge, an ENABLE input, when held high, disables the output drivers. Special power-up sequencing is not required. Internal circuit protection includes thermal shutdown with hysteresis, ground-clamp and flyback diodes, and crossover-current protection.

The A3969 is supplied in a 28-pin QFN lead (Pb) free plastic package with exposed thermal pad and 100% matte tin leadframe plating. It has a 5 x 5 mm footprint and 0.90 mm nominal height.