

Unipolar switch family offers high performance and new packaging options including lead-free plating

Allegro MicroSystems Europe has introduced a new family of unipolar Hall-effect switches which not only offer improved performance compared with earlier devices but also to offer a wider variety of packaging options including a version with lead (Pb) free plating.

The new A110x family, produced with BiCMOS technology, is intended to replace Allegro's legacy A314x and A312x families of unipolar Hall-effect switches, and includes five devices (A1101/02/03/04/06) with fast power-on time and low noise operation.

Device programming is performed after packaging to ensure increased switch-point accuracy by eliminating offsets that can be induced by package stress. Unique Hall-element geometries and low-offset amplifiers help to minimise noise and reduce the residual offset voltage normally caused by device overmoulding, temperature excursions and thermal stress.

Each device in the family incorporates, on a single silicon chip, a voltage regulator, Hall-voltage generator, small-signal amplifier, Schmitt trigger, and NMOS output transistor. The integrated voltage regulator permits operation from 3.8 to 24 V.

Extensive on-board protection circuitry makes possible a ± 30 V absolute maximum voltage rating, which provides superior protection in automotive and industrial motor commutation applications without the need to add any external components. All devices in the family are identical except for magnetic switch points.

New packaging options offer customers a wider choice of design configurations, while an extended temperature range version is available for automotive and industrial applications.

The A110x family of devices are available in a 3-pin single in-line package (UA) or a three-pin surface-mount package (LH).
