



## Hall-effect switches and latches offer improved repeatability in multiple package options

Allegro MicroSystems Europe has introduced a new family of Hall-effect switches and latches which offer superior switching repeatability through their resistance to temperature variations and thermal stresses.

The new A1120, A1220 and A1221 are suited to operation over extended temperature ranges up to +150°C, and are available in two different package styles, which offer a magnetically optimised configuration for a variety of automotive, industrial and consumer applications.

The A1220 and A1221 devices are typically used to detect the speed and direction of ring magnets in motor commutation applications, while the A1120 is most commonly used to detect the end position in automotive wiper systems and multiple discrete positions in shift selectors.

The superior high-temperature performance of the new family is made possible through dynamic offset cancellation, which reduces the residual offset voltage normally caused by device overmoulding, temperature dependencies, and thermal stress.

Each device includes, on a single silicon chip, a voltage regulator, a Hall-voltage generator, a small-signal amplifier, chopper stabilisation circuitry, a Schmitt trigger, and a short-circuit protected open-collector output that can sink up to 25 mA.

The on-board regulator permits operation with supply voltages from 3 to 24V, although significant advantages are realised by reducing the minimum operating voltage. In particular, it allows these devices to be used in 3V applications; alternatively, additional external resistance can be added in series with the supply pin for greater protection against transient events.

Output short-circuit protection, reverse battery protection and electrostatic discharge protection to 3 kV HBM (Human Body Model) are also incorporated.

The new products are available in two package styles. Package type LH is a modified SOT23W, surface mount package, while the UA package is a 3-lead, ultra-mini-SIP for through-hole mounting. Each package type is available in lead (Pb) free form (suffix, -T), with a 100% matt tin-plated lead frame.

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