

Chopper-stabilised Hall-effect latch for motor-speed and direction-sensing applications

The A1242 from Allegro MicroSystems Europe is a new chopper-stabilised latch Hall-effect sensor IC which is ideally suited to use in motor-speed and direction-sensing applications, as well as in automotive applications where the sensor is located some distance away from the engine control unit.

Typical applications in the automotive sector include window lift motors, seat position motors, headrest motors, sunroof motors and electronic power steering.

The use of a two-wire configuration means that the sensor requires one less wire in the wiring harness than the standard three-wire Hall-effect latch. In addition, the two-wire feature of this sensor provides inherent detection of short or open circuits.

The A1242 is a current-output Hall-effect latch that is ideally suited for use in automotive, industrial and consumer applications. The output of the device switches 'high' in the presence of a sufficiently large south-pole magnetic field and 'low' in the presence of a sufficiently large north-pole magnetic field.

The sensor employs a patented high-frequency chopper-stabilisation technique on Allegro's new DABIC5 (Digital Analog BiCMOS) process to achieve magnetic stability over a wide temperature range. It operates accurately and consistently in harsh environments, such as those commonly found in automotive applications.

The device also offers design flexibility by offering a choice of output current level options. On-chip transient protection is incorporated, while a Zener clamp on the power supply protects against overvoltage conditions on the supply line.

The new device is available supplied in surface-mount (LH) and insertion-mount (UA) packages.
