

## A132X

Ratiometric linear Hall-effect sensors are stable over wide temperature range

The A132X family of linear Hall-effect sensors from Allegro MicroSystems Europe are highly sensitive, temperature-stable linear Hall-effect sensors which provide a voltage output that is proportional to the applied magnetic field.

Featuring a proprietary chopper stabilisation technique which produces optimised offset characteristics, these ratiometric linear devices offer a quiescent output voltage that is 50% of the supply voltage and nominal output sensitivity options of 2.5 mV/Gs, 3.125 mV/Gs, and 5 mV/Gs.

These characteristics mean that the devices are ideal for use in linear and rotary position sensing systems in the harsh environments typically encountered in automotive and industrial applications over the temperature range from  $-40^{\circ}\text{C}$  to  $+150^{\circ}\text{C}$ .

Each device consists of a BiCMOS monolithic circuit which integrates a Hall element, temperature-compensating circuitry to reduce the intrinsic sensitivity drift of the Hall element, a small-signal high-gain amplifier, and a rail-to-rail low-impedance output stage. The devices are designed for 4.5-5.5 V operation, and have built-in EMC protection.

A proprietary dynamic offset cancellation technique, with an internal high-frequency clock, reduces the residual offset voltage normally caused by device overmoulding, temperature dependencies, and thermal stress. The high-frequency clock allows for a greater sampling frequency, which produces higher accuracy and faster signal processing capability.

This technique produces devices that have an extremely stable quiescent output voltage, are immune to mechanical stress, and have precise recoverability after temperature cycling. Having the Hall element and amplifier on a single chip minimises many problems normally associated with low-level analogue signals.

Output precision is obtained by internal gain and offset trim adjustments made at the end of the production line during the manufacturing process.

The range includes both 3-pin SOT and single-inline surface-mount packages covering industrial and automotive temperature ranges.

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