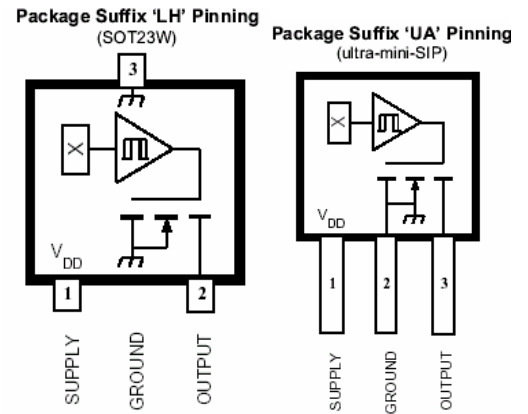




**Micropower Hall-effect switch for battery-powered applications:**

**A3212**

**NEW**



The A3212 Hall-effect sensor IC, now available from Allegro MicroSystems, is an ultra-sensitive, pole-independent micropower switch with a latched digital output.

The A3212 includes, on a single silicon chip, a Hall-voltage generator, small-signal amplifier, chopper stabilisation circuitry, a latch and a MOSFET output. Allegro's advanced BiCMOS process technology is used to provide the benefits of low-voltage and low-power requirements, component matching, very low input-offset errors, and small component geometries.

The device's 2.5-3.5 V operation, coupled with a unique clocking scheme, reduces its average operating power requirement to less than 15  $\mu\text{W}$  with a 2.75 V supply. As a result, the A3212 is especially suited for operation in battery-operated, handheld equipment such as cellular and cordless telephones, pagers, and palmtop computers.

Unlike other Hall-effect switches, the device's output can be turned on by either a north or south pole of sufficient strength; in the absence of a magnetic field, the output is off. This polarity independence, coupled with the minimal power requirement, makes the A3212 superior to reed switches in terms of reliability, lack of signal-conditioning requirements, and ease of incorporation into new designs.

Improved stability is made possible through the use of chopper stabilisation to provide dynamic offset cancellation, which reduces the residual offset voltage normally caused by device overmoulding, temperature dependencies, and thermal stress. The device also offers electrostatic discharge protection to 5 kV.

The A3212 is available in versions for operation over temperature ranges of  $-40^{\circ}\text{C}$  to  $85^{\circ}\text{C}$  and  $-40^{\circ}\text{C}$  to  $150^{\circ}\text{C}$ . Two package styles are available to provide a magnetically optimised package for most applications: a miniature low-profile surface-mount package and a 3-lead ultra-miniature single-inline package for through-hole or surface mounting.

