

General Description

The TH9239 Omnipolar Hall effect sensor IC is fabricated from mixed signal CMOS technology. It incorporates advanced chopper-stabilization techniques to provide accurate and stable magnetic switch points.

The circuit design provides an internally controlled clocking mechanism to cycle power to the Hall element and analog signal processing circuits. This serves to place the high current-consuming portions of the circuit into a “Sleep” mode. Periodically the device is “Awakened” by this internal logic and the magnetic flux from the Hall element is evaluated against the predefined thresholds. If the flux density is above or below the B_{OP}/B_{RP} thresholds then the output transistor is driven to change states accordingly. While in the “Sleep” cycle the output transistor is latched in its previous state. The design has been optimized for service in applications requiring extended operating lifetime in battery powered systems.

The output transistor of the TH9239 will be latched on (BOP) in the presence of a sufficiently strong South or North magnetic field facing the marked side of the package. The output will be latched off (BRP) in the absence of a magnetic field. It incorporates advanced chopper-stabilization techniques to provide accurate and stable magnetic switch points.

Features

- ❖ CMOS output
- ❖ Micropower consumption for battery powered applications
- ❖ Output switches with absolute value of North or South pole from magnet
- ❖ Operation down to **1.8V**
- ❖ High sensitivity for direct reed switch replacement applications
- ❖ Ultra Low power consumption: **0.9uA @1.8V**
- ❖ High ESD Protection, HMB > ±8KV(min)

Applications

- ❖ Solid state switch
- ❖ Handheld Wireless Handset Awake Switch
- ❖ Lid close sensor for battery powered devices
- ❖ Magnet proximity sensor for reed switch replacement in low duty cycle application

