

Cost-Effective AEC-Q100 Automotive Hall Effect Position Sensors-OCH40171 Series

The OCH40171 is an AEC-Q100 qualified high-precision Hall-effect switch, designed specifically for automotive electronics and harsh industrial application scenarios. It features a wide operating voltage range of 3.0V to 28V, which can work stably with unregulated automotive battery power supply. The operating temperature covers -40°C to 170°C , adapting to extreme high and low temperature environments such as engine compartments and chassis areas.



Built-in temperature compensation circuit effectively suppresses magnetic parameter drift over the full temperature range. The product lineup provides rich magnetic sensitivity options from 25Gauss to 280Gauss. Most versions support Z-axis magnetic sensing, with one dedicated variant for X-axis detection. A maximum response frequency of 125 KHz ensures precise position sensing and rotational speed measurement.

This series integrates complete hardware protection mechanisms, including reverse polarity protection, overvoltage protection, EOS protection and output short-circuit current limiting. It offers 8KV ESD tolerance and can withstand absolute maximum voltage from -40V to 30V , providing strong anti-interference performance under complex automotive electromagnetic conditions and guaranteeing long-term stable operation. It is available in SIP-3L, SOT23-3L and SOT-23 packages, including through-hole and SMT types, compatible with most PCB designs and convenient for rapid mass production deployment.

It is widely applied in position detection for automotive seats, sunroofs, power windows, tailgates, liftgates and wiper motors, as well as electronic power steering, brushless DC motors, industrial encoders and speed measurement systems. With strict automotive-grade quality control, its overall performance fully matches mainstream industry specifications. It delivers equivalent professional performance with excellent cost advantages, supporting pin-to-pin compatible replacement without PCB redesign or extra calibration, helping customers reduce R&D and procurement costs efficiently.

The manufacture Orient-Chip is a professional global IC supplier focusing on magnetic sensor and mixed-signal chip design, R&D and sales. Adhering to rigorous quality standards and reliable supply chain management, the company provides high-performance, cost-effective semiconductor solutions for automotive, industrial control and global consumer electronics markets.

