New Product Announcement

AH4930Q

High-Precision I²C 3D Linear Hall Effect Sensor for Rotary and Proximity Detection in Automotive Applications

The automotive-compliant* AH4930Q is Diodes Incorporated's (Diodes) first 3D linear Hall effect sensor. It has been qualified to AEC-Q100 Grade 1 with an extended temperature range of -40˚C to +125˚C.

The high-performance AH4930Q provides a compact solution for high-precision magnetic sensing. An integrated temperature sensor in this monolithic sensor IC provides accurate on-chip compensation. Its robust signal path and high-resolution ADC enables precise measurement of magnetic fields in all three axes, facilitating accurate decoding of motion and position information.

The AH4930Q integrates user-programmable configuration registers for optimized performance. Data is accessible via an I²C interface (up to 1Mbps), enabling seamless integration with host systems. The selectable power mode control unit allows for flexible operation, ranging from power-down (9nA) mode when the system is sleeping, to continuous (fast) mode (3.8mA) for constant measurement functionality in active, demanding applications.

Diodes also provides the AH4930 commercial-grade device for industrial applications. The AH4930Q and AH4930 are available in the industry-standard SOT26 package.

**Automotive-compliant - AEC qualified, manufactured in sites certified to IATF 16949 supporting PPAP documents.*

The DIODES Advantage

The AH4930Q 3D Hall sensor provides reliable and high-precision proximity detection in a wide range of automotive applications.

- **High-Accuracy 12-Bit Data Converter Hall Sensor Measurement**
  Provides stable measurements with resolution down to 1 Gauss
- **1Mbps I²C Interface for Control and Measurements**
  Provides seamless integration with host systems with increased flexibility
- **On-Chip 12-Bit Temperature Sensor**
  Provides accurate junction temperature measurement across temperature measurement compensation
- **Three Operating Modes and Variable Update Rates with Power-Down Mode**
  Enables an optimized speed/power performance solution with current consumption down to 9nA
- **Fast 10µs Start Up and 4µs Response Time**
  Supports quick reaction to changes in magnetic field

Applications

Automotive contactless proximity/rotation detection in:

- Stalk gear shifters
- Shifter position sensors
- Flap positions
- Mirror positions
- Multimedia rotary/push-selectors
- Door handles & door locks
- Powered seat adjusters

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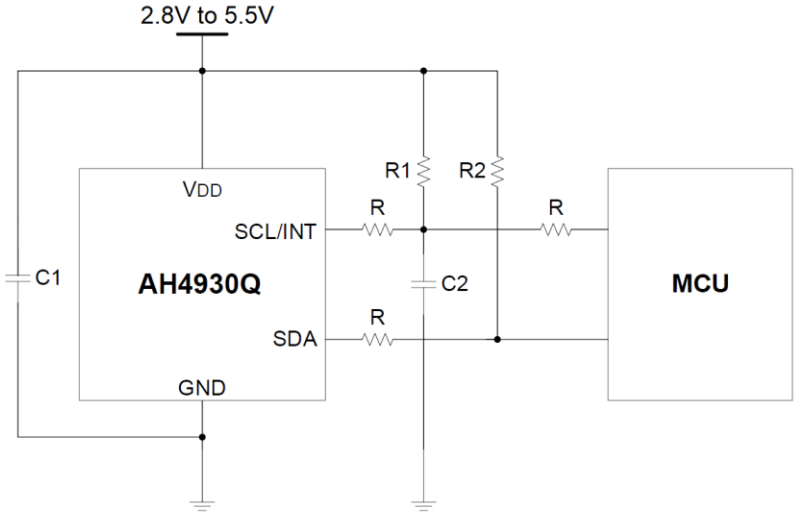
Typical Application



Automotive-Compliant 3D Hall Sensor Portfolio

Part Number	Output Type	Operating Voltage	Ave. Supply	Typical Sensitivity	Output Resolution	Offset	Magnetic Linear Range	Temp. Sensor Resolution	ESD HBM/ CDM	Ambient Temp. Range	Package
		V	μA	LSB/Gauss	Gauss/LSB	Gauss	Gauss	°C/LBM	kV	°C	
AH4930Q	I²C	2.8 to 5.5	13	1	1	-2	±1300	1	4/1	-40 to +125	SOT26 (Type A1)

LSB: Last-Significant Bit in I²C data format

Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
AH4930Q-W6-7	Automotive	SOT26 (Type A1)	MSL-1	3,000	7" Tape & Reel