



New Product Announcement

AH49F

AH49F Linear Hall Effect Sensor Provides an Output Voltage Proportional to Applied Magnetic Field

The AH49F is a small, versatile linear Hall effect device for measuring the magnetic flux density in various applications. The device is part of AH49X linear Hall effect sensor family.

The integrated circuitry features low noise output to help remove external filter components while the internal precision resistors used in AH49F provides increased temperature stability and accuracy.

The AH49F has been optimized for supply voltages of 3V to 8V, with ambient operating range of 40°C to 105°C. The device supports a range of commercial, consumer, and industrial applications. The output voltage varies in proportion to the magnetic flux density; the output voltage without the magnetic field is set by the supply voltage.

To help prevent over voltage damage, the device can withstand up to 50V instantaneous transient voltage between its VCC to GND. Additionally, high ESD withstand capability improves the reliability and robustness during manufacturing and operations. The AH49F is available in low small low profile U-DFN2020-6 standard SC59 and TO-92S packages.



The Diodes Advantage

The AH49F provides low noise small, simple and versatile solution for a wide range of linear Hall effect applications.

- **Small and simple use with low quiescent current**
 - Power Consumption of 3mA at Vcc=5V for Energy Efficiency
 - Null voltage (when magnetic flux density =0G) is set at Vcc/2.
- **Linear output over wide gauss range for design flexibility**
 - Typical Sensitivity of 2.1mV/GS at Vcc=5V over +/- 800G range
- **A Stable and Accurate Low Noise Output**
 - 90uV over 10Hz to 10kHz helps to eliminate the need for filtering
- **Instantaneous transient supply voltage up to 50V and ESD rating of 6kV(HBM) and 600V(MM)**
 - Help protects Device form Over Voltage ESD damage
 - Robust against supply transients
- **Operating temperature range -40°C to 105°C**
 - Suitable for thermally demanding enclosed applications.

Applications

- Position Sensing
- Liquid Level Sensing
- Weight Sensing
- Magnetic Code Reading
- Current Sensing
- Motor Control
- Rotary Encoder
- Vibration Sensing
- Ferrous Metal Detector

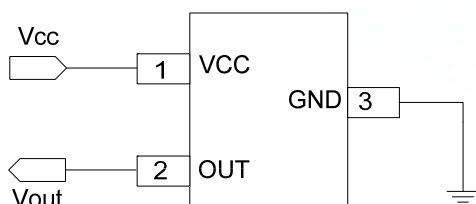


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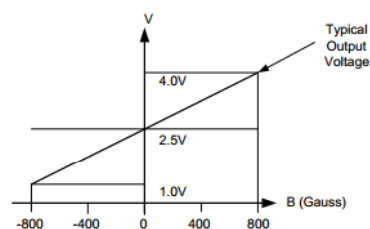
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Typical Application Circuit



Operating Diagram



Transfer Characteristics of AH49F

Part Number	Operating Voltage	Typical IC supply current	Output Voltage Span	V Null (B = 0GS, Vcc = 5V)	Output Sensitivity (Vcc = 5V, B = ±1000GS)	Typical Linear Magnetic Range	Operating Temp.	Package
	(V)	(mA)	(V)	(V)	(mV/G)	(G)	(°C)	
AH49E	3 to 6.5	3.5	0.8 to Vcc-0.8	2.5	1.6	±1000	-40 to 85	SOT23
AH49F	3 to 8	3	0.8 to Vcc-0.8	2.5	2.1	±800	-40 to 105	U-DFN2020-6 SC59 TO-92S
AH49H	3 to 8	2	0.8 to Vcc-0.8	1.7	0.33	±3000	-40 to 105	TO-92S SOT23

To find out more information:

- Linear Hall Effect portfolio page: http://diodes.com/catalog/linear_hall_effect_sensors_198/
 AH49E Datasheet: <http://www.diodes.com/datasheets/AH49E.pdf>
 AH49F Datasheet: <http://www.diodes.com/datasheets/AH49F.pdf>
 AH49H Datasheet: <http://www.diodes.com/datasheets/AH49H.pdf>

Ordering Information

Device	Packaging (Note 1 and 2)	Part mark	Packing Type	Quantity
AH49FDNTR-G1	U-DFN2020-6	CN	Tape & reel	3K
AH49FNTR-G1	SC59	GT6	Tape & Reel	3K
AH49FZ3-G1	TO-92S	49FG	Bulk	1K

- Notes: 1. U-DFN2020-6, SC59 and TO-92S are in "Green" and with Lead Free Finish/RoHS Compliant packages. EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant. No purposely added lead. Halogen and Antimony free. Please visit our website at http://www.diodes.com/products/lead_free.html
2. Pad layout as shown on Diodes Inc. suggested pad layout document AP02001, which can be found on our website at <http://www.diodes.com/datasheets/ap02001.pdf>