

### Compact, Micropower, and Wide Operating Voltage Omnipolar Hall Sensors Ease Design and Save Space

The AH1912 and AH1913 are Diodes' latest compact, micropower omnipolar Hall effect sensors, featuring even lower quiescent current and wider operating voltage range.

The wider 1.6V to 5.5V range of supply voltage allows the devices to operate directly from 5V and 3.3V rails and extends battery operating time which provides great flexibility for system design.

Thanks to the hibernating clocking system, the AH1912 only consumes 1.6 $\mu$ A (@3V) and AH1913 consumes 12 $\mu$ A (@1.8V) on average, making the AH1912/AH1913 a perfect fit for battery-powered consumer products, e-meters, smoke detectors, and IoT devices.

The AH1912/AH1913 comes in the industry-standard SC59 and X1-DFN1216-4 packages.



#### DIODES Advantage

**AH1912/13 provide an accurate, simple micropower proximity detection solution for a broad range of applications.**

##### ▪ Ultra-Low Power and Ultra-High Sensitivity

- Operates with either a north or south pole
- Only 1.6 $\mu$ A @ 3V(AH1912), Tperiod: period of magnetic sampling @45ms
- Ultra-low average supply current to extend battery lifetime.
- 12 $\mu$ A @1.8V (AH1913), fast Tperiod: period of magnetic sampling @2.8ms
- Ultra-high/high sensitivity with typical operate points: 18G (AH1913), 30G (AH1912), eases design for compact application.

##### ▪ Wide 1.6V to 5.5V Input Voltage Range

Wider operating input voltage range provides greater system design flexibility.

##### ▪ Chopper-Stabilized Design Improves drift of Bop/Brp

Provides superior switch point accuracy across supply voltage range and temperature.

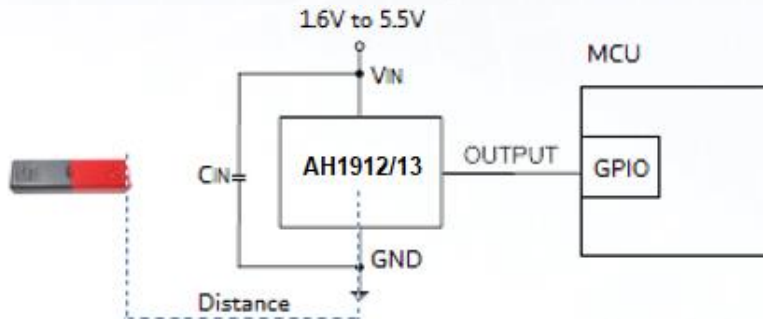
##### ▪ High 6kV (HBM) ESD Voltage Rating

Improves robustness and reliability.

#### Applications

- Smart Cover or Dock Detection for Mobile Phones and Tablets
- Medical Devices, IoT Systems
- Contactless Switches in Home Appliances and Industrial Applications
- Level, Proximity, and Position Detection
- Smart Locks, Smoke Detectors, Home Appliances

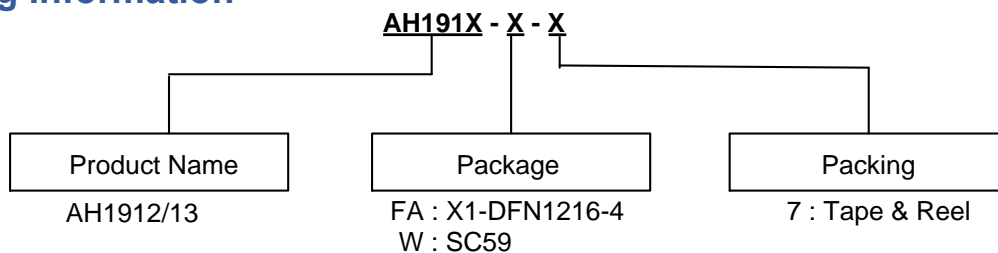
### Typical Application Schematic



Part	Output Type	Operating Voltage (V)	Supply Current (μA)	Reverse Protection	ESD (kV)	Operating Point (Bop) (Gauss)	Release Point (Brp) (Gauss)	Temp Range (°C)	Package
AH1913	Push Pull	1.6 to 5.5	12*	Yes	6	±18	±11	-40 to + 85	X1-DFN1216-4, SC59
AH1912	Push Pull	1.6 to 5.5	1.6	Yes	6	±30	±23	-40 to + 85	X1-DFN1216-4, SC59
AH1911	Push Pull	1.6 to 5.5	1.6	Yes	6	±60	±45	-40 to + 85	SC59
AH1921	Open Drain	1.6 to 5.5	1.6	Yes	6	±60	±45	-40 to + 85	SC59

\*: high magnetic sampling rate for higher supply current, please contact Diodes if you need lower supply current.

### Ordering Information



Part Number	Packaging	Packaging Code	7" Tape and Reel	
			Tape Width	Quantity
AH1912-W-7	W	SC59	8mm	3000
AH1912-FA-7	FA	X1-DFN1216-4	8mm	3000
AH1913-W-7	W	SC59	8mm	3000
AH1913-FA-7	FA	X1-DFN1216-4	8mm	3000

For more information:

AH1912 : <https://www.diodes.com/part/AH1912>

AH1913 : <https://www.diodes.com/part/AH1913>