



## New Product Announcement

### AH1807 / AH1809

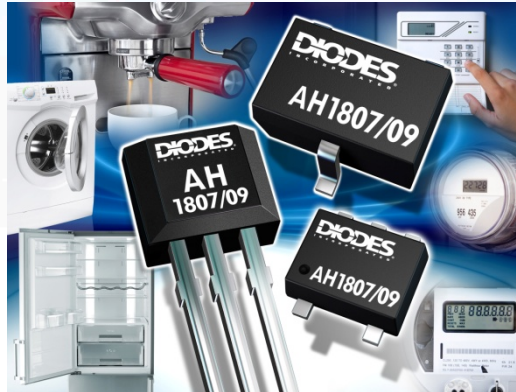
## AH1807 Medium Sensitivity and AH1809 Low Sensitivity Micropower Omnipolar Hall Effect Switches

The AH1807 and AH1809 are medium and low sensitivity micropower Omnipolar Hall-Effect switch ICs specifically designed for battery powered consumer and industrial equipment such as smart E-meters.

Based on two high sensitivity Hall Effect plates and chopper stabilized architecture, the AH1807 and AH1809 provide reliable solution over the whole operating range.

The AH1807 and AH1809 Hall effect switches have both been optimized to operate over the supply range of 2.5V to 5.5V and use a micropower sleep function to give an average supply current of only 8uA at 3V.

AH1807 and AH1809 both have open drain outputs for system flexibility. They are packaged in a small low profile SOT553 and industry standard SC59 and SIP3 packages.



### The Diodes Advantage

The AH1807 and AH1809 provides a small and simple contactless switch solution for battery powered consumer to industrial applications.

- **Omnipolars with operate point options and flexible output structure**

- Operates with either a North or South pole
- Selection of typical operate points: 80G (AH1807) or 130G(AH1809)
- Open drain for flexible pull-up

- **Designed for portable consumer and industrial equipment**

- Supply voltage designed for battery applications (2.5V to 5.5V)
- Micropower operation with an average supply current of 8uA at 3V

- **High performance and reliability**

- High sensitivity with tight operating window (less magnetic spread)
- Chopper stabilized design to provide minimal switch point drift and superior temperature stability
- Operating temperature range -40°C to 85°C
- High ESD rating of 6kV

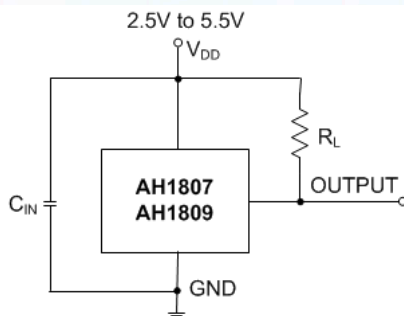
- **Small solution in low profile or industry standard packages**

- Small low profile SOT553 package is 1.6mm x 1.6mm x 0.6mm
- Also available in industry standard SC59 and SIP3

### Applications

- Smart E-meters
- Tamper protection switch
- Level detect
- Doors, lids and tray position detect switches
- Consumer and industrial contact-less switches

### Typical Applications Circuit



Note: 1.  $C_{IN}$  is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 10nF ~ 100nF.  
 $R_L$  is the pull-up resistor, the recommended resistance is 10kOhm ~ 100kOhm.

### Electrical Characteristics

Part Number	Output	Type	Operating Voltage (V)	Average Supply Current (uA)	Chopper Stabilized	Max. Operating Point (Bop) (Gauss)	Min Release Point (Brp) (Gauss)	Temp Range (°C)	Package Outlines
AH1807	Single	Open Drain	2.5 to 5.5	8	Yes	±110	±45	-40 to 85	SC59, SOT553, SIP-3
AH1809	Single	Open Drain	2.5 to 5.5	8	Yes	±170	±80	-40 to 85	SC59, SOT553, SIP-3

### Ordering Information

Device	Packaging <sup>(1)</sup>	Part mark ID	7" Tape and Reel		Ammo box	Bulk
			Tape width	Quantity	Quantity	Quantity
AH1807-W-7	SC59	H7	8mm	3000	-	-
AH1807-Z-7	SOT553	J7			-	-
AH1807-P-A	SIP-3	1807	-	-	4000/Box	-
AH1807-P-B	SIP-3	1807			-	1000
AH1809-W-7	SC59	F9	8mm	3000	-	-
AH1809-Z-7	SOT553	H9			-	-
AH1809-P-A	SIP-3	1807	-	-	4000/Box	-
AH1809-P-B	SIP-3	1807			-	1000

<sup>(1)</sup> "Green" mold compound 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](http://www.diodes.com/products/lead_free.html).



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### Product Portfolio – Omnipolar Hall Effect Switches

Part	Output	Output Type	Operating Voltage	Average Supply Current	Operating Point Bop			Release Point Brp			Temp Range	Package
					(V)	( $\mu$ A)	(Gauss)			(Gauss)		
			Min	Typ	Max	Min	Typ	Max				
AH180	Single	Open Drain	2.5 to 5.5	8	-60	40	60	10	0	-10	-40 to +85	DFN2020-3, DFN2020-6, SC59, SIP3
AH180N	Single	Open Drain	2.5 to 5.5	8	-50	35	50	10	25	-10	-40 to +85	SOT553, TSOT23, SC59
AH1801	Single	Open-Drain	2.5 to 5.5	8	-60	40	60	10	30	-10	-40 to +85	DFN2020-3, DFN2020-6, SC59
AH1802	Single	Open Drain	2.5 to 5.5	8	20	28	40	10	20	-10	-40 to +85	DFN2015H4, DFN2020-3, DFN2020-6, SC59
AH1803	Single	Open Drain	2.5 to 5.5	8	20	28	40	10	20	-10	-40 to +85	DFN2020-6, SC59
AH1804	Single	Push-Pull	2.5 to 3.6	12	20	40	60	15	32	-15	-40 to +85	DFN1216, SC59
AH9247	Single	Int. Pull-up	2.5 to 5.5	10	0	30	55	5	20	-5	40 to +85	SOT23, DFN2020-3, SIP3
AH9248	Single	Open Drain	2.5 to 5.5	10	0	30	55	5	20	-5	40 to +85	DFN2020-3, SIP3
AH1806	Single	Open Drain	2.5 to 3.6	8	15	30	45	10	20	40	-40 to +85	SC59, SOT553
AH1808	Single	Open Drain	2.5 to 3.6	8	20	40	60	10	30	50	-40 to +85	SC59, SOT553
AH1807	Single	Open Drain	2.5 to 5.5	8	50	80	115	40	65	100	-40 to +125	SC59, SOT553, SIP-3
AH1809	Single	Open Drain	2.5 to 5.5	8	90	130	185	80	115	170	-40 to +125	SC59, SOT553, SIP-3
AH1883	Single	Push-Pull	1.65 to 3.3	7	-55	37	55	6	29	-6	-40 to +85	SOT553, U-DFN2020-3
AH1884	Dual, Compl	Push-Pull	1.65 to 3.3	7	-55	37	55	15	29	-15	-40 to +85	SOT553
AH1886	Dual, Compl	Push-Pull	1.65 to 3.3	7	18	37	59	6	29	-6	-40 to +85	SOT553
AH1886	Dual, Compl	Push-Pull	1.65 to 3.3	7	18	37	59	15	29	-15	-40 to +85	SOT553
AH1888	Dual, Compl	Push-Pull	1.65 to 3.3	7	-79	61	79	35	53	-35	-40 to +85	SOT553, DFN2020-3
AH1891	Dual, Compl	Push-Pull	1.8 to 3.3	7	20	40	60	12	25	50	-40 to +85	U-WLB0808-4 (CSP)
AH1892	Single Prog.	Push-Pull	1.6 to 3.6	4.3	LB: 18	35	55	12	25	45	-40 to +85	SOT553, X1-WLB0707-4
AH1898					LB: -55	-35	-18	-45	-25	-12		X1-WLB0808-4
AH1893 (1)	Single	Push-Pull	1.6 to 3.6	4.3	HB: 43	60	80	35	50	70	-40 to +85	SOT553, X1-DFN1216-4
AH1895 (1)	Single	Push-Pull	1.6 to 3.6	4.3	HB: -80	-60	-43	-70	-50	-35	-40 to +85	SOT553, X1-DFN1216-4
AH1902 (1)	Single	Push-Pull	1.6 to 3.6	4.3	23	33	47	12	23	35	-40 to +85	SOT553, X1-DFN1216-4, X2-DFN2015-6

(1) Advanced information: please refer to Diodes for product updates and availability.

### Further Information:

Omnipolar Portfolio page: <http://www.diodes.com/products/catalog/list.php?parent-id=113>  
 Datasheet: AH1807 <http://www.diodes.com/datasheets/AH1807.pdf>  
 Datasheet: AH1809 <http://www.diodes.com/datasheets/AH1809.pdf>