



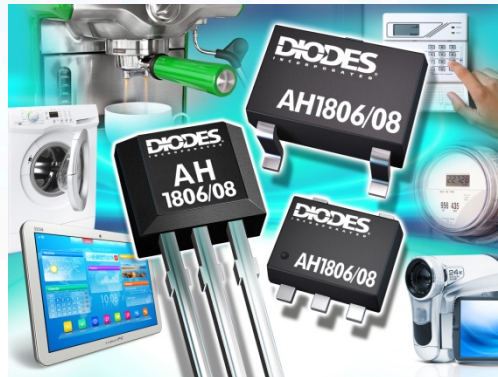
AH1806 / AH1808 – High Sensitivity Micropower Omnipolar Hall Effect Switches

The AH1806 and AH1808 are high sensitivity micropower Omnipolar hall-effect switch ICs, specifically designed for portable and battery powered consumer equipment, to home appliances and industrial applications.

Based on two high sensitivity hall effect plates and chopper stabilized architecture, the AH1806 and AH1808 provides a reliable solution over the whole operating range.

The high sensitivity hall effect switches have 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.

AH1806 and AH1808 have open drain output for flexibility. They are packaged in a small low profile SOT553 and industry standard SC59 and SIP-3 packages.



The Diodes Advantage

AH1806 and AH1808 provide a small and simple contactless switch solution for battery powered consumer to industrial applications.

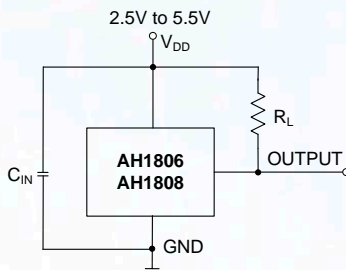
- **Omnipolars with operate point options and flexible output structure**
 - Operates with either a North or South pole
 - Selection of typical operate points: 30G (AH1806) or 40G (AH1808)
 - Open drain for flexible pull-up strength
- **Designed for portable and battery powered equipment**
 - Supply 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 SIP-3

Applications

- Consumer, home appliances and industrial contactless switches
- Coffee machines
- Smart meters
- Handheld game consoles
- Cordless phones
- Camcorders
- Tablets



Typical Applications Circuit



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

Electrical Characteristics

Part Number	Output	Type	Operating Voltage (V)	Average Supply Current (μ A)	Chopper Stabilized	Max. Operating Point (Bop) (Gauss)	Min Release Point (Brp) (Gauss)	Temp Range ($^{\circ}$ C)	Package Outlines
AH1806-P-A	Single	Open Drain	2.5 to 5.5	8	Yes	\pm 45	\pm 10	-40 to 85	SIP-3
AH1806-P-B									SIP-3
AH1806-W-7									SC59
AH1806-Z-7									SOT553
AH1808-P-A	Single	Open Drain	2.5 to 5.5	8	Yes	\pm 60	\pm 10	-40 to 85	SIP-3
AH1808-P-B									SIP-3
AH1808-W-7									SC59
AH1808-Z-7									SOT553

Ordering Information

Device	Packaging ⁽¹⁾	Part mark ID	Tape width	Quantity	Quantity	Quantity
AH1806-P-A	SIP-3	1806	-	-	4000/Ammo Box	-
AH1806-P-B	SIP-3	1806			-	1000
AH1806-W-7	SC59	H6	8mm	3000	-	-
AH1806-Z-7	SOT553	H6			-	-
AH1808-P-A	SIP-3	1808	-	-	4000/Ammo Box	-
AH1808-P-B	SIP-3	1808			-	1000
AH1808-W-7	SC59	J8	8mm	3000	-	-
AH1808-Z-7	SOT553	J8			-	-

⁽¹⁾ "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.



Product Portfolio – Omnipolar Hall Effect Switches

Part	Output	Output Type	Operating Voltage (V)	Average Supply Current (µA)	Operating Point Bop (Gauss)			Release Point Brp (Gauss)			Temp Range (°C)	Package
					Min	Typ	Max	Min	Typ	Max		
					AH180	Single	Open Drain	2.5 to 5.5	8	-60		
AH180N	Single	Open Drain	2.5 to 5.5	8	-50	35	50	10	25	-25	-40 to +85	SOT553, TSOT23, 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
AH1806	Single	Open-Drain	2.5 to 5.5	8	15	30	45	10	20	40	-40 to +85	SIP-3, SC59 SOT553
AH1808	Single	Open Drain	2.5 to 5.5	8	20	40	60	10	30	50	-40 to +85	SIP-3, 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
AH1812	Single	Push-Pull	1.6 to 3.6	4.3	16	30	40	11	20	35	-40 to +85	X1-DFN1216-4
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
LB: -55					-35	-18	-45	-25	-12	X1-WLB0808-4		
AH1898					HB: 43	60	80	35	50	70		
AH1893	Single	Push-Pull	1.6 to 3.6	4.3	14	30	42	9	20	35	-40 to +85	SOT553, X1-DFN1216-4
AH1895	Single	Push-Pull	1.6 to 3.6	4.3	40	60	80	35	50	65	-40 to +85	SOT553, X1-DFN1216-4
AH1897	Single	Push-Pull	1.6 to 3.6	4.3	16	30	40	11	20	35	-40 to +85	X1-DFN1216-4
AH1902	Single	Push-Pull	1.6 to 3.6	4.3	23	33	48	9	23	35	-40 to +85	SOT553 X1-DFN1216-4 X2-DFN2015-6
AH1903	Single, Prog. Uni/Omni	Push-Pull	1.6 to 3.6	4.3	23	33	48	12	23	35	-40 to +85	X1-DFN1216-4
23					33	47	12	23	-12			
AH1894	Single Prog.	Push-Pull	1.6 to 3.6	4.3	LB: 18	35	55	12	25	45	-40 to +85	SOT553, X1-DFN1216-4
LB: -55					-35	-18	-45	-25	-12			
					HB: 43	60	80	35	50	70		
					HB: -80	-60	-43	-70	-50	-35		

Further Information:

Omnipolar Portfolio page: <http://www.diodes.com/products/catalog/list.php?parent-id=113>
 Datasheet: AH1806 <http://www.diodes.com/datasheets/AH1806.pdf>
 Datasheet: AH1808 <http://www.diodes.com/datasheets/AH1808.pdf>