



AH1815 – Ultra Low-Sensitivity Micropower, Omnipolar Hall Effect Switch

The AH1815 is an ultra low-sensitivity, micropower, omnipolar Hall effect switch IC, designed for portable and battery-powered consumer equipment, home appliances and industrial applications.

Based on two hall-effect plates and chopper- stabilized architecture, the AH1815 provides a reliable solution over the whole operating range.

AH1815 has been optimized to operate over the supply range of 2.5-5.5V and use a micropower sleep function to give an average supply current of only 8 μ A.

AH1815 has an open-drain output for flexibility and is now available in a small, low-profile SOT553 and a through-hole SIP-3 packages in addition to the industry standard SC59.



The Diodes Advantage

AH1815 provides a small and simple contactless switch solution for battery-powered consumer to industrial applications.

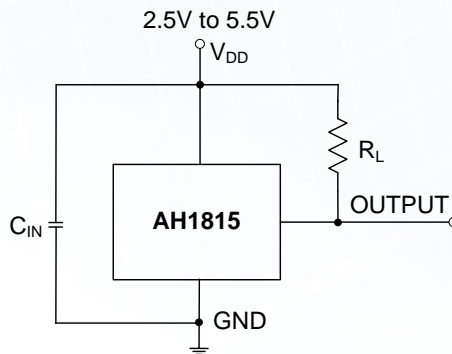
- **Omnipolars with operate point options and flexible output structure**
 - Operates with either a North or South pole
 - Ultra low -sensitivity with typical operate points: 395G
 - Open drain for flexible pull-up strength
- **Designed for battery-powered consumer to industrial equipment**
 - Supply voltage design optimized for 2.5V to 5.5V
 - Micropower operation with an average supply current of 8 μ A 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 +125°C
 - High ESD rating of 6kV
- **Industry standard package**
 - Industry standard SC59 and SIP-3 packages
 - Small low profile SOT553 packages for space constraint applications

Applications

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



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	Operating Point Bop (Gauss)			Release Point Brp (Gauss)			Temp Range ($^{\circ}$ C)	Package Outlines
						Min	Typ	Max	Min	Typ	Max		
AH1815	Single	Open Drain	2.5 to 5.5	8	Yes	255	395	540	230	355	490	-40 to 125	SC59 SOT553 SIP-3
						-540	-395	-255	-490	-355	-230		

Ordering Information

Device	Packaging	Part Mark ID	7" Tape and Reel		Ammo Box	Bulk
			Tape Width	Quantity	Quantity	Quantity
AH1815-P-A	SIP-3	1815	-	-	4,000/Ammo Box	-
AH1815-P-B	SIP-3	1815			-	1,000/Bulk
AH1815-W-7	SC59	AG	8mm	3,000	-	-
AH1815-Z-7	SOT553	AG			-	-

Further Information:

Omniport Portfolio Page: <http://www.diodes.com/products/catalog/list.php?parent-id=113>
 Datasheet: AH1815 <http://www.diodes.com/datasheets/AH1815.pdf>



Product Portfolio – Omnipolar Hall Effect Switches

Part	Output	Output Type	Operating Voltage (V)	Average Supply Current (μ A)	Operating Point Bop			Release Point Brp			Temp Range ($^{\circ}$ C)	Package
					(Gauss)			(Gauss)				
					Min	Typ	Max	Min	Typ	Max		
AH180 (1)	Single	Open Drain	2.5 to 5.5	8	-	40	60	10	0	-	-40 to +85	DFN2020-3, DFN2020-6, SC59, SIP-3
AH180N (2)	Single	Open Drain	2.5 to 5.5	8	-	35	50	10	25	-	-40 to +85	SOT553, TSOT23, SC59
AH1802	Single	Open Drain	2.5 to 5.5	8	20	28	40	10	20	-	-40 to +85	DFN2015H4, DFN2020-3, DFN2020-6, SC59
AH1803	Single	Open Drain	2.5 to 5.5	8	20	28	40	10	20	-	-40 to +85	DFN2020-6, 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
AH1815	Single	Open Drain	2.5 to 5.5	8	255	395	540	230	355	490	-40 to +125	SC59, SOT553, SIP-3
AH1883 (3)	Single	Push-Pull	1.65 to 3.3	7	-	37	55	6	29	-	-40 to +85	SOT553, U-DFN2020-3
AH1884	Dual, Compl	Push-Pull	1.65 to 3.3	7	-	37	55	15	29	-	-40 to +85	SOT553
AH1885	Dual, Compl	Push-Pull	1.65 to 3.3	7	18	37	59	15	29	-	-40 to +85	SOT553
AH1886	Dual, Compl	Push-Pull	1.65 to 3.3	7	-	37	55	6	29	-	-40 to +85	SOT553
AH1888	Dual, Compl	Push-Pull	1.65 to 3.3	7	-	61	79	35	53	-	-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
AH1898					LB: -55	-35	-18	-45	-25	-12		
					HB: 43	60	80	35	50	70		X1-WLB0808-4
					HB: -80	-60	-43	-70	-50	-35		
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
					-47	-33	-23	-35	-23	-12		
					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		

(1) For new projects, use AH1808 SC59/SIP-3 instead of AH180 SC59/SIP-3
 (2) For new projects, use AH1806 or AH1808 SC59/SIP-3 instead of AH180N SC59/SIP-3
 (3) For new projects, use AH1902 instead of AH1883