Issue Number | 001
April 2011

New Product Announcement

AH1891

AH1891 – The worlds smallest dual output Omnipolar Hall Effect switch

Description

The AH1891 is the worlds smallest dual output micro-power Omnipolar Hall-effect switch IC specifically designed for portable and battery powered equipment such as cell phones and camcorders.

The high sensitivity Hall effect switch has been optimized to operate over the supply range of 1.8V to 3.3V and uses a micro-power sleep function to give an average supply current of only 7uA.

Designed with size in mind the AH1891 has push-pull outputs to minimize the external component count and it is packaged in the miniature low profile CSP package (0.8mmx0.8mm) which is over 13 times smaller than the TSOT23.

The Diodes advantage

AH1891 provides a very small and simple contactless switch solution for portable and battery powered applications.

- **Omnipolar design**
  -Operates with either a North or South pole
- **Designed for portable and battery powered equipment**
  - Supply voltage designed for battery applications (1.8V to 3.3V)
  - Micropower operation with an average supply current of 7uA and a power consumption of only 13uW at 1.8V
- **High performance and reliability**
  - High sensitivity Hall Switch
  - Chopper stabilized design to provide minimal switch point drift and superior temperature stability
  - Operating temperature range -40°C to 85°C
  - ESD >4kV
- **Small solution**
  - Push-pull output – no external pull-up resistor needed
  - Packaged in very small and low profile CSP package U-WLB0808-4
    - 0.8mm x 0.8xx x 0.5mm

Applications

- **PDAs and Cell phones**
- **Camcorders**
- **Digital cameras**
- **Netbooks and notebooks**
- **Cordless phones**
- **Contactless switches**

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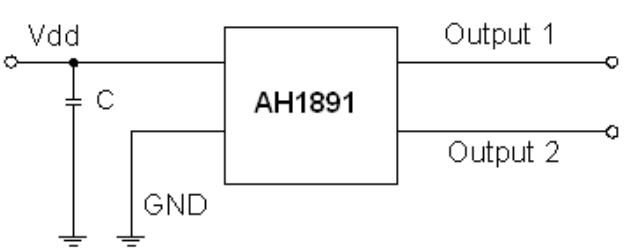
Typical applications circuit



Electrical characteristics

Part Number	Output	Type	Operating Voltage (V)	Average Supply Current (uA)	Chopper Stabilized	Operating Point (Bop) (Gauss)	Release Point (Brp) (Gauss)	Temp Range (°C)	Package Outlines
AH1891-CA4-7	Single	Push-pull	1.8 to 3.3V	7	Yes	+60/-50	±12	-40 to 85	U-WLB0808-4

Ordering information

Device	Packaging (1)	Part mark ID	Reel size	Tape width	Quantity
AH1891-CA4-7	U-WLB0808-4	A2	7"	8mm	3000

Notes: 1. U-WLB0808-4 is in “Green” and with Lead Free Finish/RoHS Compliant package.
EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied.

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DIODES INCORPORATED

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Product portfolio – Omnipolar Hall Effect Switches

Part Number	Output	Type	Operating Voltage (V)	Average Supply Current (uA)	Operating Point (Bop) (Gauss)	Release Point (Brp) (Gauss)	Typical Hysteresis (Gauss)	Temp Range (°C)	Package Outlines
AH180N	Single	Open Drain	2.5 to 5.5V	8	±50	±10	10	-40 to 85	SC59 SOT553 TSOT23
AH180	Single	Open Drain	2.5 to 5.5V	8	±60	±10	15	-40 to 85	DFN2020-3 DFN2020-6 SC59 SIP-3
AH1801	Single	Open Drain	2.5 to 5.5V	8	±60	±10	10	-40 to 85	DFN2020-3 DFN2020-6 SC59
AH1802	Single	Open Drain	2.5 to 5.5V	8	±40	±10	8	-40 to 85	DFN2020-3 DFN2020-6 SC59
AH1803	Single	Open Drain	2.4 to 5.5V	8	±40	±10	10	-40 to 85	DFN2020-6 SC59
AH1822	Single	Open Drain	2.4 to 5.5V	8	±55	±10	8	-40 to 85	DFN1015-6 DFN3020-6
AH1883	Single	Push /Pull	1.65 to 3.3V	7	±55	±6	8	-40 to 85	SOT553
AH1884	Single	Push /Pull	1.65 to 3.3V	7	±55	±15	8	-40 to 85	SOT553
AH1885	Single	Push /Pull	1.65 to 3.3V	7	±59	±15	8	-40 to 85	SOT553
AH1886	Single	Push /Pull	1.65 to 3.3V	7	±55	±6	8	-40 to 85	SOT553
AH1887	Single	Push /Pull	1.65 to 3.3V	7	±50	±6	15	-40 to 85	SOT553
AH1888	Singl Stnd Single Inv. Dual	Push /Pull	1.65 to 3.3V	7	±79	±35	8	-40 to 85	DFN2020-3 DFN2020R-3 SOT553
AH1891	Dual	Push /Pull	1.8 to 3.3V	7	+60/-50	±12	15	-40 to 85	U-WLV0808-4 (CSP package)

To find out more information:

Omnipolar Portfolio page: http://www.diodes.com/products/catalog/list.php?parent-id=113
Product page: http://www.diodes.com/products/catalog/detail.php?item-id=8465
Datasheet: http://www.diodes.com/datasheets/AH1891.pdf