

Magnetic Sensor IC

Omnipolar Detection High Performance Low Power Hall-Effect Sensor IC



AS1891

● General Description

Using low power CMOS process, the AS1891 is designed for low power, high performance omnipolar detection hall-effect application, such as cover switch, contactless switch, solid state switch and lid close sensor etc battery operation. The hall IC integrated an on-chip hall voltage generator for magnetic sensing, a comparator that amplifiers the hall voltage, a Chopper amplifier, a Schmitt trigger to provide switching hysteresis for noise rejection, and a complementary output.

The total power consumption of AS1891 is typically less than 3.5mA at 3.6V power supply. AS1891 is designed to respond to alternating North and South poles. When the magnetic flux density (B) is larger than operate point (B_{OP}), the output will be turned on (low), the output is held until the magnetic flux density (B) is lower than release point (B_{RP}), then turn off (high).

The device is available in SOT23-3L and SIP-3L Package and is rated over the -40°C to 125°C . The all packages are RoHS and Green compliant.

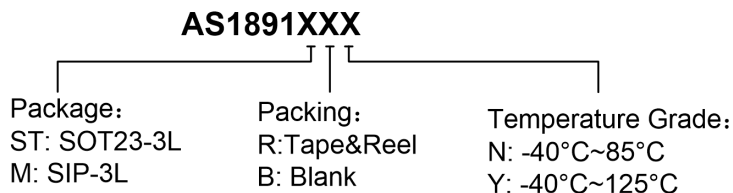
● Features

- Input Voltage Range : 2.2V to 5.5V
- Omnipolar Operation, easy to use as output
- Very high sensitivity hall sensor
- Chopper stabilization amplifier stage
- Magnetic Sensitivity (typical)
 $B_{OP} = \pm 95\text{Gauss}$, $B_{RP} = \pm 75\text{Gauss}$
- Good RF noise immunity
- Open Drain Output Capable of 20mA
- Small Solution Size
- RoHS & Green Compliant
- SOT23-3L and SIP-3L Packages
- -40°C to $+125^{\circ}\text{C}$ Temperature Range

● Applications

- Speed and Rotational Speed Detection
- Contact-less switch in consumer products
- Solid State Switch
- Handheld Wireless Handset Awake Switch
- Lid close sensor for battery-powered device
- Magnet proximity sensor for reed switch replacement in low duty cycle applications

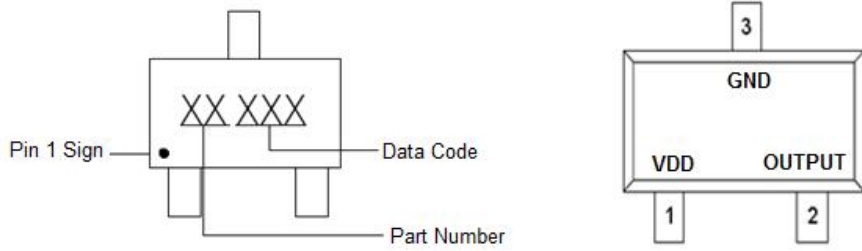
■ Ordering Information



Part Number	B_{OP} (Gauss)	B_{RP} Gauss)	Package Type	Package Qty	Temperature	Eco Plan
AS1891STRN	$\pm 95\text{Gauss}$	$\pm 75\text{Gauss}$	SOT23-3L	7-in reel 3000pcs/reel	$-40 \sim 85^{\circ}\text{C}$	Green
AS1891MBN	$\pm 95\text{Gauss}$	$\pm 75\text{Gauss}$	SIP-3L	1000pcs/Package	$-40 \sim 85^{\circ}\text{C}$	Rohs
AS1891STRY	$\pm 95\text{Gauss}$	$\pm 75\text{Gauss}$	SOT23-3L	7-in reel 3000pcs/reel	$-40 \sim 125^{\circ}\text{C}$	Green
AS1891MBY	$\pm 95\text{Gauss}$	$\pm 75\text{Gauss}$	SIP-3L	1000pcs/Package	$-40 \sim 125^{\circ}\text{C}$	Rohs

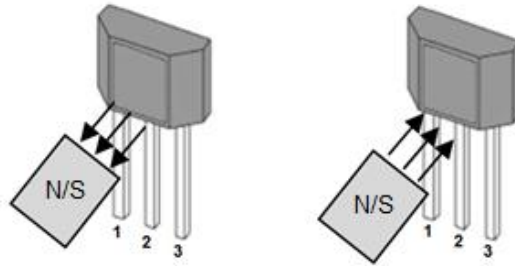
■ **Marking & Pin Assignment**

SOT23-3L



Pin Name	Pin No.	I/O	Pin Function
	SOT23-3L		
VDD	1	P	Input Power Supply
GND	3	P	Ground
OUTPUT	2	O	Output Pin

SIP-3L



Pin Name	Pin No.	I/O	Pin Function
	SIP-3L		
VCC	1	P	Input Power Supply
GND	2	P	Ground
OUTPUT	3	O	Output Pin.

■ **Typical Application Circuit**

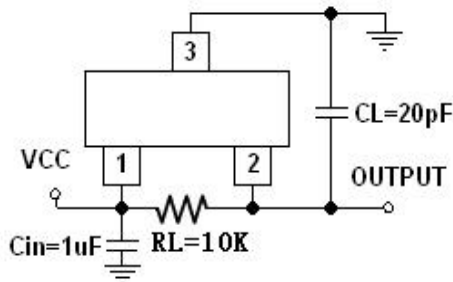
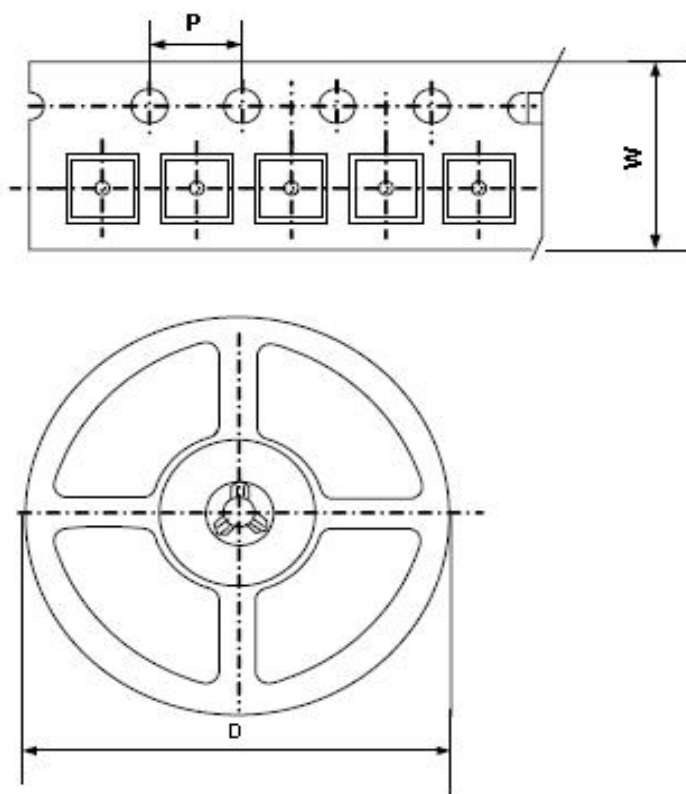


Figure 1, Typical Application Circuit of AS1891

■ **Packing Information**



Package Type	Carrier Width(W)	Pitch(P)	Reel Size(D)	Packing Minimum
SOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs

Note: Carrier Tape Dimension, Reel Size and Packing Minimum

■ **Packing Information**

SIP-3L

1. Packing type: Bulk
2. Packing minimum: 1000pcs