

Magnetic Sensor IC

## Omnipolar Detection High Performance Low Power Hall-Effect Sensor IC



## AS1890D

### ● General Description

Using low power CMOS process, the AS1890 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 AS1890 is typically less than 2.0uA at 2.8V power supply. AS1890 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 TSOT23-3L, SOT23-3L and SIP-3L Package is rated over the -40°C to 125°C.

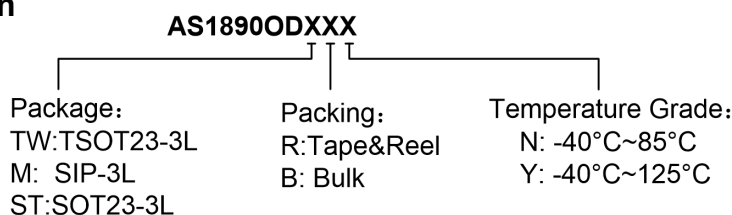
### ● Features

- Input Voltage Range: 1.7V to 5.5V
- Micro-power consumption ideal for battery power applications
- Omnipolar Operation, easy to use as output
- Sensitivity hall sensor
- Low Power CMOS process technology
- Chopper stabilization amplifier stage
- Magnetic Sensitivity (typical)  
 $B_{OP} = \pm 40\text{Gauss}$ ,  $B_{RP} = \pm 23\text{Gauss}$
- Good RF noise immunity
- RoHS & Green Compliant
- TSOT23-3L, SOT23-3L and SIP-3L Packages
- -40°C to +125 °C Temperature Range

### ● Applications

- Smart Meter
- Cover switch
- Contact-less switch

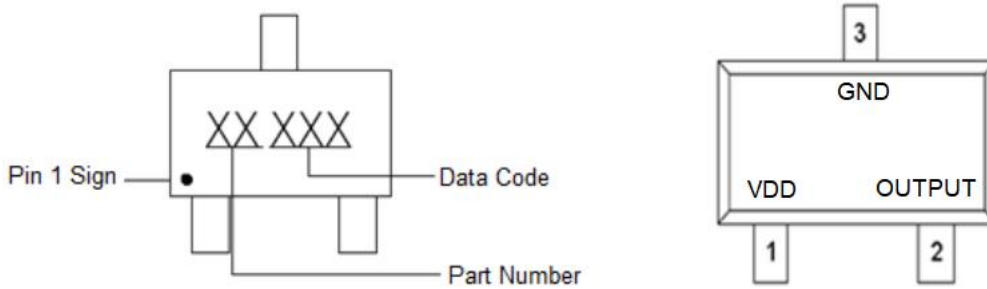
### ■ Ordering Information



Part Number	$B_{OP}$ (Gauss)	$B_{RP}$ Gauss)	Package Type	Package Qty	Temperature	Eco Plan
AS1890ODTWRN	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	TSOT23-3L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1890ODMBN	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	SIP-3L	1000pcs/Package	-40~85°C	RoHS
AS1890ODSTRN	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	SOT23-3L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1890ODTWRY	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	TSOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1890ODMBY	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	SIP-3L	1000pcs/Package	-40~125°C	RoHS
AS1890ODSTRY	$\pm 40\text{Gauss}$	$\pm 23\text{Gauss}$	SOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green

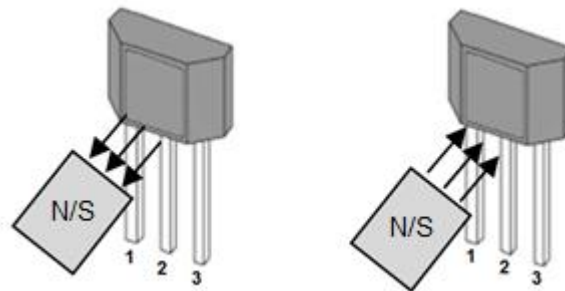
■ **Marking & Pin Assignment**

TSOT23-3L/SOT23-3L:



Pin Name	Pin No.	I/O	Pin Function
	TSOT23-3L/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		
VDD	1	P	Input Power Supply
GND	2	P	Ground
OUTPUT	3	O	Output Pin.

■ **Typical Application Circuit**

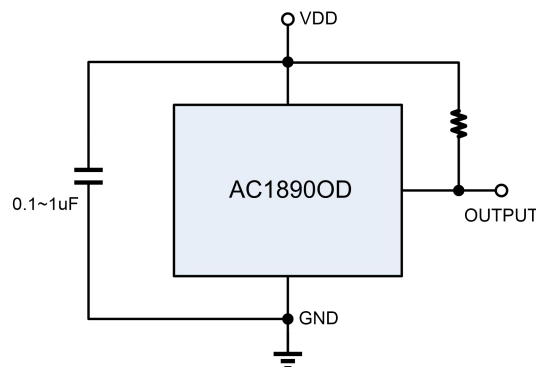
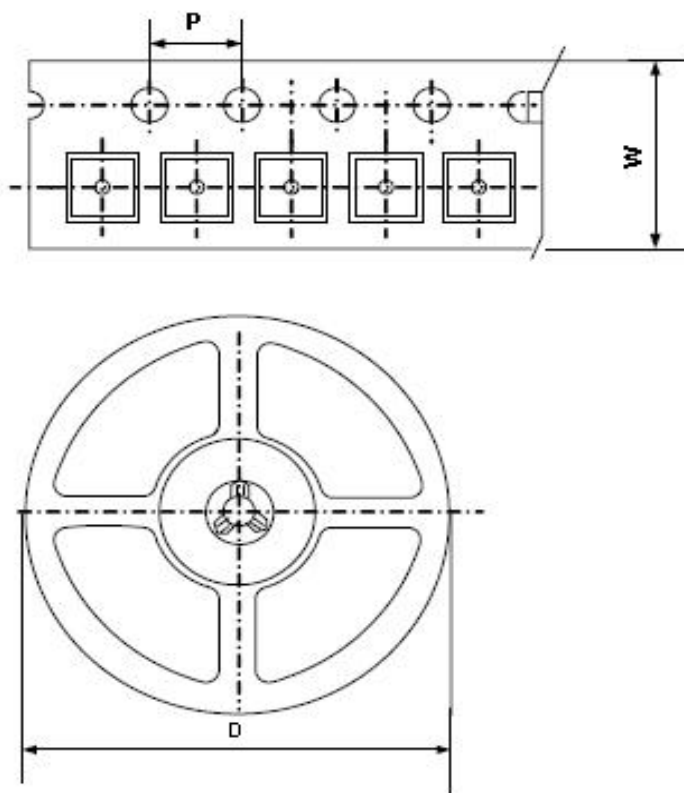


Figure 1, Typical Application Circuit of AS1890OD

■ **Packing Information**

TSOT23-3L/SOT23-3L:



Package Type	Carrier Width(W)	Pitch(P)	Reel Size(D)	Packing Minimum
TSOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs
SOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs

**SIP-3L:**

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