

Magnetic Sensor IC

Omnipolar Detection High Performance Low Power Hall-Effect Sensor IC



AS1890

● 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 3uA at 3.6V 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, SIP-3L, DFN1216-4L and SOT553 Package and is rated over the -40°C to 125°C . The all packages are RoHS and Green compliant.

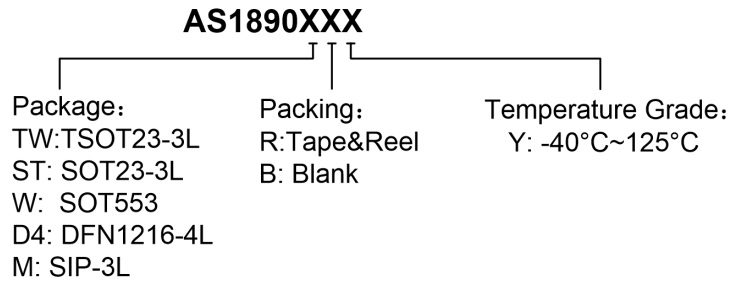
● Features

- Input Voltage Range : 1.65V to 5.5V
- Micro-power consumption ideal for battery power applications
- Omnipolar Operation, easy to use as output
- Very high 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
- No need pull-up resistor
- Small Solution Size
- RoHS & Green Compliant
- TSOT23-3L, SOT23-3L, SIP-3L, DFN1216-4L & SOT553 Packages
- -40°C to $+125^{\circ}\text{C}$ Temperature Range

● Applications

- Cover switch in clam-shell cellular phones
- Cover switch in Notebook, PC/PAD
- 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
- DV, DSC, and White Goods

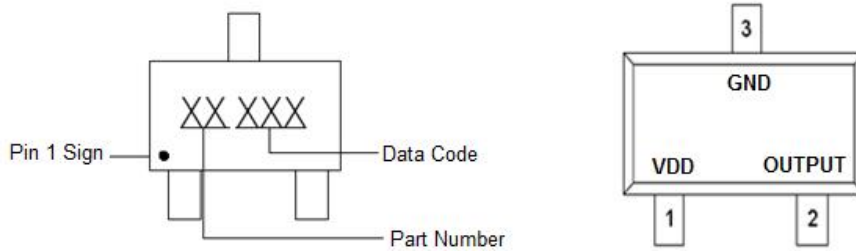
Ordering Information



Part Number	B _{OP} (Gauss)	B _{RP} Gauss)	Package Type	Package Qty	Temperature	Eco Plan
AS1890TWRY	±40Gauss	±23Gauss	TSOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1890STRY	±40Gauss	±23Gauss	SOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1890WRY	±40Gauss	±23Gauss	SOT553	7-in reel 3000pcs/reel	-40~125°C	Green
AS1890D4RY	±40Gauss	±23Gauss	DFN1216-4L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1890MBY	±40Gauss	±23Gauss	SIP-3L	1000pcs/package	-40~125°C	Rohs

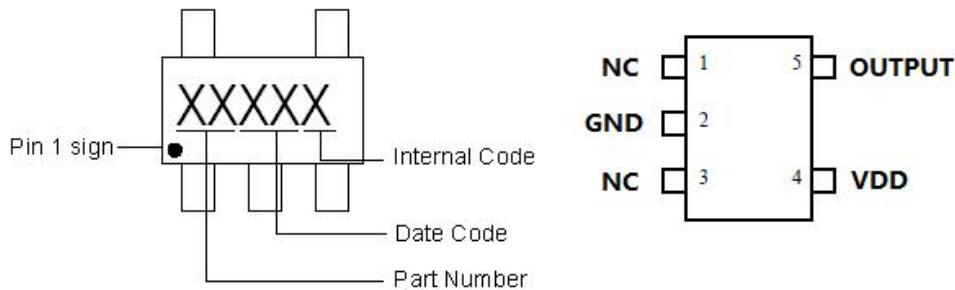
Marking & Pin Assignment

TSOT23-3L/SOT23-3L

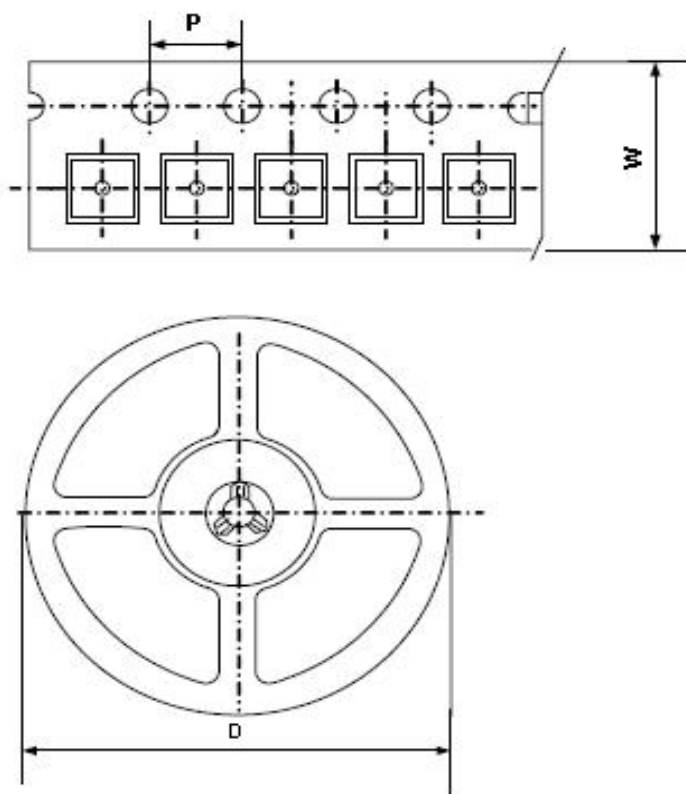


Pin Name	Pin No.	I/O	Pin Function
	TSOT23-3L/ SOT23-3L		
VDD	1	P	Input Power Supply
GND	3	P	Ground
OUTPUT	2	O	Output Pin

SOT553



Pin Name	Pin No.	I/O	Pin Function
	SOT553		
VDD	4	P	Input Power Supply
GND	2	P	Ground
OUTPUT	5	O	Output Pin
NC	1,3	-	Not Connected

■ Packing Information


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
SOT553	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs
DFN1216-4L	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

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