

Magnetic Sensor IC

Omnipolar Detection High Performance Low Power Hall-Effect Sensor IC



AS1853

● **General Description**

Using low power CMOS process, the AS1853 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 AS1853 is typically less than 2uA at 2.8V power supply. AS1853 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 85°C. The all packages are RoHS and Green compliant.

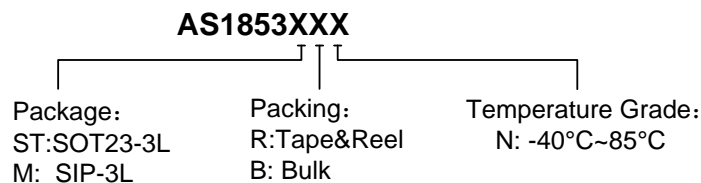
● **Features**

- Input Voltage Range : 2.0V to 5.0V
- 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)
 $B_{OP} = \pm 40\text{Gauss}$, $B_{RP} = \pm 30\text{Gauss}$
- Good RF noise immunity
- No need pull-up resistor
- Small Solution Size
- RoHS & Green Compliant
- SOT23-3L, SIP-3L Packages
- -40°C to +85 °C Temperature Range

● **Applications**

- Smart Meter
- Cover switch
- Contact-less switch

■ **Ordering Information**



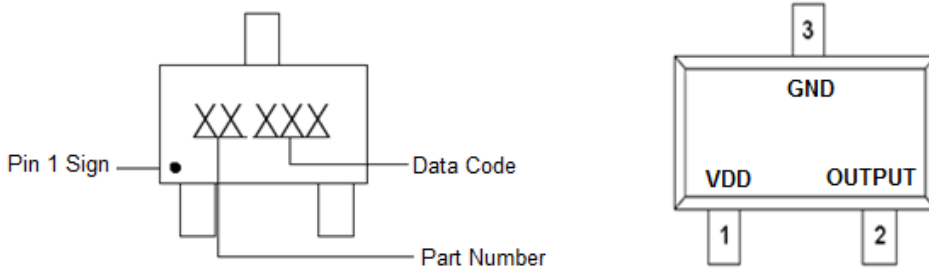
Part Number	B_{OP} (Gauss)	B_{RP} Gauss)	Package Type	Package Qty	Temperature	Eco Plan	Lead
AS1853STRN	$\pm 40\text{Gauss}$	$\pm 30\text{Gauss}$	SOT23-3L	7-in reel 3000pcs/reel	-40~85°C	Green	Cu
AS1853MBN	$\pm 40\text{Gauss}$	$\pm 30\text{Gauss}$	SIP3	1K/Package	-40~85°C	RoHS	Cu

■ **Function Table**

Magnetic Flux Density	Output
$\geq B_{OP}$	L
$\leq B_{RP}$	H

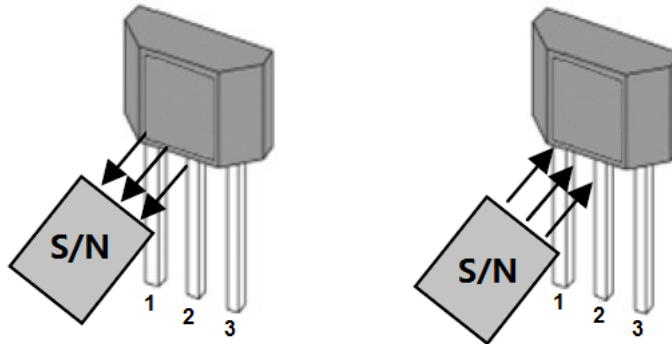
■ **Marking & Pin Assignment**

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**

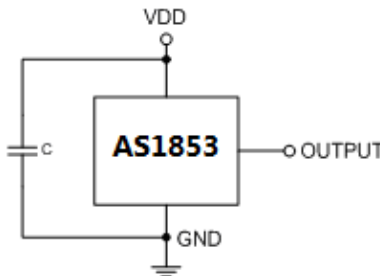
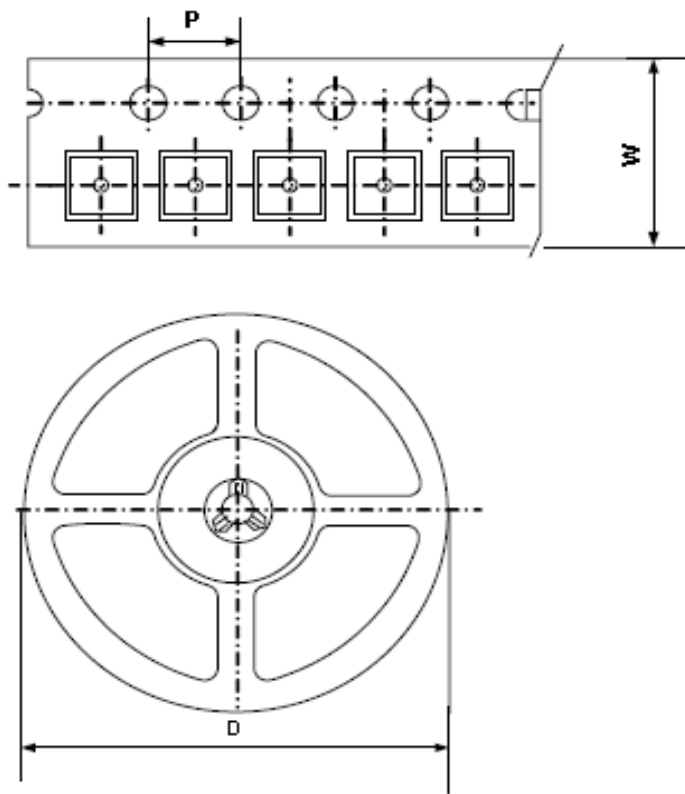


Figure 1, Typical Application Circuit of AS1853

■ **Packing Information**

SOT23-3:



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**

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