

Magnetic Sensor IC

North Unipolar Detection High Performance Low Power Hall-Effect Sensor IC



AS1813

● General Description

Using low power CMOS process, the AS1813 is designed for low power, high performance unipolar 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 AS1813 is typically less than 3.0uA at 3.6V power supply. AS1813 is designed to respond to alternating North pole. When the magnetic flux density (B) is larger than operate point (B_{OPN}), the output will be turned on (low), the output is held until the magnetic flux density (B) is lower than release point (B_{RPN}), then turn off (high).

The device is available in SOT553, SIP-3L and TSOT23-3L Package and is rated over the -40°C to 85°C. The package is RoHS and Green compliant.

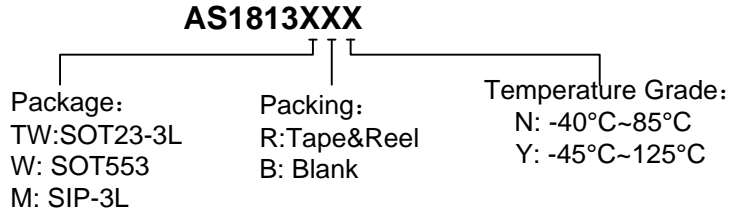
● Features

- Input Voltage Range : 1.65V to 5.0V
- Micro-power consumption ideal for battery power applications
- Uniplar Operation, easy to use as output
- Very high sensitivity hall sensor
- Low Power CMOS process technology
- Chopper stabilization amplifier stage
- Magnetic Sensitivity (typical)
 $B_{OPN}=-30\text{Gauss}$, $B_{RPN}=-23\text{Gauss}$
- Good RF noise immunity
- No need pull-up resistor
- Small Solution Size
- RoHS & Green Compliant
- Small SOT553, TSOT23-3L and SIP-3L Package
- -40°C to +85 °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 devise
- Magnet proximity sensor for reed switch replacement in low duty cycle applications
- DV, DSC, and White Goods

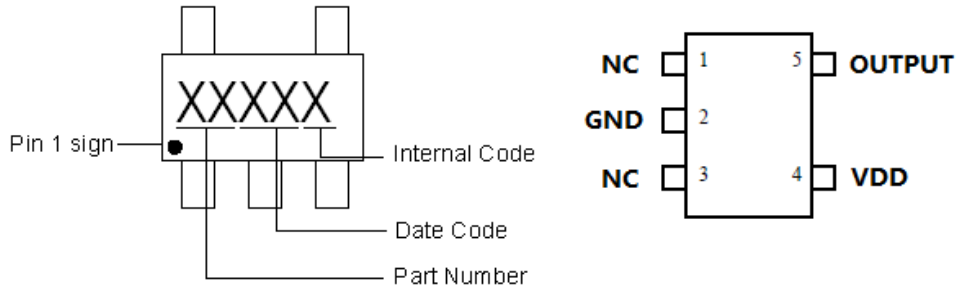
■ **Ordering Information**



| Part Number | B _{OPN} (Gauss) | B _{RPN} (Gauss) | Package Type | Package Qty | Temperature | Eco Plan | Lead |
|-------------|--------------------------|--------------------------|--------------|---------------------------|-------------|----------|------|
| AS1813WRN | -30 | -23 | SOT553 | 7-in reel 3000pcs/reel | -40~85°C | Green | Cu |
| AS1813TWRN | -30 | -23 | TSOT23-3L | 7-in reel 3000pcs/reel | -40~85°C | Green | Cu |
| AS1813MBY | -30 | -23 | SIP-3L | 1000pcs/Package | -45~125°C | Rohs | Cu |

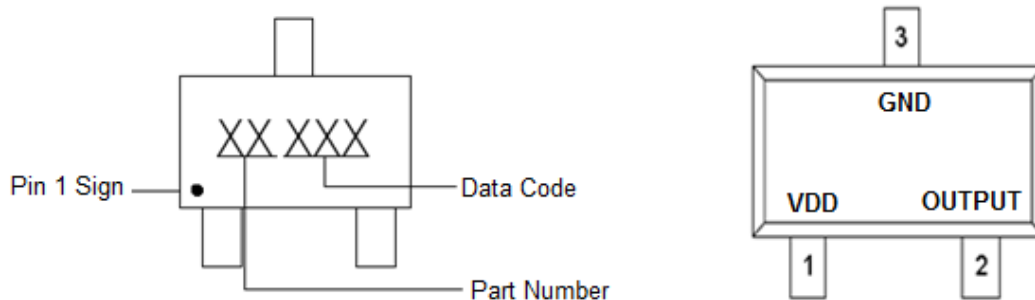
■ **Marking & Pin Assignment**

SOT553:



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

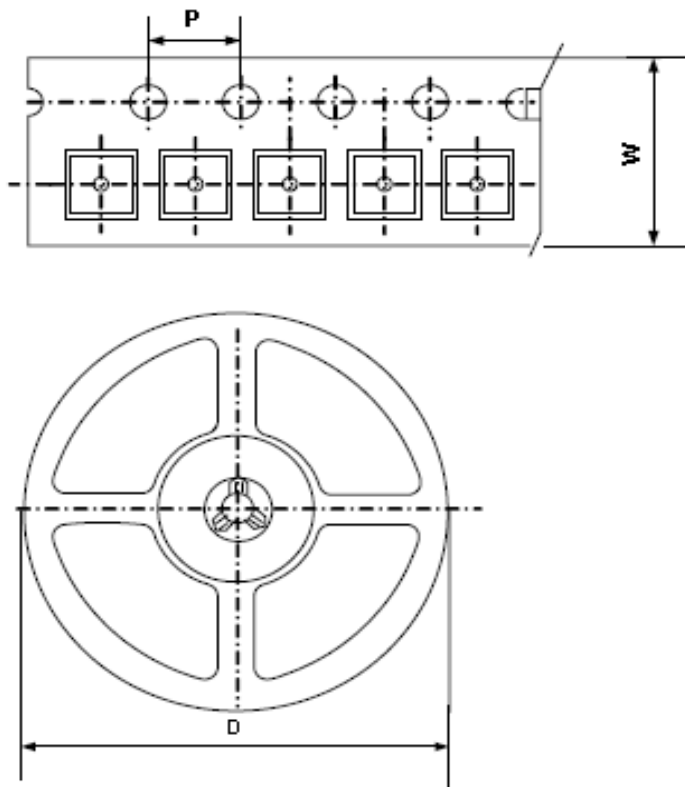
TSOT23-3L



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

■ **Packing Information**

SOT553/TSOT23-3L



| Package Type | Carrier Width(W) | Pitch(P) | Reel Size(D) | Packing Minimum |
|--------------|------------------|------------|--------------|-----------------|
| SOT553 | 8.0±0.1 mm | 4.0±0.1 mm | 180±1 mm | 3000pcs |
| TSOT23-3L | 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