

Magnetic Sensor IC

Dual Outputs for both S and N-pole Low Power Hall-Effect Sensor IC



AS1820

● General Description

Using low power CMOS process, the AS1820 is designed for low power, high performance unipolar detection dual output 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 amplifies the hall voltage, a chopper amplifier, a Schmitt trigger to provide switching hysteresis for noise rejection, and two complementary output.

The total power consumption of AS1820 is typically less than 1.5uA at 1.8V power supply. AS1820 is designed to respond to alternating North and South poles. While 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 DFN1014-4L, SOT553 and SOT23-5L Packages and is rated over the -40°C to 85°C. The all packages are RoHS and Green compliant.

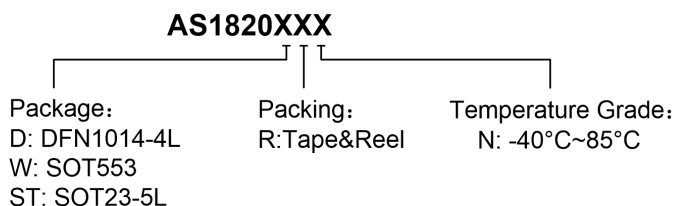
● Features

- Input Voltage Range : 1.65V to 5.0V
- Micro-power consumption ideal for battery power applications
- Uniplar Operation, dual output
- Very high sensitivity hall sensor
- Low Power CMOS process technology
- Chopper stabilization amplifier stage
- Magnetic Sensitivity (typical)
 $B_{OPS}=30\text{Gauss}$, $B_{RPS}=20\text{Gauss}$
 $B_{OPN}= -30\text{Gauss}$, $B_{RPN}= -20\text{Gauss}$
- Good RF noise immunity
- No need pull-up resistor
- Small Solution Size
- RoHS & Green Compliant
- DFN1014-4L, SOT553 & SOT23-5L Packages
- -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

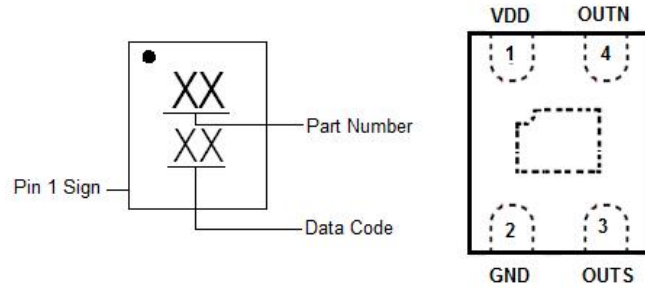
■ Ordering Information



Part Number	B_{OP} (Gauss)	B_{RP} Gauss)	Package Type	Package Qty	Temperature	Eco Plan
AS1820DRN	±30Gauss	±20Gauss	DFN1014-4L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1820WRN	±30Gauss	±20Gauss	SOT553	7-in reel 3000pcs/reel	-40~85°C	Green
AS1820STRN	±30Gauss	±20Gauss	SOT23-5L	7-in reel 3000pcs/reel	-40~85°C	Green

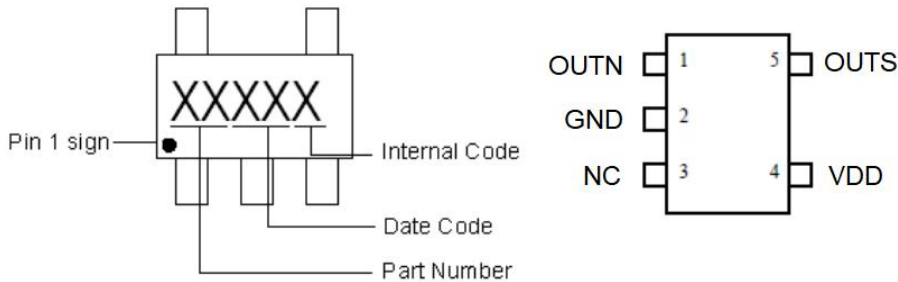
■ **Marking & Pin Assignment**

DFN1014-4L:



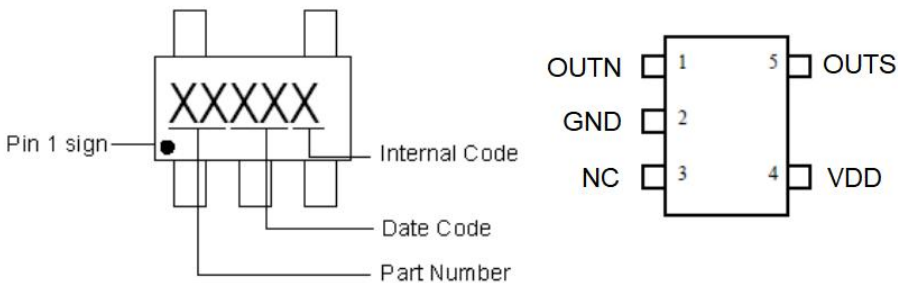
Pin Name	Pin No.	I/O	Pin Function
	DFN1014-4L		
VDD	1	P	Input Power Supply.
GND	2	P	Ground.
OUTS	3	O	Output Pin for South Pole.
OUTN	4	O	Output Pin for North Pole.

SOT553:



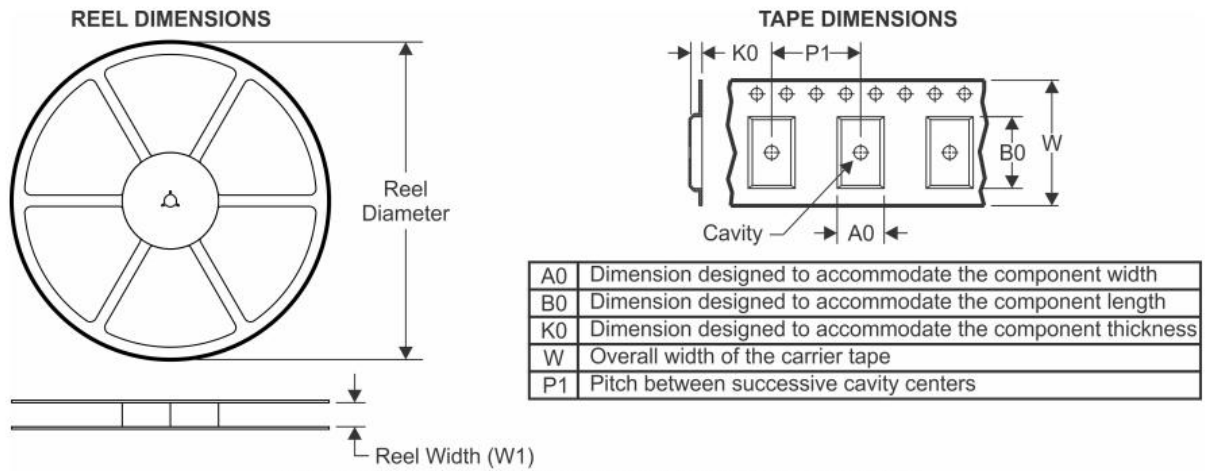
Pin Name	Pin No.	I/O	Pin Function
	SOT553		
OUTN	1	O	Output Pin for North Pole.
GND	2	P	Ground
NC	3	-	Not Connected
VDD	4	P	Input Power Supply
OUTS	5	O	Output Pin for South Pole.

SOT23-5L:

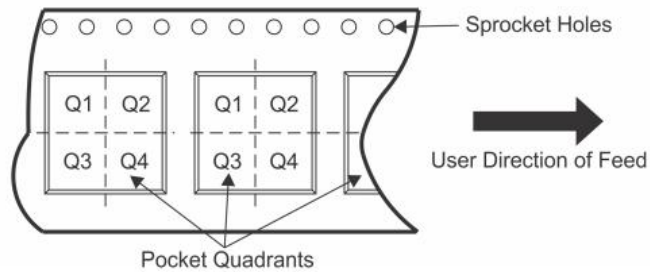


Pin Name	Pin No.	I/O	Pin Function
	SOT23-5L		
OUTN	1	O	Output Pin for North Pole.
GND	2	P	Ground
NC	3	-	Not Connected
VDD	4	P	Input Power Supply
OUTS	5	O	Output Pin for South Pole.

■ **Tape and Reel Information**



QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



Device	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
AS1820DRN	180.0	8.5	2.60	2.60	0.8	4.0	8.0	Q2
AS1820WRN	180.0	8.5	2.60	2.60	0.8	4.0	8.0	Q3
AS1820STRN	180.0	8.5	2.60	2.60	0.8	4.0	8.0	Q3

*All dimensions are nominal