

Magnetic Sensor ICs

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



AS1821

● General Description

Using low power CMOS process, the AS1821 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 AS1821 is typically less than 1.7uA at 1.8V power supply. AS1821 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 SOT23-5L, DFN1014-4L and DFN1010-4L package is rated over the -40°C to 125°C. The all packages are RoHS and Green compliant.

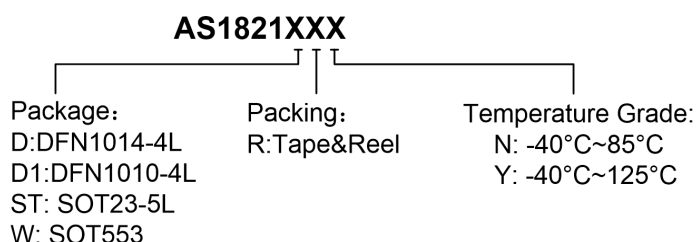
● Features

- Input Voltage Range : 1.65V to 5.0V
- 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)
 $B_{OPS}=40\text{Gauss}$, $B_{RPS}=20\text{Gauss}$
 $B_{OPN}= -40\text{Gauss}$, $B_{RPN}= -20\text{Gauss}$
- Good RF noise immunity
- No need pull-up resistor
- Small Solution Size
- RoHS & Green Compliant
- DFN1014-4L, DFN1010-4L and SOT23-5L Packages
- -40°C to +125 °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

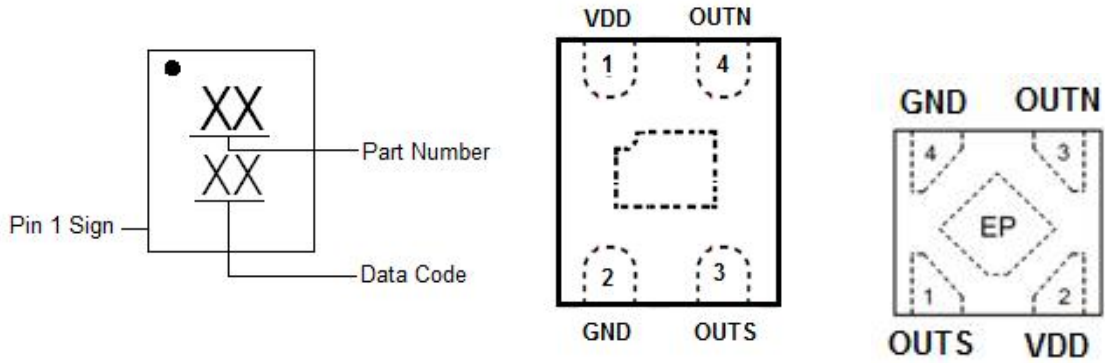
■ Ordering Information



Part Number	B_{OP} (Gauss)	B_{RP} Gauss)	Package Type	Package Qty	Temperature	Eco Plan
AS1821DRN	±40Gauss	±20Gauss	DFN1014-4L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1821D1RN	±40Gauss	±20Gauss	DFN1010-4L	7-in reel 10000pcs/reel	-40~85°C	Green
AS1821STRN	±40Gauss	±20Gauss	SOT23-5L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1821WRN	±40Gauss	±20Gauss	SOT553	7-in reel 3000pcs/reel	-40~85°C	Green
AS1821DRY	±40Gauss	±20Gauss	DFN1014-4L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1821D1RY	±40Gauss	±20Gauss	DFN1010-4L	7-in reel 10000pcs/reel	-40~125°C	Green
AS1821STRY	±40Gauss	±20Gauss	SOT23-5L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1821WRY	±40Gauss	±20Gauss	SOT553	7-in reel 3000pcs/reel	-40~125°C	Green

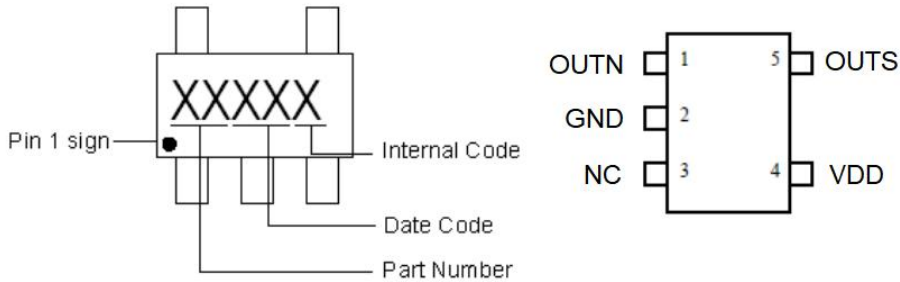
■ **Marking & Pin Assignment**

DFN1014-4L/DFN1010-4L:



Pin Name	Pin No.		I/O	Pin Function
	DFN1014-4L	DFN1010-4L		
VDD	1	2	P	Input Power Supply.
GND	2	4	P	Ground.
OUTS	3	1	O	Output Pin for South Pole.
OUTN	4	3	O	Output Pin for North Pole.

SOT553/SOT23-5L:



Pin Name	Pin No.		I/O	Pin Function
	SOT23-5L	SOT553		
OUTN	1	1	O	Output Pin for North Pole.
GND	2	2	P	Ground
NC	3	3	-	Not Connected
VDD	4	4	P	Input Power Supply
OUTS	5	5	O	Output Pin for South Pole.

■ **Typical Application Circuit**

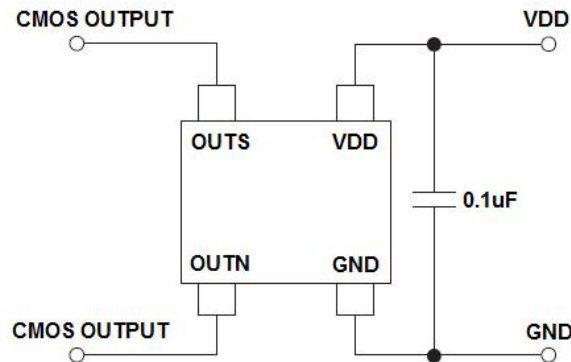
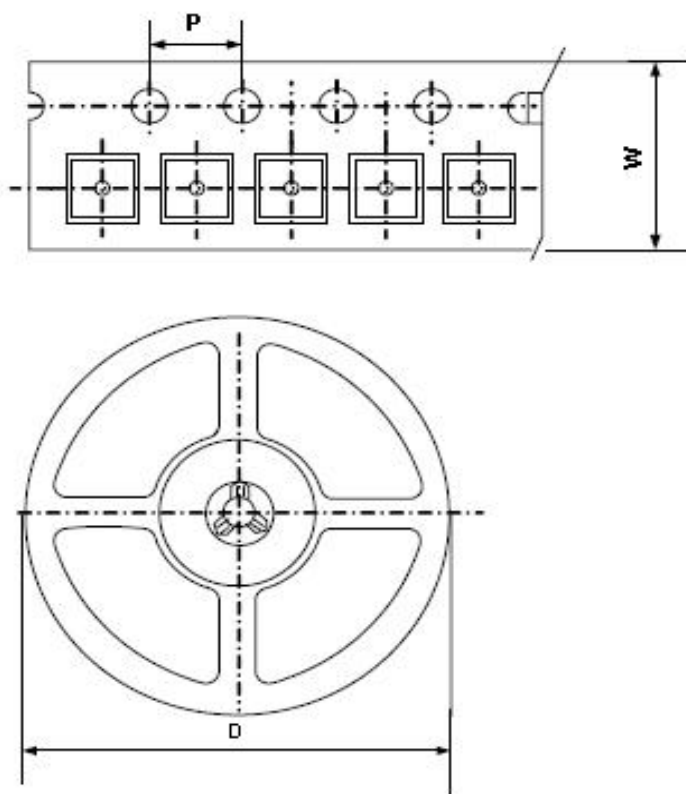


Figure 1, Typical Application Circuit of AS1821

■ Packing Information



Package Type	Carrier Width(W)	Pitch(P)	Reel Size(D)	Packing Minimum
DFN1014-4L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs
DFN1010-4L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	10000pcs
SOT553	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs
SOT23-5L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs

Note: Carrier Tape Dimension, Reel Size and Packing Minimum