

Magnetic Sensor IC

Continuous-Time Ratio-metric Linear Hall-Effect Sensor IC

**AS1240**

● General Description

The AS1240 is small, versatile linear Hall effect devices which are operated by the magnetic field from a permanent magnet or an electromagnet. They are optimized to accurately provide a voltage output that is proportional to an applied magnetic field. These devices have a quiescent output voltage that is about 50% of the supply voltage.

The Hall-effect integrated circuit included in each device includes a Hall sensing element, a linear amplifier, and a CMOS Class AB output structure. Integrating the Hall sensing element and the amplifier on a single chip minimizes many of the problems normally associated with low voltage level analog signals.

High precision in output levels is obtained by internal gain and offset trim adjustments made at end-of-line during the manufacturing process.

The integrated circuitry provides increased temperature stability and sensitivity, for both linear target motion and rotational motion. These linear position sensors have an operating temperature range of -40°C to +125°C, appropriate for industrial environments. They respond to either positive or negative gauss, monitoring either or both magnetic poles. The quad Hall sensing element minimizes the effects of mechanical or thermal stress on the output. The positive temperature coefficient of the sensitivity helps compensate for the negative temperature coefficients of low cost magnets, providing a robust design over a wide temperature range.

The AS1240 is available in small 3-pin SSOT23 and SIP-3L packages, and is rated over the -40°C to +125°C. These packages are available in a lead (Pb) free version.

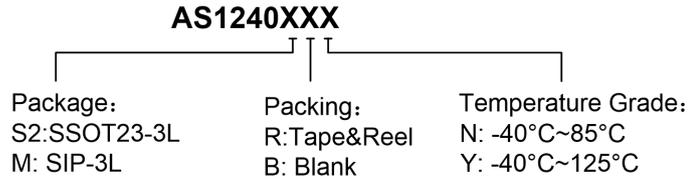
● Features

- Input Voltage Range : 2.5V to 6.0V
- Fast Power-on Time
- Power consumption of 5mA/5V
- Single Current Sinking or Current Sourcing Output
- Linear Output For Circuit Design Flexibility
- Ratio-metric Output for A/D Interface
- Wide Sensible Magnetic Field Range on Different Supplied Voltage ± 800 Gauss on 5V Supplied Voltage
- Rail to Rail Operation Provides More Useable Signal For Higher Accuracy
- Temperature Stable Quiescent Output Voltage
- Quad Hall Sensing Element For Stable Output
- Responds to Either Positive or Negative Gauss
- Robust EMC Protection
- Small Solution Size
- RoHS & Green Compliant
- SSOT23-3L and SIP-3L Packages
- -40°C to +125°C Temperature Range

● Applications

- Current Sensing
- Motor Control
- Linear Position Sensing
- Magnetic Code Reading
- Rotary Position Sensing
- Ferrous Metal Detector
- Vibration Sensing

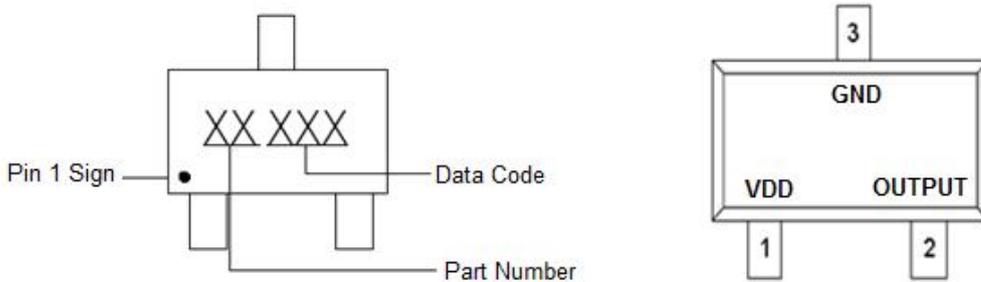
■ **Ordering Information**



Part Number	Sensitivity (Typ.)	Package Type	Package Qty	Temperature	Eco Plan
AS1240S2RN	1.4mV/Gauss	SSOT23-3L	7-in reel 3000pcs/reel	-40~85°C	Green
AS1240MBN	1.4mV/Gauss	SIP-3L	1000pcs/package	-40~85°C	Green
AS1240S2RY	1.4mV/Gauss	SSOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green
AS1240MBY	1.4mV/Gauss	SIP-3L	1000pcs/package	-40~125°C	Green

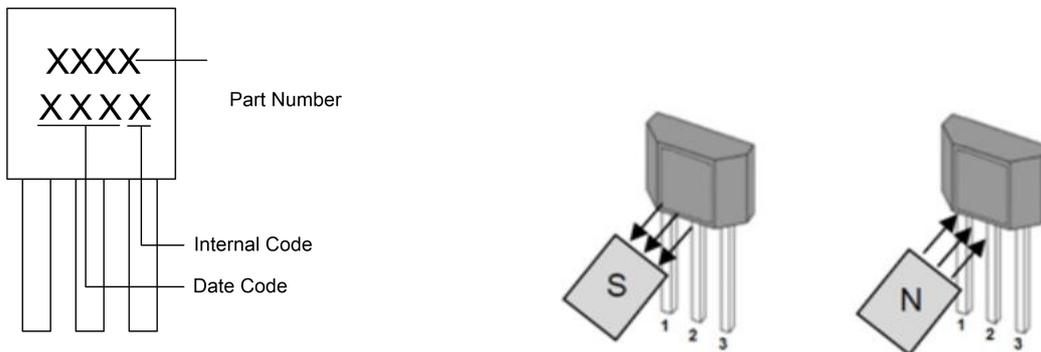
■ **Marking & Pin Assignment**

SSOT23-3L



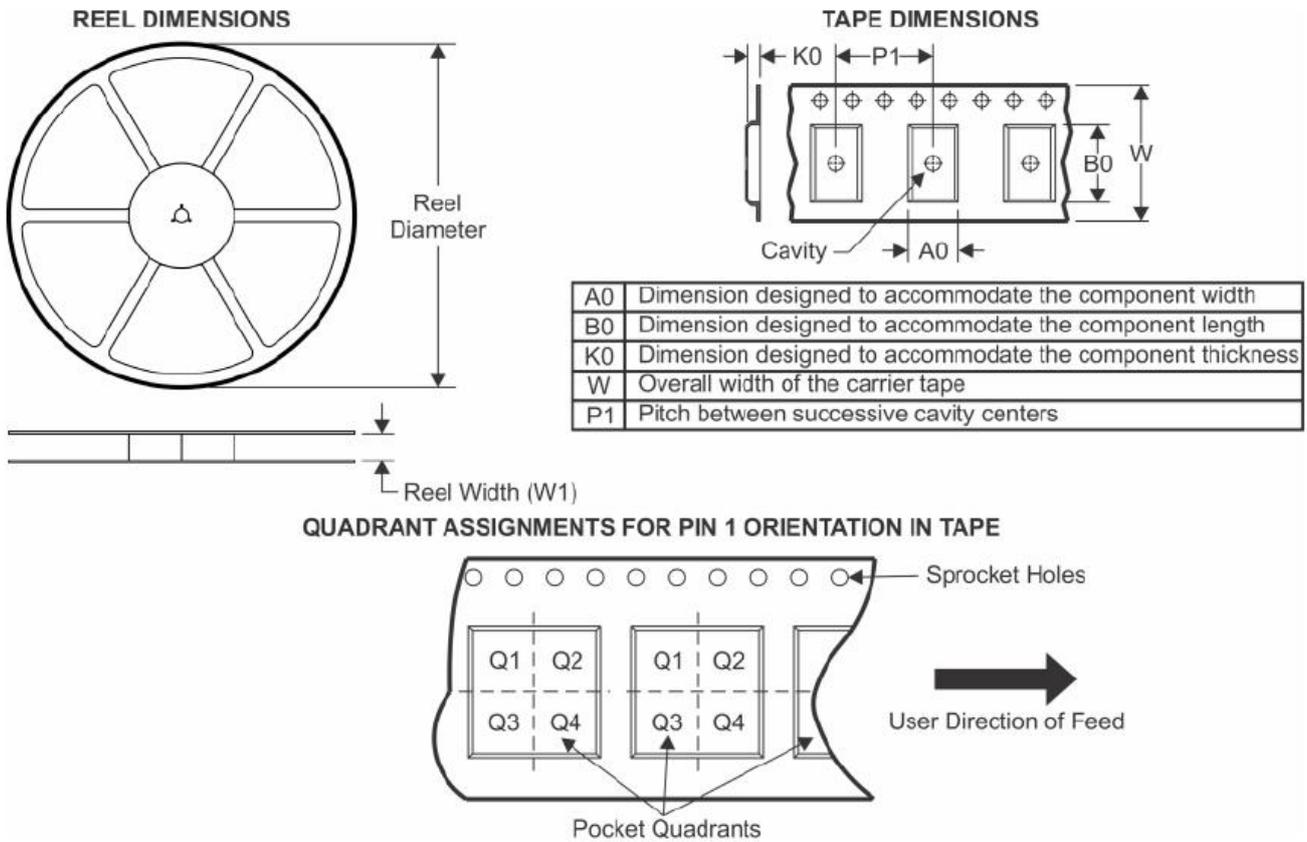
Pin Name	Pin No.	I/O	Pin Function
	SSOT23-3L		
VDD	1	P	Input Power Supply
GND	3	P	Ground
OUTPUT	2	O	Output Pin

SIP-3L:



Pin Name	Pin No.	I/O	Pin Function
	SIP-3L		
VCC	1	P	Input Power Supply.
GND	2	P	Ground.
OUT	3	O	Analog Output Pin.The quiescent output voltage of these devices is 50% of the supply voltage VCC.

■ **Packing Information**



Package Type	Carrier Width(W)	Pitch(P)	Reel Size(D)	Pin1 Quadrant	Packing Minimum
SSOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	Q3	3000pcs

Note: Carrier Tape Dimension, Reel Size and Packing Minimum

■ **Packing Information**

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