

Magnetic Sensor IC

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

**AS1290**

● General Description

The AS1290 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 AS1290 is available in small 3-pin SOT23 package, and is rated over the -40°C to +125°C. These packages are available in a lead (Pb) free version.

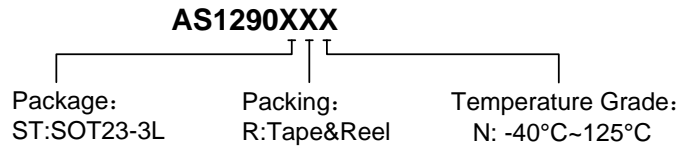
● Features

- 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
- SOT23-3L 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

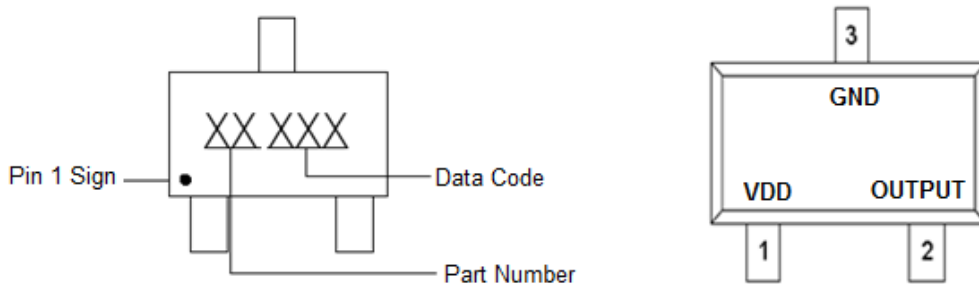
■ **Ordering Information**



Part Number	Sensitivity (Typ.)	Package Type	Package Qty	Temperature	Eco Plan	Lead
AS1290STRN	1.4mV/Gauss	SOT23-3L	7-in reel 3000pcs/reel	-40~125°C	Green	Cu

■ **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

■ **Typical Application Circuit**

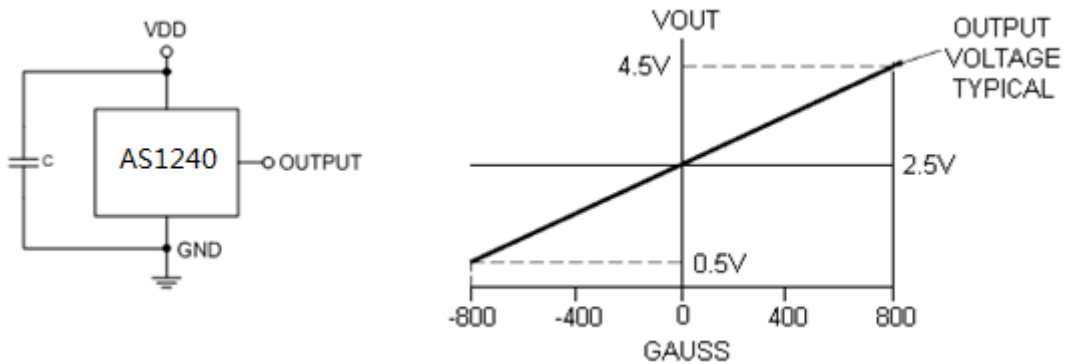
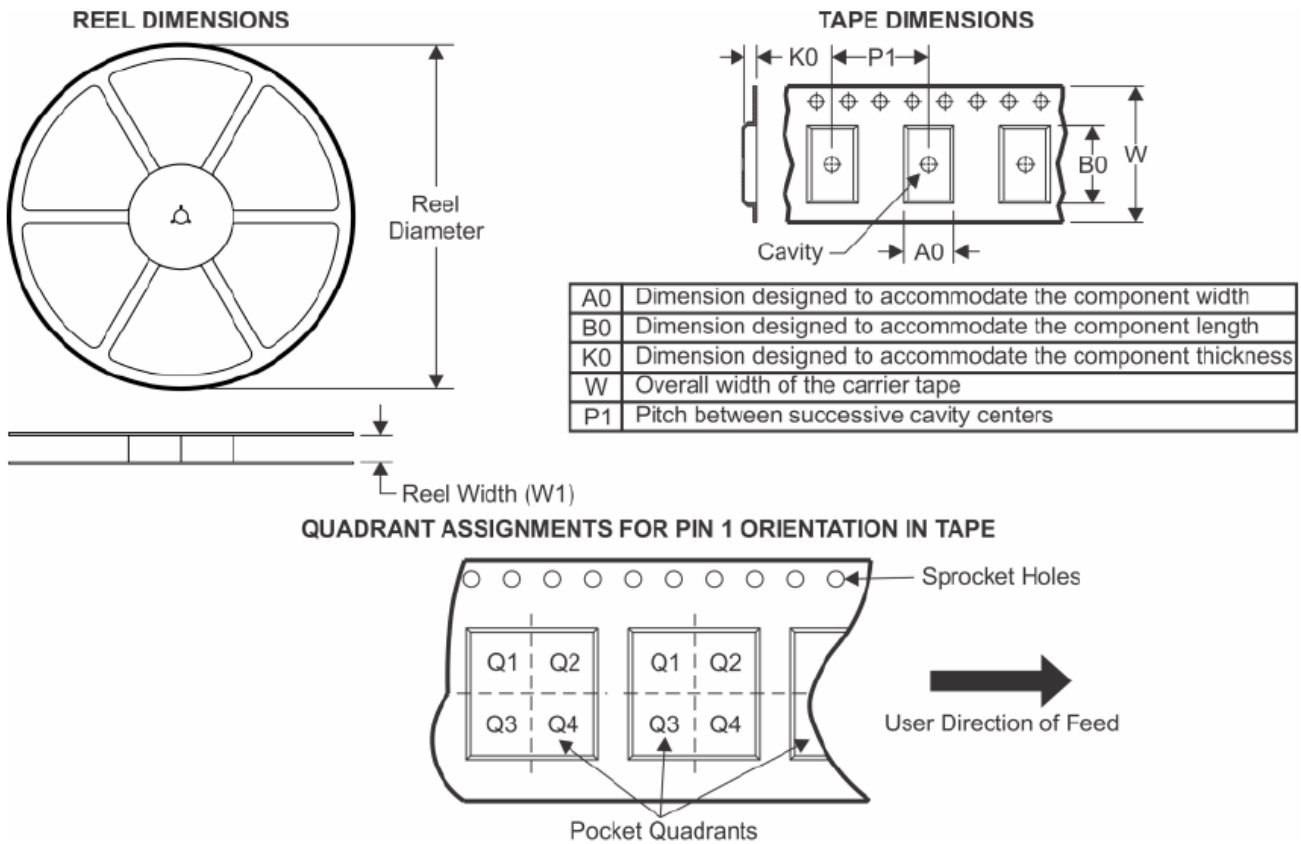


Figure 1, 5.0V Typical Application Circuit of AS1290

Note: C is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 10nF~100nF.

■ **Packing Information**



Package Type	Carrier Width(W)	Pitch(P)	Reel Size(D)	Pin1 Quadrant	Packing Minimum
SOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	Q3	3000pcs

Note: Carrier Tape Dimension, Reel Size and Packing Minimum