

## Dual-Channel Quadrature Hall-Effect Bipolar Switch Module Magnetic Encoders

The A1230 is a dual-channel, bipolar switch with two Hall-effect sensing elements, each providing a separate digital output for speed and direction signal processing capability. The Hall elements are photo lithographically aligned to better than 1  $\mu\text{m}$ . maintaining accurate mechanical location between the two active Hall elements eliminates the major manufacturing hurdle encountered in fine-pitch detection applications. The A1230 is a highly sensitive, temperature stable magnetic sensing device ideal for use in ring magnet based, speed and direction systems located in harsh automotive and industrial environments.

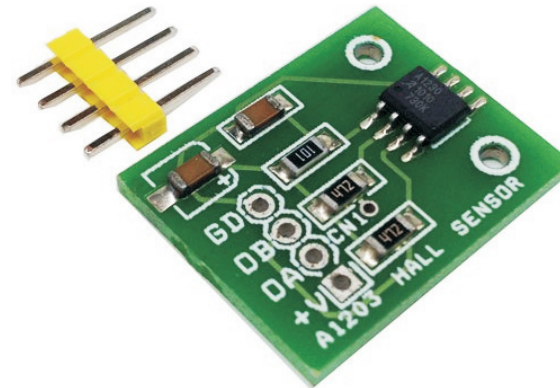
Applications for detecting the position of a rotating shaft, such as in a brushless dc motor (BLDC) are shown in figure 1. The multiple magnets are incorporated into a simple structure referred to as a "ring magnet," which incorporates alternating zones of opposing magnetic polarity. The IC package adjacent to each ring magnet is the Hall bipolar switch device. When the shaft rotates, the magnetic zones are moved past the Hall device. The device is subjected to the nearest magnetic field and is turned-on when a south field is opposite, and turned-off when a north field is opposite. Note that the branded face of the device is toward the ring magnet.

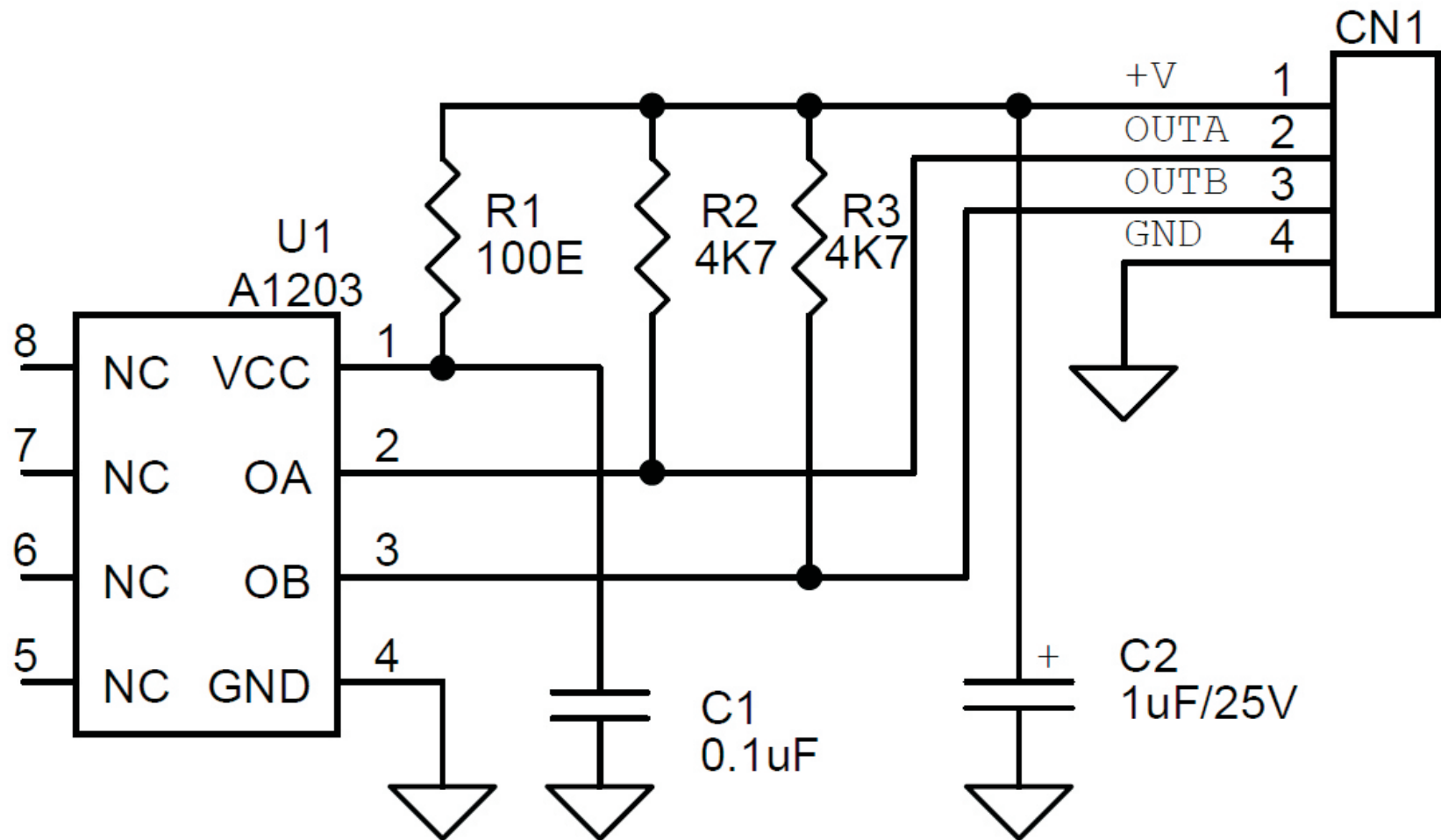
### Features

- It Provides Dual A & B Channel Like optical Encoder
- Simple Module help to make Magnetic Encoder for Motion Control application
- Supply 5V DC
- TTL Output
- Two matched Hall-effect switches on a single substrate
- 1 mm Hall element spacing
- Superior temperature stability and industry-leading jitter performance through use of advanced chopper stabilization topology
- Integrated LDO regulator provides 3.3 V operation
- Integrated ESD protection from outputs and VCC to ground
- High-sensitivity switch points
- Robust structure for EMC protection
- Solid-state reliability
- Reverse-battery protection on supply and both output pins

### Applications

- Brushless DC Motor Rotation
- Speed Sensing
- Pulse Counter
- Magnetic Encoders

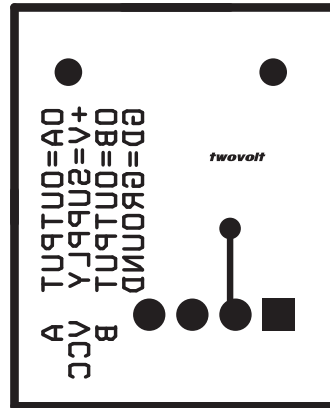




0 7 0 0 5

BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	4 PIN HEADER CONNECTOR
2	1	C1	0.1uF SMD 1206
3	1	C2	1uF SMD 1206
4	1	R1	100E SMD 1206
5	2	R2,R3	4K7 SMD 1206
6	1	U1	A1203 SO8

MOTTOB



SILK SCREEN TOP TOP

