



New Product Announcement

AH396x

Dual Hall-Effect Latches with Speed and Direction Outputs for Accurate Sensing

The AH396x are high-voltage dual Hall-effect sensors designed for applications that require accurate speed and direction sensing.

To support a wide range of demanding applications, the device is optimized to operate over the supply range of 2.7V to 27V.

The AH3965/66/67 provides speed and direction outputs with chopper-stabilized architecture and an internal bandgap regulator to provide temperature compensated supply for internal circuits. The AH3968 provides two independent outputs at Q1 and Q2.

For robustness and protection, the devices have a reverse blocking diode with a Zener clamp on the supply voltage.

If the supply voltage falls too low, the under-voltage lockout protection is triggered, freezing the IC and preventing any incorrect magnetic measurement.

All the devices are available in the industry standard TSOT25 (Type A1) package.



The DIODES Advantage

This dual Hall-effect latch family is for accurate speed and direction sensing applications.

- **Precise and Stable Switch Points Across Operating Range**
Maintains switch point integrity, ensuring correct system operation
- **Operating Voltage Range: 2.7V to 27V**
Supports wide operating voltage range
- **Reliable and Robust Functionality**
 - Output clamps with output overcurrent limit
 - Reverse voltage protection and 40V transient input capability
 - High ESD ratings: 5kV HBM, 2kV CDM
 - Operating temperature range -40 to +125°C
- **Industry-Standard TSOT25 Package**
Provides ease of use and placement

Applications

- Industrial motors
- White goods
- Pumps
- Knob control
- Angular position detection
- Linear speed and direction detection
- Rotation speed and direction detection

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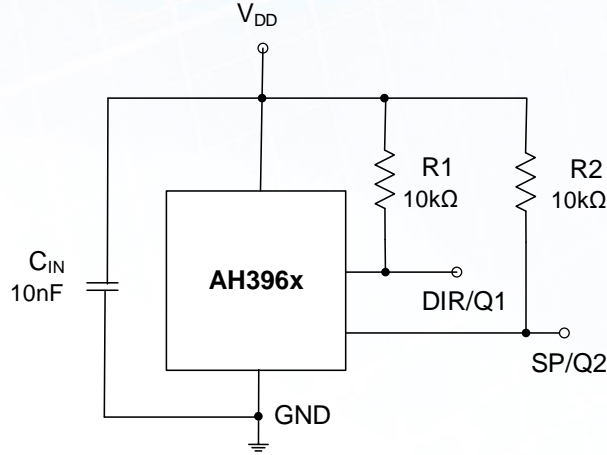
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Typical Application Circuit

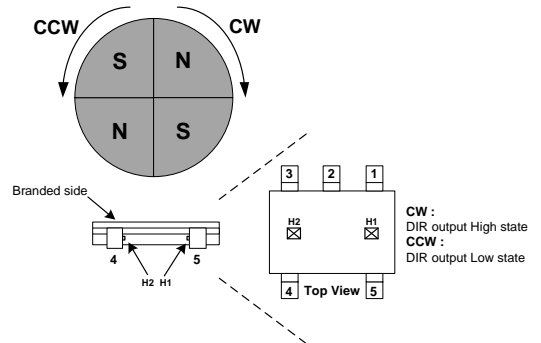
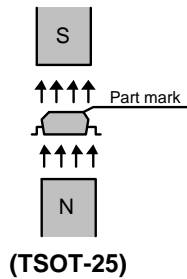
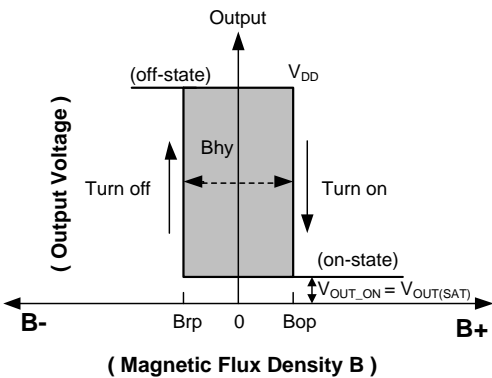


Dual Hall-Effect Latch Switch Product Portfolio

Part Name	Operating Voltage*	Supply Current	ESD HBM	Operating Point Bop (Gauss)			Release Point Brp (Gauss)*			Output				Temp. Range °C	Package
	V	mA		kV	Min	Typ	Max	Min	Typ	Max	Q1	Q2	SP		
AH3965	2.7 to 27	4.7	5	-10	10	30	-30	-10	10			V	V	-40 to +125	TSOT25 (Type A1)
AH3966				8	25	42	-42	-25	-8			V	V		
AH3967				50	75	100	-100	-75	-50			V	V		
AH3968				50	75	100	-100	-75	-50	V	V				

* Operating voltage range is between V_{DD} and GND pins.

‡ Negative numbers mean North polarity flux density.



Ordering Information

Orderable Part Number	Compliance (Only Automotive Supports PPAP)	Package	Moisture Sensitivity	Packing	
				Quantity	Carrier
AH3965-WT-7	Standard	TSOT25 (Type A1)	MSL-1	3,000	7" Tape & Reel
AH3966-WT-7	Standard	TSOT25 (Type A1)	MSL-1	3,000	7" Tape & Reel
AH3967-WT-7	Standard	TSOT25 (Type A1)	MSL-1	3,000	7" Tape & Reel
AH3968-WT-7	Standard	TSOT25 (Type A1)	MSL-1	3,000	7" Tape & Reel