

# ATS266

## High Voltage Hall Effect Latch

### ■ Features

- On-chip Hall sensor
- Operating voltage: 4V~28V
- Internal bandgap regulator allows temperature compensated operations and a wide operating voltage range
- High output sinking capability up to 400mA for driving large load
- Build in protection diode for chip reverse power connecting (Note 1)
- Package: SIP-4L

### ■ Application

- Dual coils Brush-less DC Motor
- Dual coils Brush-less DC Fan
- Revolution Counting
- Speed Measurement

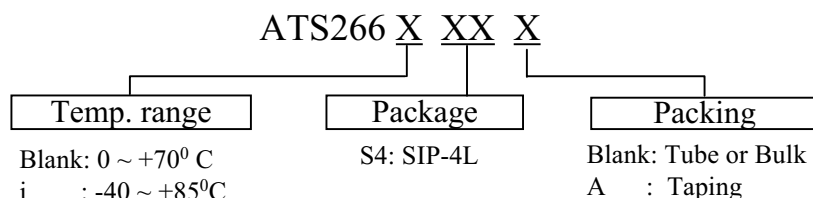
### ■ General Description

ATS266 is an integrated Hall sensor with output drivers designed for electronic commutation of brush-less DC motor applications. The device includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifies the Hall voltage, and a Schmitt trigger to provide switching hysteresis for noise rejection, and complementary darlington open-collector drivers for sinking large current loads. An internal bandgap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

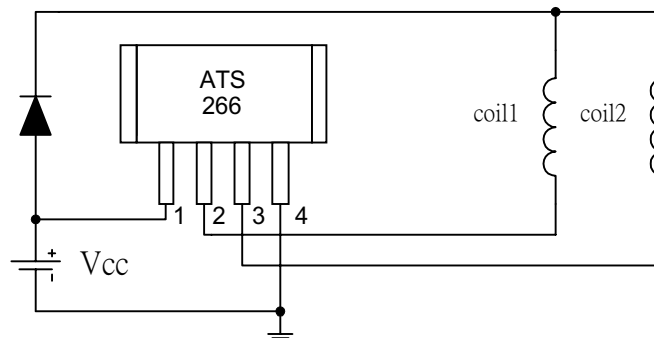
If a magnetic flux density larger than threshold  $B_{op}$ , DO is turned on (low) and DOB is turned off (high). The output state is held until a magnetic flux density reversal falls below  $B_{rp}$  causing DO to be turned off and DOB turned on. ATS266 is rated for operation over temperature range from 0°C to 70 °C and voltage range from 4.0V to 28V. The devices are available in low cost die forms or rugged 4 pin SIP packages.

Note 1. Protection diode only exist at power pin (1,4) output pin (2,3) were not included.

### ■ Ordering Information



### ■ Typical Circuit



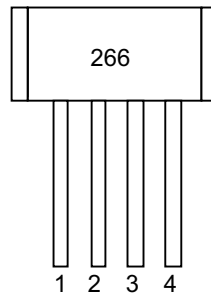
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### ■ Pin Configuration



Front View

1 : VCC

2 : DO

3 : DOB

4 : VSS

Name	P/I/O	Pin #	Description
VCC	P	1	Positive Power Supply
DO	O	2	Output Pin
DOB	O	3	Output Pin
VSS	P	4	Ground

### ■ Absolute Maximum Ratings

- Supply Voltage,  $V_{CC}$  ..... 28V
- Reverse  $V_{CC}$  Polarity Voltage,  $V_{RCC}$  ..... -20V
- Magnetic flux density, B ..... Unlimited
- Output OFF Voltage,  $V_{ce}$  ..... 50 V (Note 1)
- Output ON Current,  $I_c$ 
  - Continuous ..... 0.4A
  - Hold ..... 0.7A
  - Peak (Start Up) ..... 1A
- Operating Temperature Range,
  - $T_a$  ..... (0 °C to 70 °C)
- Storage Temperature Range,
  - $T_s$  ..... (-65 °C to +150 °C)
- Package Power Dissipation,
  - $P_d$  ..... 600mW

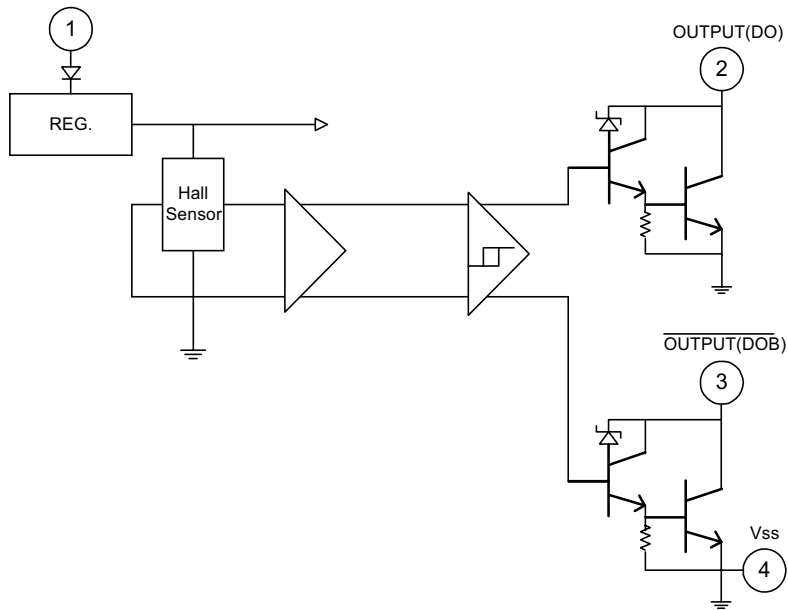
(Note 1) Output Zener protection voltage.

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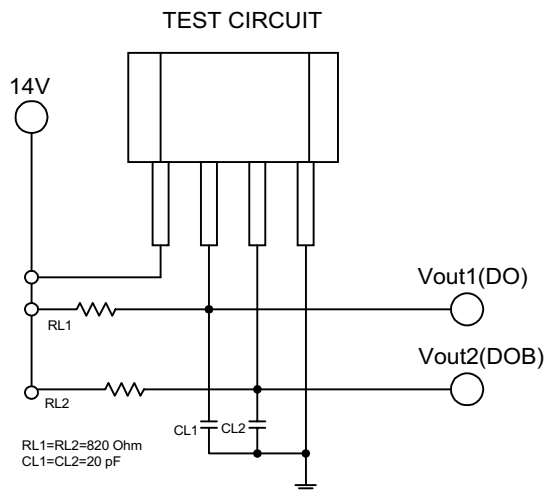
### ■ Block Diagram



### ■ Electrical Characteristics ( $T=+25^{\circ}\text{C}$ $V_{cc}=4.0\text{V}$ to $20\text{V}$ )

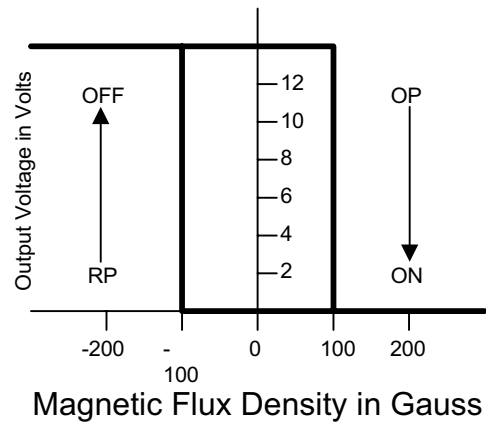
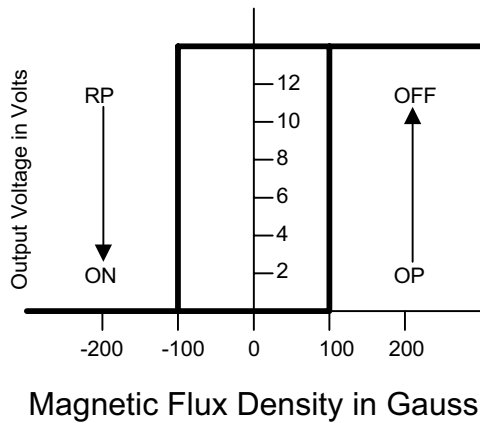
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	$V_{cc}$	—	4.0	—	28	V
Output Saturation Voltage	$V_{ce(sat)}$	$V_{cc}=14\text{V}$ , $I_c=400\text{mA}$	—	1.0	1.5	V
Output Leakage Current	$I_{cex}$	$V_{ce}=14\text{V}$ , $V_{cc}=14\text{V}$	—	< 0.1	10	$\mu\text{A}$
Supply Current	$I_{cc}$	$V_{cc}=20\text{V}$ , Output Open	—	10	15	mA
Output Rise Time	$T_r$	$V_{cc}=14\text{V}$ , $R_L=820\Omega$ , $C_L=20\text{pF}$	—	1.0	5	$\mu\text{s}$
Output Falling Time	$t_f$	$V_{cc}=14\text{V}$ , $R_L=820\Omega$ , $C_L=20\text{pF}$	—	1.0	1.5	$\mu\text{s}$
Switch Time Differential	$\Delta t$	$V_{cc}=14\text{V}$ , $R_L=820\Omega$ , $C_L=20\text{pF}$	—	3.0	10	$\mu\text{s}$

### ■ Test Circuit



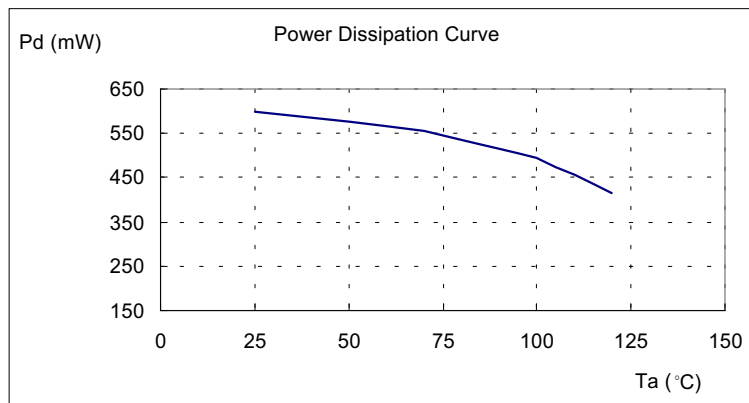
### ■ Magnetic Characteristics

Characteristic	Symbol	Ta=+25°C		Ta=0°C to 70°C		Units
		Min	Max	Min	Max	
Operate Point	Bop	---	100	---	100	G
Release Point	Brp	-100	---	-100	---	G
Hysteresis	Bhys	50	200	30	200	G



### ■ Performance Characteristics

Ta (°C)	25	50	60	70	80	85	90	95	100	105	110	115	120
Pd (mW)	600	575	565	555	535	525	515	505	495	475	455	435	415



Note : SIP-4L package

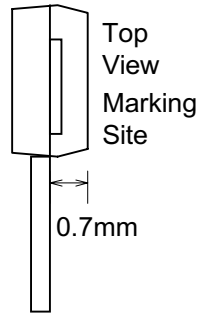
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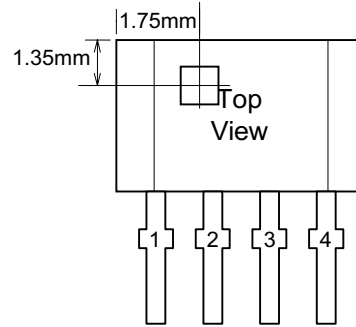


### ■ Package Information

Active Area Depth



Package Sensor Location



### Package Dimension

