

## High Voltage Hall Effect Latch

### ■ Features

- On-chip Hall plate
- Operating voltage: 4V~28V
- Output current: 400mA(Continuous)
- Reverse protection diode only for chip reverse power connecting <sup>(Note)</sup>
- Output protection Zener breakdown Vz=56V(Typ)
- Package: SIP-4L

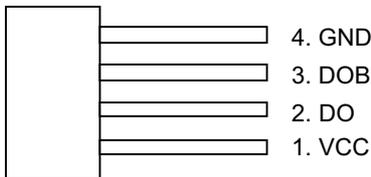
(Note)

Protection diode only exists at power pin(1,4) output, not including pin (2,3).

### ■ Application

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

### ■ Pin Assignments



### ■ General Description

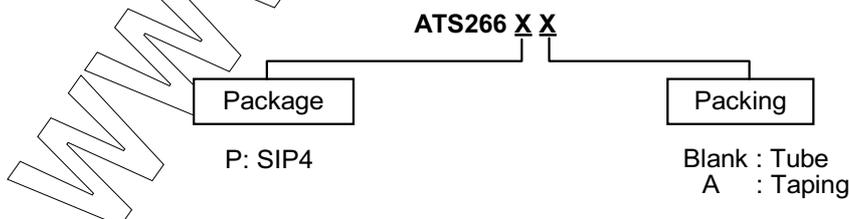
ATS266 is an integrated Hall sensor with output drivers designed for electronic commutation of brush-less DC motor applications. The device includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifies the Hall voltage, and a Schmitt trigger to provide switching hysteresis 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 (B) is larger than operate point (Bop), DO turn on (low) and DOB turn off (high). The outputs state is latched prior to release point (Brp) coming. if B < Brp, DO turn off and DOB turn on. ATS266 is rated for operation over temperature range from -20°C to 85°C and voltage range from 4.0V to 28V. The devices are available in low cost die forms or rugged 4 pin SIP packages.

### ■ Pin Configuration

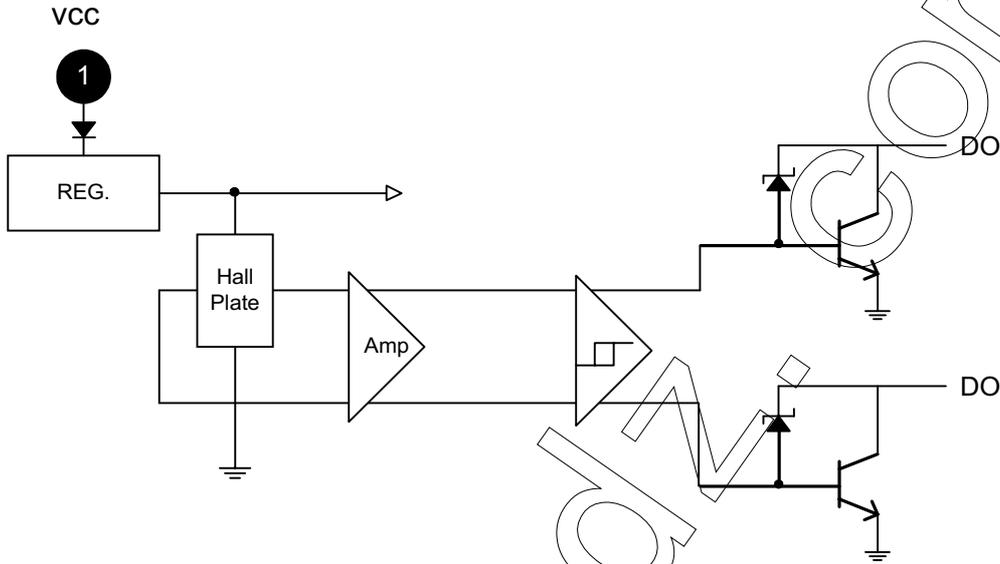
Name	Description
VCC	Positive Power Supply
DO	Output Pin
DOB	Output Pin
GND	Ground

### ■ Ordering Information

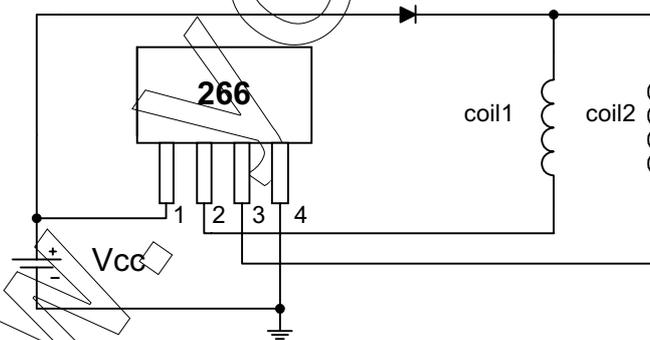


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### ■ Block Diagram



### ■ Application Circuit



Brush-less DC Fan

Note: This application circuit can't protect reverse coil current if power is connecting reverse.

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### ■ Absolute Maximum Ratings (at $T_a = 25^{\circ}\text{C}$ )

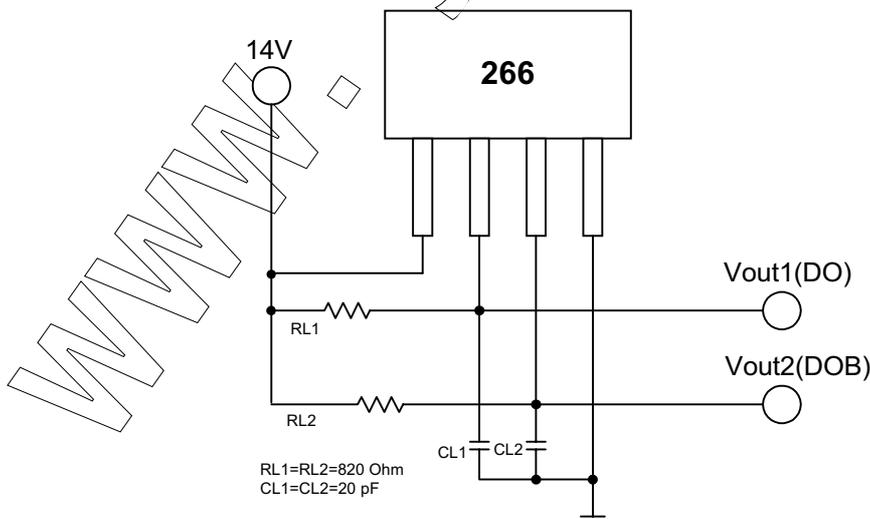
Parameter	Symbol	Rating	Unit
Supply voltage	VCC	28	V
Output "OFF" voltage	Vout (off)	20	V
Output "ON" current	Io (con)	400	mA
	Io (hold)	700	mA
	Io (peak)	1000	mA
Magnetic flux density	B	Unlimited	Gauss
Operating temperature range	Top	-20~+85	$^{\circ}\text{C}$
Storage temperature range	Tstg	-65~+150	$^{\circ}\text{C}$
Power dissipation <sup>(Note)</sup>	PD	600	mW

Note: See Performance Characteristic for other conditions

### ■ Electrical Characteristics ( $T_a = 25^{\circ}\text{C}$ )

Characteristic	Symbol	Conditions	Min	Typ	Max	Units
Supply Voltage	Vcc	—	4.0	—	28	V
Output Zener Breakdown	Vz	Output Turn off	—	56	—	V
Output Saturation Voltage	Vce(sat)	Vcc=14V, Ic=400mA	—	1.0	1.5	V
Output Leakage Current	Icex	Vce=14V, Vcc=14V	—	< 0.1	10	$\mu\text{A}$
Supply Current	Icc	Vcc=20V, Output Open	—	10	15	mA
Output Rise Time	Tr	Vcc=14V, RL=820 $\Omega$ , CL=20pF	—	1.0	5	$\mu\text{s}$
Output Falling Time	tf	Vcc=14V, RL=820 $\Omega$ , CL=20pF	—	1.0	1.5	$\mu\text{s}$
Switch Time Differential	$\Delta t$	Vcc=14V, RL=820 $\Omega$ , CL=20pF	—	3.0	10	$\mu\text{s}$

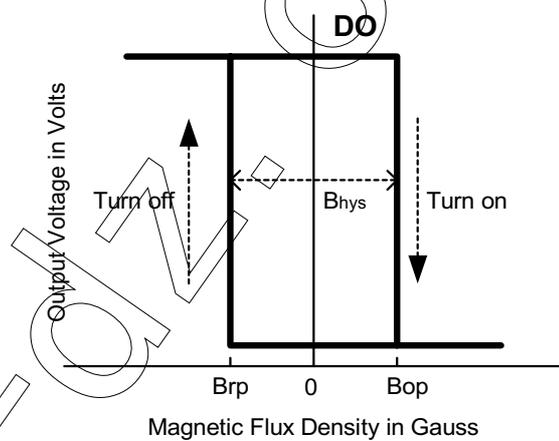
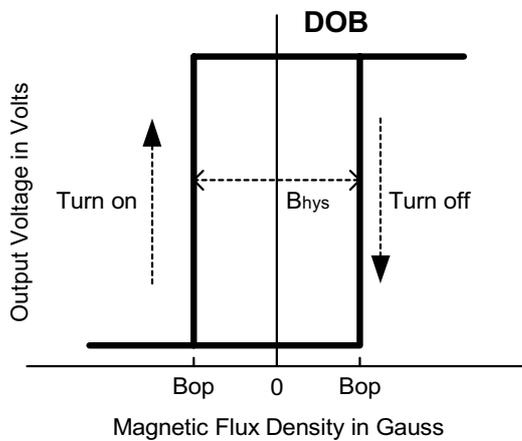
### ■ Test Circuit



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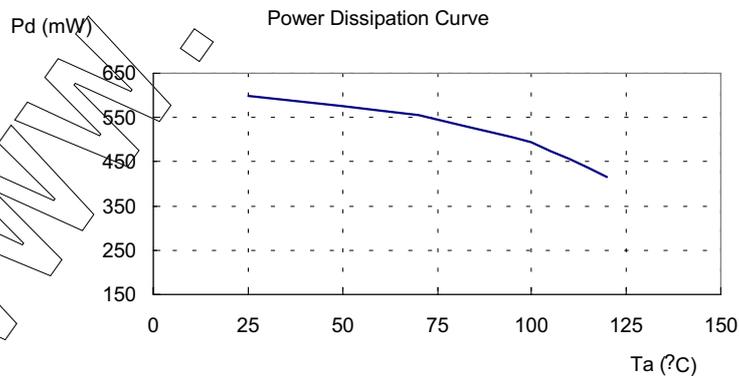
### ■ Magnetic Characteristics

Characteristic	Symbol	Ta=+25°C		Ta=-20°C to 85°C		Units
		Min	Max	Min	Max	
Operate Point	Bop	5	100	5	100	Gauss
Release Point	Brp	-100	-5	-100	-5	Gauss
Hysteresis	Bhys	50	200	30	200	Gauss



### ■ 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

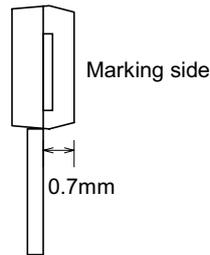


SIP-4L package

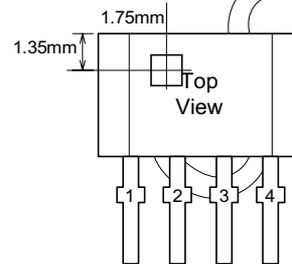
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### ■ Package Information

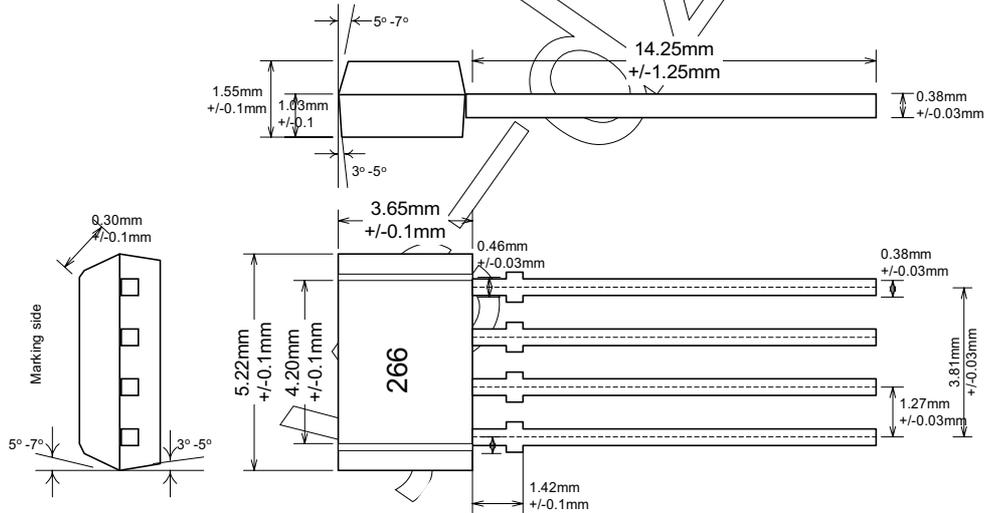
Active Area Depth



Package Sensor Location



Package Dimension



### ■ Marking Information

