

# ATS276/277

## Complementary Output Hall Effect Latch

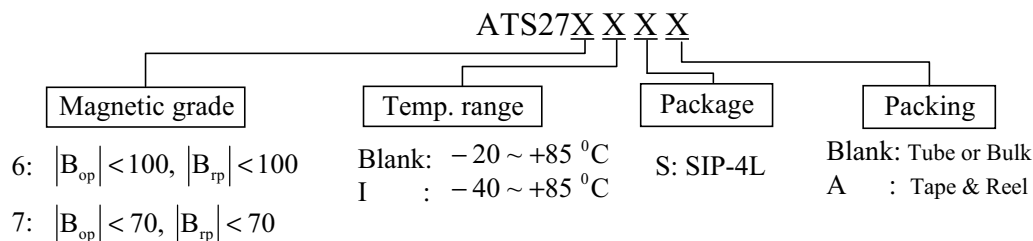
### ■ Features

- On-chip Hall sensor with two different sensitivity and hysteresis settings for ATS276/277
- Internal bandgap regulator allows temperature compensated operations and a wide operating voltage range
- High output sinking capability up to 300mA for driving large load
- Lower current change rate reduces the peak output voltages during switching
- Build in protection diode for chip reverse power connecting (Note 1)
- Available in die form or rugged low profile 4 pin SIP packages

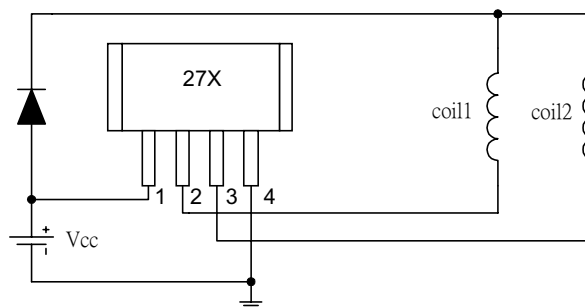
### ■ Applications

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

### ■ Ordering Information



### ■ Typical Circuit



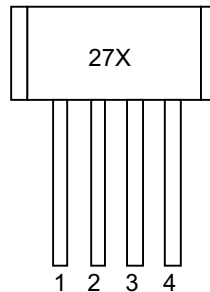
Brush-less DC Fan

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### ■ Pin Assignment



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 ( at Ta=25°C )

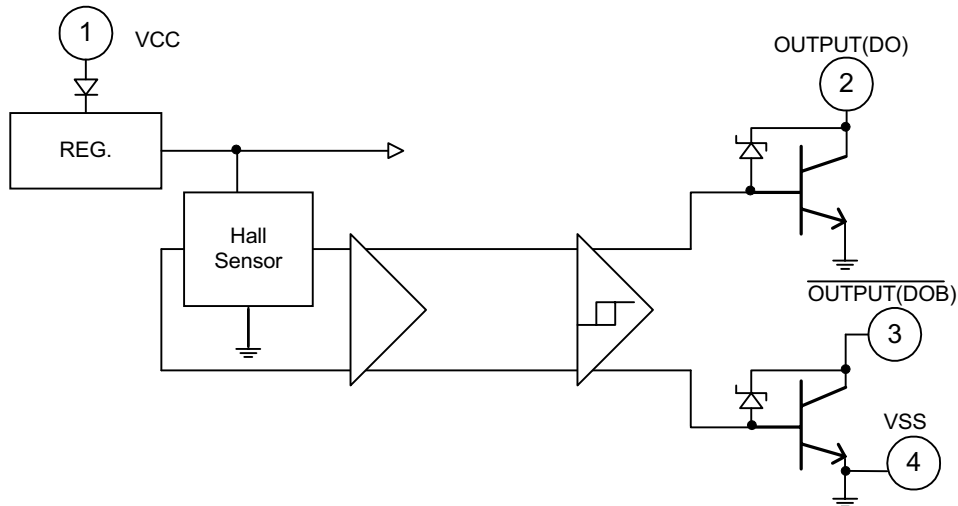
Supply Voltage, Vcc-----	20V
Reverse V <sub>CC</sub> Polarity Voltage, V <sub>RCC</sub> -----	-35V
Magnetic flux density, B-----	Unlimited
Output OFF Voltage, Vce -----	50V (Note 1)
Output ON Current, Ic	
Continuous -----	0.3A
Hold-----	0.4A
Peak (Start Up)-----	0.7A
Operating Temperature Range,	
Ta-----	(-20°C to +85°C)
Storage Temperature Range,	
Ts -----	(-65°C to +150°C)
Package Power Dissipation,	
Pd-----	500mW
Maximum Junction Temp, Tj-----	175°C

(Note1) Output Zener protection voltage.

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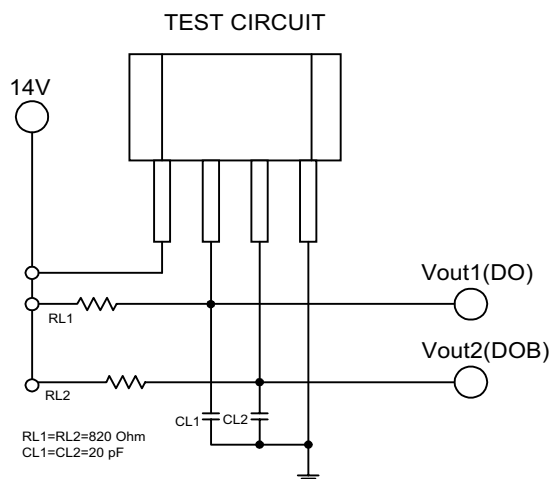
### ■ Block Diagram



### ■ Electrical Characteristics ( T=+25°C Vcc=4.0V to 20V )

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Low Supply Voltage	Vce	Vcc=3.5V, IL=100mA		0.4		V
Supply Voltage	Vcc	----	3.5	----	20	V
Output Saturation Voltage	Vce(sat)	Vcc=14V, IL=300mA	----	300	600	mV
Output Leakage Current	Icex	Vce=14V, Vcc=14V	----	<0.1	10	μA
Supply Current	Icc	Vcc=20V, Output Open	----	16	25	mA
Output Rise Time	tr	Vcc=14V, RL=820Ω, CL=20pF	----	3.0	10	μs
Output Falling Time	tf	Vcc=14V, RL=820Ω, CL=20pF	----	0.3	1.5	μs
Switch Time Differential	Δt	Vcc=14V, RL=820Ω, CL=20pF	----	3.0	10	μs

### ■ Test Circuit

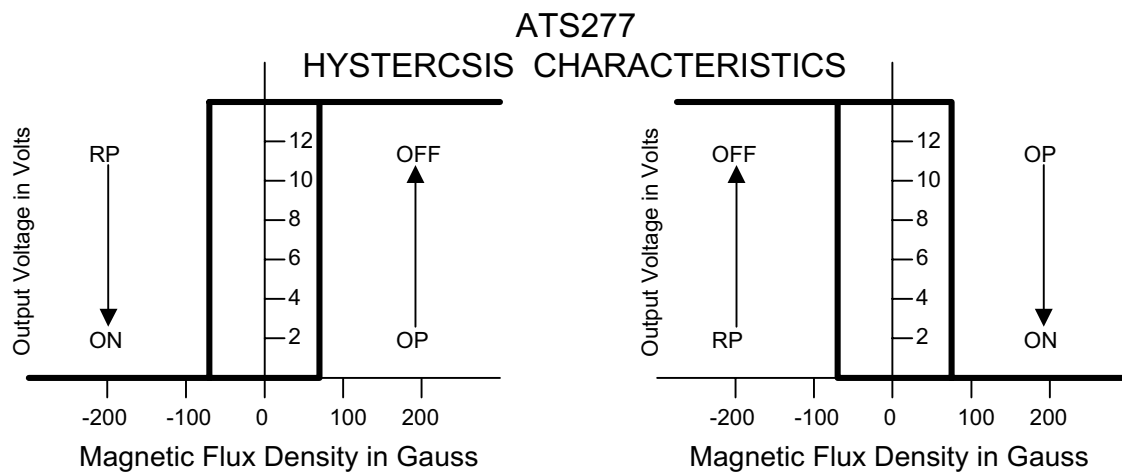
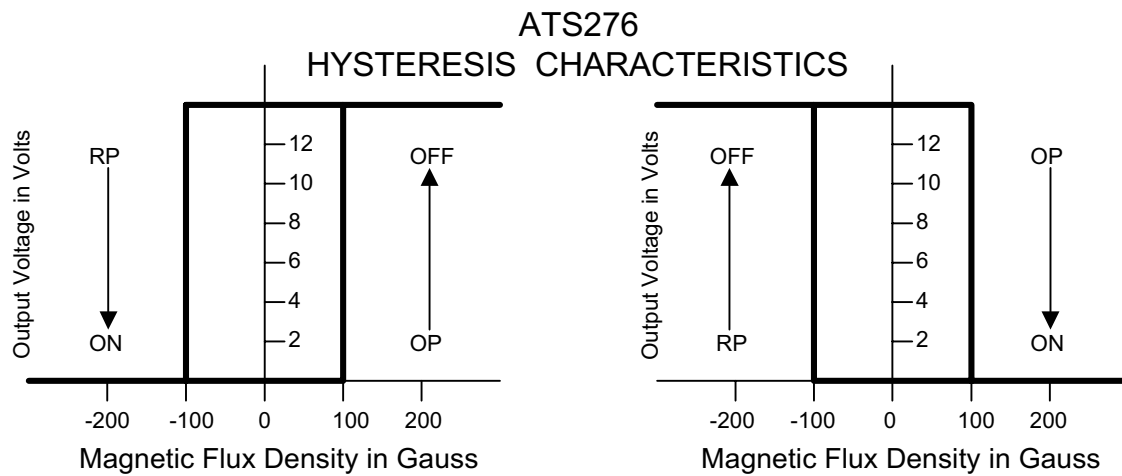


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## Complementary Output Hall Effect Latch

### ■ Magnetic Characteristics

Characteristic	Symbol	Ta=+25°C		Ta=0°C to 70°C		Units	
		Min	Max	Min	Max		
Operate Point	ATS276	Bop	—	100	—	100	G
	ATS277	Bop	—	70	—	70	G
Release Point	ATS276	Brp	-100	—	-100	—	G
	ATS277	Brp	-70	—	-70	—	G
Hysteresis	ATS276	Bhys	50	200	30	200	G
	ATS277	Bhys	20	140	10	140	G

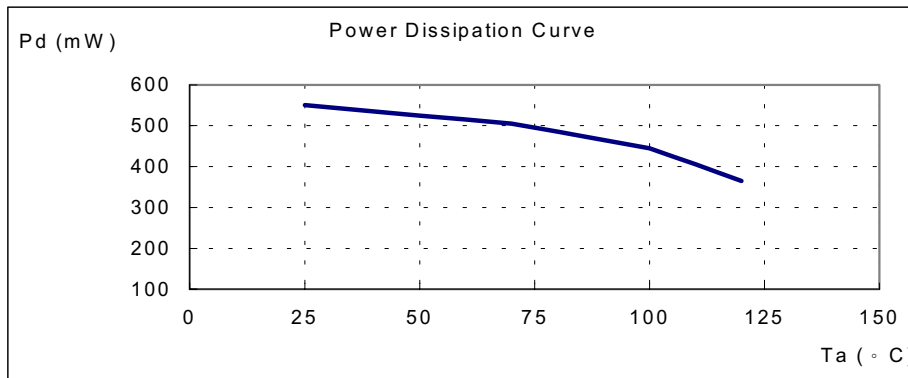


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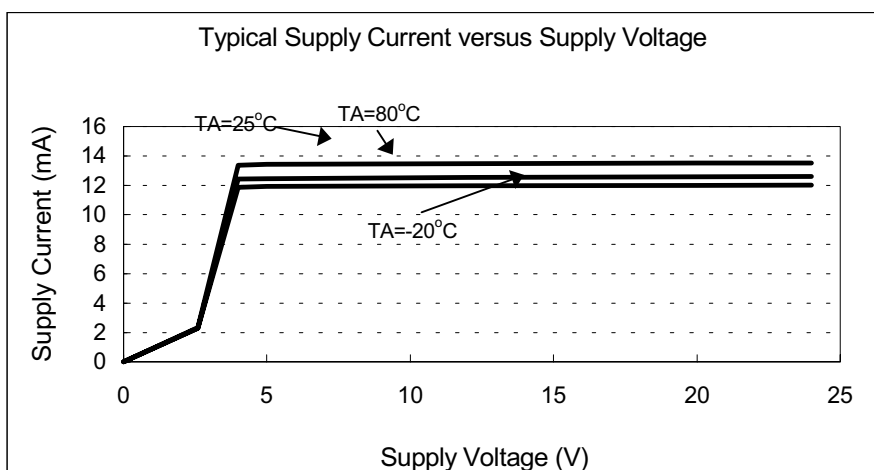
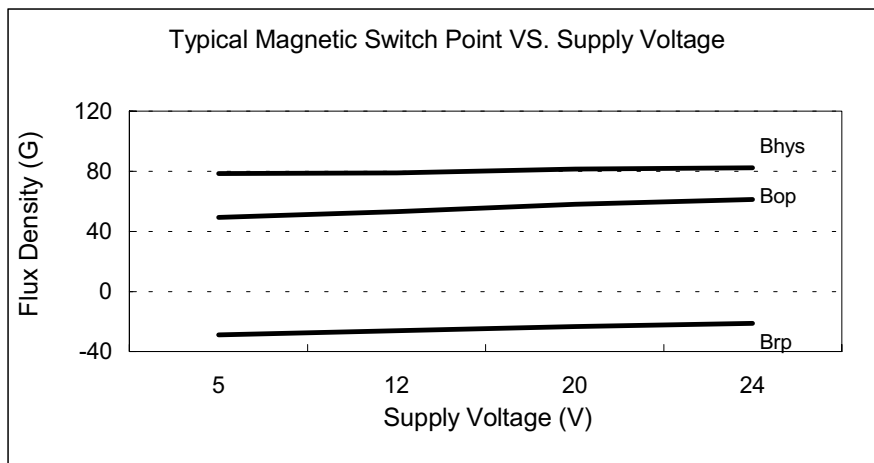
## Complementary Output Hall Effect Latch

### ■ Performance Characteristics

Ta (°C)	25	50	60	70	80	85	90	95	100	105	110	115	120
Pd (mW)	550	525	515	505	485	475	465	455	445	425	405	385	365



Note : SIP-4L package.

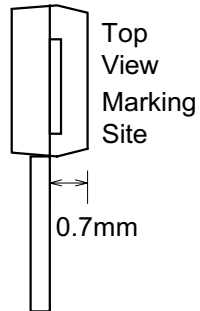


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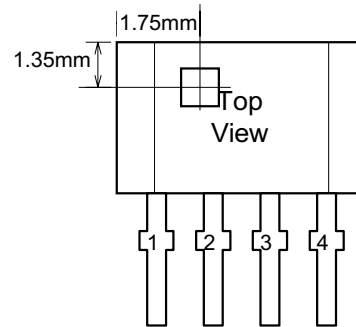
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### ■ Package Information

Active Area Depth



Package Sensor Location



Package Dimension

