



SINGLE OUTPUT HALL EFFECT LATCH IC

■ FEATURES

- 1) Wide range of supply voltage: 3.5V to 28V.
- 2) Internal bandgap regulator allows temperature compensated operations and a wide operating voltage range.
- 3) High sensitivity with a small magnet.
- 4) TTL and MOS ICs directly drivable by output.
- 5) Build in protection diode for chip reverse power connecting.
- 6) Package: SIP-3.

■ GENERAL DESCRIPTION

A6851 is an integrated Hall effect latched sensor with output pull-high resistor driver designed for electronic commutation of brushless DC motor applications and contactless switches. 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 output driver with pull-high resistor. 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). The output state is held until a magnetic flux density reversal falls below B_{rp} causing DO to be turned off (high).

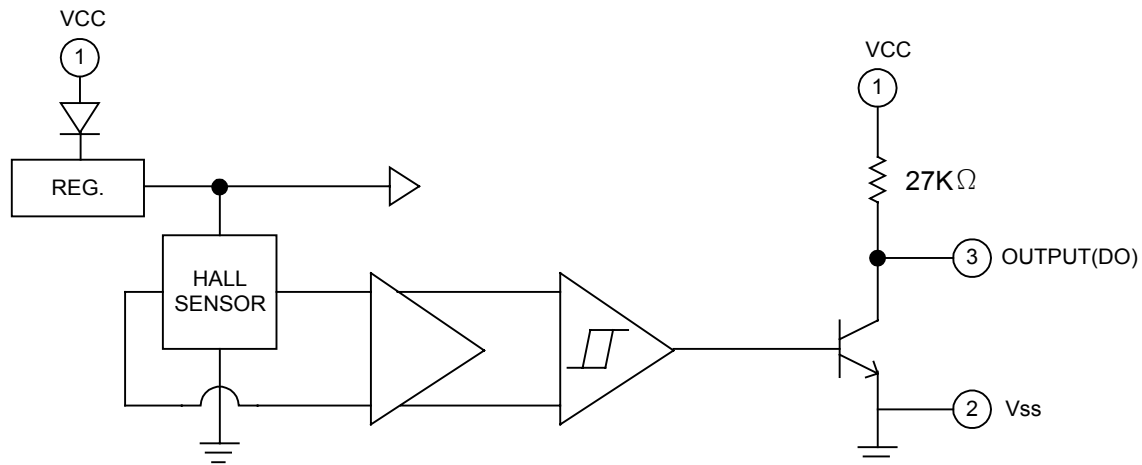
A6851 is rated for operation over temperature range from -20°C to 100°C and voltage range from 3.5V to 28V. The devices are available in low cost die forms or rugged 3 pin SIP packages.

■ APPLICATIONS

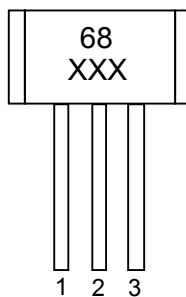
- 1) Brushless DC Motor
- 2) Brushless DC Fan
- 3) Position Sensors
- 4) Rotation Sensors
- 5) Revolution Counting
- 6) Speed Measurement
- 7) Keyboard Switches
- 8) Microswitches



■ FUNCTIONAL BLOCK DIAGRAM



■ PIN DESCRIPTION



REMARK :

XXX : DATE CODE (ex : 52Z)

52 : WEEK (ex=>52:52 WEEK . 35:35 WEEK)

Z : YEAR (ex=>Z:DC2001 , Y:DC2002 , X:DC2003)

Name	P/I/O	Pin #	Description
Vcc	P	1	Positive Power Supply
Vss	P	2	Ground
DO	O	3	Output Pin



■ **ABSOLUTE MAXIMUM RATING (at Ta=25 °C)**

Supply Voltage, Vcc-----	28V
Reverse V _{CC} Polarity Voltage, V _{RCC} -----	-28V
Magnetic flux density, B-----	Unlimited
Output OFF Voltage, Vce-----	35V
Output ON Current, Ic	
Continuous -----	25mA
Operating Temperature Range,	
Ta -----	(-20 °C to +100 °C)
Storage Temperature Range,	
Ts -----	(-65 °C to +150 °C)
Package Power Dissipation,	
Pd-----	250mW
Maximum Junction Temp , Tj-----	175 °C

■ **ELECTRICAL CHARACTERISTICS (Ta = +25 °C)**

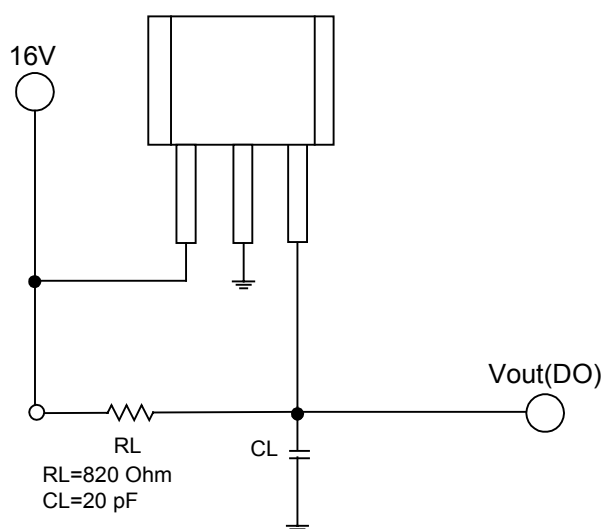
Characteristic	Symbol	Conditions	Min	Typ	Max	Units
Supply Voltage	Vcc	-	3.5	—	28	V
Low output voltage	VOL	Vcc=16V, Io=12mA, B=130 Gauss	—	—	0.4	V
		Vcc=3.6V, Io=12mA, B=130 Gauss	—	—	0.4	V
High output voltage	VOH	Vcc=16V, Io=-30μA, B=-130 Gauss	14.6	—	—	V
		Vcc=3.6V, Io=-30μA, B=-130 Gauss	2.2	—	—	V
Output Leakage Current	Icex	Vce=16V, Vcc=16V	—	< 0.1	10	μA
Output Short-circuit Current	-Ios	Vcc=16V, Vo=0V, B=-130 Gauss	0.4	—	0.9	mA
Supply Current	Icc	Vcc=24V, Output Open	—	5	10	mA
Output Rise Time	tr	Vcc=16V, RL=820Ω, CL=20pF	—	0.3	1.5	us
Output Falling Time	tf	Vcc=16V, RL=820Ω, CL=20pF	—	0.3	1.5	us



■ MAGNETIC CHARACTERISTICS

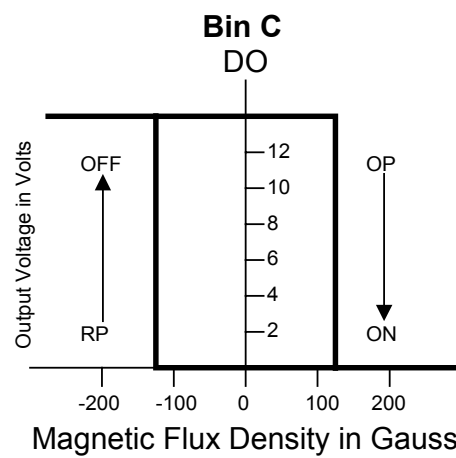
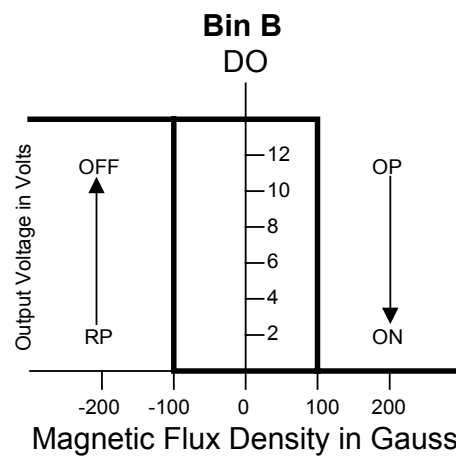
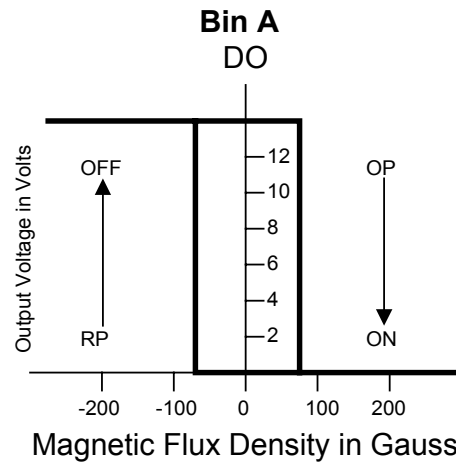
Characteristic		Symbol	Ta=+25 °C		Ta=0 °C to 70 °C		Units
			Min	Max	Min	Max	
Operate Point	Bin A	Bop	0	70	0	70	G
	Bin B	Bop	—	100	—	100	G
	Bin C	Bop	—	130	—	130	G
Release Point	Bin A	Brp	-70	0	-70	0	G
	Bin B	Brp	-100	—	-100	—	G
	Bin C	Brp	-130	—	-130	—	G
Hysteresis	Bin A	Bhys	40	110	20	140	G
	Bin B	Bhys	50	150	30	200	G
	Bin C	Bhys	60	160	40	220	G

■ TEST CIRCUIT





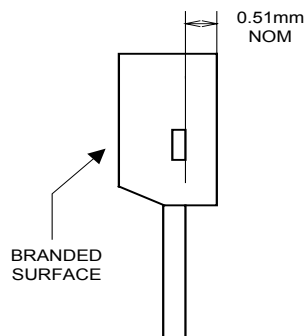
■ HYSTERESIS CHARACTERISTICS



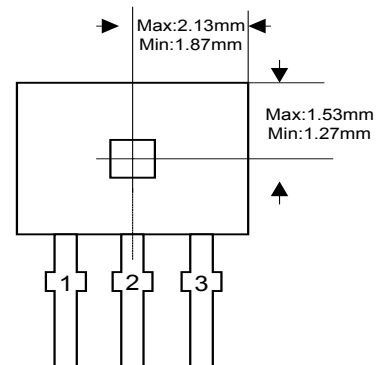


■ PACKAGE INFORMATION

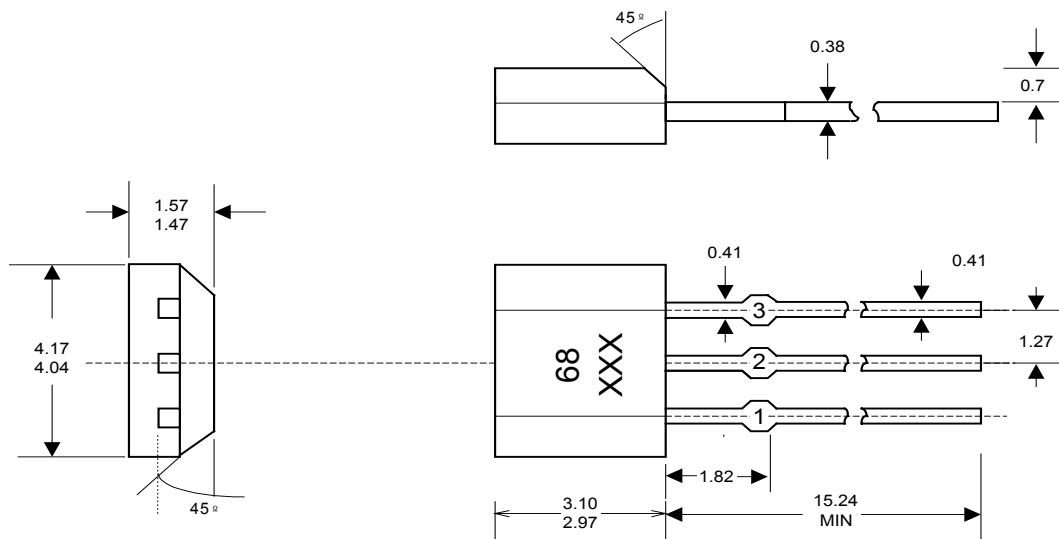
Active Area Depth



Package Sensor Location



■ PACKAGE DIMENSION (Unit:mm)



REMARK:XXX(DATE CODE)