Hall Integrated Circuit Sensor

177

Features

3.5V to 20V operation Hall sensor
Open-Collector Output.
Reverse Voltage Protection.

Descriptions

177 is an integrated Hall sensors that 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 open-collector output. a north pole of sufficient strength will turn the output ON. In the absence of a magnetic field, the output is OFF.

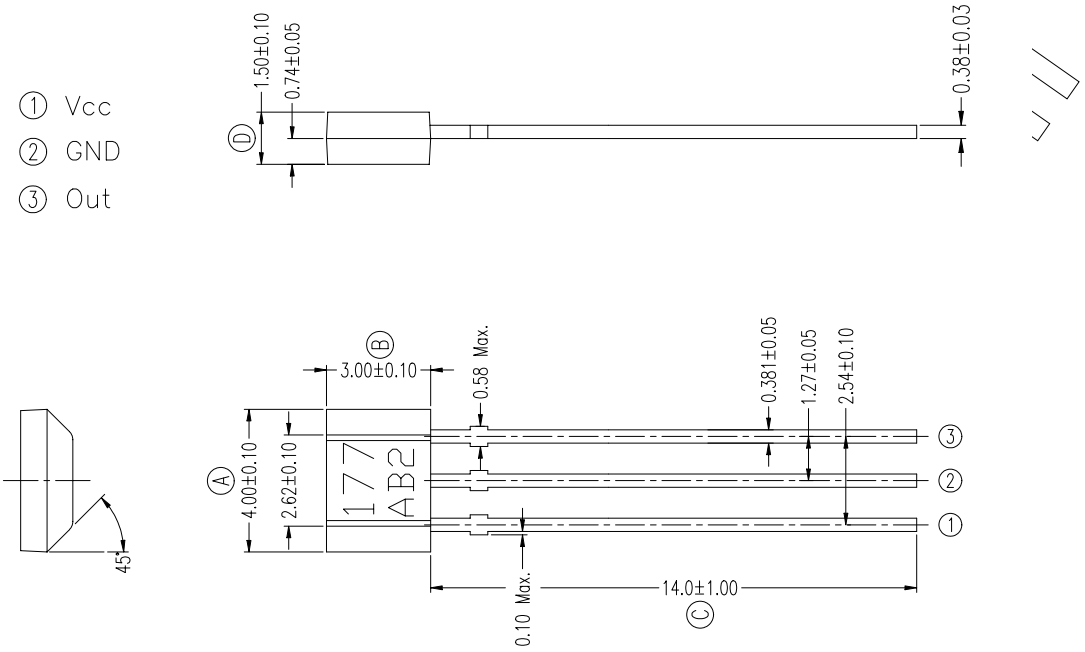
Applications

Brushless DC Fan
Brushless DC Motor
Speed Measurement

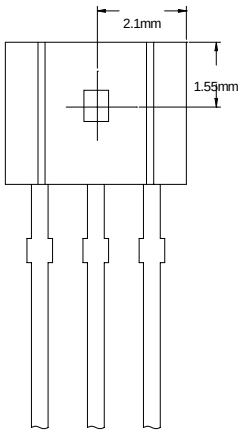
Device Selection Guide

Part No.	Chip Material	Color
HALL IC	SI	BLACK

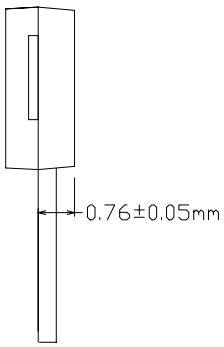
Package Dimensions



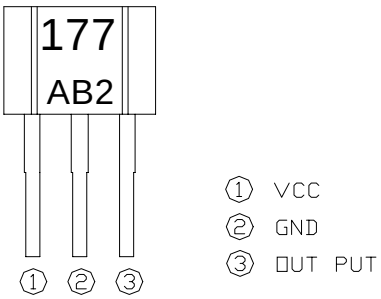
Package Sensor Location



Active Area Depth



Pin Description



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

Absolute Maximum Ratings at T_A = 25°C

Parameter	Symbol	Rating	Unit	
Supply Voltage	Vcc	20	V	
Magnetic flux density	B	Unlimited	Gauss	
Maximum Power Dissipation	P_D	400	mW	
Output ON current,Ic (continous)	Ic	20	mA	
Operating Ambient Temperature	T_A	-20 ~ +85	°C	
Storage Temperature	Tstg	-55 ~ +150	°C	

Electronic Characteristics :(T_A = 25°C, Vcc=3.5V to 20V)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Supply Voltage	Vcc	3.5	---	20	V	Operating
Output Saturation Voltage	$V_{CE(SAT)}$	---	590	700	mV	Vcc=14V Ic=20mA
Supply Current	Icc	---	3.5	10	mA	Vcc=20V Output Open
Output Leakage Current	I_{LEAK}	---	---	10	μA	V_{CE}=14V Vcc=14V
Output Rise Time	tr	---	0.2	1.5	μS	Vcc=14V, R_L=820Ω, C_L=20pF
Output Fall Time	tf	---	0.5	1.5	μS	

Magnetic Characteristics

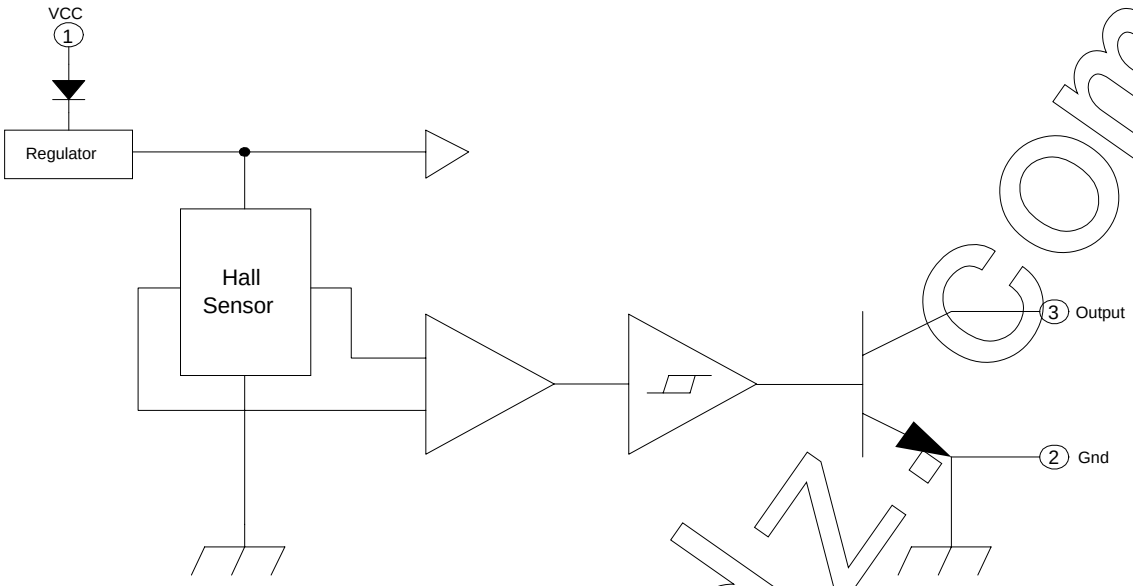
Character		Symbol	Ta=+25°C Min	Max .	Units
Operate Point	177	Bop	-----	60	G
Release Point	177	Brp	-60	-----	G
Hysteresis	177	Bhys		120	G

Magnetic Specification : T_A = 25°C

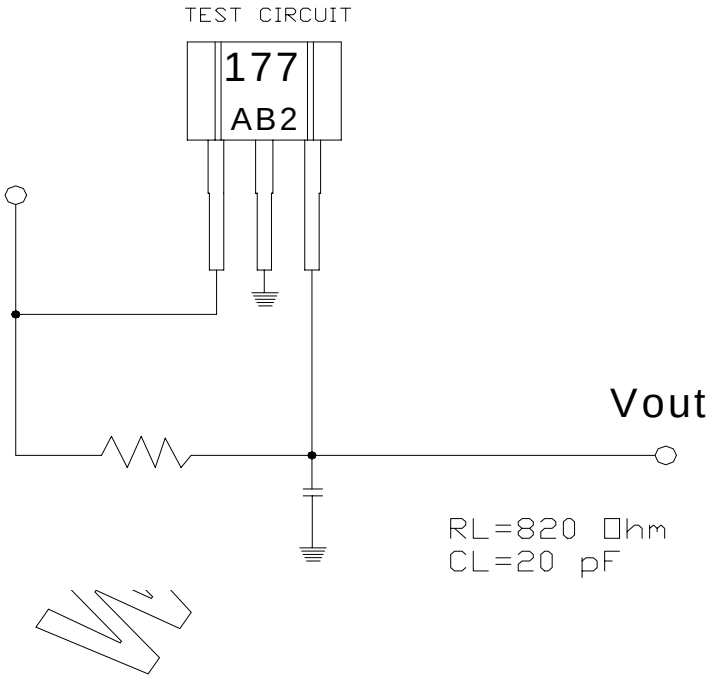
Condition:Vcc=20V,Bs=MAX[ABS(Bop),ABS(Brp)] Unit:: Gauss

Bin Number	Bin1	Bin2	Bin3	
BS	<60	<90	<120	

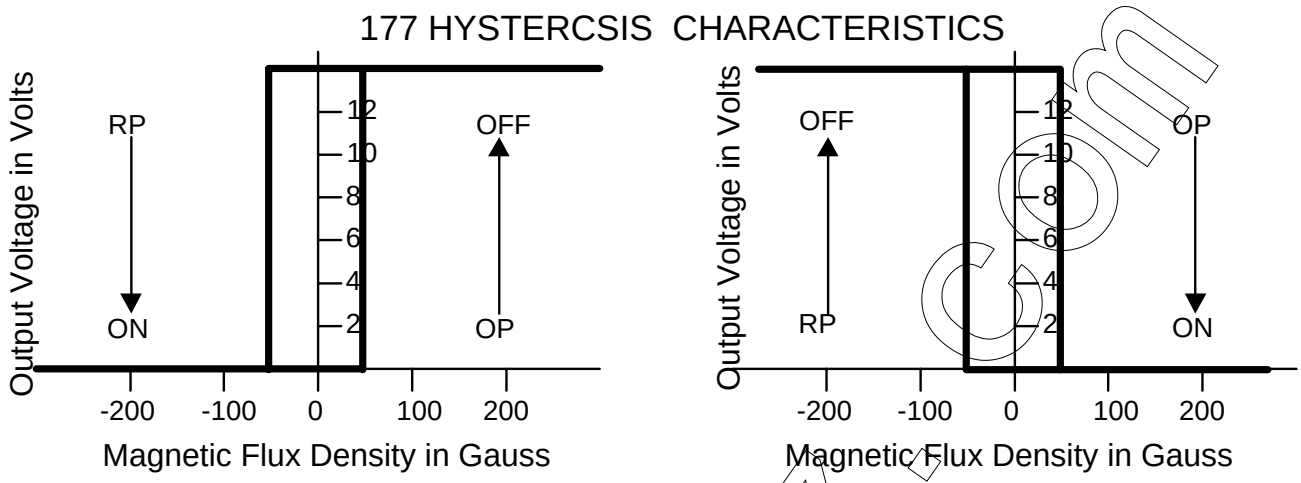
Block Diagram



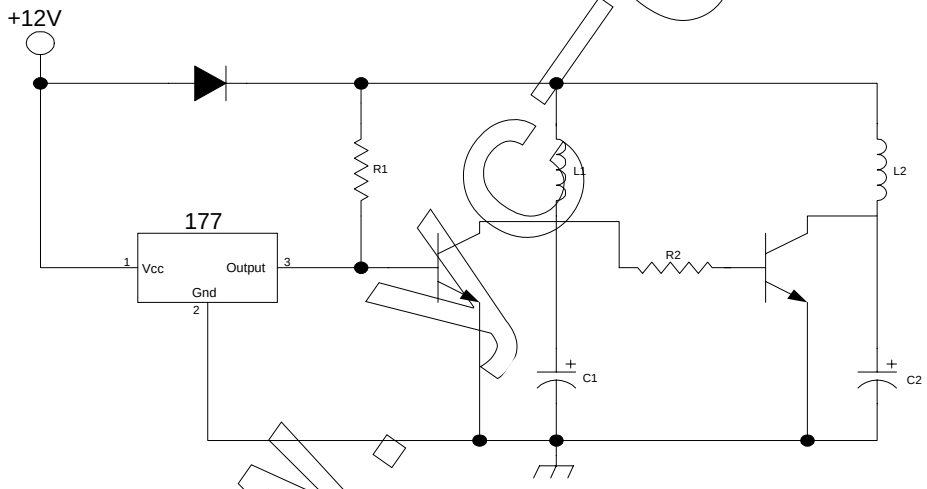
Test Circuit



Hysteresis Characteristics



Application Circuit Explain



Brushless DC Fan

Packing Quantity

1. 1.1000Pcs/1Bag, 5Bags/1Red Bags, 5Red Bags/1 Inside Box
2. 3 Inside Boxes/1Carton/75K
3. Inside Boxes/1Carton/100K