

General Description

The HXJ1662 is an integrated Hall effect omnipolar sensor. The device using High Voltage process 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 an Open-Drain output. An internal band-gap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

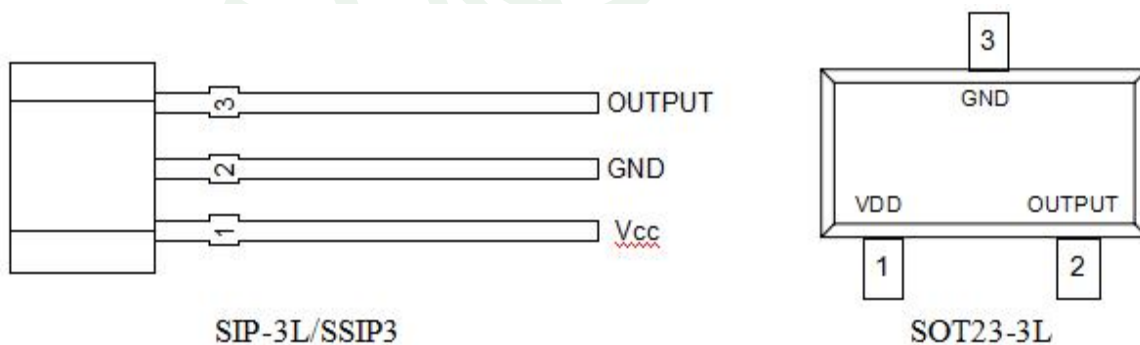
Features

- Wide operating voltage range: 2.5V~30V
- Operating temperature range: -40° C ~+150° C
- Temperature compensation
- Reverse polarity protection
- Open-Drain pre-driver
- Package: SIP-3L、SSIP-3L、SOT23-3L

Applications

- Rotor Position Sensing
- Brush-less DC Motor
- Speed measurement
- Revolution counting

Pin Configuration



Name	PIN No.		HXJ1662 Description
	SIP-3L SSIP-3L	SOT23-3L	
VDD	1	1	IC Power Supply
GND	2	3	IC Ground
OUTPUT	3	2	Output PIN

Application Circuit

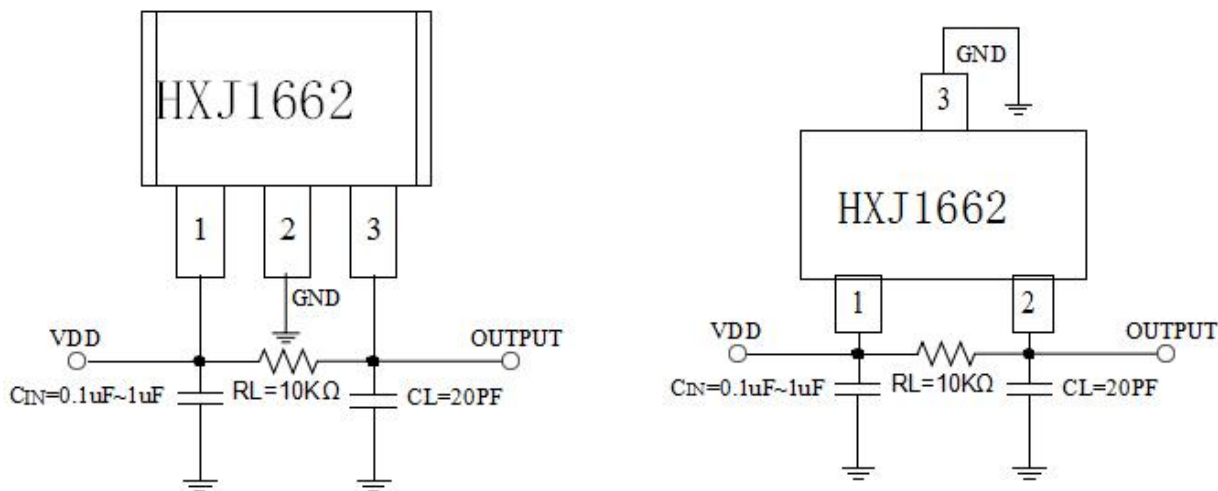


Figure 1, application circuit

Note: C_{IN} is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 0.1~1uF.

Ordering Information

Part Number	Package Type	Packing Qty	BOP (Gauss)	BRP(Gauss)	Temperature	Eco Plan	Lead
HXJ1662MF	SIP-3L	1000pcs	35 (Typ.)	25 (Typ.)	-40 ~ 150°C	ROHS	Cu
HXJ1662WAF	SOT23-3L	3000pcs	35 (Typ.)	25 (Typ.)	-40 ~ 150°C	ROHS	Cu
HXJ1662SMAF	SSIP-3L	4000pcs	35 (Typ.)	25 (Typ.)	-40 ~ 150°C	ROHS	Cu

Block Diagram

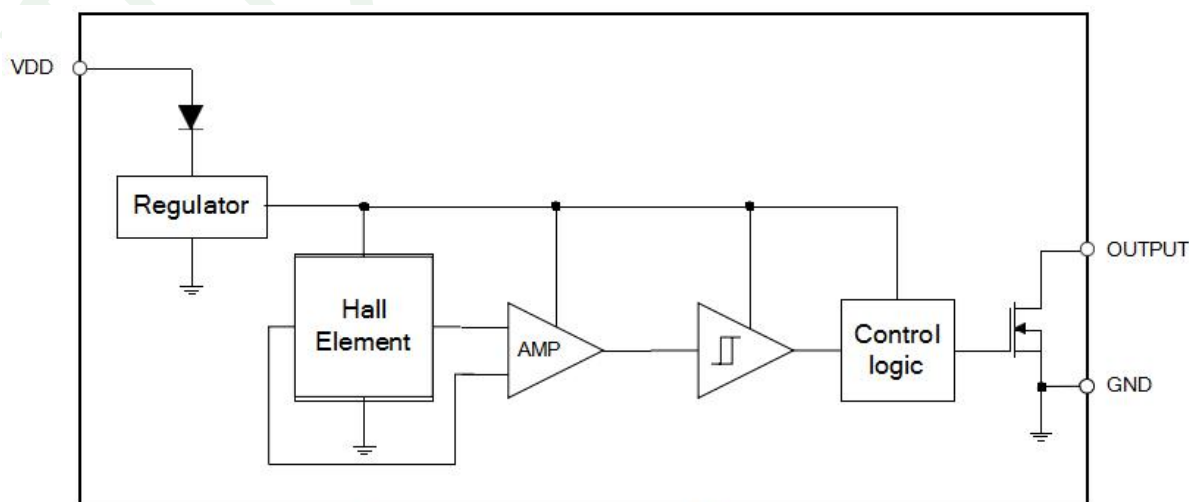


Figure 2, Block Diagram of HXJ1662

Absolute Maximum Ratings

Supply Voltage		36V
Output OFF Voltage, VDS		36V
Output Maximum Sink Current (AVG)		25mA
Power Dissipation (SIP-3L、SSIP-3L)	Ta=25°C	400mW
Power Dissipation (SOT23-3L)	Ta=25°C	260mW
Thermal Resistance (SIP-3L、SSIP-3L)	Tja	0.34°C/mW
	Tjc	0.42°C/mW
Thermal Resistance (SOT23-3L)	Tja	0.52°C/mW
	Tjc	0.64°C/mW
Operating Temperature Range		-40°C ~ +150°C
Storage Temperature Range		-65°C ~ +150°C
Junction Temperature		+150°C
Lead Temperature (Soldering, 10 sec)		+260°C

DC Electrical Characteristics (at Ta=25°C)

HXJ1662 Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Operating Voltage	VDD		2.5	-	30	V
Supply current	IDD	No use pin is open VDD: 2.7V~28V, OUT "H"	0.8	2.45	5	mA
Output Saturation Voltage	VSAT	Vcc=5V, OUT "L", Io=15mA	-	0.3	0.5	V
Output drop voltage	Vd	Vcc=5V, OUT "H" Io=0mA	-	-	10	mV
Output current limitation	IL	Intenally limited	35	55	75	mA
Output rise time	tr	RL1=1.5KΩ, CL=50PF	0.1	0.5	1	uS
Output fall time	tf	RL1=1.5KΩ, CL=50PF	0.1	0.5	1	uS
ESD Voltage (HBM)	VESD	R= 1.5KΩ, C=100pF	8			KV
Delay Time	td			15	25	uS
Chopper frequency	fc			350		KHZ

Magnetic Characteristics

Ta=25° C					
HXJ1662 Parameter	Symbol	Min.	Typ.	Max.	Unit
South Pole Operate point	Bops	10	35	55	G
South Pole Release Point	Brps	5	25	50	G
South Pole Hysteresis	Bhys	3	10	17	G
North Pole Operate point	BopN	-55	-35	-10	G
North Pole Release Point	BrpN	-50	-25	-5	G
North Pole Hysteresis	BhyN	5	10	17	G

Output VS Magnetic Pole

Part No.	Magnetic Pole	Test Conditions	Output
HXJ1662	South Pole	$B > B_{ops}$	Low
HXJ1662	South Pole	$B < B_{rps}$	High
HXJ1662	North Pole	$B > B_{opN}$	High
HXJ1662	North Pole	$B < B_{rpN}$	Low

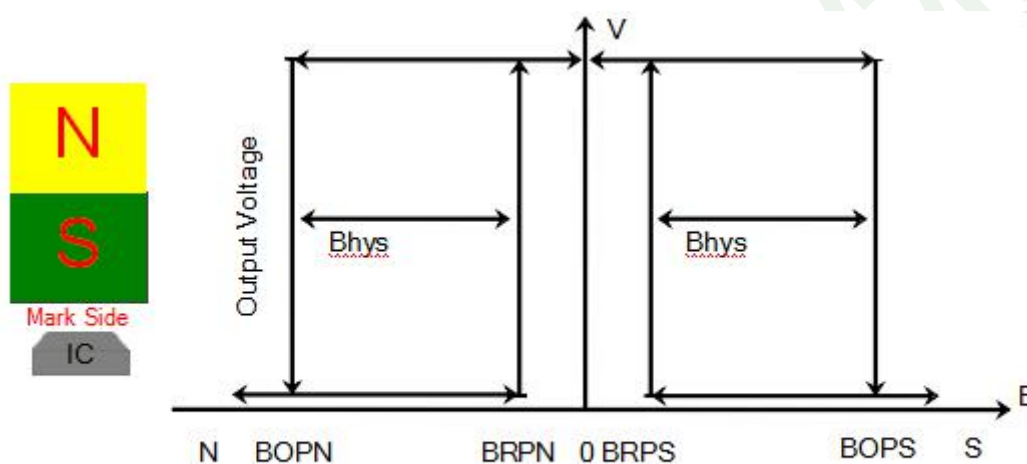


Figure 3, Operational Characteristics

Hall Sensor Location

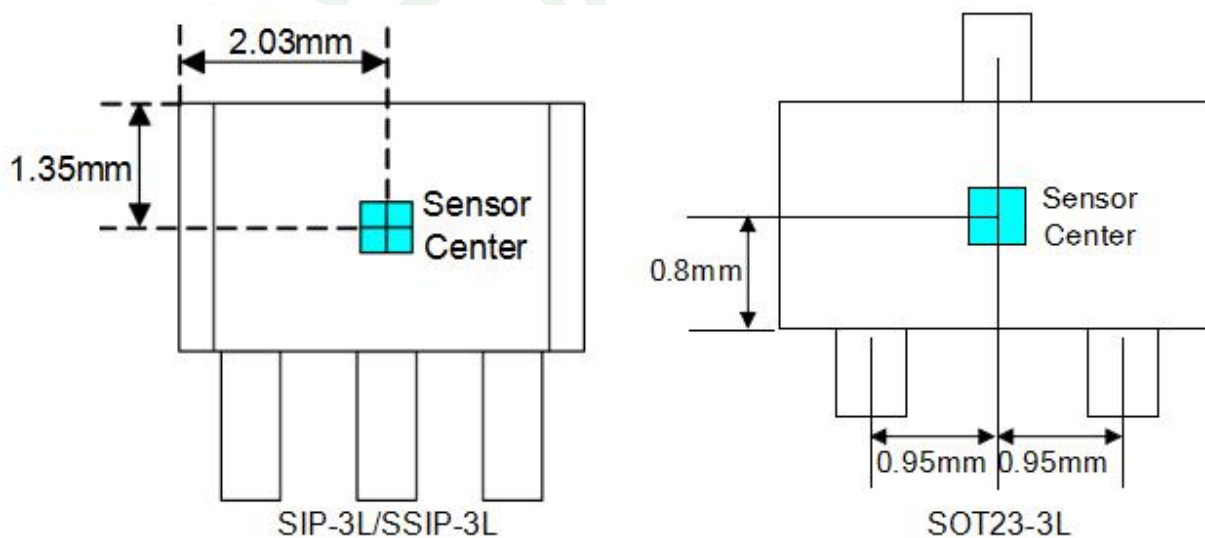


Fig. 4, Hall Sensor Location

Land Pattern (for reference only)

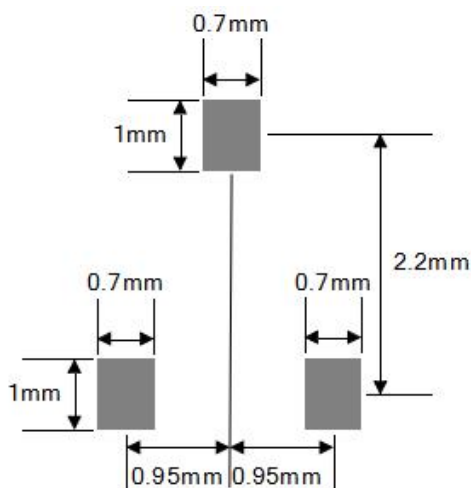
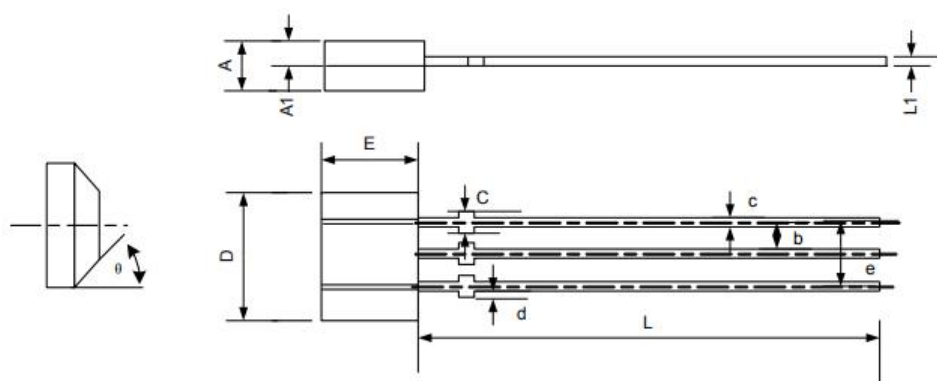


Figure 5, Land Pattern Dimension (SOT23-3L)

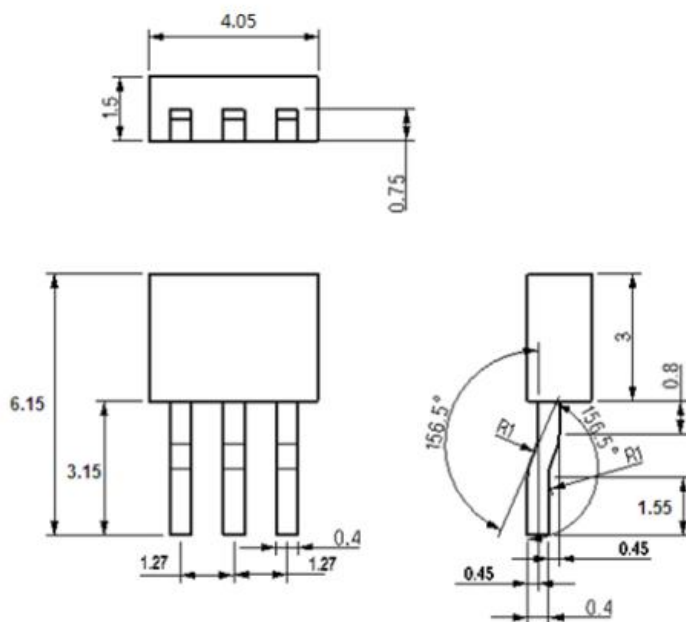
Package Information

1) SIP-3L

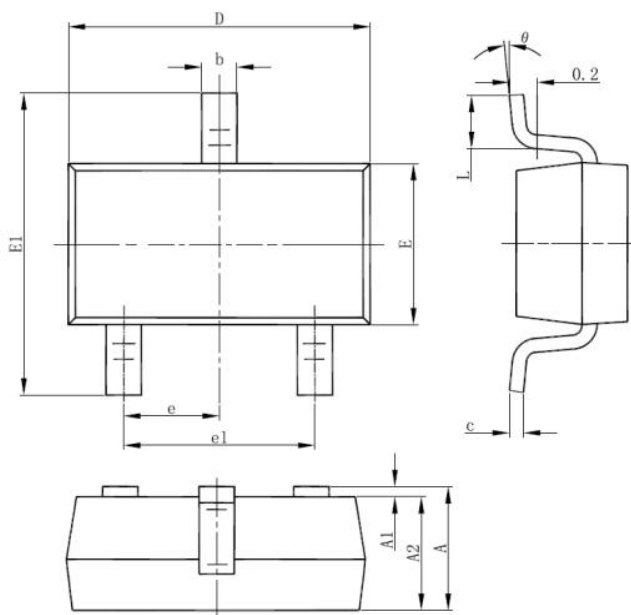


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.245	1.753	0.049	0.069
A1	0.750REF		0.030REF	
b	1.270REF		0.050REF	
C	0.406	0.550	0.016	0.022
c	0.330	0.495	0.013	0.019
D	4.05REF		0.159REF	
d		0.100		0.004
E	2.73	3.27	0.107	0.129
e	2.540REF		0.100REF	
L	13.60	15.60	0.535	0.614
L1	0.350	0.410	0.014	0.016
θ		45°		45°

2) SSIP-3L



3) SOT23-3L



Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.050	1.15	1.250	0.041	0.045	0.049
A1	0.000	0.050	0.100	0.000	0.002	0.004
A2	1.050	1.100	1.150	0.041	0.043	0.045
b	0.300	0.400	0.500	0.012	0.016	0.020
c	0.100	0.150	0.200	0.004	0.006	0.008
D	2.820	2.920	3.020	0.111	0.115	0.119
E	1.500	1.600	1.700	0.059	0.063	0.067
E1	2.650	2.800	2.950	0.104	0.110	0.116
e1	1.800	1.900	2.000	0.071	0.075	0.079
e	0.950 REF			0.037 REF		
L	0.300	0.450	0.600	0.012	0.018	0.024
θ	0°	4°	8°	0°	4°	8°