LINEAR HALL SENSOR IC

General Description

The SL39F series linear Hall circuit is composed of a Hall voltage generator, a linear amplifier and an emitter follower. Its input is the magnetic induction intensity, and its output is a voltage proportional to the input.

Features

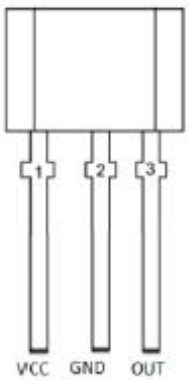
- Long life, small size, easy to install
- High accuracy, high sensitivity
- Good linearity, good temperature stability
- High reliability

Applications

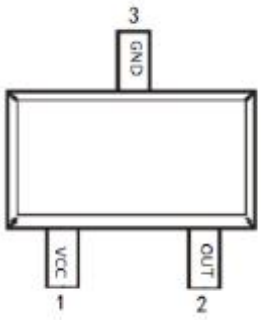
- Motion detector
- Gear sensor
- Approach the detector
- Current sensing sensor
- Electric bicycle speed regulator

Pin Configuration

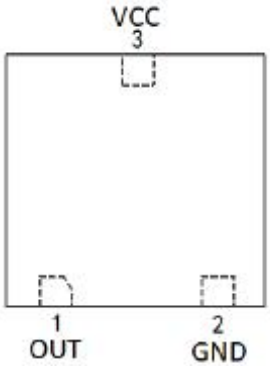
UA: SIP-3L(TO-92S)



SW: SOT23-3L



DFN1616-3L



Pin Number			Pin Name	Function
SIP-3L/TO92-S	SOT23-3L	DFN1616-3L		
1	1	3	VCC	Power supply
2	3	2	GND	Ground
3	2	1	VOUT	Output

Absolute Maximum Ratings

T_A =25°C

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	15	V
Output Current	I_{OUT}	10	mA
Operation Temperature	T_A	-40~+85	℃
Storage Temperature	T_S	-65~+150	℃

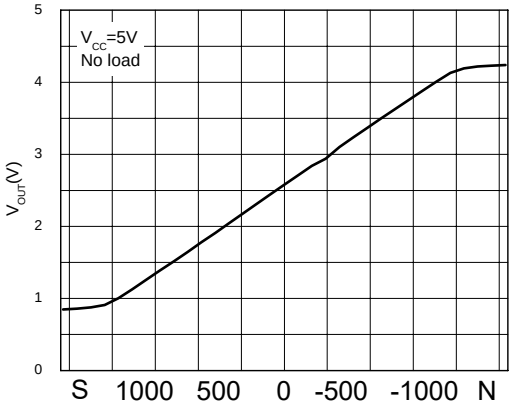
Electrical Characteristics

V_{CC} =5V , T_A =25°C, unless otherwise specified.

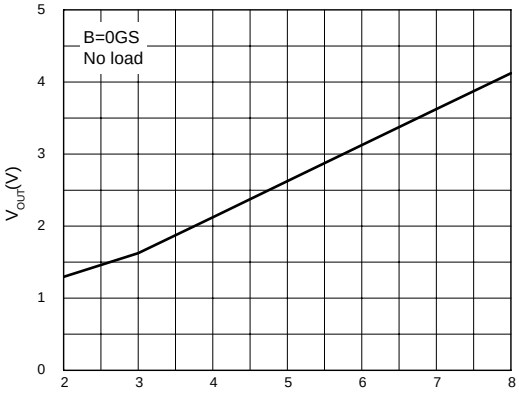
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage	V_{CC}		3.0	--	6.5	V
Quiescent Output Voltage	V_{OUT}	B=0GS	2.25	2.50	2.75	V
Supply Current	I_{CC}		2.0	--	9	mA
Sensitivity	Sens	B=0GS to ±1000GS	1.45	1.8	2.0	mV/GS
Min Output Voltage	VL		0.80	--	1.05	V
Max Output Voltage	VH		3.95	--	4.20	V
Magnetic field range	B		±650	±1000	--	GS
Linearity Error	Lin		--	0.70	--	%

Note: The output voltage should be measured using a voltmeter with an input impedance greater than 10KΩ; the magnetic induction intensity should be measured in the most sensitive area of the device (see figure)

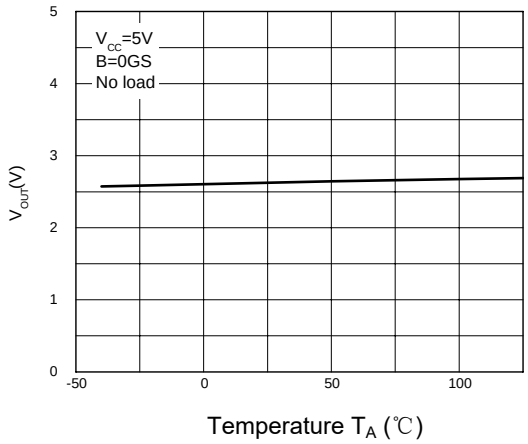
Characteristic curve



Output voltage varies with magnetic field strength

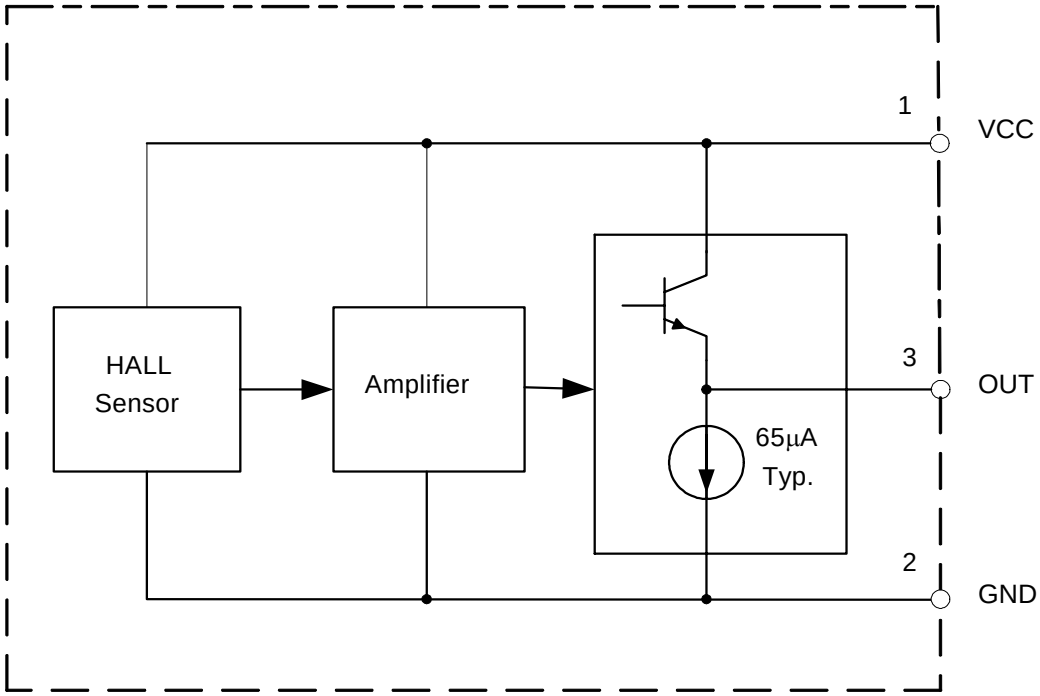


Static output voltage varies with the power supply voltage



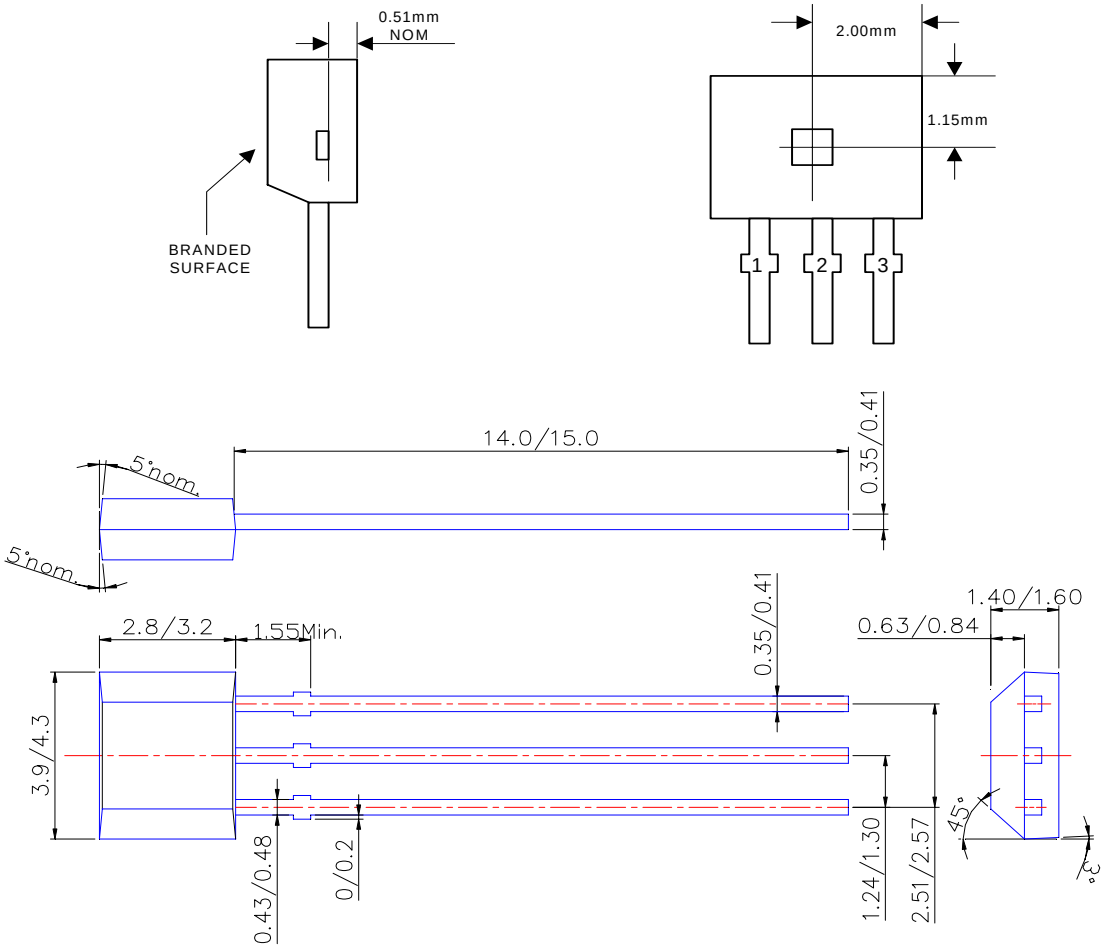
Static output voltage varies with temperature

Functional Block Diagram

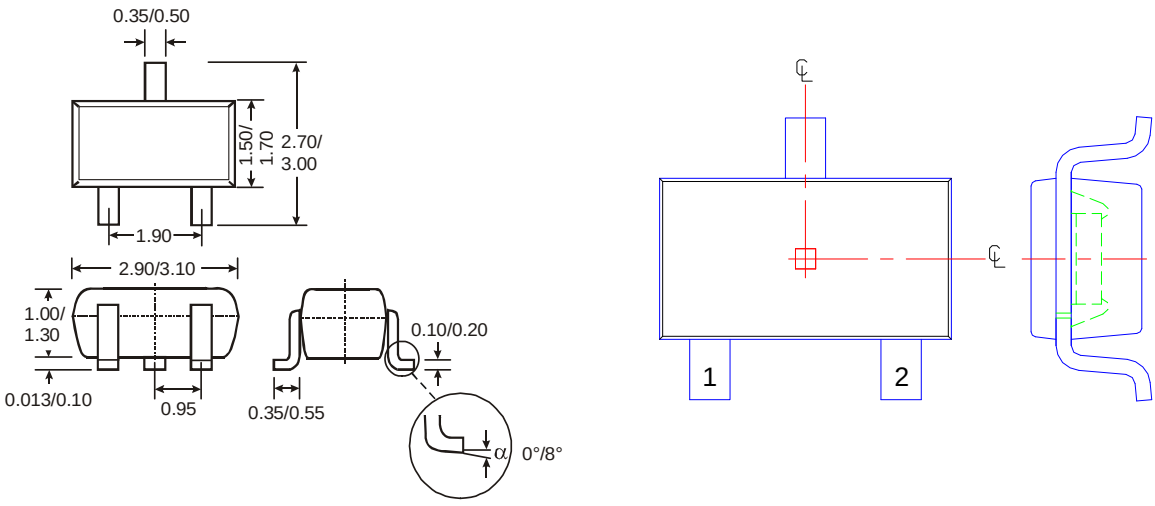


Package Information

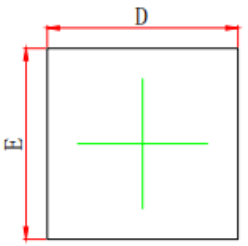
(1)SIP-3L(TO-92S)



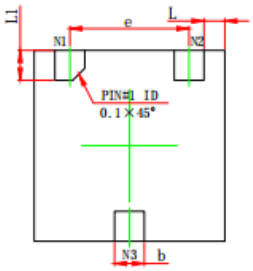
(2)SOT23-3L



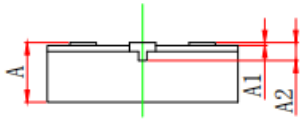
(3)DFN1616-3L



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.000	0.050	0.000	0.002
A2	0.150REF.		0.006REF.	
D	1.550	1.650	0.061	0.065
E	1.550	1.650	0.061	0.065
b	0.200	0.300	0.008	0.012
e	0.950	1.050	0.037	0.041
L	0.175REF.		0.007REF.	
L1	0.200	0.300	0.008	0.012