FEELING TECHNOLOGY

FS50

LINEAR HALL-EFFECT SENSORS

Features

- Extremely Sensitive
- Flat Response to 23 KHz
- Low-Noise Output
- 2.7V to 7V Operation
- Available in SIP-3L package

Pb Free

General Description

The FS50 Hall-effect sensors accurately track extremely small changes in magnetic flux density-changes generally too small to operate Hall-effect switches.

As motion detectors, gear tooth sensors, and proximity detectors, they are magnetically driven mirrors of mechanical events. As sensitive monitors of electromagnets, they can effectively measure a system's performance with negligible system loading while providing isolation from contaminated and electrically noisy environments.

Each Hall-effect integrated circuit includes a Hall sensing element, linear amplifier, and emitter-follower output stage. Problems associated with handling tiny analog signals are minimized by having the Hall cell and amplifier on a single chip.

Block Diagram

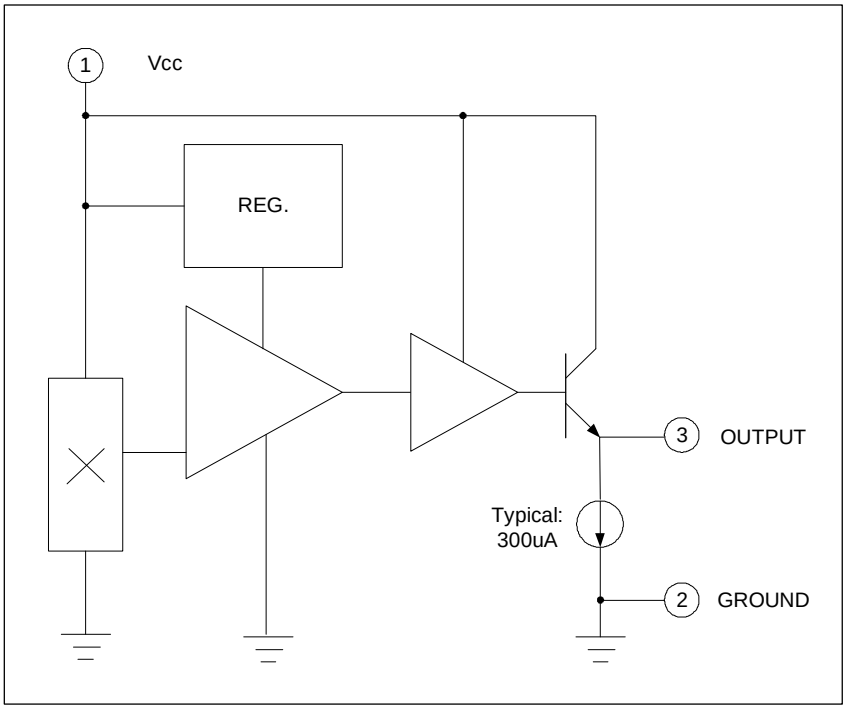


Figure.1

Pin Connection

[Top View]

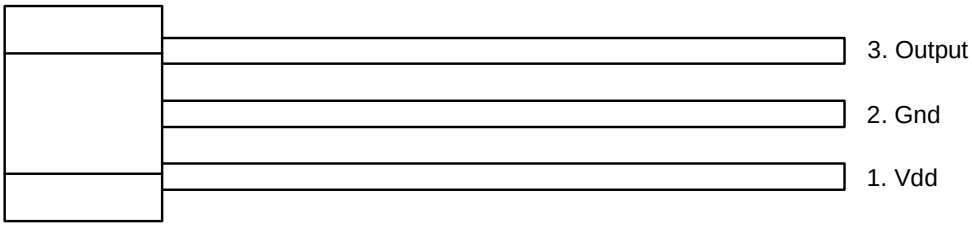


Figure.2

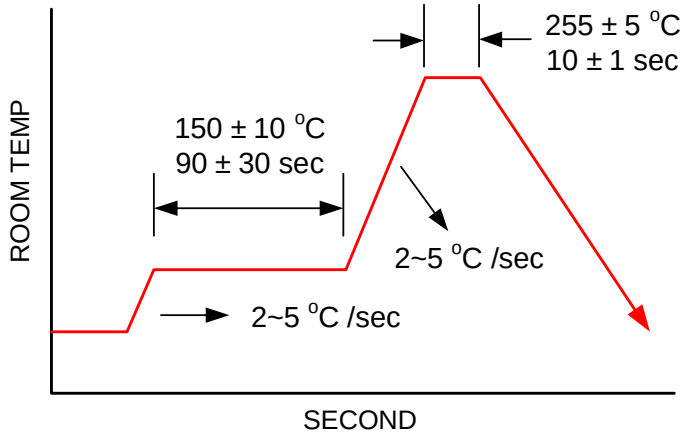
Pin Descriptions

Name	I/O	Pin No.	Description
Vdd	P	1	Positive power supply
Gnd	G	2	Ground
Output	O	3	Driver output

Legend: I=input, O=output, I/O=input/output, P=power supply, G=ground

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Operating Temperature	T_{OP}	-	-20		85	℃
Storage Temperature	T_{ST}	-	-55		165	℃
DC Supply Voltage	V_{DD}	-			7	V
Supply Current	I_{DD}	-			10	mA
Magnetic Flux Density	B	-			Unlimited	G
Junction temperature	T_J				160	℃
Lead Temperature		10sec			260	℃



Soldering Condition

Figure.3

Recommended Operating Conditions

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Supply Voltage	V_{DD}	-	2.7		7.0	V
Operating Temperature Range	T_A	-	-20		85	℃

Electrical Characteristics V_{DD}=5.0V, T_A=25℃ (unless otherwise specified)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Average Supply Current(no load)	I_{DD}	-		6.0	10	mA
Quiescent Output Voltage	V_{OUT}	B=0G	2.35	2.50	2.65	V
Sensitivity	ΔV_{OUT}	B=0 G to ±900G	1.00	1.20	1.40	mV/G
Linearity (% of Span)				<0.7		%

Transfer Characteristics (V_{DD}=5.0V)

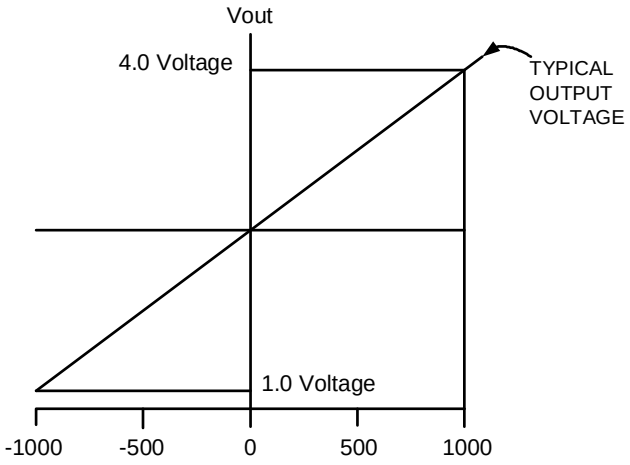


Figure.4

Marking Information

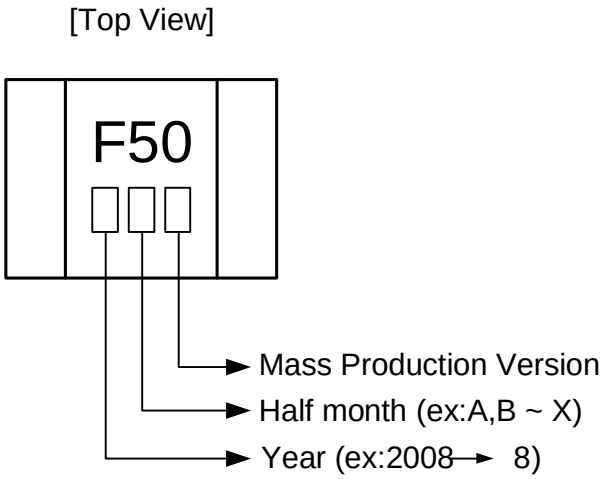
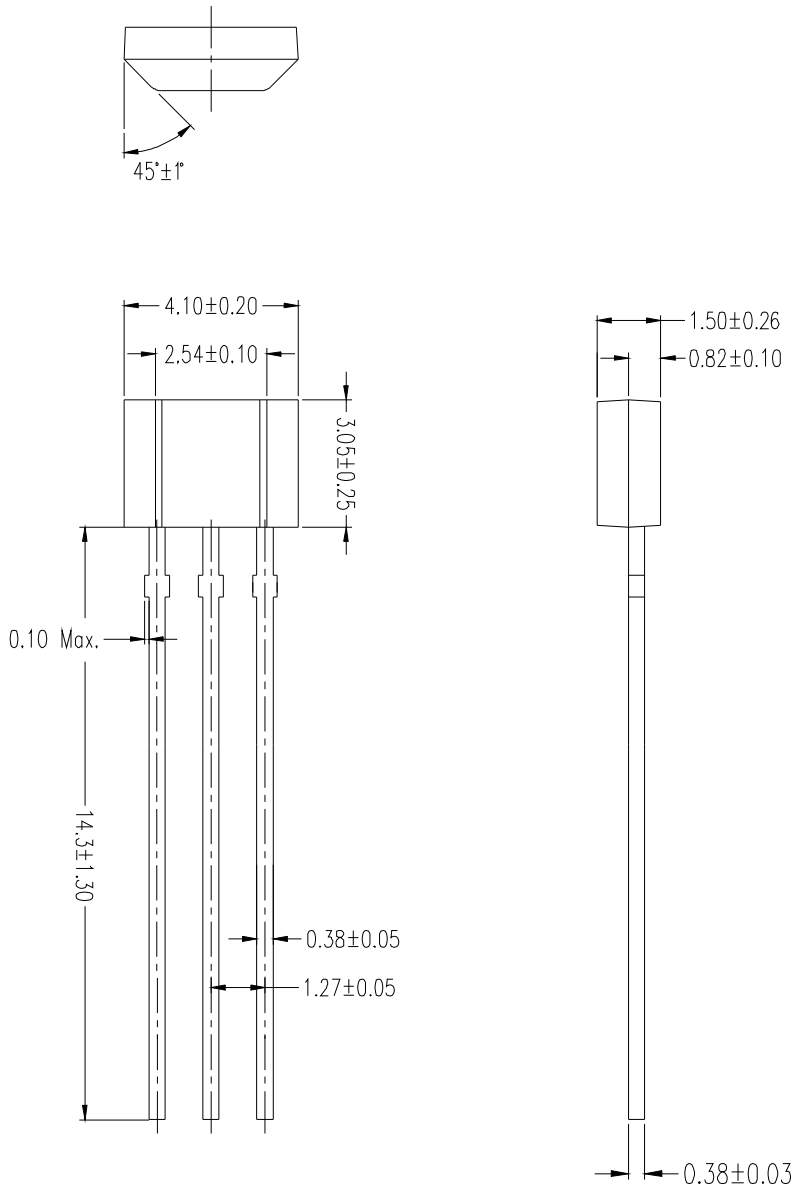


Figure.5

Package Dimension (Unit: mm)
SIP-3L(Pb Free)



Order Information

Part Number	Operating Temperature	Package	MOQ
FS50LF	-20 ℃ to +85 ℃	SIP-3L	1000ea