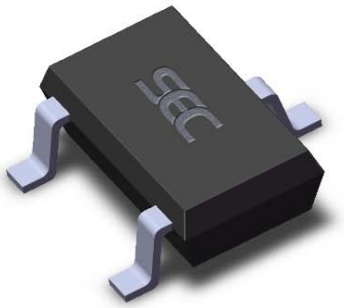
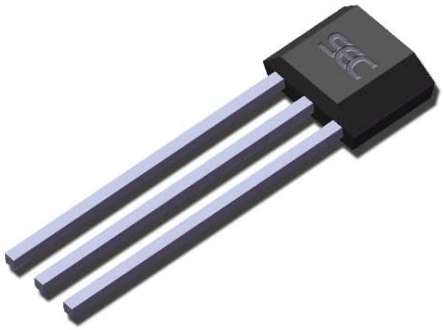
Features

Miniature construction
Low-Noise Output
4.5 V to 6 V Operation
Magnetically Optimized Package
Linear output for circuit design flexibility
Temperature range of -40 °C to 150 °C

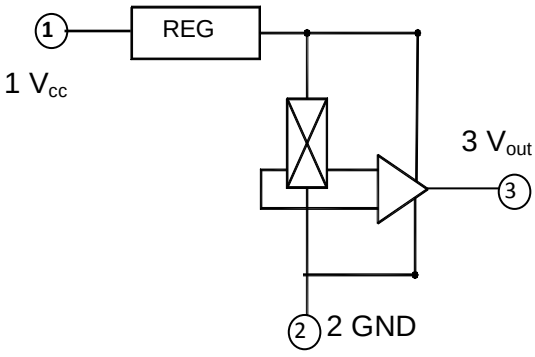


3 pin SOT23 (suffix SO)



3 pin SIP (suffix UA)

Functional Block Diagram



Application Examples

- Motor control
- Magnetic code reading
- Ferrous metal detector
- Current sensing
- Position sensing

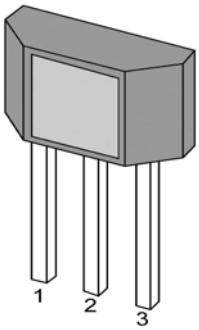
General Description

SS657 Linear Hall-effect sensor is small, versatile linear Hall-effect device that is operated by the magnetic field from a permanent magnet or an electromagnet. The linear sourcing output voltage is set by the supply voltage and varies in proportion to the strength of the magnetic field. The integrated circuitry features low noise output, which makes it unnecessary to use external filtering. It also includes thin film resistors to provide increased temperature stability and accuracy. The linear Hall sensor has an operating temperature range of -40 °C to 150 °C appropriate for commercial, consumer and industrial environments.

Glossary of Terms

MilliTesla (mT), Gauss	Units of magnetic flux density: 1mT = 10 Gauss
RoHS	Restriction of Hazardous Substances
Operating Point (B_{OP})	Magnetic flux density applied on the branded side of the package which turns the output driver ON ($V_{OUT} = V_{DSon}$)
Release Point (B_{RP})	Magnetic flux density applied on the branded side of the package which turns the output driver OFF (V_{OUT} = high)

Pin Definitions and Descriptions



SOT Pin №	Name	Status	Description
1	VDD	P	Power Supply
2	OUT	P	IC Ground
3	GND	O	Output

Absolute Maximum Ratings

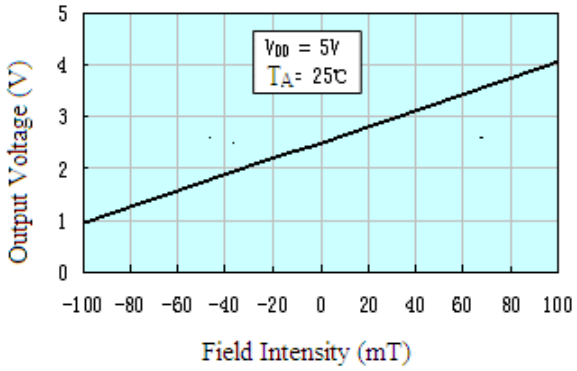
Parameter	Symbol	Value	Units
Supply Voltage(operating)	V_{CC}	8.0	V
Output Current	I_{OUT}	20	mA
Operating Temperature Range	T_A	-40 to 150	℃
Storage Temperature Range	T_S	-65 to 150	℃

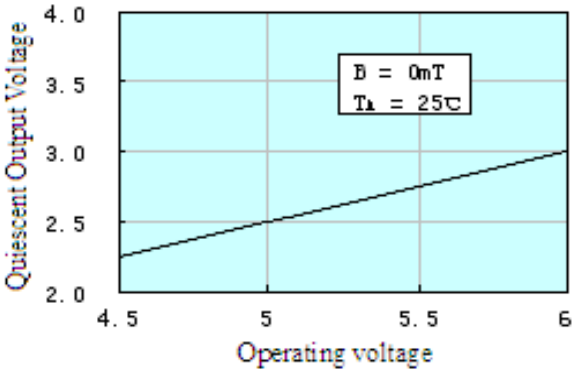
Electrical Characteristics

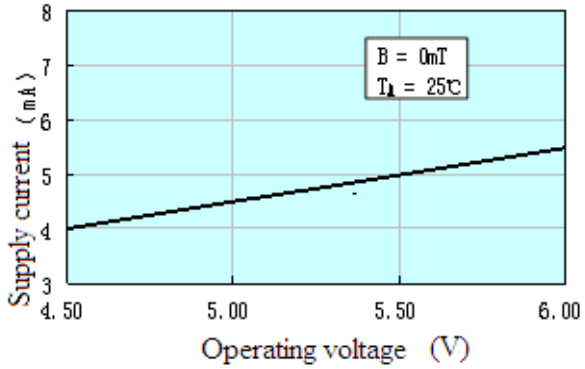
DC Operating Parameters T_A = 25°C, V_{CC}= 5.0V

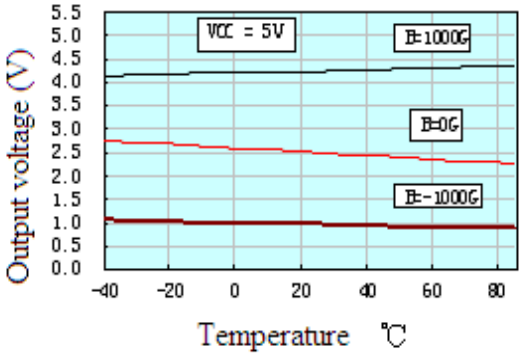
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Operating Voltage	V_{CC}	Operating	3.0		6.5	V
Supply Current	I_{CC}	Average		4.2	8.0	mA
Output Current	I_{OUT}		1.0	1.5		mA
Response Time	T_{ack}			3		μs
Quiescent Output Voltage	V_O	B = 0G	2.25	2.5	2.75	V
Sensitivity	$\triangle V_{OUT}$	T_A =25°C	2.0	2.5	3.0	mV/G
Min Output Voltage		B = -1500G		0.86		V
Max Output Voltage		B = 1500G		4.21		V

Performance Characteristics



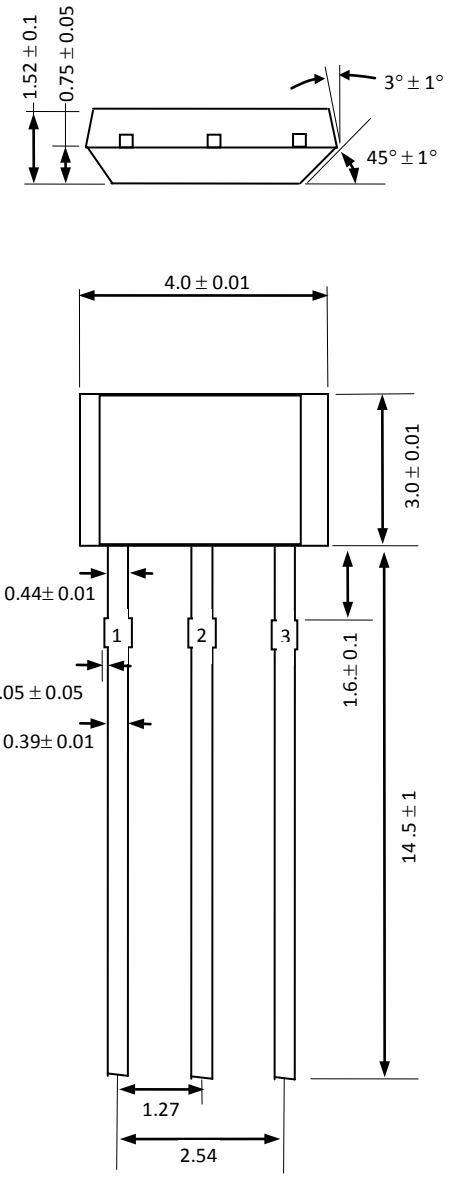


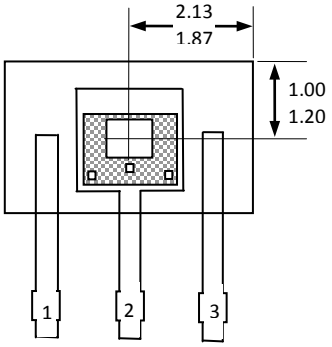




Package Information

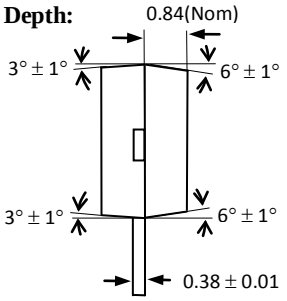
Package UA, 3-Pin SIP:





Sensor Location

Active Area Depth:



Notes:

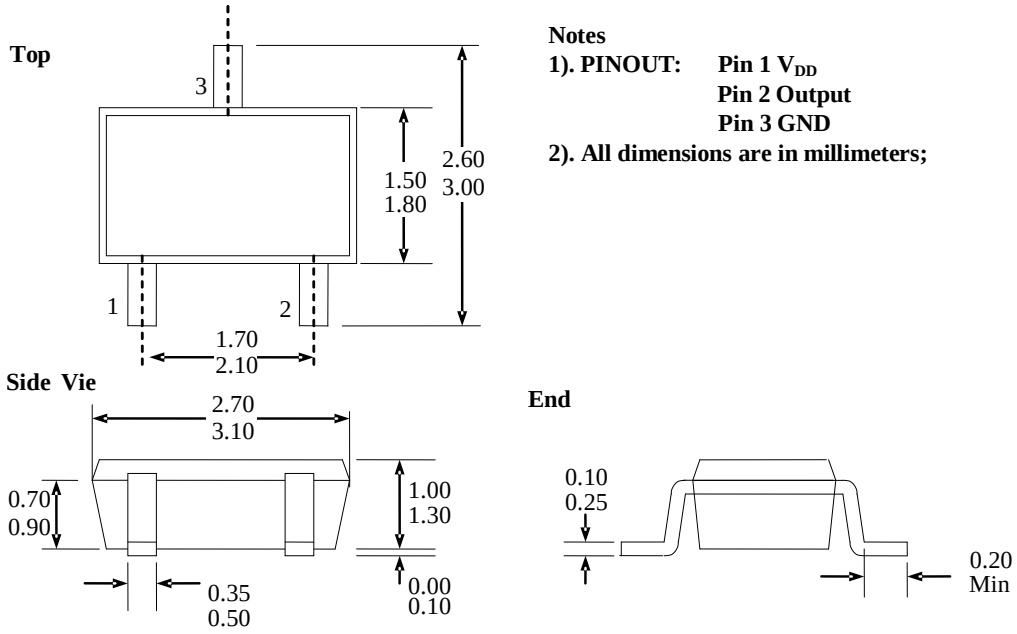
1). Controlling dimension : mm ;

2). Leads must be free of flash and plating voids ;

3). Do not bend leads within 1 mm of lead to package interface ;

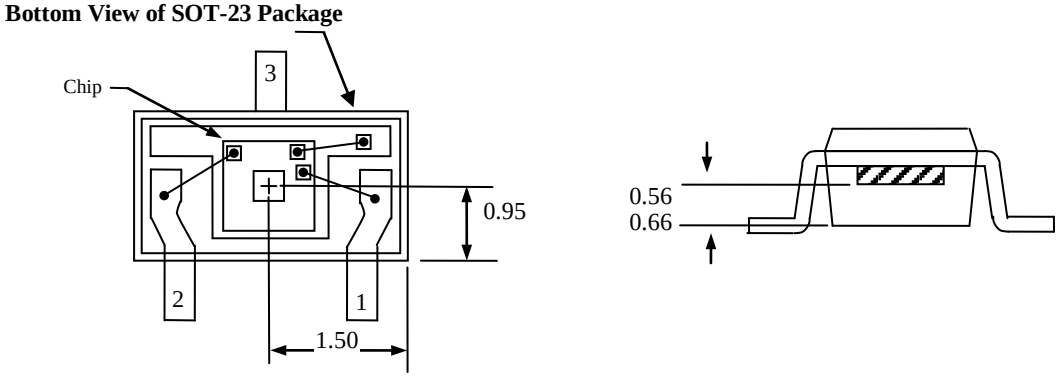
4). PINOUT: **Pin 1** V_{DD}
Pin 2 **GND**
Pin 3 **Output**

Package SO, 3-Pin SOT-23:



Notes
1). PINOUT: Pin 1 V_{DD}
Pin 2 Output
Pin 3 GND
2). All dimensions are in millimeters;

Hall plate location



Ordering Information

Part No.	Pb-free	Temperature Code	Package Code	Packing
SS657EUA	YES	E (-40°C to 85°C)	UA(TO-92)	Bulk, 1000 pieces/bag
SS657ESOT	YES	E (-40°C to 85°C)	SO（SOT-23）	7-in. reel, 3000 pieces/ reel
SS657KUA	YES	E (-40°C to 125°C)	UA(TO-92)	Bulk, 1000 pieces/bag
SS657KSOT	YES	E (-40°C to 125°C)	SO（SOT-23）	7-in. reel, 3000 pieces/ reel
SS657LUA	YES	E (-40°C to150°C)	UA(TO-92)	Bulk, 1000 pieces/bag
SS657LSOT	YES	E (-40°C to 150°C)	SO（SOT-23）	7-in. reel, 3000 pieces/ reel