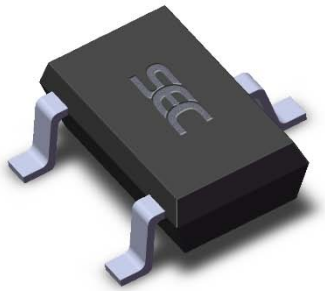
Features and Benefits

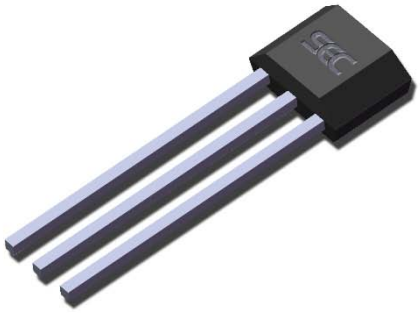
- 4.5V to 24V Operation
- -40°C to 150°C Superior temperature operation
- Bipolar technology
- Open-collector 25 mA output
- Reverse battery protection
- Small Size SOT23 3L or SIP 3L
- Solid-state reliability
- Resistant to physical stress
- Activate with small, commercially available permanent magnets

Application Examples

- Brushless DC motor commutation
- Automotive, Consumer and Industrial
- Solid-state switch
- Speed measurement
- Revolution counting
- Angular position detection
- Proximity detection

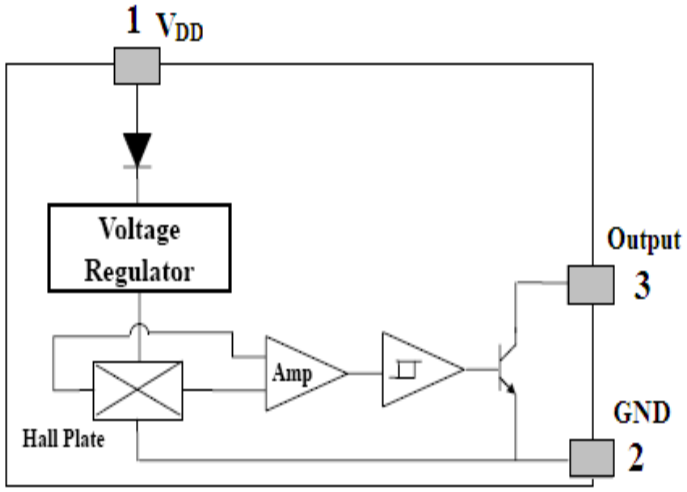


3 pin SOT23 (suffix SO)



3 pin SIP (suffix UA)

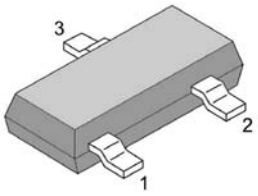
Functional Block Diagram

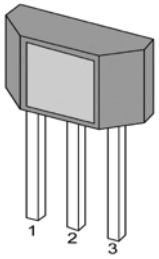


SIP Package	SOT Package
Pin 1 – V_{DD}	Pin 1 – V_{DD}
Pin 2 – GND	Pin 2 – OUT
Pin 3 – OUT	Pin 3 – GND

Pin Definitions and Descriptions

SOT Pin №	SIP Pin №	Name	Type	Function
1	1	V_{DD}	Supply	Supply Voltage pin
2	3	OUT	Output	Open Drain Output pin
3	2	GND	Ground	Ground pin





Absolute Maximum Ratings

Parameter	Symbol	Value	Units
Supply Voltage	V_{DD}	28	V
Supply Current	I_{DD}	50	mA
Output Voltage	V_{OUT}	28	V
Output Current	I_{OUT}	50	mA
Storage Temperature Range	T_S	-65 to 170	°C

Operating Temperature Range	Symbol	Value	Units
Temperature Suffix “E”	T_A	-40 to 85	°C
Temperature Suffix “K”	T_A	-40 to 125	°C
Temperature Suffix “L”	T_A	-40 to 150	°C

Exceeding the absolute maximum ratings may cause permanent damage. Exposure to absolute-maximum- rated conditions for extended periods may affect device reliability.

General Electrical Specifications

DC Operating Parameters T_A = 25°C, V_{DD}= 4.5V to 24V (unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	V_{DD}	Operating	4.5		24	V
Supply Current	I_{DD}	B < B_{RP}		5	10	mA
Output Saturation Voltage	$V_{DSo}n$	I_{OUT} = 20mA, B > B_{OP}		0.4	0.5	V
Output Leakage Current	I_{OFF}	B < B_{RP} V_{OUT} = 24V		0.01	5	μA
Output Rise Time	tr	R_L = 1KΩ, C_L = 20pF		0.3	1.5	μs
Output Fall Time	tf	R_L =1KΩ, C_L = 20pF		0.3	1.5	μs

Magnetic Specifications

DC Operating Parameters V_{DD} = 4.5 to 24V (unless otherwise specified)

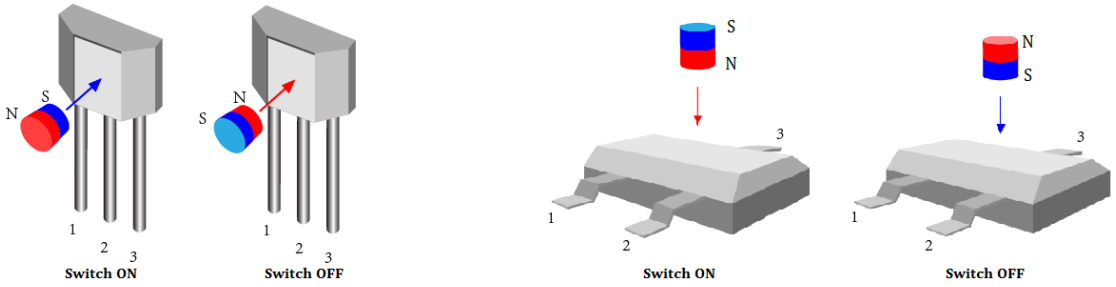
Package	Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
UA	Operating Point	B_{OP}	Ta=25°C,Vdd=12V DC	5	45	90	G
	Release Point	B_{RP}		-90	-45	-5	G
	Hysteresis	B_{HYST}			90		G
SO	Operating Point	B_{OP}	Ta=25°C,Vdd=12V DC	-90	-45	-5	G
	Release Point	B_{RP}		5	45	90	G
	Hysteresis	B_{HYST}			90		G

Output Behavior versus Magnetic Pole

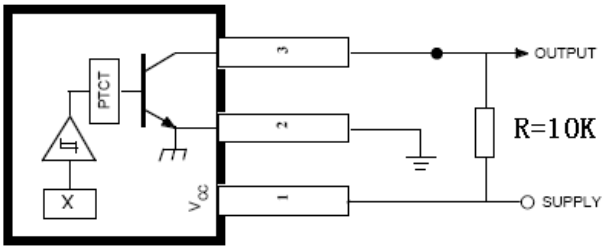
DC Operating Parameters TA = -40°C to 150°C, V_{DD} = 4.5 to 24V (unless otherwise specified)

Test Conditions (UA)	Test Conditions (SO)	OUT
B < B_{RP}	B > B_{RP}	High
B > B_{OP}	B < B_{OP}	Low

The SOT-23 device is reversed from the UA package. The SOT-23 output transistor will be turned on(drops low) in the presence of a sufficiently strong North pole magnetic field applied to the marked face and turned off(hoists high) in the presence of a sufficiently strong South pole magnetic field.

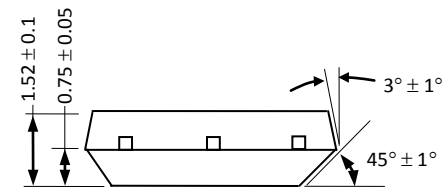


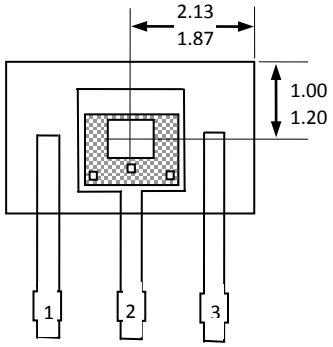
Application Information



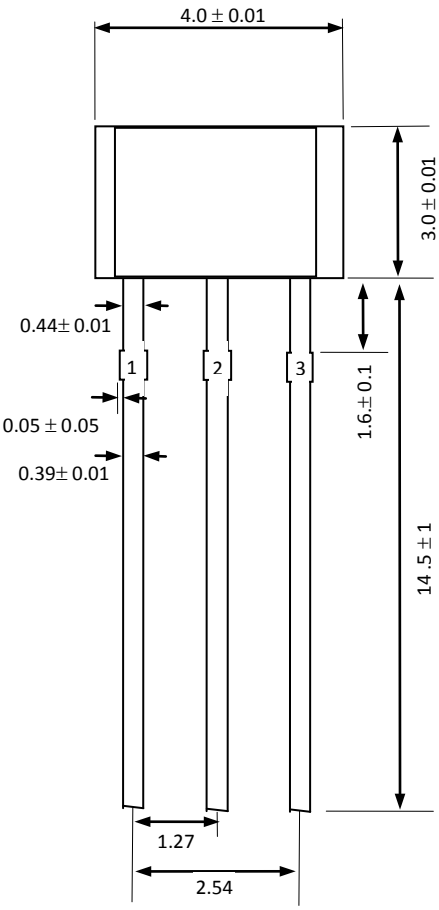
Package Information

Package TO, 3-Pin SIP:

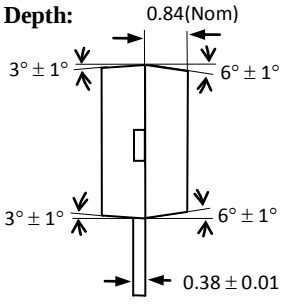




Sensor Location



Active Area Depth:



Notes:

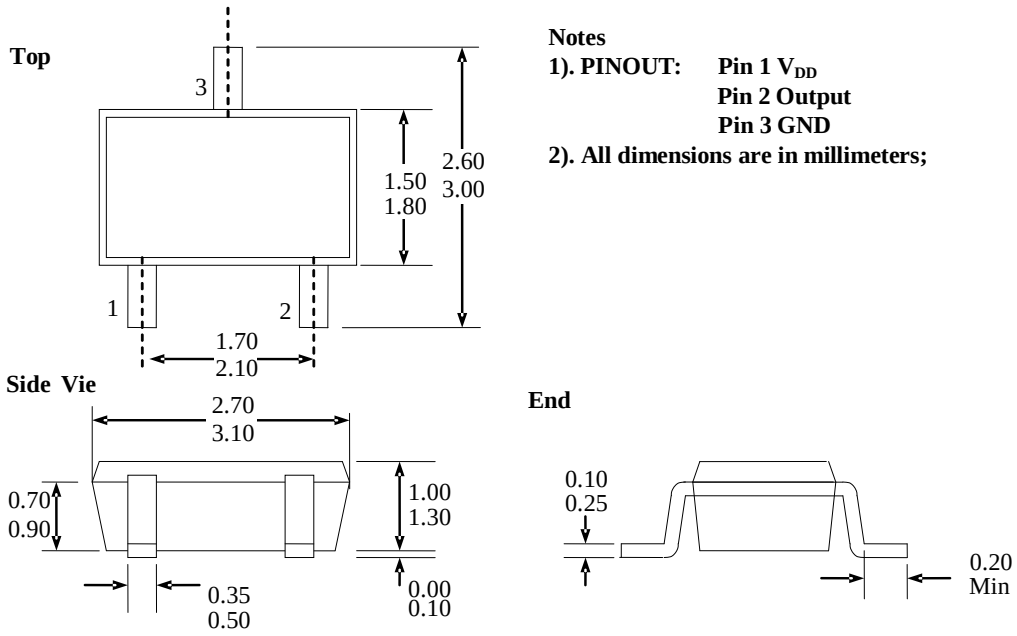
1). Controlling dimension : mm ;

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;

Ordering Information

Part No.	Pb-free	Temperature Code	Package Code	Packing
SS41FESOT	YES	-40°C to 85°C	SOT-23	7-in. reel, 3000 pieces/ reel
SS41FEUA	YES	-40°C to 85°C	TO-92	Bulk, 1000 pieces/ bag
SS41FKSOT	YES	-40°C to 125°C	SOT-23	7-in. reel, 3000 pieces/ reel
SS41FKUA	YES	-40°C to 125°C	TO-92	Bulk, 1000 pieces/ bag
SS41FLSOT	YES	-40°C to 150°C	SOT-23	7-in. reel, 3000 pieces/ reel
SS41FLUA	YES	-40°C to 150°C	TO-92	Bulk, 1000 pieces/ bag