

OH37 / OH137 Unipolar Hall-effect IC

1. General Description

OH37 Series Hall-effect ICs response to S pole from a permanent magnet or an electromagnet. They internally consist of a reverse voltage protection device, voltage regulator, Hall voltage generator, a differential amplifier, Schmitt trigger, and the open collector output level. While the magnetic flux density (B) is larger than the threshold B_{op} , the OUT pin turns on (low), when $B < B_{rp}$, the OUT pin goes into “ off ” state. SIP and SMD types are available.

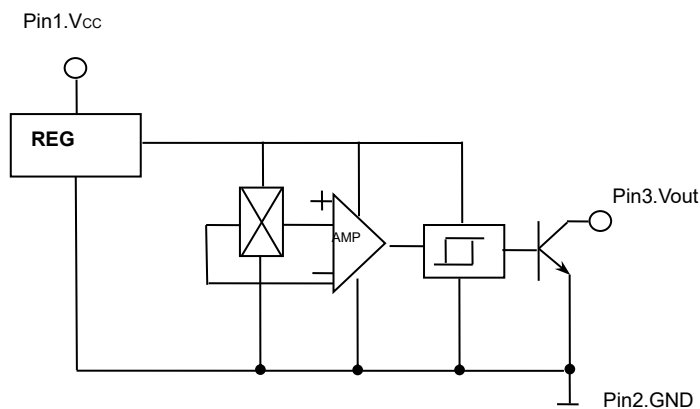
2. Features

- Respond to a South pole
- 4V to 24V DC operation voltage
- 25mA maximum sinking output current.
- Open-Collector pre-driver
- Reverse Polarity Protection

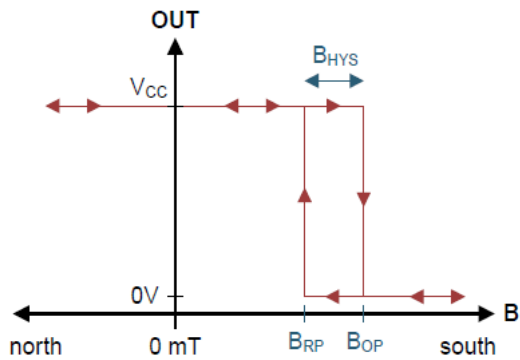
3. Applications

- Speed measurement
- Home appliances
- Position detection
- Flow measurement

4. Functional Block Diagram

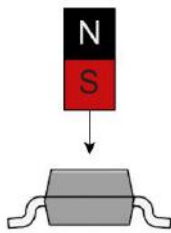


5. Magnetic-electrical Transfer Characteristics



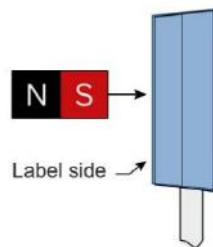
6. Typical Working Mode

OH37



South pole toward IC:
Output = Low

OH137



South pole toward IC:
Output = Low

7. Order information

Part number	Package Type	Response pole	Quantity/package
OH37	SOT23	S	3000 pcs/ reel
OH137	TO-92S	S	bulk 1000 pcs/ bag

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8. Absolute Maximum Ratings (T_A=25°C)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	4.5 to 24	V
Output current	I _{out}	25	mA
Operating temperature range	T _A	-40 to 85	°C
Storage temperature range	T _{stg}	-55 to 150	°C

9. Electrical Characteristics (T_A=25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V _{CC}		4.5	-	24	V
Output Saturation Voltage	V _{OL}	V _{CC} =5V, R _L =1KΩ, B≥B _{OP}	-	200	400	mV
Output Leakage Current	I _{OH}	V _{out} =V _{CCmax} , B≤B _{RP}	-	1.0	10	μA
Supply Current	I _{CC}	V _{CC} =V _{CCmax} OC output	-	3	-	mA
Output Rise Time	t _r	V _{CC} =5V, R _L =1kΩ, C _L =20pF	-	0.13	-	μS
Output Falling Time	t _f		-	0.1	-	μS

10. Magnetic Characteristics (T_A=25°C) (1mT = 10 Gauss)

Parameter	symbol	Part Number	Value			Unit
			Min	Typ	Max	
Operate Point	B _{OP}	OH37	-	-	16	mT
		OH137	-	-	18	mT
Release Point	B _{RP}	OH37	2	-	-	mT
		OH137	2	-	-	mT
Hysteresis	B _H		6	-	8	mT

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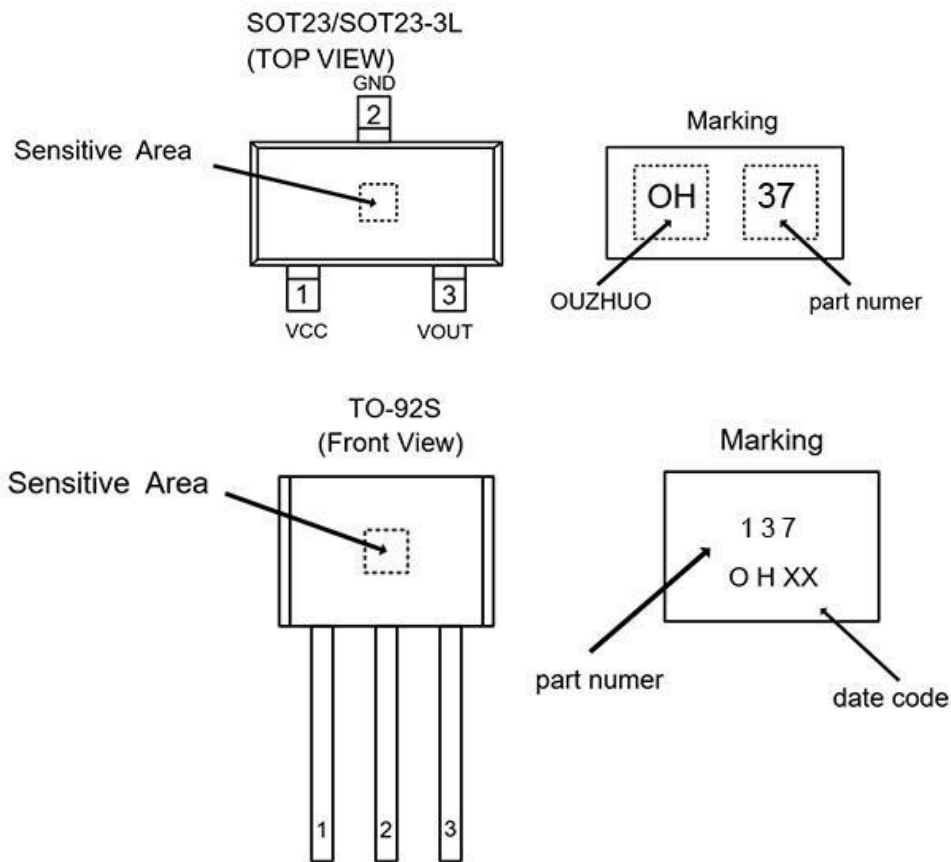
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11. Pin configuration



Pin Name	PIN	Function description
	SOT23/TO92S	
Vcc	1	Supply Voltage
GND	2	Ground
Vout	3	Output

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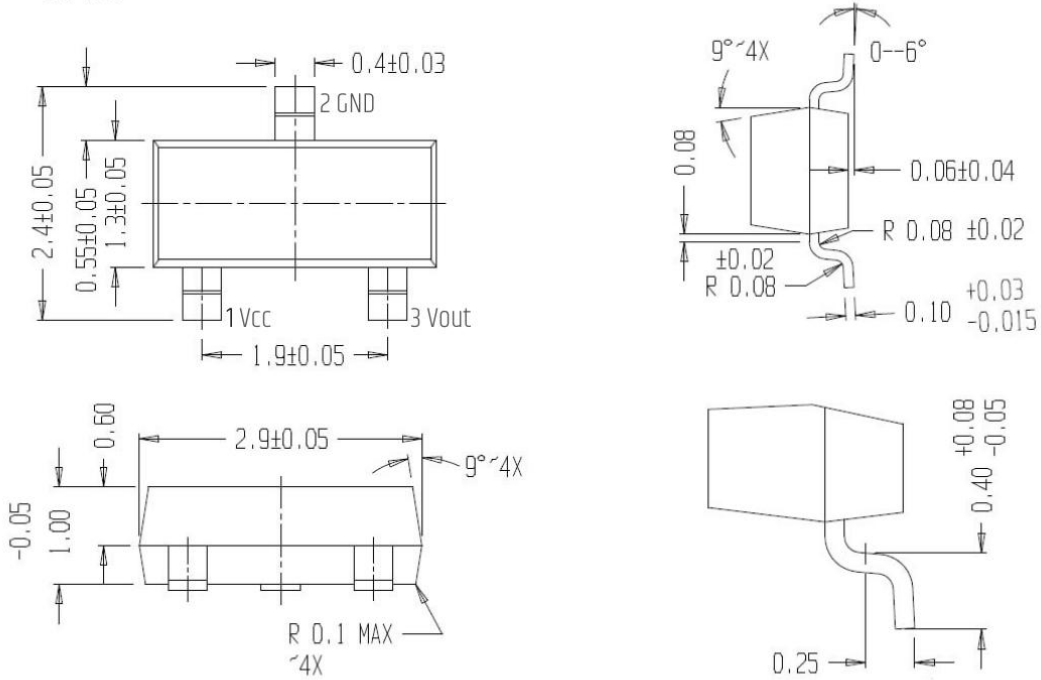
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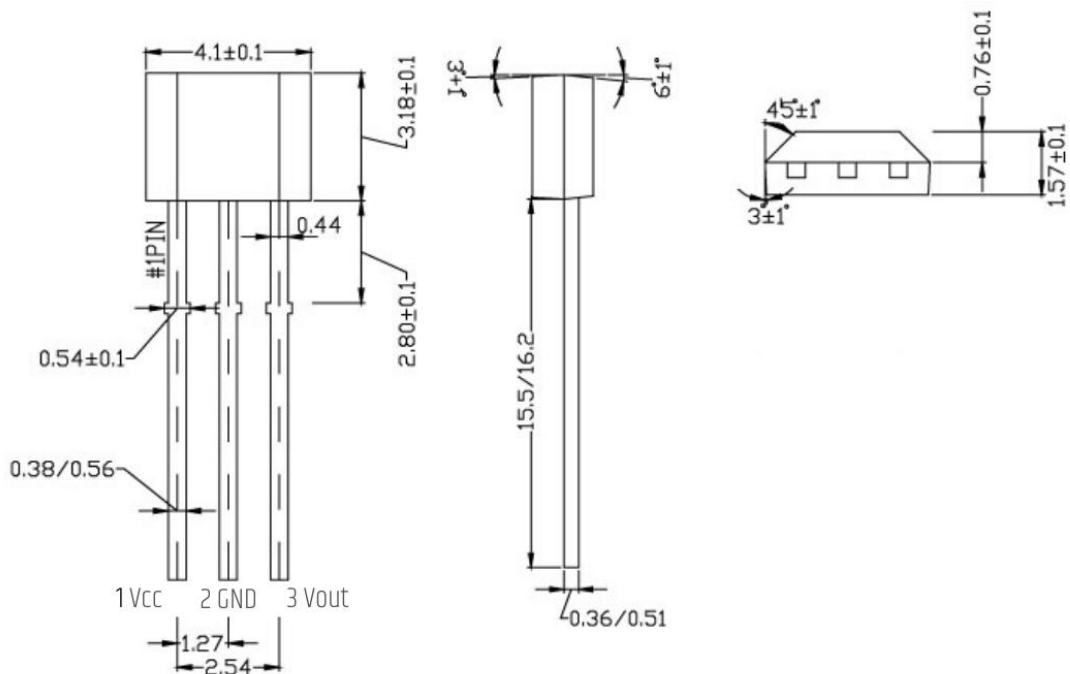


12. Dimension (unit: mm)

SOT23



T0-92S



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For more information:

Ouzhuo Technology service you through a worldwide network of sales offices and distributors. For application assistance, current specifications, pricing, or the nearest Authorized Distributor, you could reach us the way you are convenient, thank you for your support!

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NOTICE:

The information presented in this datasheet is for reference only. Specifications may change without notice.

