

OH4S / OH4N / OH401 Unipolar Hall IC

1. General Description

OH4S series unipolar hall IC includes an on-chip Hall voltage generator for magnetic sensing, an amplifier that amplifies the Hall voltage, a Schmitt trigger to provide switching hysteresis for noise rejection, and open-collector output. It detects the changes of the Magnetic field and outputs a digital voltage signal. With the typical feature of a wide range of working voltage, operating temperature, and high load capacity, OH4N series ICs perform well in many applications, such as position control, speed detection, and flow detection as a non-contact magnetic sensor.

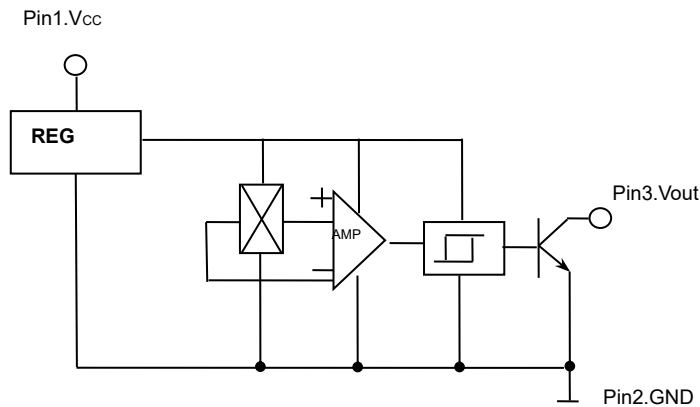
2. Features

- 4V to 30V DC operation voltage
- Open-Collector pre-driver
- Reverse Polarity Protection
- Respond to a single-pole (North or South).
- High load capacity
- anti-environmental stress

3. Applications

- The brushless DC motor, DC fans, DC water pump
- The home appliance control panel sewing equipment, textile machinery
- speed sensor, position detecting, counting and
- The auto-ignition, safety alarm device

4. Functional Block Diagram



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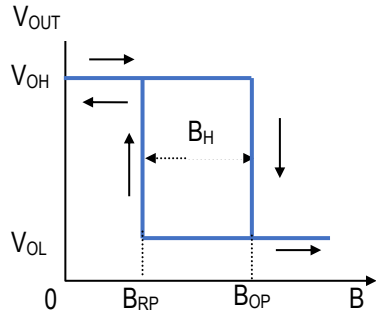
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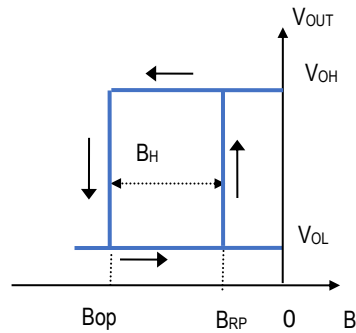
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5. Magnetic-electrical Transfer Characteristics



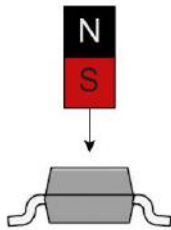
OH4S, OH401



OH4N

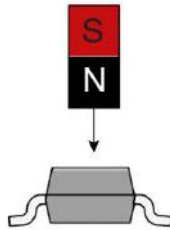
6. Typical Working Mode

OH4S



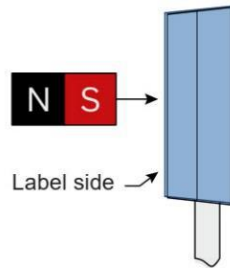
South pole toward IC:
Output = Low

OH4N



North pole toward IC:
Output = Low

OH401



South pole toward IC:
Output = Low

7. Order information

Part number	Package Type	Response pole	
OH4S	SOT23-3	S	3000 pcs/ reel
OH4N	SOT23-3	N	3000 pcs/ reel
OH401	TO-92S	S	bulk 1000 pcs/ bag

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8. Absolute Maximum Ratings (TA=25°C)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	4 to 30	V
Output current	I _{out}	50	mA
Operating temperature range	T _A	-40 to 150	°C
Storage temperature range	T _{stg}	-55 to 150	°C

9. Electrical Characteristics (Ta= 25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V _{CC}		4	-	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	-	5	-	mA
Output Rise Time	t _r	V _{CC} =5V, R _L =1kΩ, C _L =20pF	-	0.2	2.0	μS
Output Falling Time	t _f		-	0.18	2.0	μS

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

Parameter	symbol	Part Number	Value			Unit
			Min	Typ	Max	
Operate Point	B _{OP}	OH4S	-	-	20	mT
		OH401	-	-	20	mT
		OH4N	-20	-	-	mT
Release Point	B _{RP}	OH4S	2	-	-	mT
		OH401	2	-	-	
		OH4N	-	-	-2	
Hysteresis	B _H		-	4	-	mT

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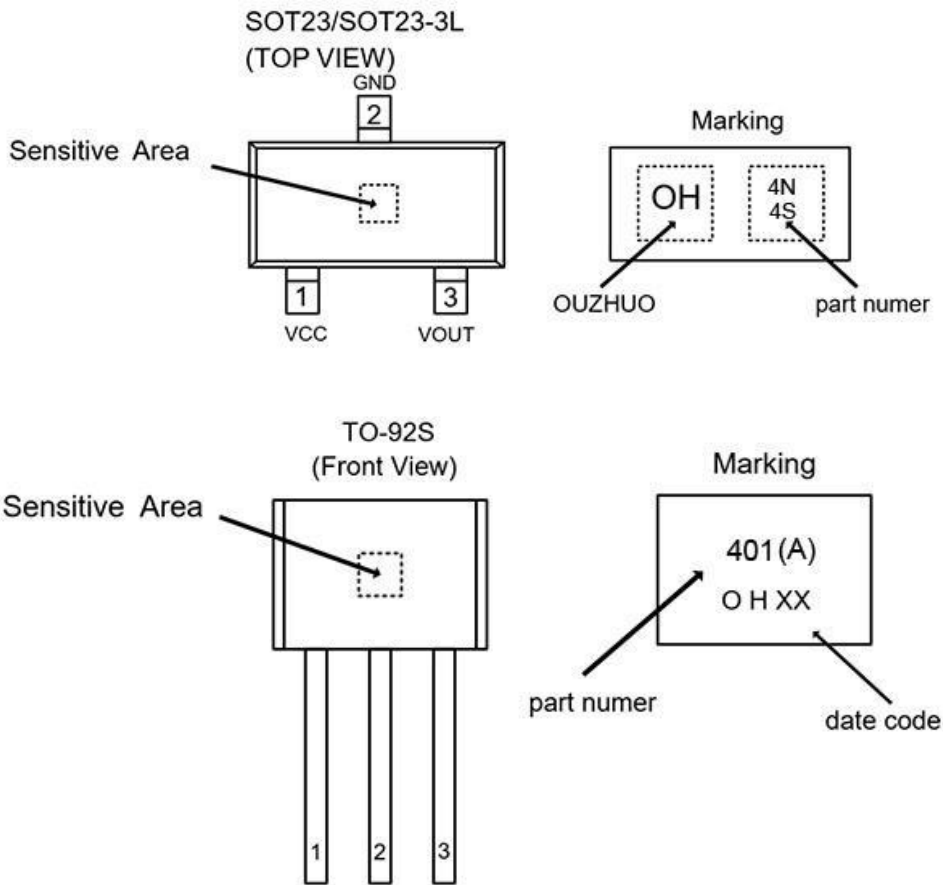
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11. Pin configuration


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

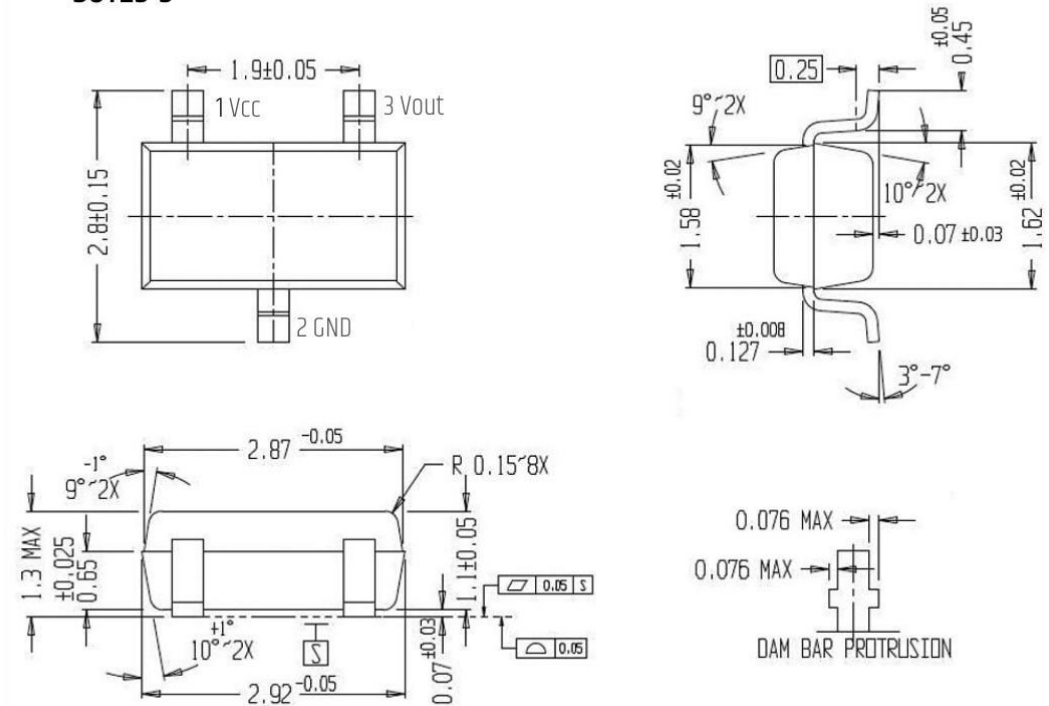
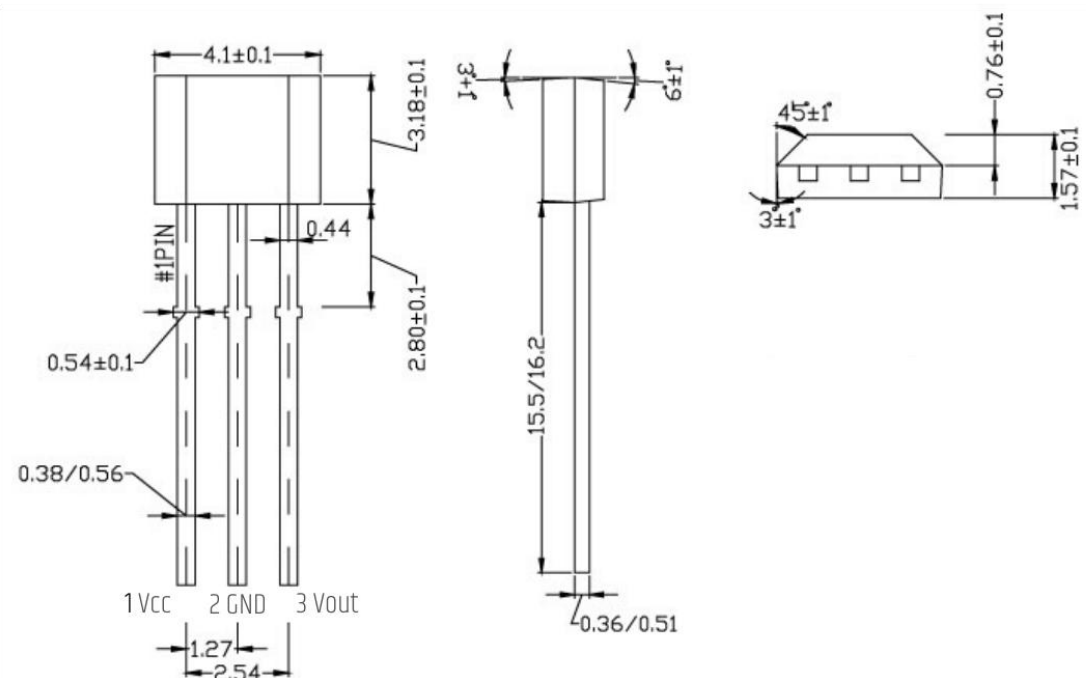
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12. Dimension unit: mm
SOT23-3

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.

