

OH513 / OH413 / OH13 Hall Latch IC

1. General Description

OH413, OH513, OH13 Series Hall sensor IC latch on to a first pole (North or South) until a magnetic field of sufficient strength of the opposite polarity is brought near the sensor IC. 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. On-board regulation provides stable operation over a 4Vdc to 30 Vdc supply voltage range. These sensors are capable of continuous 20 mA sinking output and maybe cycled as high as 50 mA max. The digital, open collector sinking-type output is easily interfaced with a wide variety of electronic circuits. Flat TO-92S, SOT89, and SOT23 package style are available.

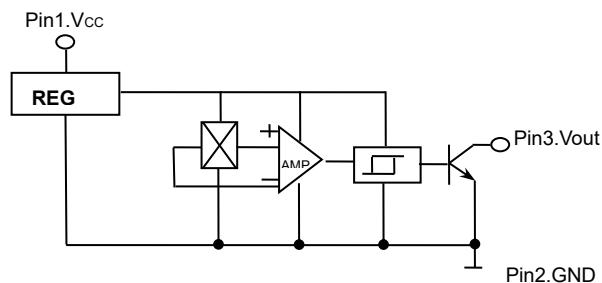
2. Features

- 4V to 30V DC operation voltage
- Open-Collector sinking type
- 50mA maximum sinking output current.
- Reverse Polarity Protection
- Good temperature performance

3. Applications

- The brushless DC motor internal reversing
- The motor speed and direction detection
- The motor of the electric bicycle, power-assisted device
- Speed sensor, counter
- The flow sensor, flow meter
- The automotive odometer, speed sensor

4. Functional Block Diagram



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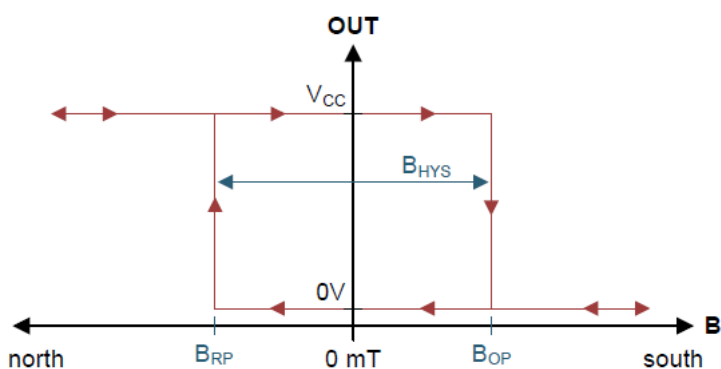
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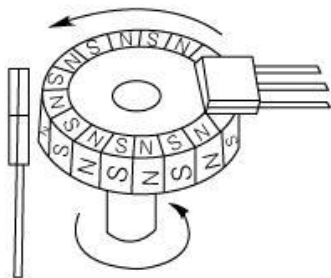
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5. Magnetic-electrical Transfer Characteristics



6. Typical Working Mode



7. Order information

Part number	Package type	Quantity/Package
OH513	SOT89	1000 PCS/ Reel
OH413	TO-92S	Bulk, 1000 pcs/bag
OH13	SOT23	3000 PCS/ Reel



8. Absolute Maximum Ratings (T_A =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

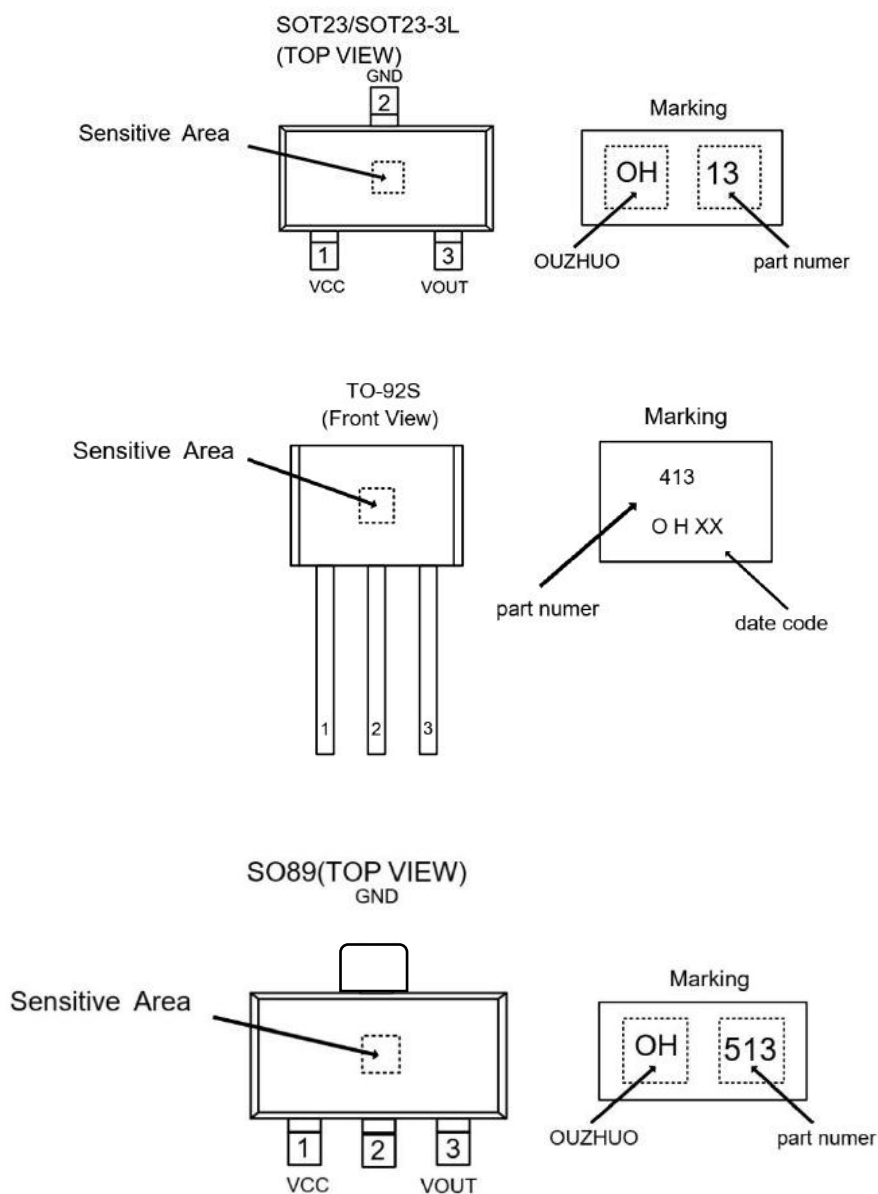
9. Electrical Characteristics (T_A = 25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V _{CC}		4	-	30	V
Output Saturation Voltage	V _{OL}	V _{CC} =5V, R _L =1KΩ, B≥B _{OP}	-	200	400	mV
Output Leakage Current	I _{OH}	V _O =V _{CCmax} , B≤B _{RP}	-	0.1	10	μA
Supply Current	I _{CC}	V _O =V _{CCmax} , B≤B _{RP}	-	5	-	mA
Output Rise Time	t _r	V _{CC} =5V, R _L =1KΩ, C _L =20pF	-	0.5	-	μS
Output Falling Time	t _f		-	0.5	-	μS

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

Parameter	symbol	Value			Unit
		Min	Typ	Max	
Operate Point	B _{OP}	-	-	8	mT
Release Point	B _{RP}	-8	-	-	mT
Hysteresis	B _H	-	10	-	mT



11. Pin configuration


Pin Name	Pin number	Function description
Vcc	1	Supply Voltage
GND	2	Ground
Vout	3	Output

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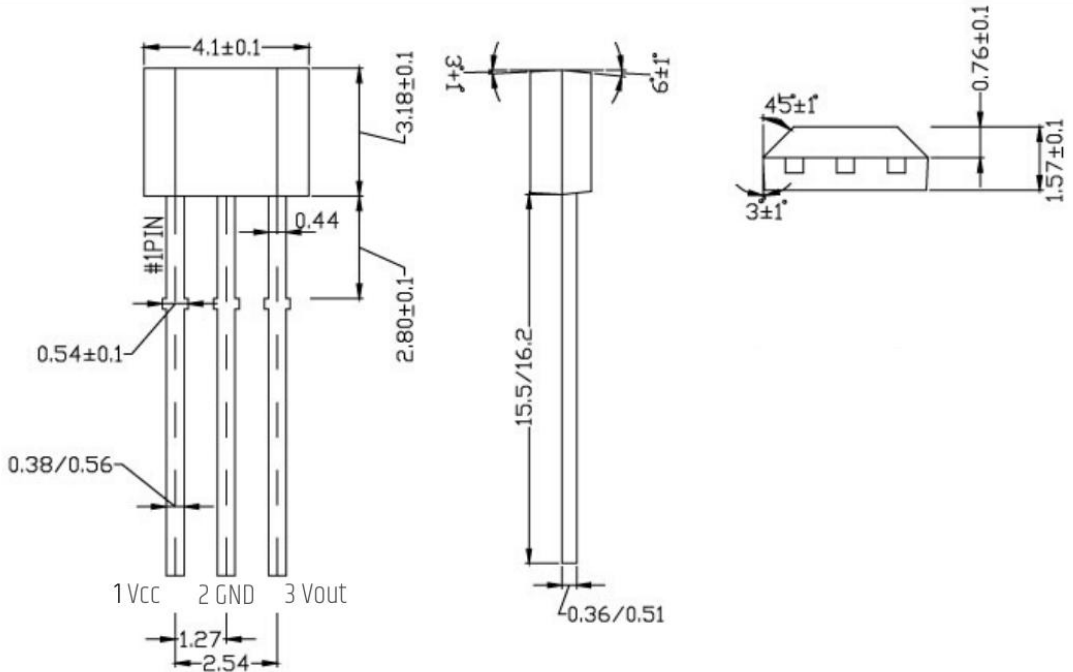
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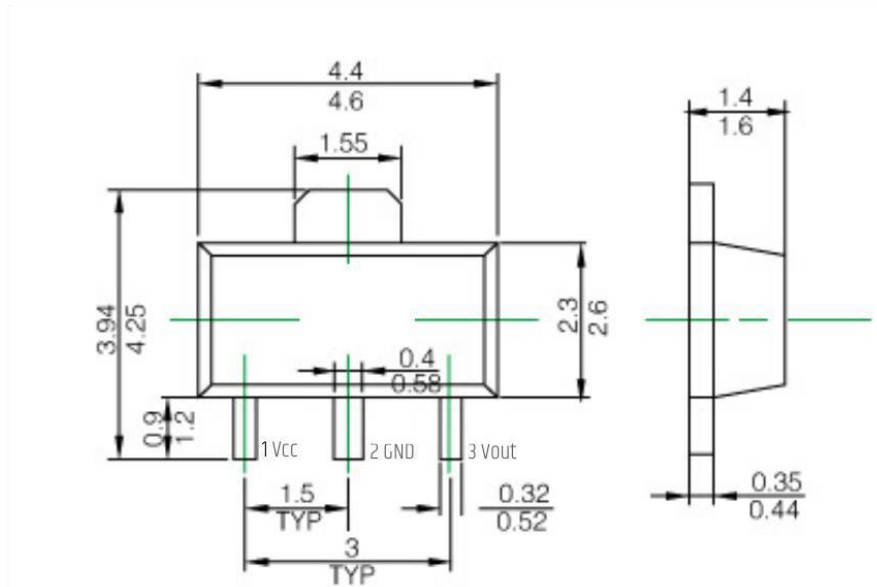
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12. Dimension unit: mm

T0-92S



SOT89



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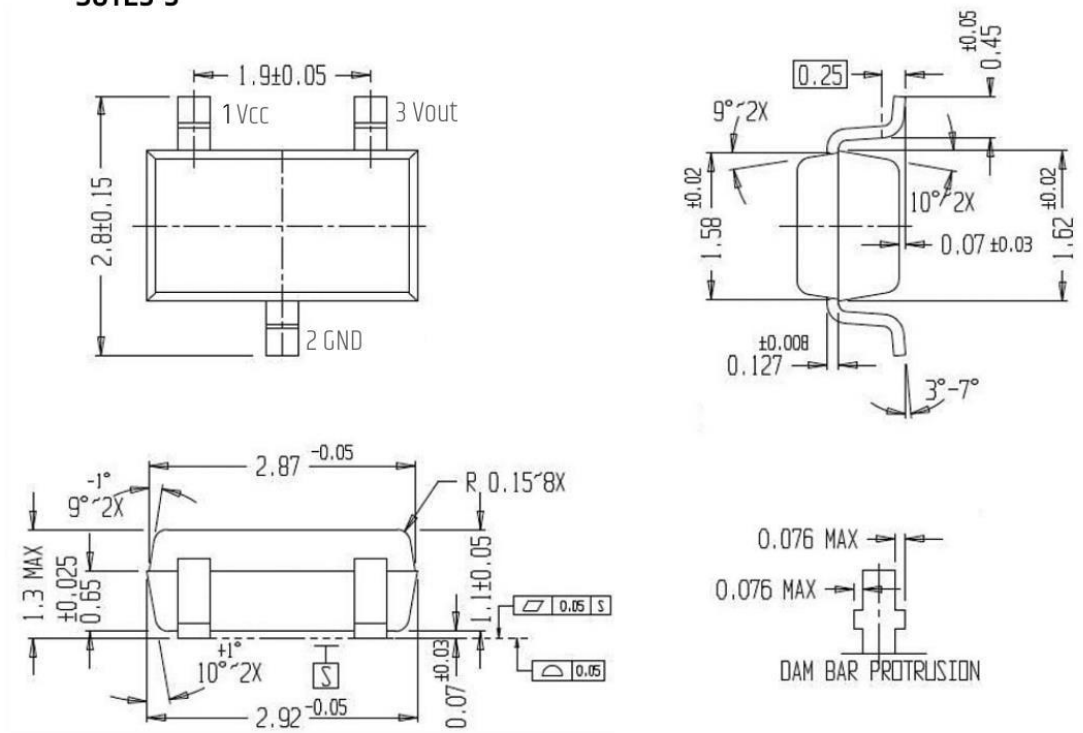
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SOT23-3



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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.

