

OH9245 Omnipolar Hall Switch

1. General Description

OH9245 Omnipolar Hall IC is designed from mixed-signal CMOS technology. It incorporates advanced chopper-stabilization techniques to provide accurate and stable magnetic switch points—the output transistor of the OH9245 switches on in the presence of sufficient South or North magnetic field and switches off in the absence of a magnetic field.

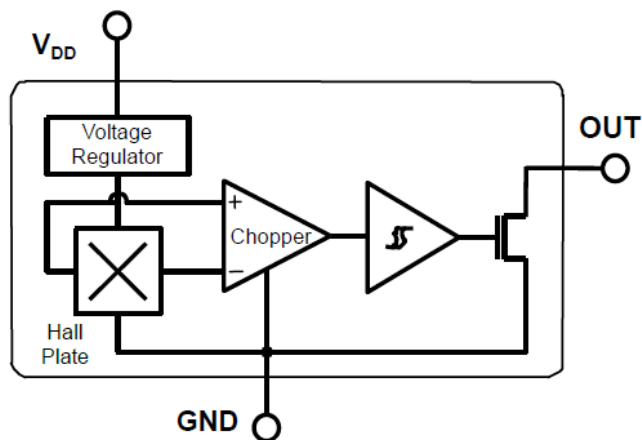
2. Features

- Switching for Both Poles of a Magnet (Omnipolar)
- Stabilized Chopper
- High sensitivity for direct reed switch replacement application
- Solid-state reliability much better than a reed switch
- Operation from 3.5V to 24V

3. Applications

- Solid state switch
- Speed detection
- Position detection
- Magnetic proximity sensor
- Reed switch replacement

4. Functional Block Diagram



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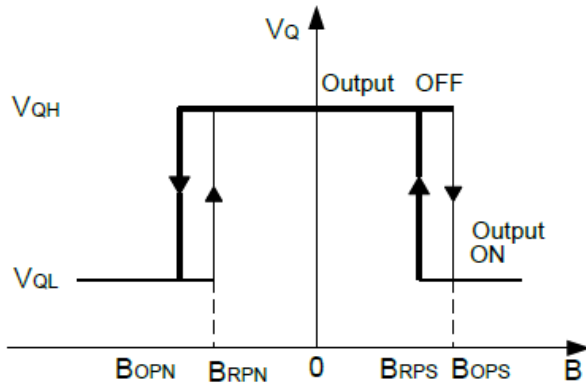
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5. Output Voltage vs. Magnetic Flux Density



6. Order information

Part number	Package type	Quantity/Package
OH9245-T	TO-92S	Bulk, 1000 pcs/bag
OH9245-S	SOT23	3000 PCS/ Reel



7. Absolute Maximum Ratings (TA=25°C)

Parameter	Symbol	Value	Unit
Supply Voltage	V _{CC}	28	V
Output Voltage	V _{OUT}	28	V
Supply Current	I _{CC}	5	mA
Output current	I _{OUT}	10	mA
Operating temperature range	T _A	-40 to 150	°C
Storage temperature range	T _{stg}	-55 to 165	°C
ESD		4000	V

8. Electrical Characteristics (Ta= 25°C)

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	V _{CC}		3.5	-	24	V
Supply Current	I _{AW}	B<B _{RP}	-	2	5	mA
Output Current	I _{OUT}		-	-	10	mA
Output Leakage Current	I _{LEAK}	B<B _{RP} , V _{OUT} =24V	-	1	10	μA
Output Saturation Voltage	V _{SAT}	B>B _{OP} , I _{OUT} =10mA	-		0.5	V
Output Rise Time	t _r	V _{CC} =5V, R _L =1kΩ, C _L =20pF		0.25		μs
Output Falling Time	t _f			0.25		μs
Max Switch Frequency	F _{SW}			10		kHz

9. Magnetic Characteristics V_{CC} =3V, T_A=25°C, (1mT = 10 Gauss)

Parameter	symbol	Conditions	Value			Unit
			Min	Typ	Max	
Operate Point	B _{OPS}	South pole to branded side B>B _{OPS} , V _{OUT} =low(output on)	20	35	50	GS
	B _{OPN}	North pole to branded side B>B _{OPN} , V _{OUT} =low(output on)	-50	-35	-20	GS
Release Point	B _{RPS}	South pole to branded side B<B _{RPS} , V _{OUT} =high(output off)	5	20	35	GS
	B _{RPN}	North pole to branded side B<B _{RPN} , V _{OUT} =high(output off)	-35	-20	-5	GS
Hysteresis	B _H	B _{OPX} - B _{RPX}	-	15	-	GS

B_{OPX}=operating point (output turns on); B_{RPX}=releasing point (output turns off)

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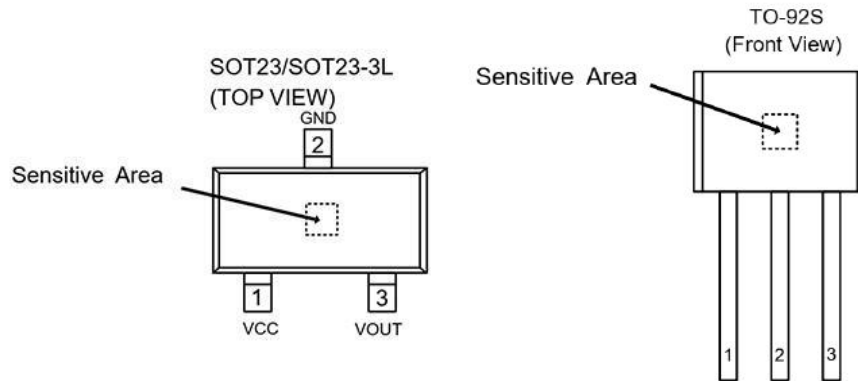
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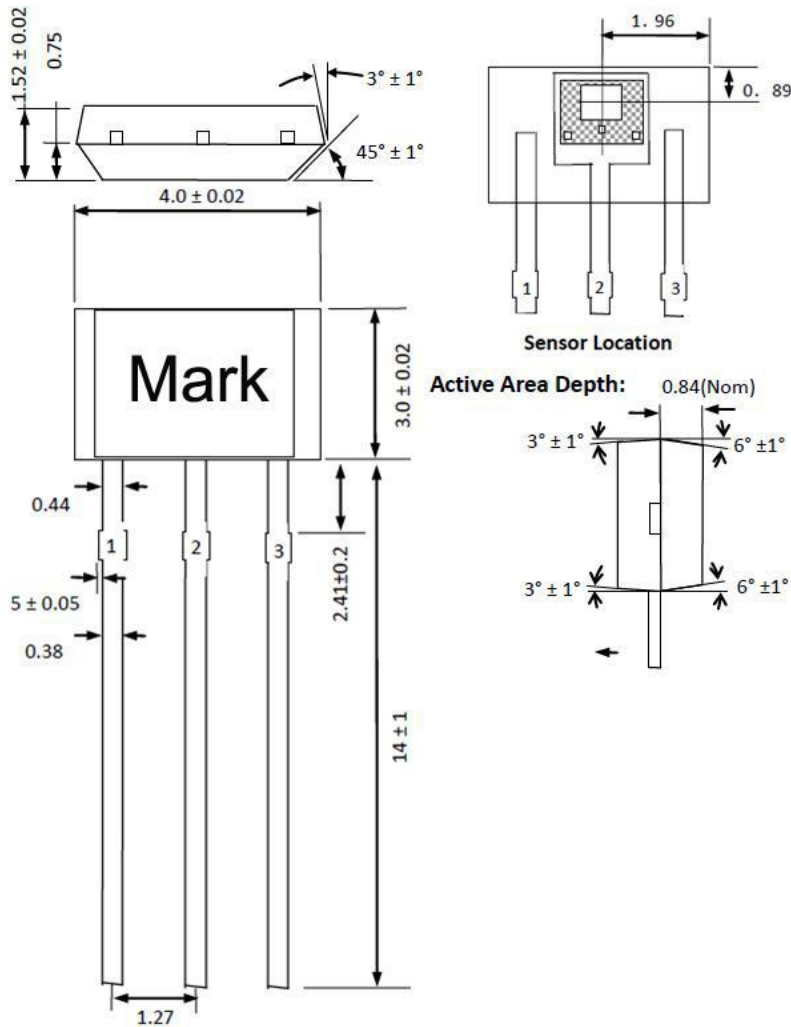
10. Pin configuration



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

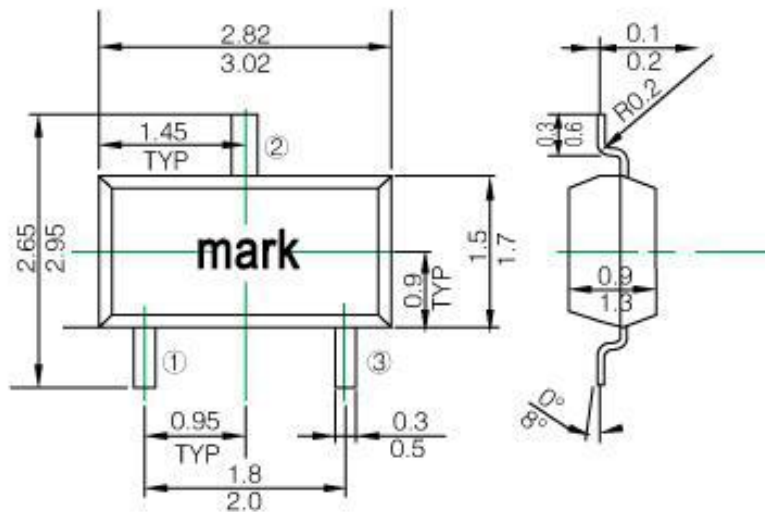


11. Mechanical Dimension Unit: (mm)



TO-92S and SOT23 pins

1. V_{CC}
2. GND
3. V_{OUT}



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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.

