

# OH920

## HIGH SENSITIVITY CMOS HALL-EFFECT LATCH

### Order Information

Package	Temperature Range	Part Number	Marking ID	Packing Type
TO92S-3	-40 to 125°C	OH920-T	920	Bulk
SOT23-3	-40 to 125°C	OH920-S	GS7	Tape & Reel

**General Description:** The OH920 is a Hall-effect latch designed in mixed signal CMOS technology. It is quite suitable for use in automotive, industrial and consumer applications. Superior high-temperature performance is made possible through dynamic offset cancellation, which reduces the residual offset voltage normally caused by device over-molding, temperature dependencies, and thermal stress. The device integrates a voltage regulator, Hall-voltage generator, small-signal amplifier, chopper stabilization, schmitt trigger, and open-drain output. An on-board regulator permits operation with supply voltage from 3.5V to 20V.



### Features

- Wide Operating Voltage Range from 3.5 to 20V
- Symmetrical Switch Points
- Chopper-stabilized Amplifier Stage
- Superior Temperature Stability
- Open-drain Output
- Compact Size
- ESD Rating: 6000V (Human Body Model)

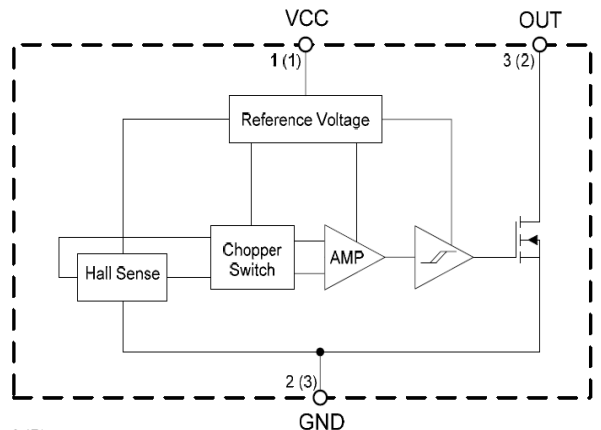
### Applications

- Brushless DC Motor Commutation
- Brushless DC Fan
- Solid-state Switch
- Revolution Counting
- Speed Detection
- High Sensitivity and Unconnected Switch

### Absolute Maximum Ratings (T<sub>A</sub>=25°C)

Supply Voltage V<sub>CC</sub> ..... 3.5-20V  
 Output Current I<sub>O</sub> ..... 25mA  
 Operating Temperature Range T<sub>A</sub> ..... -50 ~ 150°C  
 Storage Temperature Range T<sub>S</sub> ..... -65 ~ 150°C

### Functional Block Diagram



A (B)  
 A for TO-92S-3  
 B for SOT-23-3

# OH920

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### Electrical Characteristics

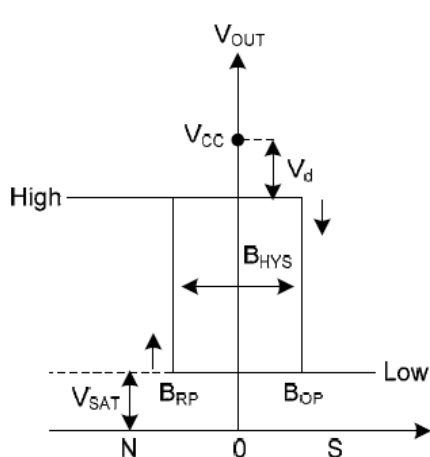
$V_{CC} = 12V$ ,  $T_A = 25^\circ C$ , unless otherwise specified

Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Supply Voltage	$V_{CC}$		3.5	-	20	V
Output Saturation Voltage	$V_{OL}$	$I_{out} = 20mA$ , $B > B_{OP}$	-	185	500	mV
Output Leakage Current	$I_{OH}$	$V_{OUT} = 20V$ , $B < B_{RP}$	-	0.1	10	$\mu A$
Supply Current	$I_{CC}$	$V_{CC} = 12V$	-	3	5	mA
Output Rise Time	$t_r$	$R_L = 1k\Omega$ , $C_L = 20pF$	-	0.4	2	$\mu S$
Output Falling Time	$t_f$		-	0.4	2	$\mu S$

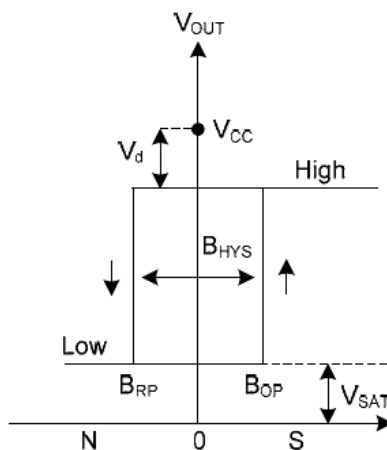
### Magnetic Characteristics

$V_{CC} = 12V$ ,  $T_A = 25^\circ C$ , (1mT = 10 Gauss)

Parameter	symbol	Value			Unit
		Min	Typ	Max	
Operate Point	$B_{OP}$	0.5	2.2	4	mT
Release Point	$B_{RP}$	-4	-2.2	-0.5	mT
Hysteresis	$B_H$	-	4.5	-	mT



For TO-92S-3

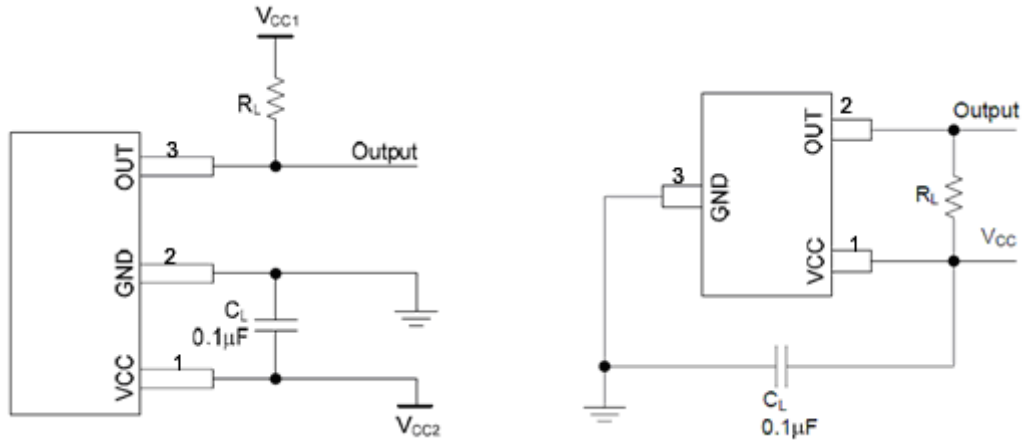


For SOT-23-3

# OH920

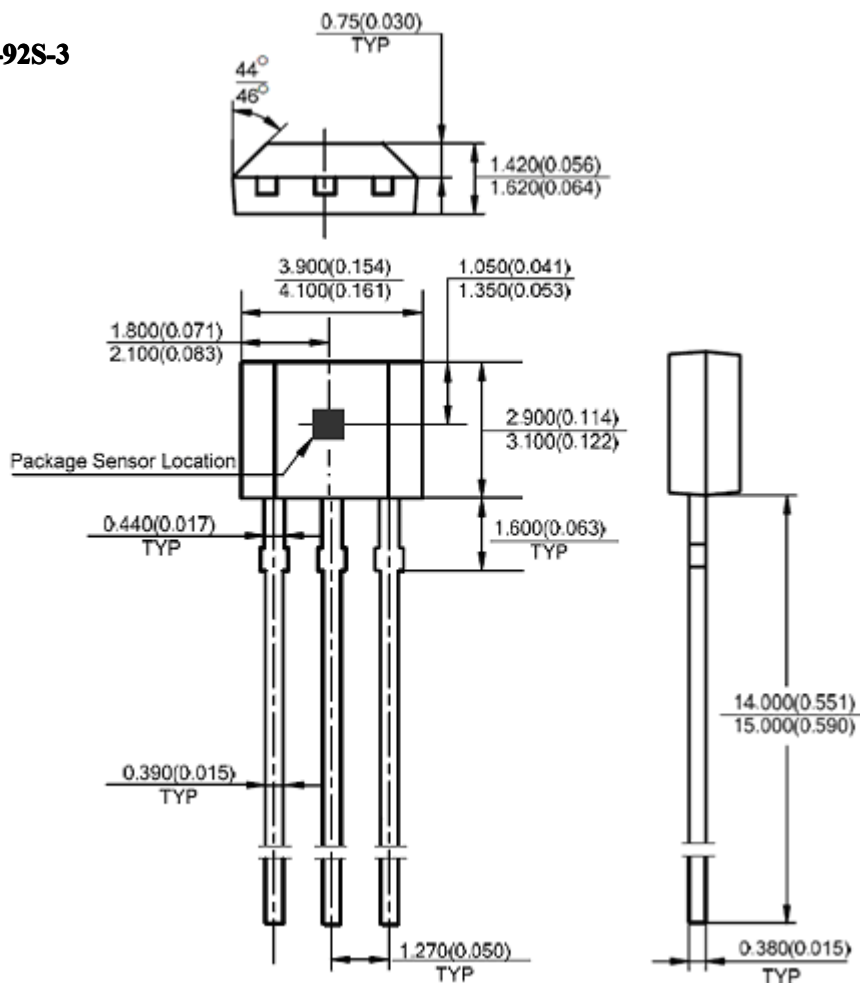
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### Typical Application:



### Mechanical Dimension unit:mm(inch)

#### TO-92S-3



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## HIGH SENSITIVITY CMOS HALL-EFFECT LATCH

**SOT23-3**

