



#### General Description

The OCH182 is an integrated Hall effect latched sensor designed for electronic commutation of brush-less DC motor applications. The device using HV BCD process includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifiers the Hall voltage, and a Schmitt trigger to provide switching hysteresis for noise rejection, and an open-collector output. An internal band-gap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

If a magnetic flux density larger than threshold Bop,output is turned on(low). The output state is held until a magnetic flux density reversal falls below Brp causing OUT to be turned off(high).

#### Features

- Wide operating voltage range: 2.5V~26V
- Operating temperature range: -40°C ~+125°C
- Temperature compensation
- Reverse polarity protection
- Integrated  $10K\Omega$  pull-up resistor
- Package: SOT23-3L

#### Applications

- Rotor Position Sensing
- Brush-less DC Motor
- Speed measurement
- Revolution counting

### Pin Configuration



Name	No.	Status	Description		
VDD	1	Р	IC Power Supply		
OUTPUT	2	0	It is low state during the S magnetic field		
GND	3	Р	IC Ground		

## Application Circuit



Figure 1, application circuit of OCH147

Note:  $C_{IN}$  is for power stabilization and to strengthen the noise immunity, the recommended capacitance is 0.1~1uF. If the VCC power supply is clean, the  $C_{IN}$  can be cancelled.





Hall Effect Latched Sensor

Block Diagram





# Absolute Maximum Ratings

Supply Voltage	28V		
Output OFF Voltage, V <sub>DS</sub>	28V		
Output Maximum Sink Current (AVG)	25mA		
Power Dissinction (SOT22 21)	Ta=25°C	260mW	
Power Dissipation (SOT23-SL)	$\begin{array}{c c} & & & & & & & & & & & & & & & & & & &$	115mW	
Thermal Basistones (SOT22 21)	T <sub>ja</sub>	0.64°C/mW	
	T <sub>ia</sub> T <sub>ic</sub>	0.52°C/mW	
Operating Temperature Range		-40°C ~+125°C	
Storage Temperature Range	-65°C ~+150°C		
Junction Temperature	+150°C		
Lead Temperature(Soldering,10 sec)	+260°C		

# ■ DC Electrical Characteristics(at Ta=25°C)

Parameter	Symbol	Test Conditions	Min.	Тур.	Max.	Unit
Operating Voltage	$V_{DD}$		2.5	-	26	V
Supply current	I <sub>DD</sub>	No use pin is open V <sub>DD</sub> :3.3V~26V, OUT "H"	-	2	5	mA
Output Saturation Voltage	V <sub>SAT</sub>	Vcc=5V, OUT "L"	-	-	0.4	V
Output drop voltage	Vd	Vcc=5V, OUT "H"			20	mV
pull-up resistor	RL		6		14	KΩ

## Magnetic Characteristics

Ta=25°C						
Parameter	Symbol	Min.	Тур.	Max.	Unit	
Operate point	Вор	+5	28	55	G	
Release Point	Brp	-55	-28	-5	G	
Hysteresis	Bhys	30	56	80	G	