■ 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).

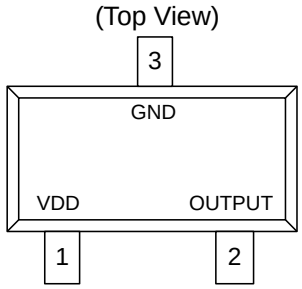
■ Features

- Wide operating voltage range: 2.5V~26V
- Operating temperature range: -40°C ~+125°C
- Temperature compensation
- Reverse polarity protection
- Integrated10KΩpull-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	P	IC Power Supply
OUTPUT	2	O	It is low state during the S magnetic field
GND	3	P	IC Ground

■ Application Circuit

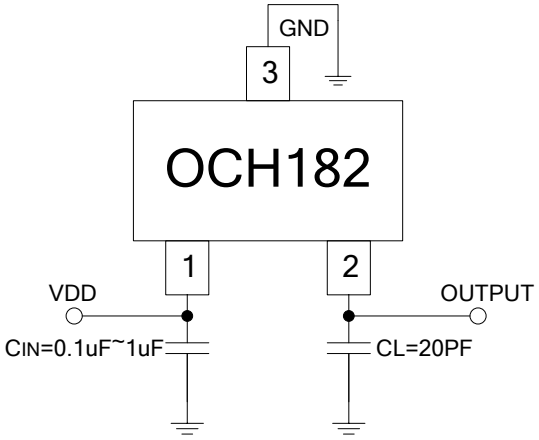


Figure 1, application circuit of OCH147

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.

■ Ordering Information

PartNumber	Package Type	Packing Qty	B_{OP} (Gauss)	B_{RP}(Gauss)	Temperature	Eco Plan	Lead
OCH182WAE	SOT23-3L	3000pcs	28(Typ.)	-28(Typ.)	-40~ 125℃	ROHS	Cu

■ Block Diagram

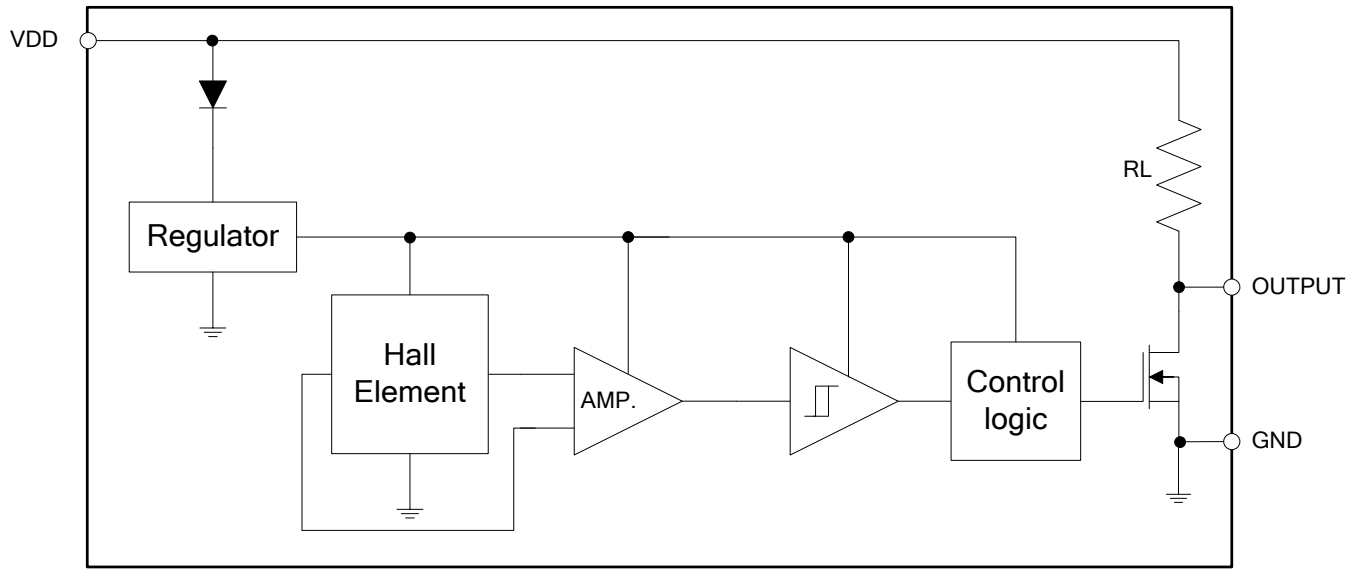


Figure 2, Block Diagram of OCH182

■ Absolute Maximum Ratings

Supply Voltage		28V
Output OFF Voltage,V_{DS}		28V
Output Maximum Sink Current (AVG)		25mA
Power Dissipation (SOT23-3L)	Ta=25°C	260mW
	Ta=100°C	115mW
Thermal Resistance (SOT23-3L)	T_{ja}	0.64°C/mW
	T_{jc}	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.	Typ.	Max.	Unit
Operating Voltage	V_{DD}		2.5	-	26	V
Supply current	I_{DD}	No use pin is open V_{DD}:3.3V~26V, OUT “H”	-	2	5	mA
Output Saturation Voltage	V_{SAT}	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.**	**Typ.**	**Max.**	**Unit**
Operate point	Bop	+5	28	55	G
Release Point	Brp	-55	-28	-5	G
Hysteresis	Bhys	30	56	80	G

■ Output VS Magnetic Pole

Magnetic Pole	Test Conditions	Output
South Pole	B > BOP	Low
North Pole	B < BRP	High

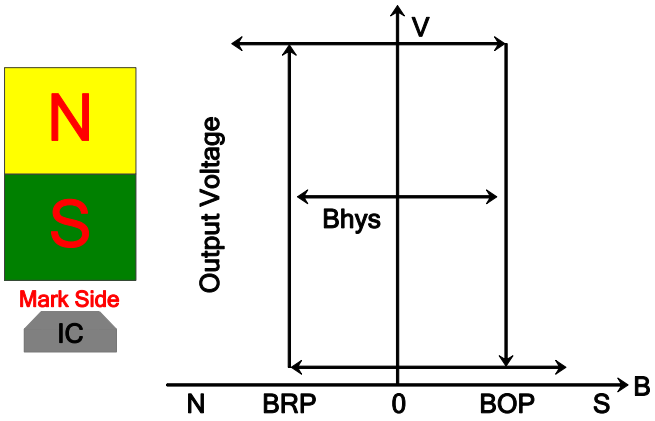


Figure 3, Operational Characteristics

■ Hall Sensor Location

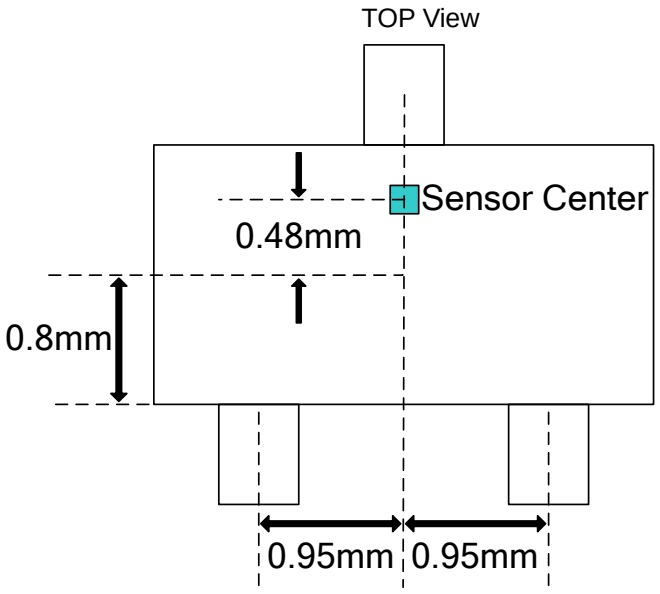


Fig. 4, Hall Sensor Location

■ Land Pattern (for reference only)

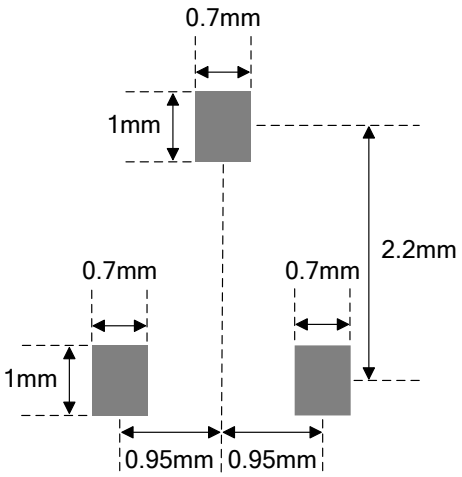
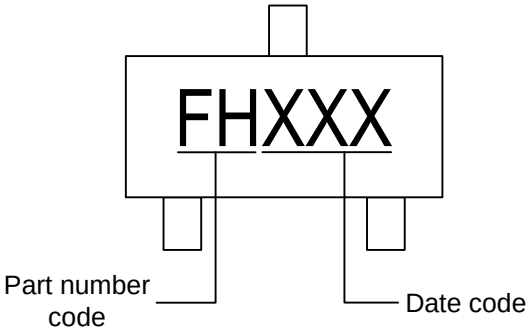


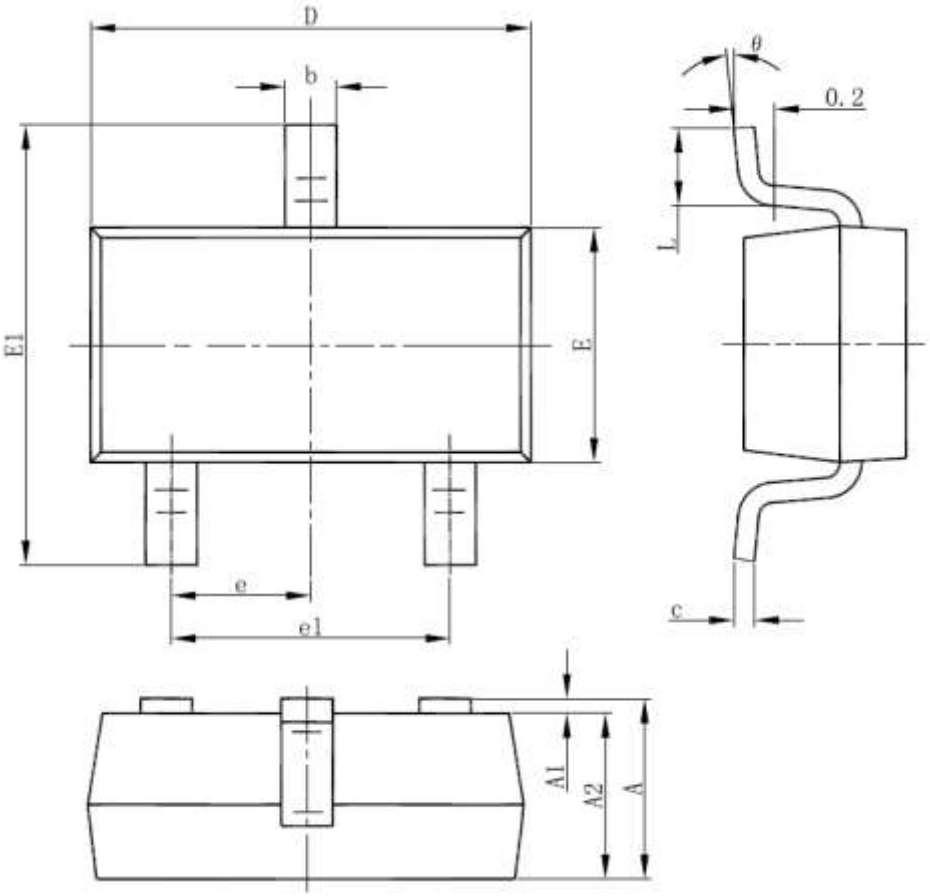
Figure 5, Land Pattern Dimension (SOT23-3L)

■ Marking Information



■ Package Information

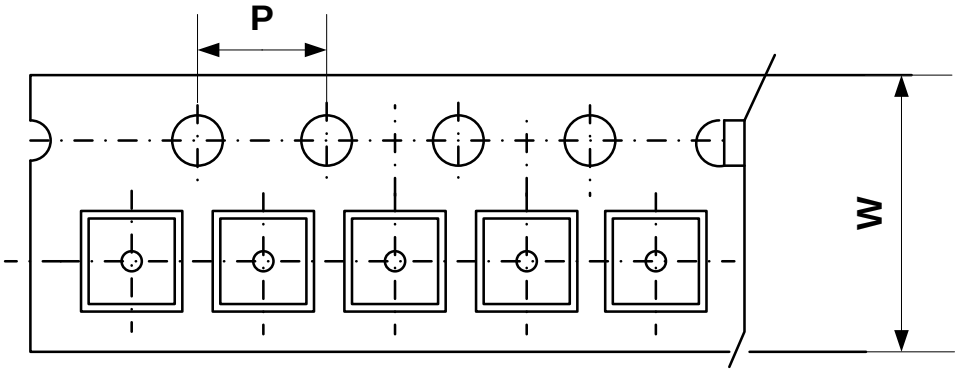
1) SOT23-3L

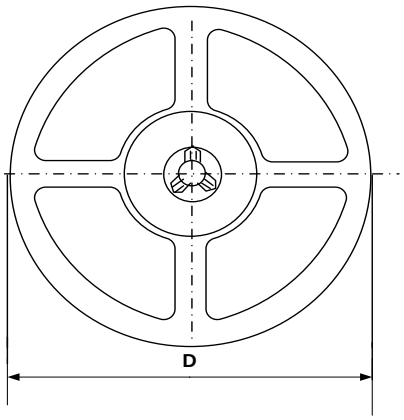


Symbol	Dimensions In Millimeters			Dimensions In Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.050	1.15	1.250	0.041	0.045	0.049
A1	0.000	0.050	0.100	0.000	0.002	0.004
A2	1.050	1.100	1.150	0.041	0.043	0.045
b	0.300	0.400	0.500	0.012	0.016	0.020
c	0.100	0.150	0.200	0.004	0.006	0.008
D	2.820	2.920	3.020	0.111	0.115	0.119
E	1.500	1.600	1.700	0.059	0.063	0.067
E1	2.650	2.800	2.950	0.104	0.110	0.116
e1	1.800	1.900	2.000	0.071	0.075	0.079
e	0.950 REF			0.037 REF		
L	0.300	0.450	0.600	0.012	0.018	0.024
θ	0°	4°	8°	0°	4°	8°

■ Packing Information

1)SOT23-3L





Package Type	Carrier Width (W)	Pitch (P)	Reel Size(D)	Packing Minimum
SOT23-3L	8.0±0.1 mm	4.0±0.1 mm	180±1 mm	3000pcs

Note: Carrier Tape Dimension, Reel Size and Packing Minimum

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