■ General Description

The OCH41F is an integrated Hall Effect latched sensor designed for electronic commutation of brush-less DC motor applications. The device includes an on-chip Hall voltage generator for magnetic sensing, a comparator that amplifiers the Hall voltage, and a Schmitt to provide switching hysteresis for noise rejection, and open-collector output. An internal bandgap regulator is used to provide temperature compensated supply voltage for internal circuits and allows a wide operating supply range.

A north pole of sufficient strength will turn the output ON. In the absence of a magnetic field, the output is OFF.

■ Features

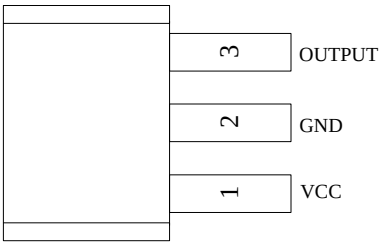
- Wide operating voltage range: 4.0V~30V
- Wide operating temperature range: -40°C ~+150°C
- Reverse polarity protection
- Package: SIP-3L

■ Applications

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

■ Pin Configuration

(Top View)



Pin Name	Pin No.	P/O	Pin Function
VCC	1	P	IC Power Supply
GND	2	P	IC Ground
Output	3	O	It is low state during the S magnetic field

■ Typical Application Circuit

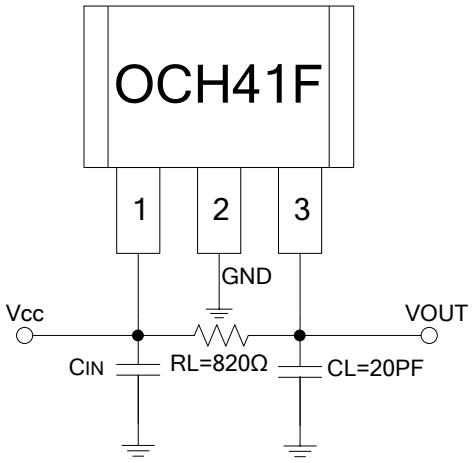


Figure 1, application circuit Of OCH41F

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

■ Block Diagram

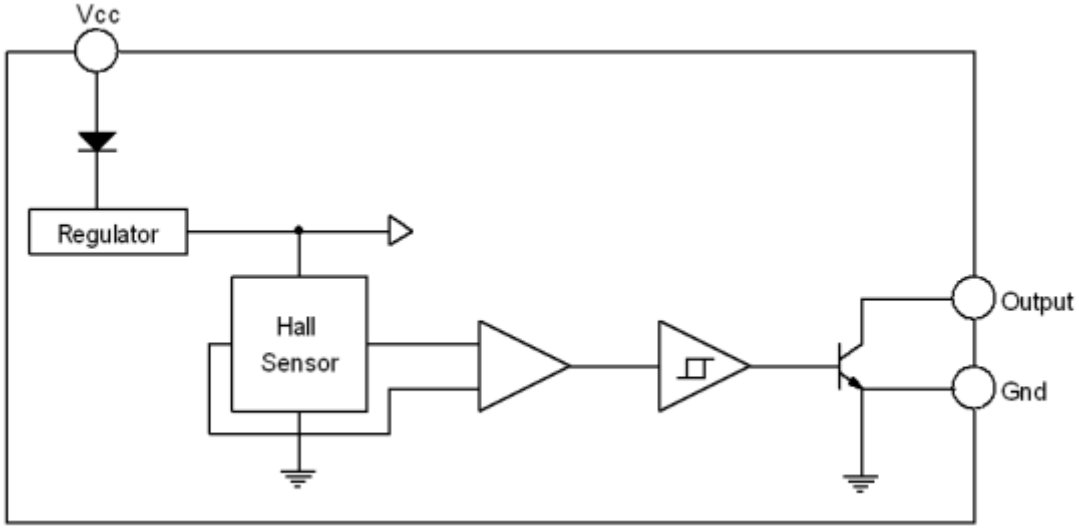


Figure 2, Block Diagram of OCH41F

■ Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
V_{CC} Pin Voltage	V_{CC}	40	V
Output OFF Voltage, V_{CE}	V_{OUT}	40	V
Output Maximum Sink Current (AVE)	I_{SINK}	50	mA
Power Dissipation (SIP-3L)	P_D	400	mW
Operating Temperature Range	T_{OP}	-40 to +150	°C
Storage Temperature Range	T_S	-65 to+150	°C
Junction Temperature	T_J	+160	°C
Lead Temperature (Soldering,10 sec)	T_L	+260	°C
ESD Capability	HBM	8000	V
	MM	800	V

■ Electrical Characteristics(at Ta=25°C, V_{CC}=12V)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_{CC}	Operating Voltage		4.0	-	30	V
Icc	Supply current	Vcc:4.0V~30V, OUT “H”	-	3.3	7	mA
V_{SAT}	Output Saturation Voltage	Vcc=12V, OUT “L”, I_{SINK}=25mA	-	-	0.4	V
t_r	Output Rise time	R_L=820Ω, C_L=20pF	-	0.1	0.7	uS
t_f	Output Fall time	R_L=820Ω, C_L=20pF	-	0.265	1	μS

■ Magnetic Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operate point	Bop	+5	-	+80	G
Release Point	Brp	-80	-	-5	G
Hysteresis	Bhys	30		150	G

■ Output VS Magnetic Pole

Part No.	Magnetic Pole	Test Conditions	Output
OCH41F	South Pole	B > BOP	Low
OCH41F	North Pole	B < BRP	High

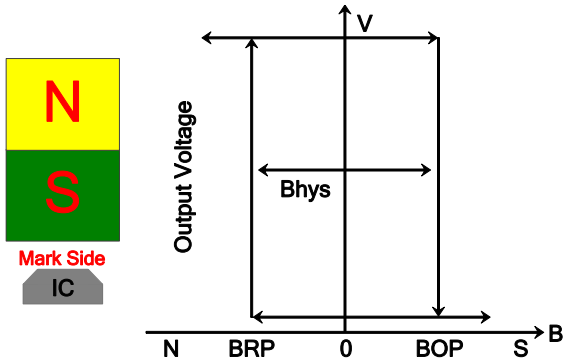
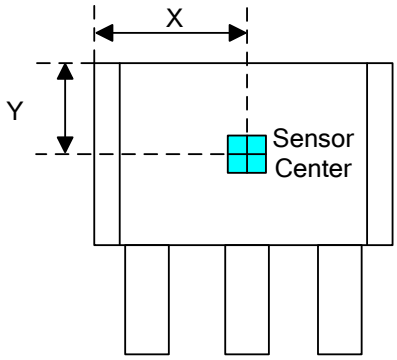


Figure 3, Operational Characteristics

■ Hall Sensor Location

The Figure4 is hall sensor location, where marks the IC number.

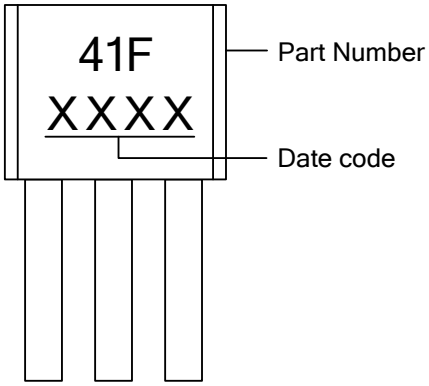


Orientation	Value	Unit
X	2.10	mm
Y	1.55	mm

Figure4, OCH41F Hall Sensor Location

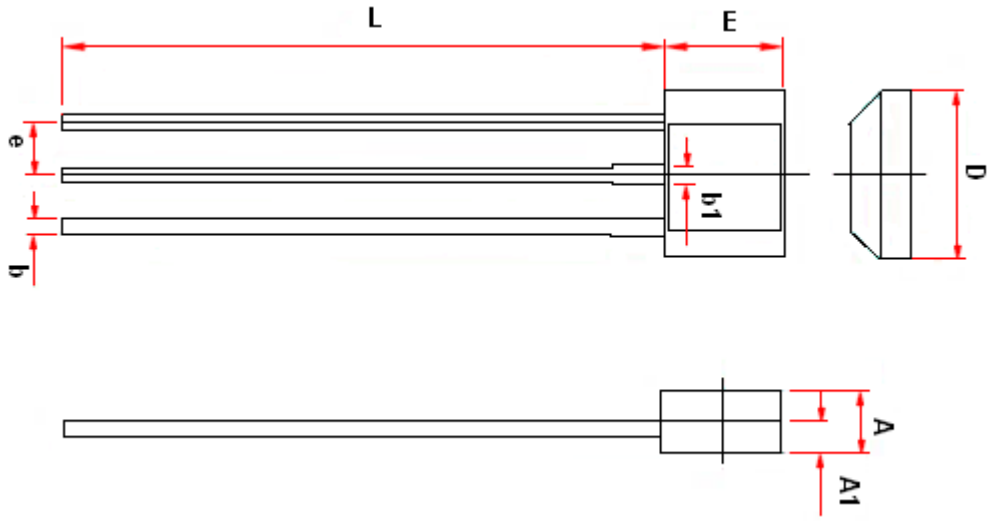
■ Marking Information

1) SIP-3L



■ Package Information

1) SIP-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.245	1.753	0.049	0.069
A1	0.750(BSC)		0.030(BSC)	
b1	0.406	0.508	0.016	0.020
b	0.330	0.432	0.013	0.017
D	3.962	4.216	0.156	0.166
E	2.870	3.124	0.113	0.123
e	1.270(BSC)		0.05(BSC)	
L	13.60	15.60	0.535	0.614

■ Packing Information

1. Packing Type: Bulk
2. Packing minimum: 1000pcs

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