



General Description

The OCH40171 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 trigger 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.

Features

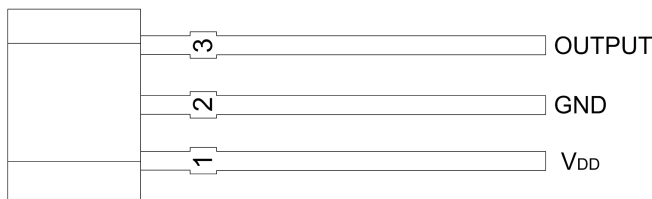
- AEC-Q100 qualified
- Wide operating voltage range: 3.8V~30V
- Wide operating temperature range: -40°C ~+150°C
- Reverse polarity protection
- Maximum output sink current 25mA
- Package: SIP3L 、 SOT23-3L

Applications

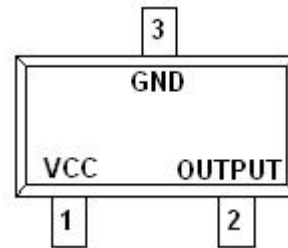
- Rotor Position Sensing
- Brush-less DC Fan
- Brush-less DC Motor
- Speed measurement

Pin Configuration

(Top View)



SIP3L



SOT23-3L

Pin Name	Pin No.		P/O	Pin Function
	SIP3L	SOT23-3L		
VCC	1	1	P	IC Power Supply
GND	2	3	P	IC Ground
Output	3	2	O	It is low state during the S magnetic field

Typical Application Circuit

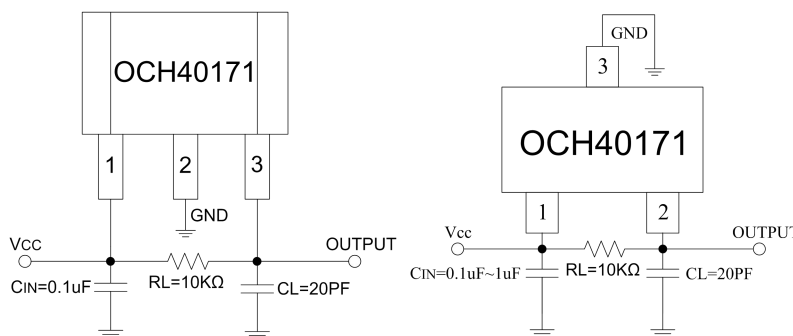


Figure 1, application circuit Of OCH40171

Note: CIN 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 CIN can be cancelled.

■ **Ordering Information**

Part Number	Package Type	Packing Qty	B <sub>OP</sub> (Gauss)	B <sub>RP</sub> (Gauss)	Temperature	Eco Plan	Lead
OCH40171MF	SIP-3L	1000pcs	+45 (Typ.)	-45(Typ.)	-40 ~ +150°C	ROHS	Cu
OCH40171SWAF	SOT23-3L	3000pcs	+45 (Typ.)	-45(Typ.)	-40~ +150°C	ROHS	Cu

■ **Block Diagram**

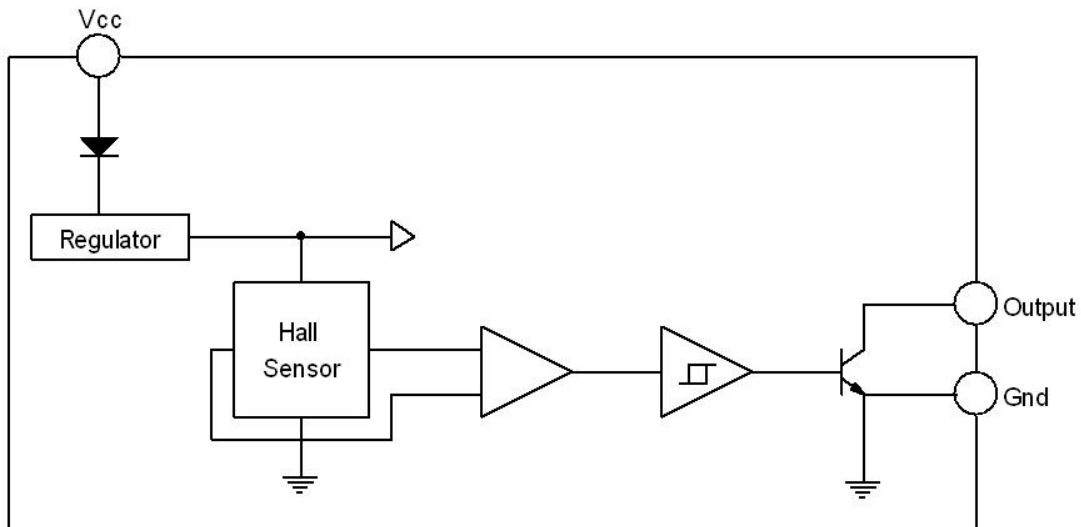


Figure 2, Block Diagram of OCH40171

■ **Absolute Maximum Ratings**

Parameter	Symbol	Rating	Unit
V <sub>CC</sub> Pin Voltage	V <sub>CC</sub>	40	V
Output OFF Voltage, V <sub>CE</sub>	V <sub>OUT</sub>	40	V
Output Maximum Sink Current (AVE)	I <sub>SINK</sub>	50	mA
Power Dissipation	P <sub>D</sub>	260	mW
Operating Temperature Range	T <sub>OP</sub>	-40 to +150	°C
Storage Temperature Range	T <sub>S</sub>	-65 to +150	°C
Junction Temperature	T <sub>J</sub>	+160	°C
Lead Temperature (Soldering, 10 sec)	T <sub>L</sub>	+260	°C
ESD Capability	HBM	8000	V
	MM	800	V

■ **Electrical Characteristics**(at Ta=25°C, V<sub>CC</sub>=12V)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V <sub>CC</sub>	Operating Voltage		3.8	-	30	V
I <sub>CC</sub>	Supply current	V <sub>CC</sub> :4.0V~30V, OUT "H"	3.0	3.3	7	mA
V <sub>SAT</sub>	Output Saturation Voltage	V <sub>CC</sub> =12V, OUT "L" , I <sub>SINK</sub> =25mA	-	-	0.4	V
t <sub>r</sub>	Output Rise time	R <sub>L</sub> =820Ω, C <sub>L</sub> =20pF	-	0.1	0.7	μS
t <sub>f</sub>	Output Fall time	R <sub>L</sub> =820Ω, C <sub>L</sub> =20pF	-	0.265	1	μS