



General Description

The OCH1405N is a switched Hall-Effect IC, which is for contact less switching applications. The device includes an on-chip Hall voltage generator for magnetic sensing, an amplifier that amplifies the Hall voltage, a Schmitt trigger to provide switching hysteresis for noise rejection, and an open-drain output. The bandgap regulator allows a wide operating voltage range. OCH1405N is rated for operating temperature range from -40°C to 150°C and voltage range from 3.8V to 24V. OCH1405N are capable of continuous 50mA sinking out and maybe cycled as high as 50mA maximum.

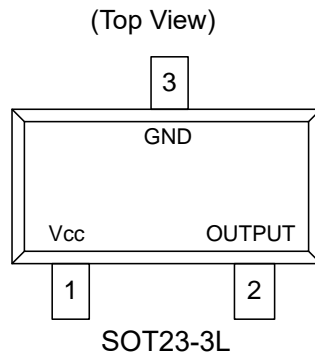
Features

- Unipolar Hall Effect Switch Sensor
- Wide operating voltage range: 2.7V~24V
- Operating Temperature: -40°C~+150°C
- Maximum output sink current: 50mA
- Open-Drain output
- Reverse polarity protection
- Package: SOT23-3L

Applications

- Intelligent Circuit Breaker
- RPM Detection
- Speed measurement
- Position Detection
- Safe Alarm Device

Pin Configuration



Name	PIN	Status	Description
V _{cc}	1	P	IC Power Supply
GND	2	P	IC Ground
OUTPUT	3	O	It is low state during the N pole magnetic field

Application Circuit

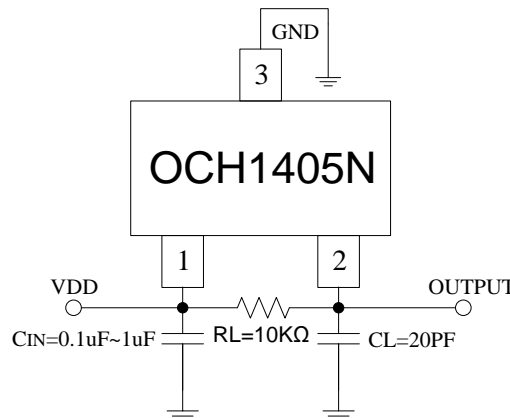


Figure 1, application circuit

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



■ **Ordering Information**

Part Number	Package Type	Packing Qty	B _{OP} (Gauss)	B _{RP} (Gauss)	Temperature	Eco Plan	Lead
OCH1405NWA	SOT23-3L	3000pcs	-120(Typ.)	-65(Typ.)	-40 ~ +150°C	ROHS	Cu

■ **Block Diagram**

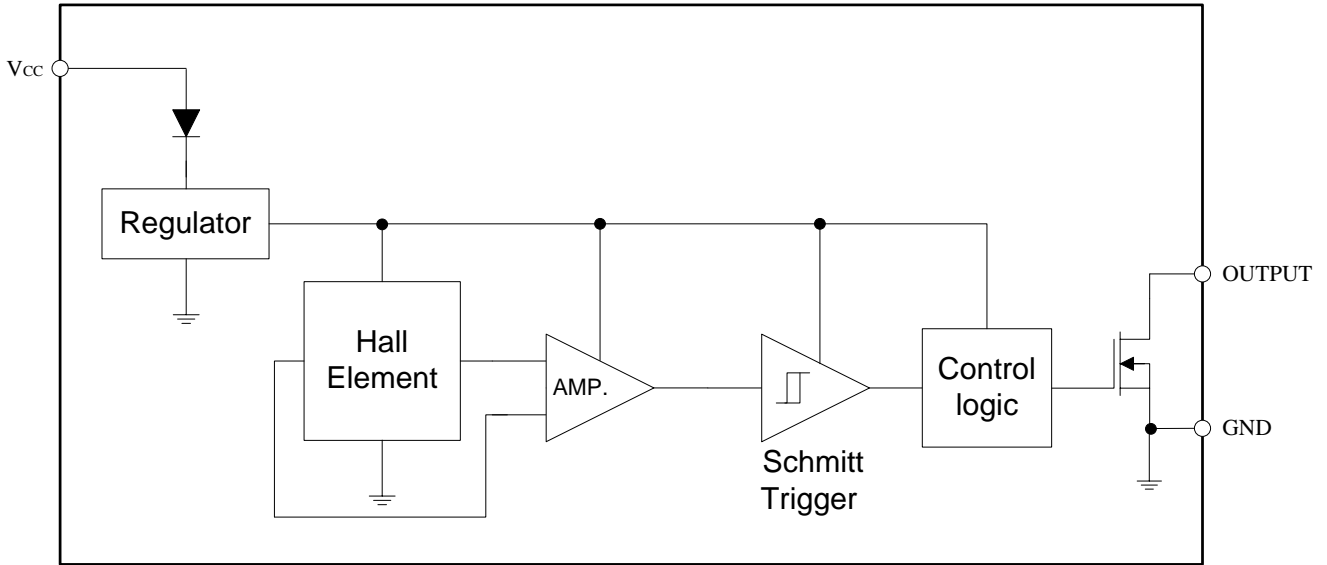


Figure 2, Block Diagram of OCH1405N

■ **Absolute Maximum Ratings**

Supply Voltage		28V
Output OFF Voltage, V _{DS}		28V
Output Maximum Sink Current (AVG)		50mA
Power Dissipation (SOT23-3L)	T _a =25°C	260mW
Thermal Resistance (SOT23-3L)	T _{ja}	0.52°C/mW
	T _{jc}	0.64°C/mW
Operating Temperature Range		-40°C ~+150°C
Storage Temperature Range		-65°C ~+150°C
Junction Temperature		+150°C
Lead Temperature(Soldering,10 sec)		+260°C

■ **DC Electrical Characteristics**(at T_a=25°C)

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Operating voltage	V _{CC}		3.8	-	24	V
Supply current	I _{CC}	No use pin is open V _{DD} :3.8V~24V, OUTPUT "H"	-	1.9	6	mA
Output saturation voltage	V _{SAT}	V _{CC} =5V, OUT "L", I _o =25mA	-	0.15	0.4	V
Output Leakage Current	I _L	OUT "H"	-	0.01	5	uA
Output rise time	t _r	RL=820Ω, CL=20PF	-	145	1000	nS
Output fall time	t _f	RL=820Ω, CL=20PF	-	90	1000	nS