■ General Description

OCS OCH8801 is a digital linear hall sensor to measure magnetic flux intensity. It is an integrated chip with magnetic sensors and control ASIC with 16-bit ADC output.OCH8801 provides an I2 C digital output with fast mode up to 400 kHz. Wide dynamic range operation, high resolution and compact form factor features make it the best candidate for handheld, wearable and IoT devices.

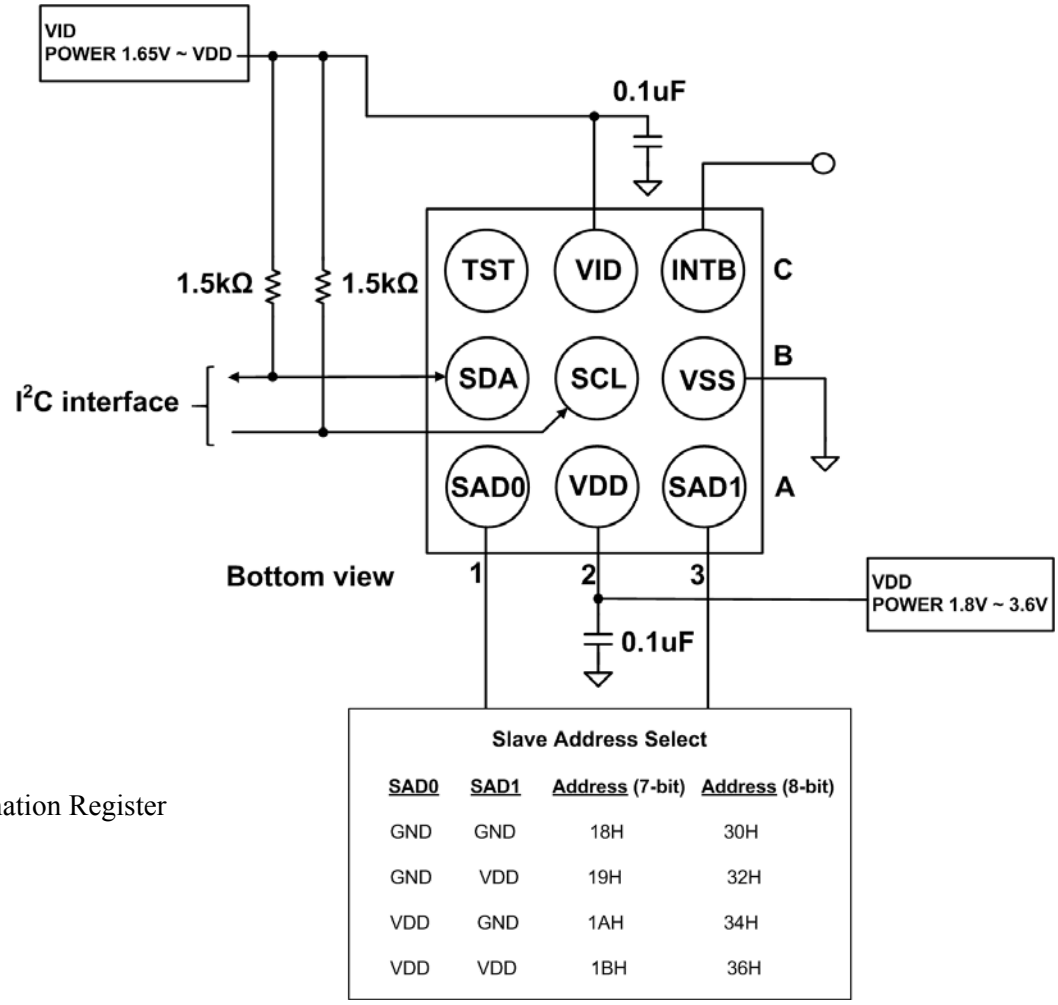
■ Features

- Single chip linear hall sensor with digital output
- Compact form factor, 1.33 x 1.33 x 0.53mm3 , 9-pin WLCSP-BGA package
- I2C slave, Fast Mode up to 400kHz
- High dynamic range of maximum ±40.96mT
- High resolution of maximum 0.3125 uT/LSB (16-bit setting with 10.24mT dynamic range)
- High output data rate of maximum 500Hz
- 8~16-bit adjustable data output
- Operation Temperature -40~85o C
- Built-in oscillator for internal clock source
- Power on Reset circuit

■ Applications

- Magnetometer for external magnet detection
- Lid opening angle detection
- Displacement detection
- VCM modules

■ Application Circuit and Pin Description



More Information Register

Slave Address Select

SAD0	SAD1	Address (7-bit)	Address (8-bit)
GND	GND	18H	30H
GND	VDD	19H	32H
VDD	GND	1AH	34H
VDD	VDD	1BH	36H

Figure 1. Application Circuit

PIN	Name	I/O type	Function
A1	SAD0	I	I2 C slave address selection, connect to GND or VDD. Internally pull-low when floating
A2	VDD	Supply	Power supply voltage: 1.8~3.6V
A3	SAD1	I	I2 C slave address selection, connect to GND or VDD. Internally pull-low when floating
B1	SDA	I/O	I2 C data, should be connected to VID with 1.5k Ohm resistor
B2	SCL	I	I2 C clock, should be connected to VID with 1.5k Ohm resistor
B3	VSS	Supply	Should be connected to Ground
C1	TST	I/O	Keep it floating or connect it to VDD/GND*1
C2	VID	Supply	Digital power supply voltage: 1.65~VDD.
C3	INTB	O	When detected magnetic flux density meets specific threshold level, INTB become low level unless user clear it manually via PERSINT[0]. Internally pull-high when floating.

■ Ordering Information

PareNumber	PackageType	Packing Qty.	Temperature	Eco Plan
OCH8801	WLCSP-9	3000	-40~+85℃	ROHS

■ Block Diagram

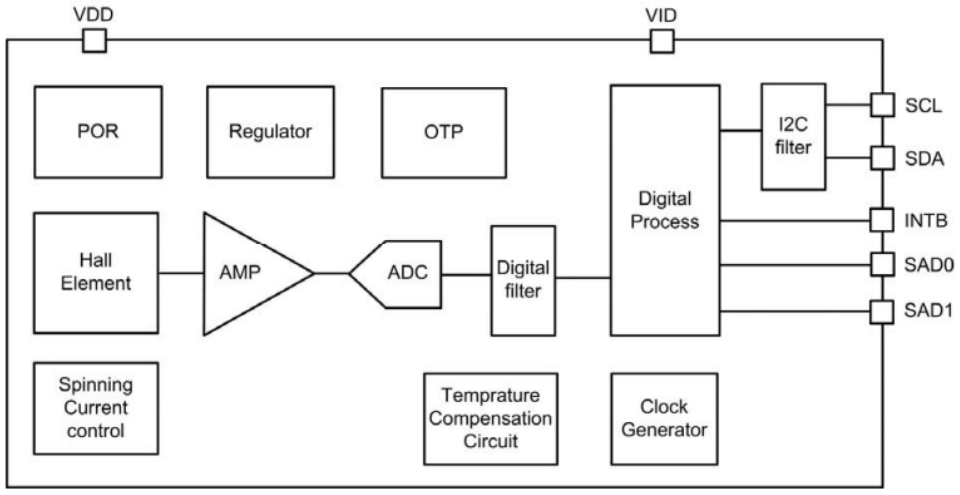


Figure 1. Block Diagram

Absolute Maximum Ratings

Symbol	Parameter	Limits	Unit
TSTG	Storage Temperature	-40 to +150	o C
VDD	Power Supply Voltage(VDD)	-0.5 to +3.8	V
VID	Power Supply Voltage(VID)	-0.5 to +3.8	V
VIN	Digital Input Voltage	-0.3 to VDD+0.3	V
VESD-HBM	Electrostatic Discharge*1	-2000 to 2000	V
VESD-CDM	Electrostatic Discharge*3	-1000 to 1000	V
Reflow Classification		JESD22-A113 with 260℃ Peak Temperature	