Low Voltage Operation
Low Current Consumption
Super-small Package

ABLIC

S-5718

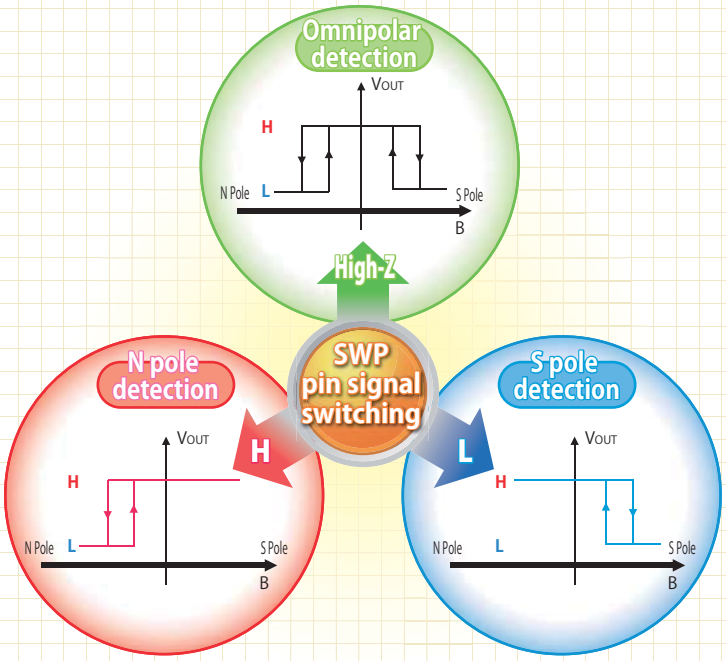
Omnipolar / Unipolar Detection Type Hall Effect Switch IC with Switchable Detection Pole Function

S-5718 Series

- Switchable between omnipolar detection, N pole detection and S pole detection in a single IC due to the input signal to SWP pin
- Achieves industry's top class low voltage operation of V_{DD}=1.45V(min.)
- Wide hysteresis products which can reduce chattering are also selectable

Switchable detection pole function

Switching the SWP pin signal by a controller between High-Z, H and L allows the S-5718 to be switched between 3 operation modes of omnipolar detection, N pole detection and S pole detection.



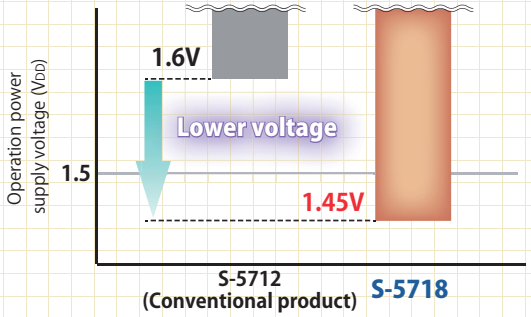
Controlling the SWP pin using digital I/O enables magnetic polarity discrimination.

SWP pin \ Magnetic polarity	N pole proximity	S pole proximity	No magnet
High-Z	L	L	H
H	L	H	H
L	H	L	H

(For active "L")

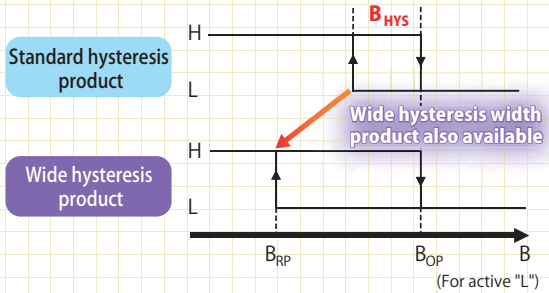
Low voltage operation

Achieves industry's top class low voltage operation for a Hall effect IC
Capable of operating even at an extremely low power supply voltage of 1.45V



Selectable hysteresis width

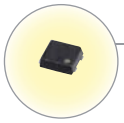
Wide hysteresis products can achieve stable output results even in environments where the distance between the Hall effect IC and magnet varies easily.



Specifications

Item	S-5718	
Power supply voltage range	V_{DD}=1.45 to 3.6V	
Operation temperature range	Ta=−40 to +85℃	
Operating cycle (current consumption)	t_{CYCLE}=102.1ms typ. (I_{DD}=1.4μA typ.)	
	t_{CYCLE}=50.5ms typ. (I_{DD}=2.0μA typ.)	
	t_{CYCLE}=5.7ms typ. (I_{DD}=12.0μA typ.)	
Magnetic sensitivity (hysteresis width)	1.8mT typ. (B_{HYS}=0.7mT typ.)	—
	3.0mT typ. (B_{HYS}=0.8mT typ.)	3.0mT typ. (B_{HYS}=1.3mT typ.)
	4.5mT typ. (B_{HYS}=1.0mT typ.)	4.5mT typ. (B_{HYS}=2.5mT typ.)
Output form	CMOS output	

Package



SNT-4A

1.6×1.2×t0.5max.(mm)

Applications

Smart phone

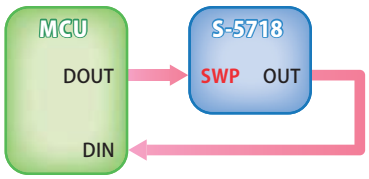
Tablet PC

Contact our sales office for information on the sample.
See the latest datasheet on each product series for product information.

Examples of Application Circuits

Switching the SWP pin input signal makes it possible to identify the polarity of magnets in close proximity.

Example of connection circuits for MCU and S-5718

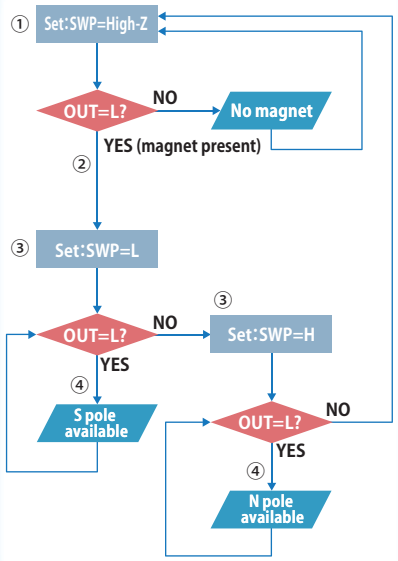


"This circuit allows for..."

- Setting of the polarity of detected magnets after assembly
- Switching operation based on the polarity of magnets in close proximity
- Identification of accessories based on magnet polarity

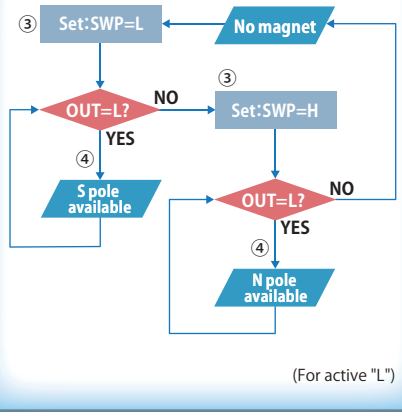
<Flowchart example 1>

When using an I/O with ON/OFF function



<Flowchart example 2>

When using a general purpose I/O



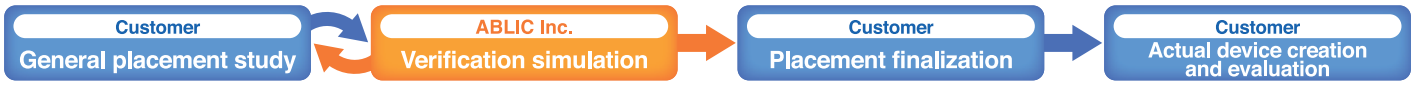
① Turn MCU digital output pin OFF and set SWP pin to "High-Z" to detect magnet proximity
② The S-5718 will enter the detection state
③ Turn MCU digital output pin ON and set SWP pin to "H" or "L"
④ Identify the polarity of magnets in close proximity

Magnetic Simulation Service

High-accuracy magnetic simulation service reduces your development workload, period, and costs

We offer a magnetic simulation service to verify that your magnet is ideal for your system until your system design is completely finished. By utilizing simulations effectively, it is possible to achieve high-accuracy design and reduce the number of times of prototype production. For more information, contact our sales office.

- **Example of a product development flow**



ABLIC Inc.
www.ablicinc.com

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www.ablicinc.com/en/semicon/sales/

Specifications are subject to change without notice.
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