
Low Voltage Single Coil Hall Effect IC with Complementary Output Drivers

Features

- Operates from 1.8 V to 4.5 V supply voltage
- On-chip Hall Sensor
- On-chip temperature compensation circuitry minimizes shifts in on and off points and hysteresis over temperature and supply voltage
- Output sinking capability up to 200mA for driving large load.
- Available in rugged low profile SOT-25 packages.

Functional Description

WSH520 is designed to integrate Hall sensor with complementary output drivers on the same chip, it is suitable for single coil DC brushless motors. It includes a temperature compensated circuit, a differential amplifier, a Hysteresis controller, complementary bi-direction drivers for sinking and driving large current load.

WSH520 are rated for operation over temperature range from -20°C to 75°C and voltage ranges from 1.8V to 4.5V.

Pin Definition (SOT-25)

Name	P/I/O	Pin#	Description
Vdd	P	1	Positive Power Supply
Vss	P	2	Ground
NC	-	3	No Connection
OUT2	O	4	Output Pin #2
OUT1	O	5	Output Pin #1

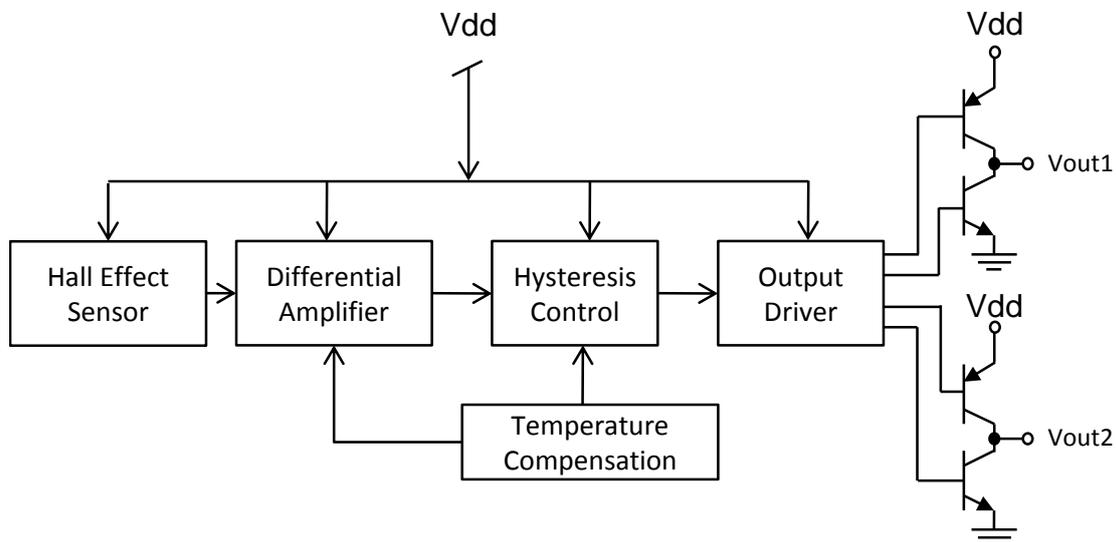
Absolute Maximum Rating (at Ta = 25°C)

Supply Voltage	Vdd -----	5V
Magnetic flux density	B -----	Unlimited
Output ON Current (continuous)	Ic -----	220mA
Operating Temperature Range	Ta -----	-20°C to +75°C
Storage Temperature Range	Ts -----	-65°C to +150°C
Package Power Dissipation	Pd -----	350mW for SOT-25

Electrical Characteristics (T = +25 °C, Vcc = 1.8 V to 4.5V)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Supply Voltage	Vdd	—	1.8	—	4.5	V
Output Saturation Voltage	Vout(sat) Vdrive+Vsink	Vdd=3V,Io=150mA	—	0.6	1.0	V
Supply Current	Isupply	Vdd=3V,Io=150mA	—	10	20	mA

Function Block



Functional Block Diagram

Winson reserves the right to make changes to improve reliability or manufacturability.

Magnetic Characteristics

Characteristic	Symbol	Grade	Min.	Typ.	Max.	Unit
Operating Point	Bop	A		+35	+70	Gauss
		B		+50	+100	Gauss
Release Point	Brp	A	-70	-35		Gauss
		B	-100	-50		Gauss
Hysteresis Window	Bhys			70	150	Gauss

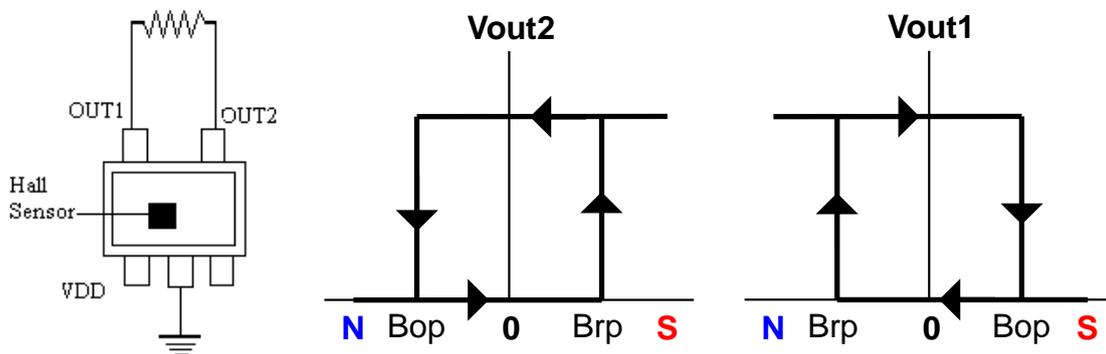
★ "+" means South magnetic field.

★ 1 mT = 10 Gauss

Ordering Information

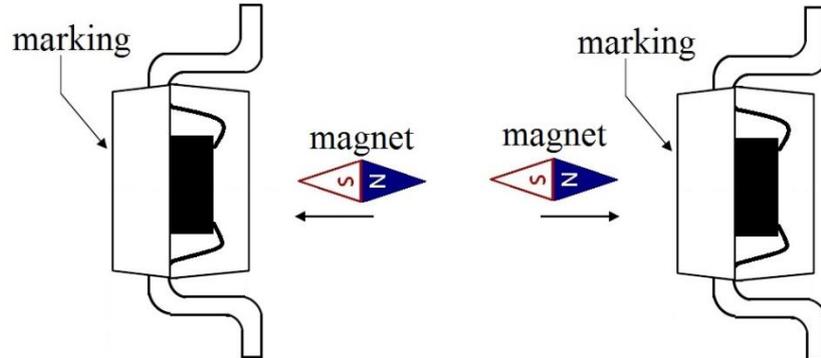
WSH520-XPDN (SOT25)	Grade: 1.70 Gauss 2.100 Gauss
Grade Halogen Free	

WSH520 Complementary Output 1 & Output 2 VS. Magnetic Field



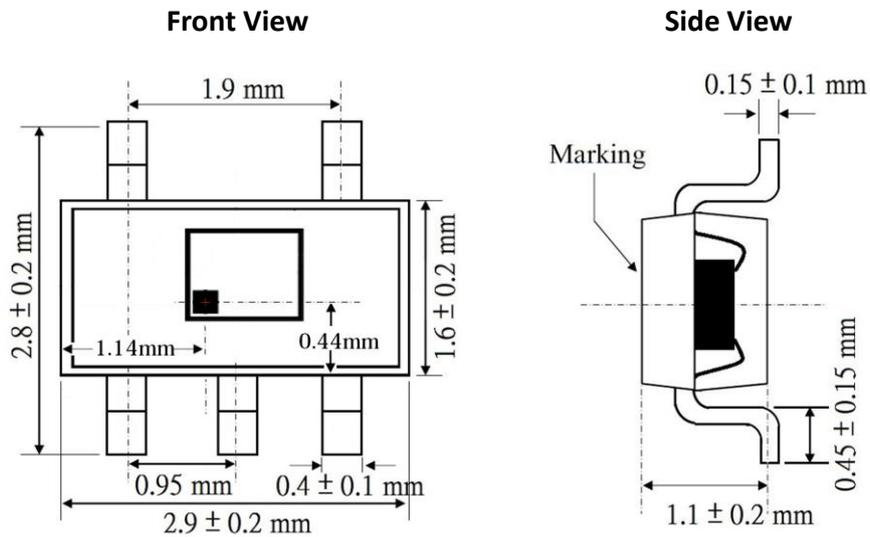
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Hall Device Sensing Direction



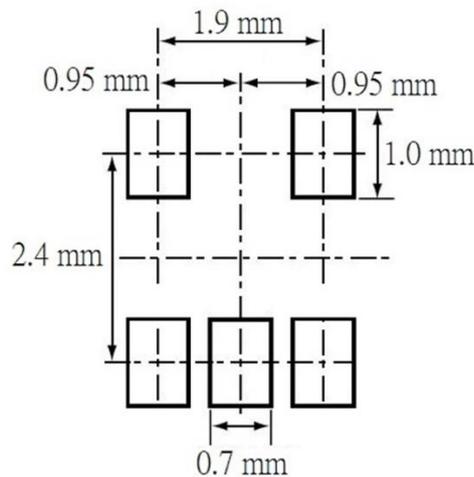
Package Information

《SOT-25》



PCB Layout Reference View

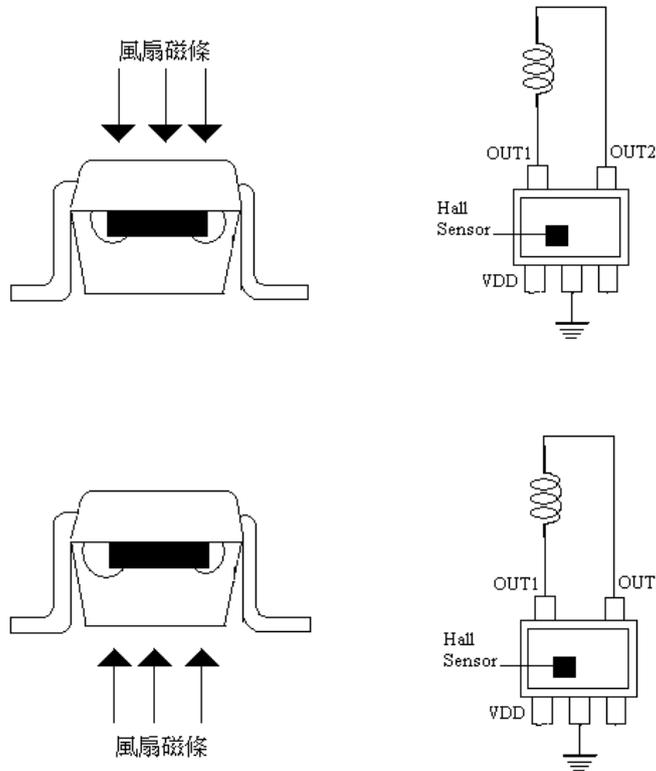
《SOT-25》



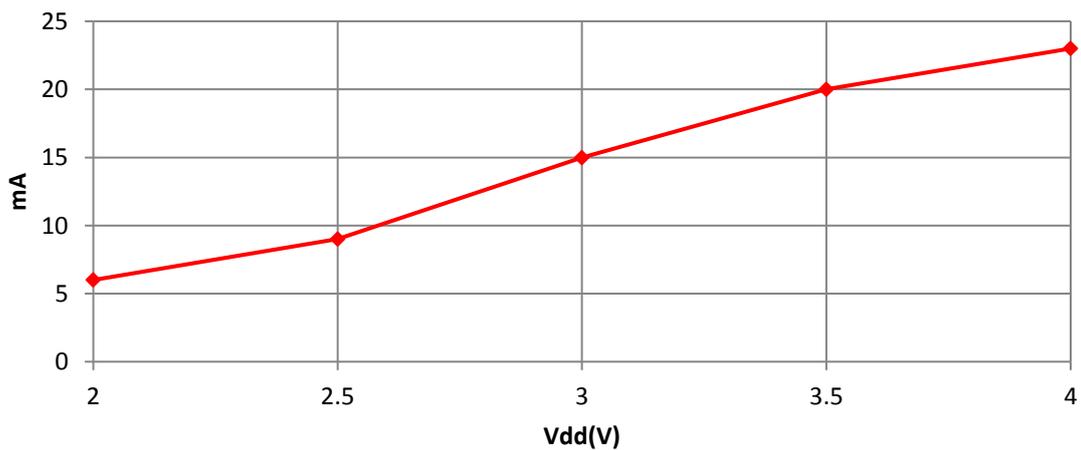
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Application Circuit

《Fan Application》



WSH520 I supply V.S Supply Voltage



Precautions for the use of Hall Sensor IC: please refer to Winson Website->

Products->Application Note ->Hall Sensor IC Application Note:

<http://www.winson.com.tw/Product/83>

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