

Low voltage Single Coil Hall Effect IC with Complementary Output Drivers

Features:

- Operate from 1.8V to 4.5V supply voltage.
- On-chip Hall sensor.
- Internal thermal compensation circuit enable operation in a wide range temperature without loss of sensitivity.
- Output sinking capability up to 200mA for driving large load.
- Available in rugged low profile SOT-25 packages.

General 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 Descriptions: (SOT-25)

Name	P/I/O	Pin#	Description
Vcc	P	1	Positive Power Supply
Vss	P	2	Ground
DO	O	3	Output Pin #2
DOB	O	4	Output Pin #1

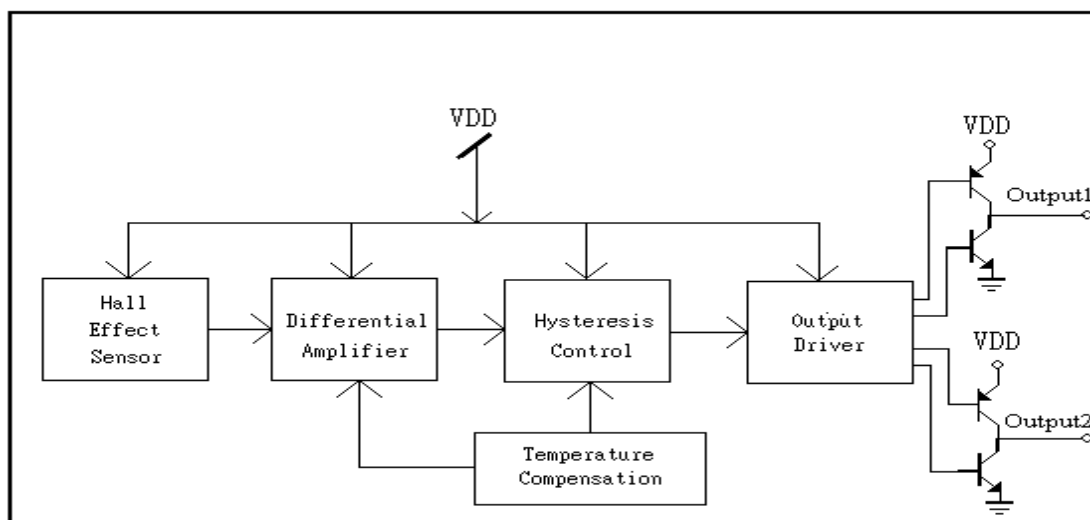
Absolute Maximum Rating (at $T_a=25^{\circ}\text{C}$)

Supply Voltage	Vcc	5V
Magnetic flux density	B	Unlimited
Output ON Current (continuous)	Ic	220mA
Operating Temperature Range	Ta	$(-20^{\circ}\text{C}$ to $+75^{\circ}\text{C})$
Storage Temperature Range	Ts	$(-65^{\circ}\text{C}$ to $+150^{\circ}\text{C})$
Package Power Dissipation	Pd	350mw for SOT-25

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

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

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	Vcc	—	1.8	—	4.5	V
Output Saturation Voltage	V _{out(sat)} V _{drive} +V _{sink}	Vcc=3V, I _o =150mA	—	0.6	1.0	V
Output Leakage Current	I _{leakage}	Vcc=3V, B < Brp	—	<0.1	10	uA
Supply Current	I _{supply}	Vcc=3V, I _o =150mA	—	10	20	mA

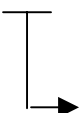
Function Block:


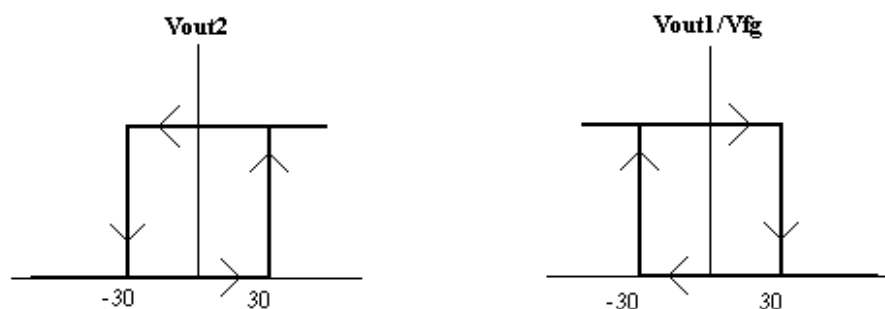
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Magnetic Characteristics:

Characteristics	Symbol	Quantity	Ta= -20°C to +80°C			Unit
			Min	Typ.	Max	
Operate Point	Bop	Grade A Grade B		35 50	70 100	Gauss
Release Point	Brp	Grade A Grade B	-70 -100	-35 -50		Gauss
Hysteresis Window	Bop-Brp			70	150	Gauss

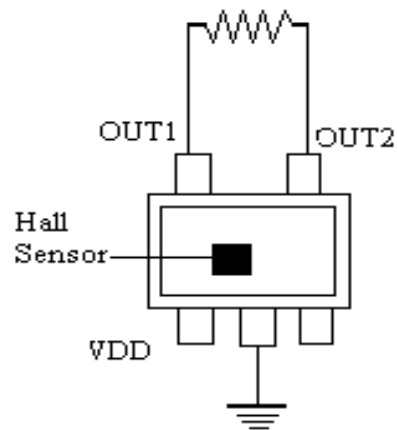
Ordering Information:

SOT-25: WSH520-XP 	Elec. Grade SOT-25: 1: A Grade (70 Gauss) 2: B Grade (100 Gauss)
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Test Circuit:
WSH520 Complementary Output1/Vfg vs. Output2


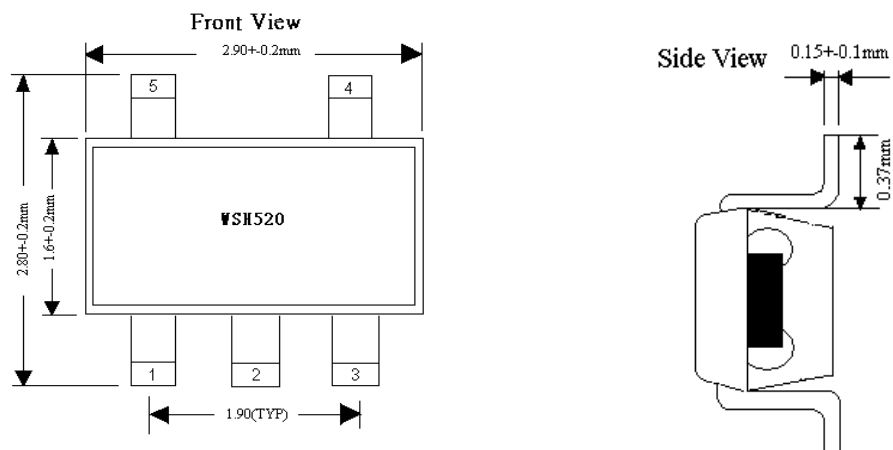
Magnetic Flux Density in Gauss

1. SOT-25:

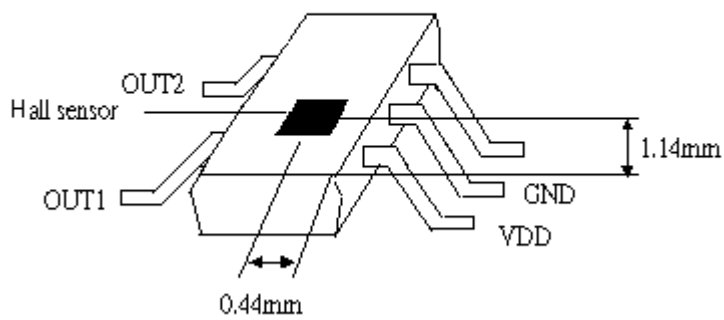
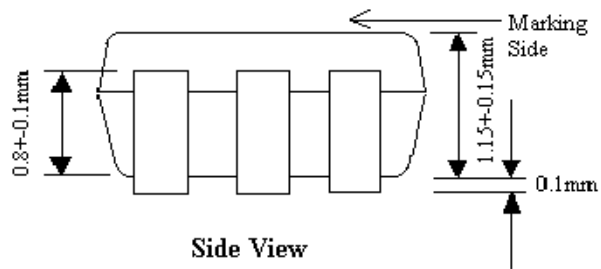


Package Information:

1. SOT-25

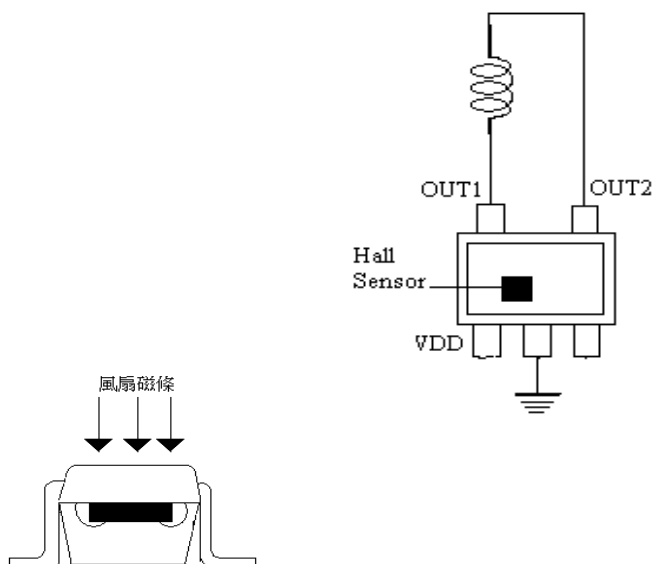


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Application Circuit:

1-1. SOT-25



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Figure 1.

1-2. SOT-25

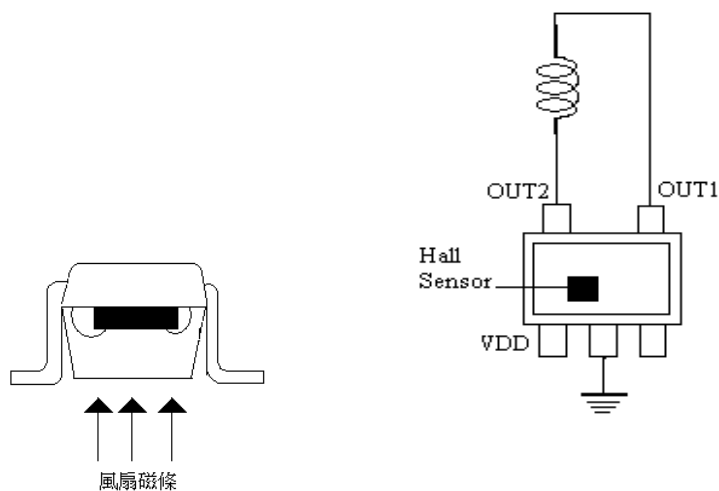
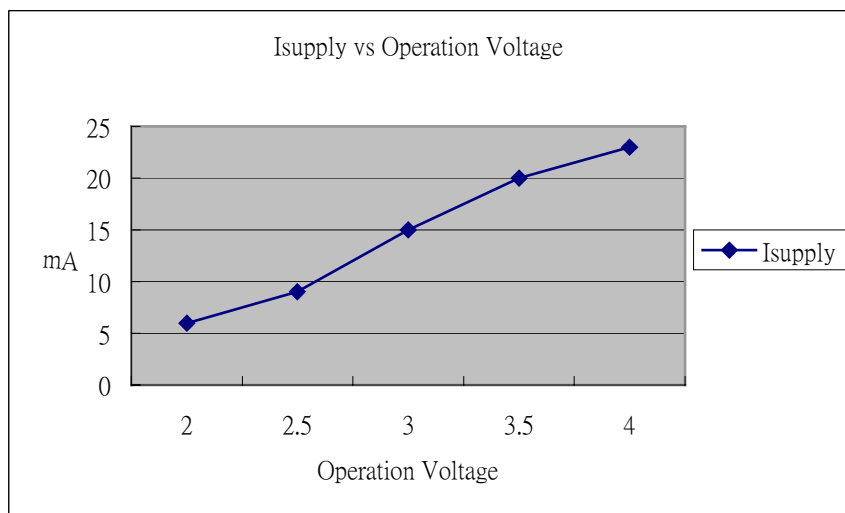


Figure 2.

IV-Curve



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