

## Linear Hall Effect Sensor IC

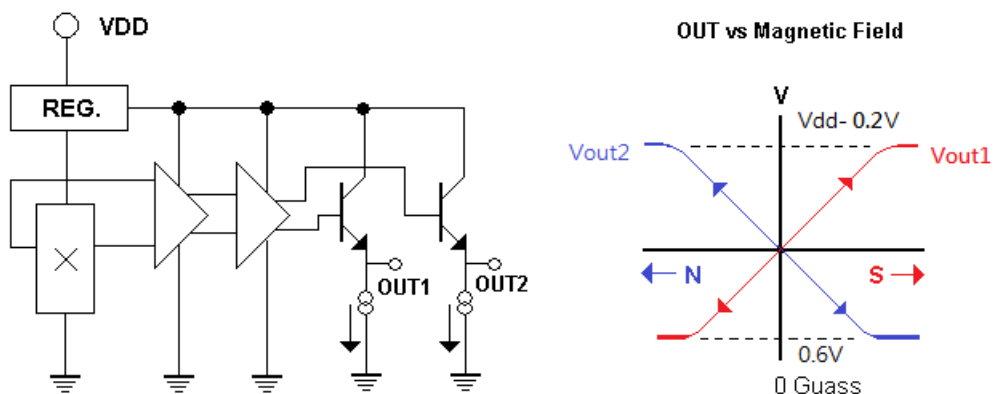
### Features:

- Wide operating range 3.0~12V, -40°C~125°C
- Flat Response to 23k Hz
- Low operating current 3mA
- High Sensitivity
  - Sensitivity: 10mV/Guass (Differential output) on 3V
  - Sensitivity: 20mV/Guass (Differential output) on 5V
- Two package styles TO-94/SOT-25 available.

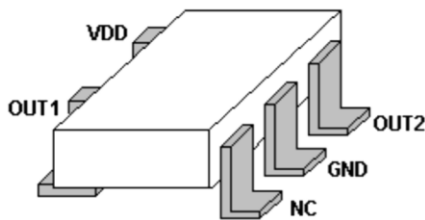
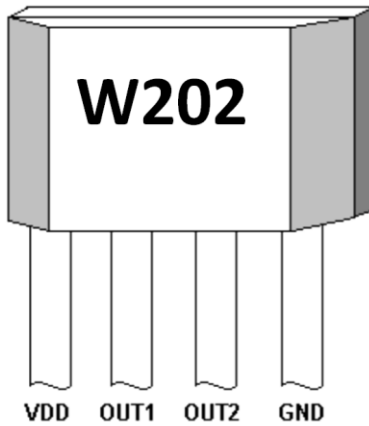
### Functional Description :

The W202 integrates Hall sensing element, linear amplifier, sensitivity controller and emitter follower output stage. It accurately tracks extremely small change in magnetic flux density –generally too small to operate Hall effect switch.

W202 can be applied as current sensor, tooth sensor, proximity detectors and motion detectors. As sensitive monitor of magnetic flux, it can effectively measure a system's performance with negligible system loading while providing isolation from contaminated and electrically noisy environments.



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



### Absolute Maximum Range

Supply Voltage, Vdd	14V
Magnetic Flux Density, B	Unlimited
Output Driving Current, Iout	2mA
Operating Temperature Range, Ta	-40°C to +125°C
Storage Temperature Range, Ts	-65°C to +150°C
Power Dissipation, Pd	
TO-94	500mW
SOT-25	400mW

### Order Information

WSH202-XPAN (TO-94)
WSH202-XPDN (SOT-25)
<b>Halogen Free</b>

★TO-94 – 1,000/bag , SOT-25 – 3,000/reel

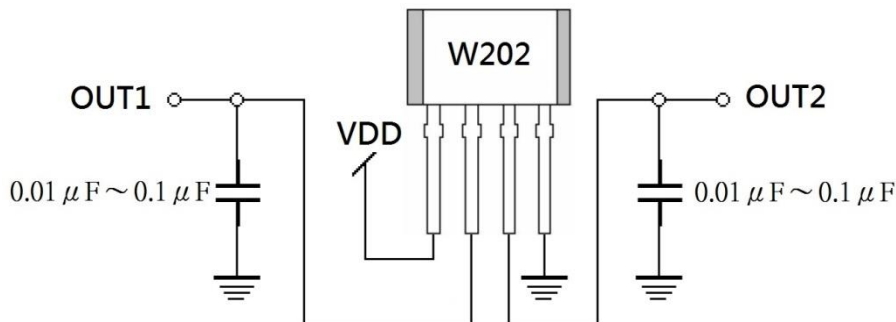
### Electrical Characteristics:

(T=+25°C, Vdd=5.0V)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	Vcc	—	3.0	—	12	V
Supply Current	Isupply	B=0 Gauss	—	3.25	5.0	mA
Quiescent Vout	Vout1/2	B=0 Gauss	2.25	2.5	2.75	V
Differential Δ Vout	Δ Vout1-2	B=0 G, Vout1-Vout2	-0.4		0.4	V
Sensitivity (Single Ended)	Δ Vout1/2	B= 0 to ± 50 G	8.0	10.0	12.0	mV/G
Sensitivity (Differential)	Δ Vout12	B= 0 to ± 50 G	16.0	20.0	24.0	mV/G
Bandwidth	BW	—	—	23	—	kHz
Measurable Range	MR	Vdd=5V	—	±150	—	Gauss
Temperature Drift	Δ Vout0	B=0 Gauss	—	±1.5	—	mV/°C
Output Noise	V <sub>Np-p</sub>	—	—	16.6	—	mV

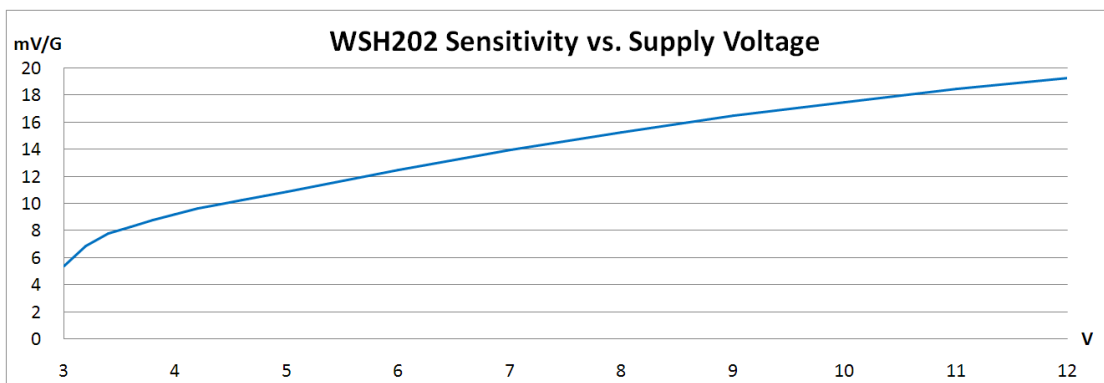
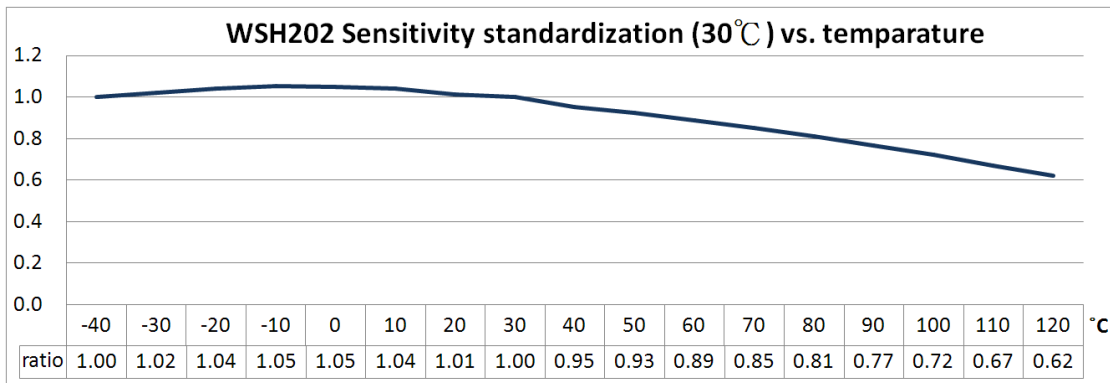
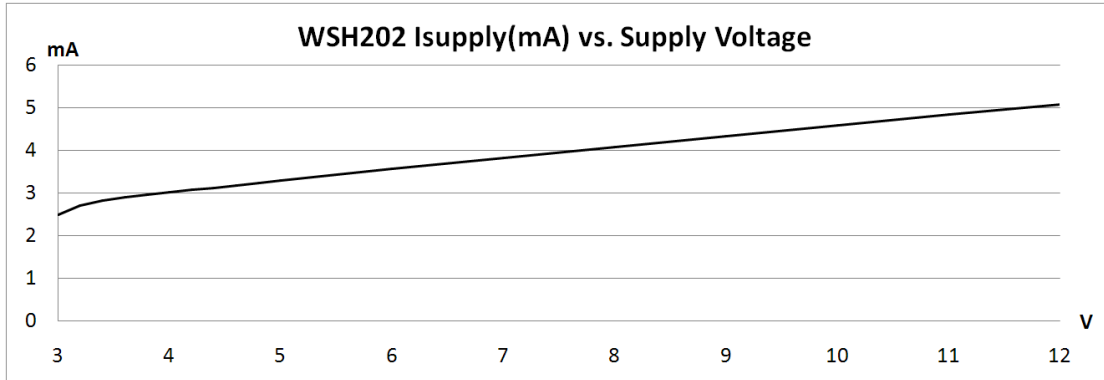
1. All output-voltage measurements are made with a voltmeter having an input impedance of at least 100kΩ
2. Do not apply any 'resistor load' on output pin, it will degrade IC performance.

### Application circuit:

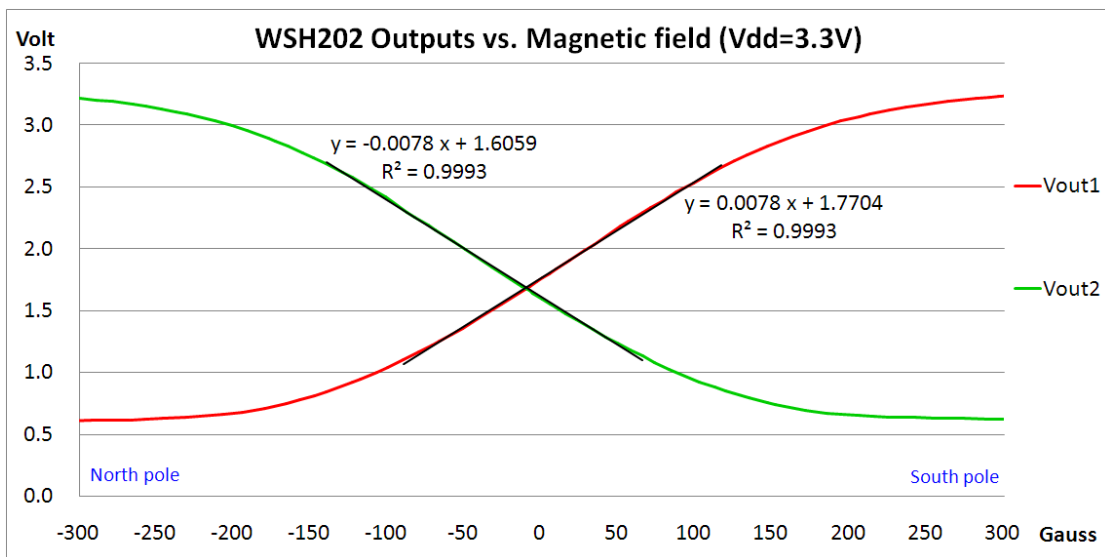
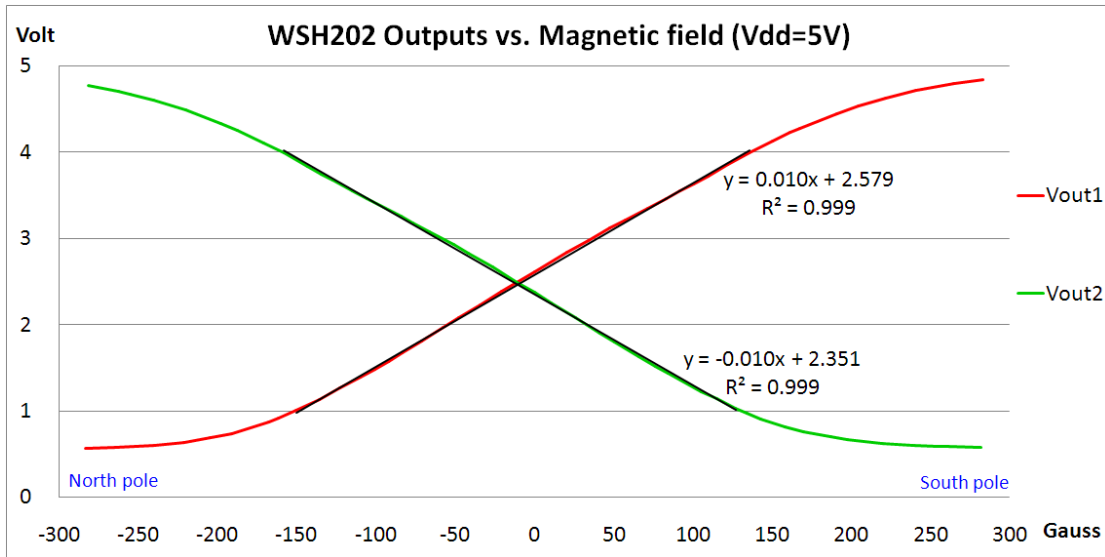


Winson reserves the right to make changes to improve reliability or manufacturability.

**Electrical Diagram:**

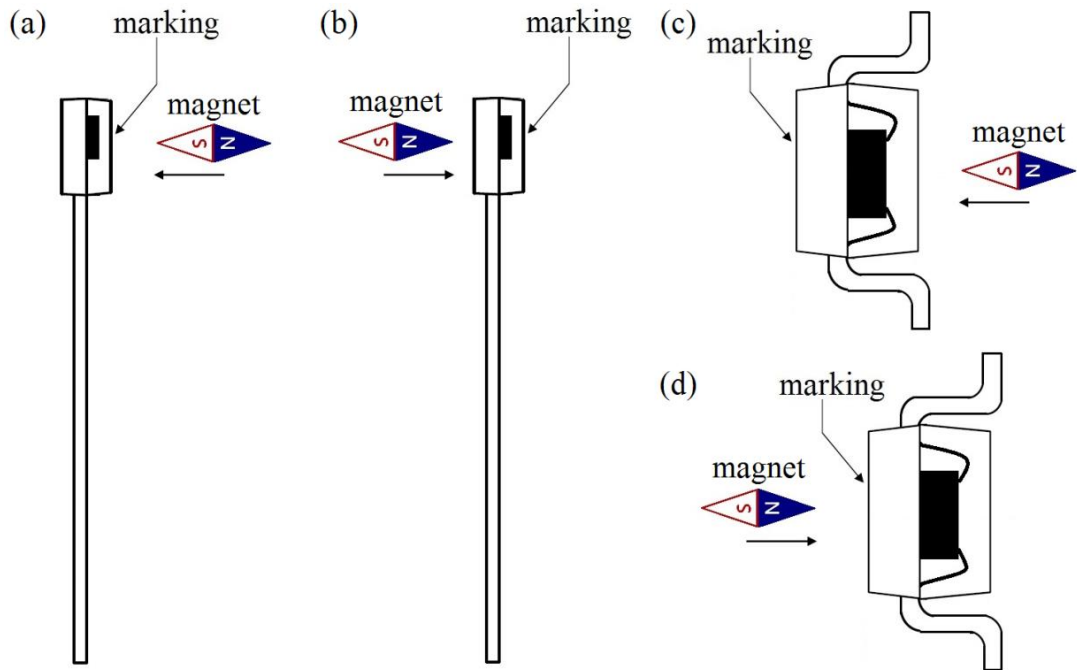


Winson reserves the right to make changes to improve reliability or manufacturability.



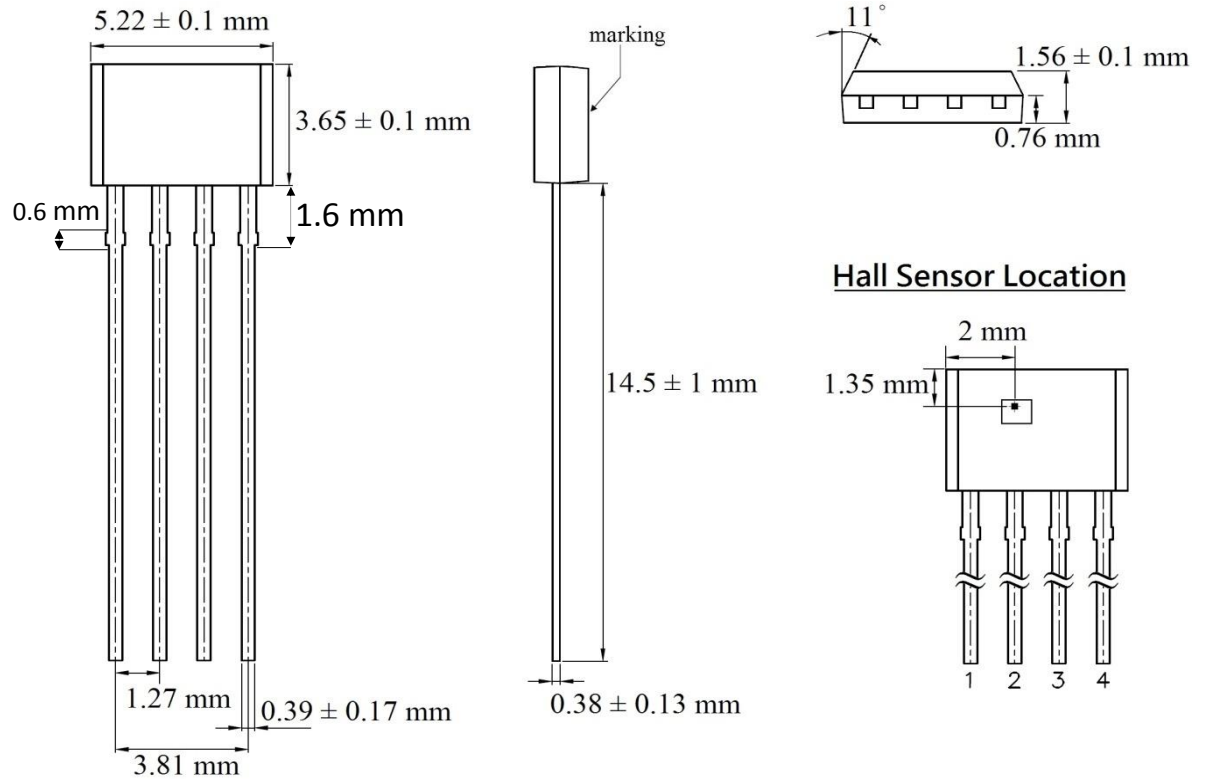
Winson reserves the right to make changes to improve reliability or manufacturability.

**Hall Device Sensing Direction**



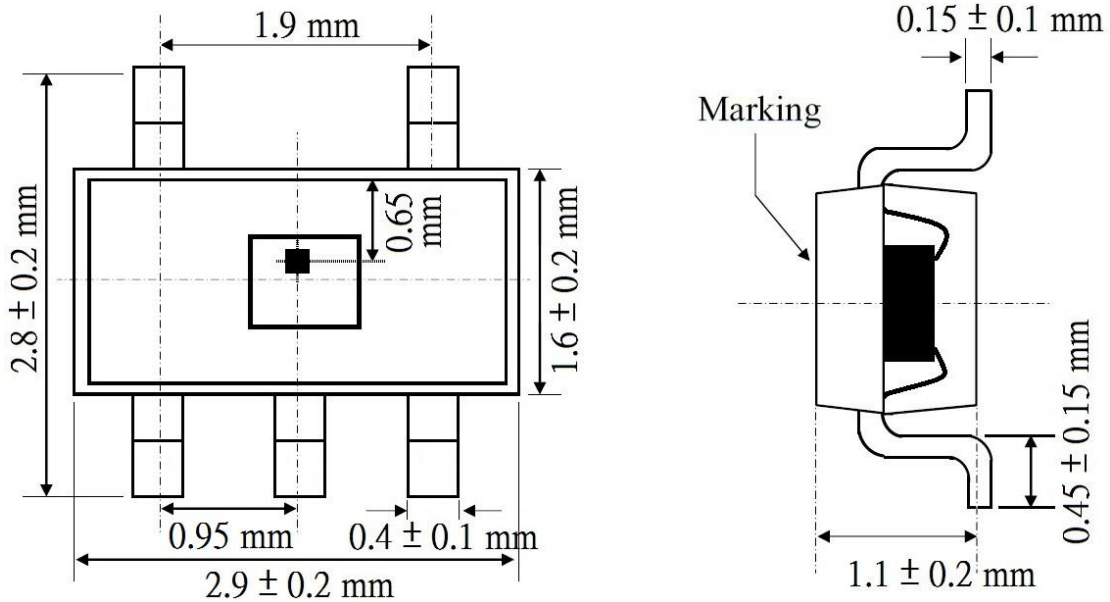
**Package Information**

《TO-94》



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

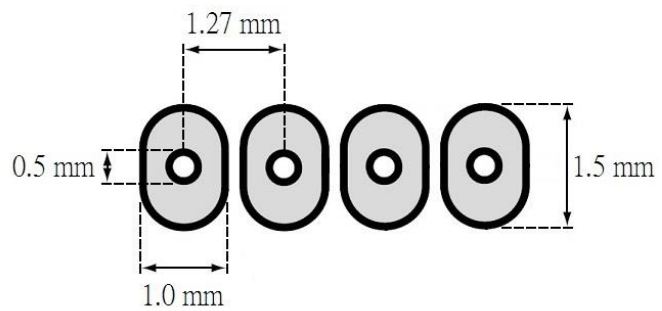
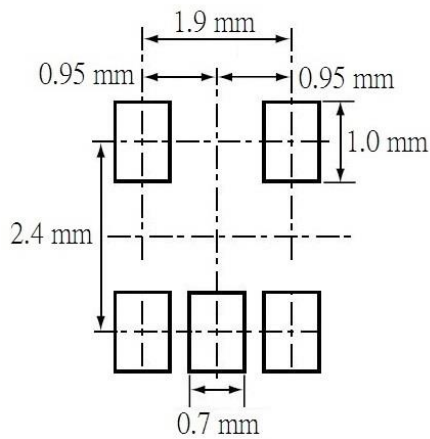
《SOT-25》



PCB Layout Reference View

SOT-25

TO-94



**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>

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