Linear Hall Effect Sensor IC

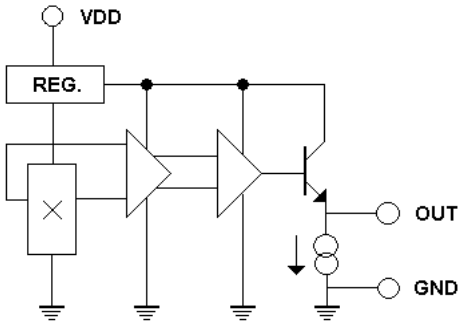
Features:

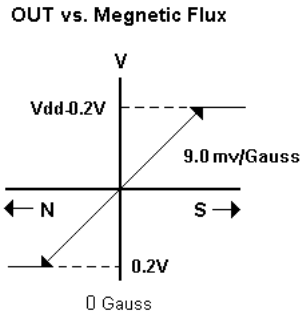
- Wide operating range 3.0~12V, -40℃~125℃
- Flat Response to 23kHz
- High Sensitivity 9.0 mV/G
- Wide sensible magnetic field range on different supplied voltage
  ±200 Gauss on 5V supplied voltage
  ±500 Gauss on 12V supplied voltage. Low operating current 3mA
- Two package styles TO-92S/SOT-23 available.
- Built-in temperature compensated circuit to minimize temperature's effect

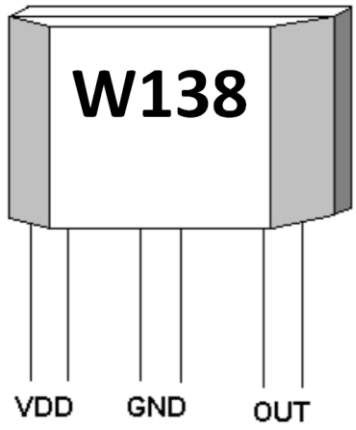
Functional Description :

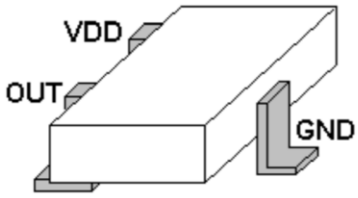
The W138 integrates Hall sensing element, linear amplifer, sensitivity controller and emitter follower output stage.It accurately tracks extremely small change in magnetic flux density –generally too small to operate Hall effect switch.

W138 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.









Absolute Maximum Range

Supply Voltage, Vdd ---------- **14V**
Magnetic Flux Density, B ---------- **Unlimited**
Output Driving Current, Iout ---------- **0.4mA**
Operating Temperature Range, Ta ----------
---------- **-40ºC to +125ºC**
Storage Temperature Range, Ts ----------
---------- **-65ºC to +150ºC**
Power Dissipation, Pd
TO-92S ---------- **500mW**
SOT-23 ---------- **400mW**

Order Information

WSH138-XPAN□ (TO-92S) WSH138-XPCN□ (SOT-23) Grade Halogen Free	1: A Grade 2: B Grade

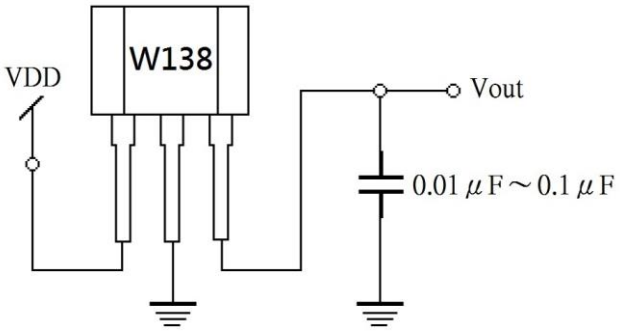
★TO-92S — 1,000/bag , SOT-23 — 3,000/reel

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	—	3.0	5.0	mA
Quiescent Vout	V0G	B=0 G (A Grade)	2.4	2.5	2.6	V
		B=0 G (B Grade)	2.3	2.5	2.7	
Sensitivity	△Vout	B= 0 to ± 200 G	8.0	9.0	10.0	mV/G
Bandwidth	BW	—	—	23	—	kHz
Measurable Guass Range	MGR	Vdd=5V	—	±200	—	Guass
		Vdd=12V	—	±500	—	
Temperature Drift	△Vout	B=0 Gauss	—	±1.0	—	mV/℃
Output Noise	V_{Np-p}	—	—	15	—	mV

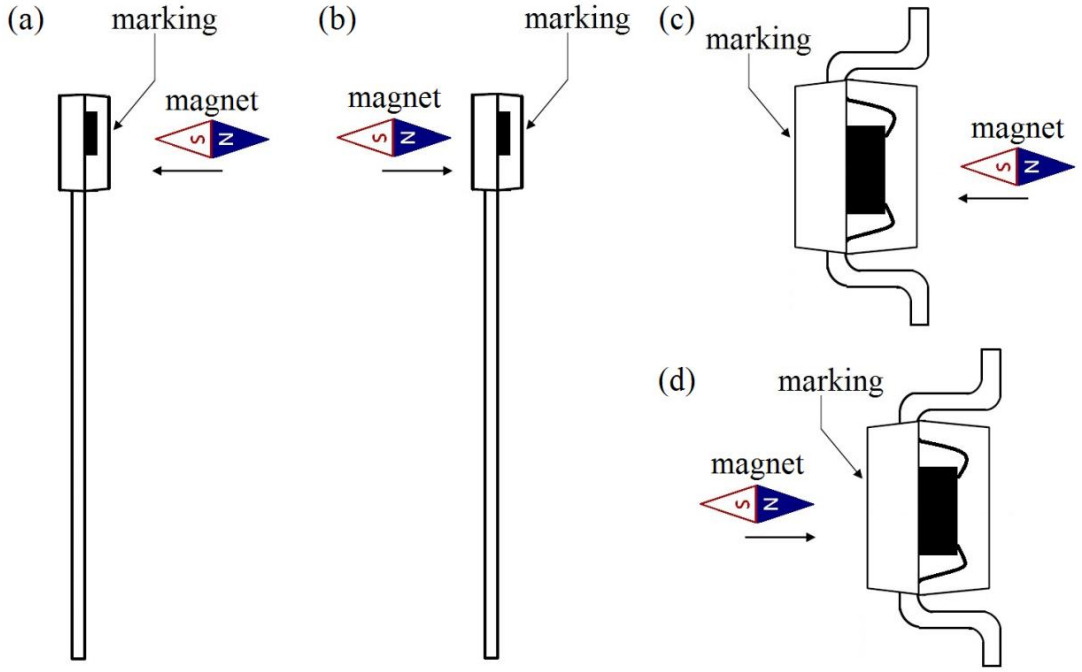
1.All output-voltage measurements are made with a voltmeter having an input impedance of at least 100kΩ
2. Do not apply any 'resistor load' on output pin, it will degrade IC's performance.

Application circuit:



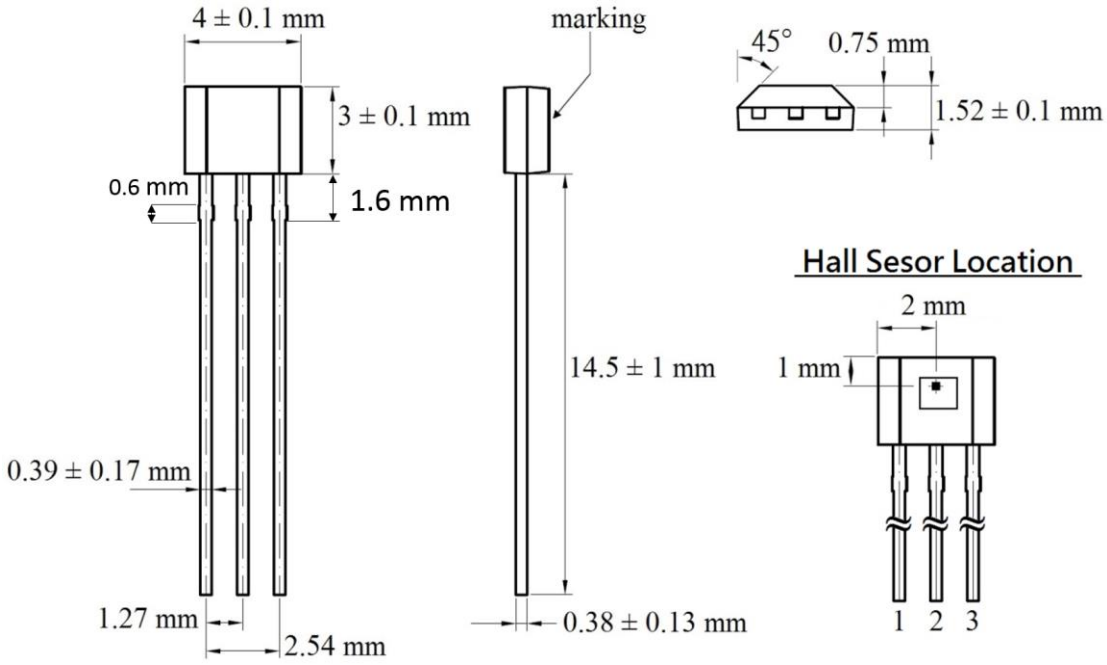
Winson reserves the right to make changes to improve reliability or manufacturability.

Hall Device Sensing Direction



Package Information

《**TO-92S**》



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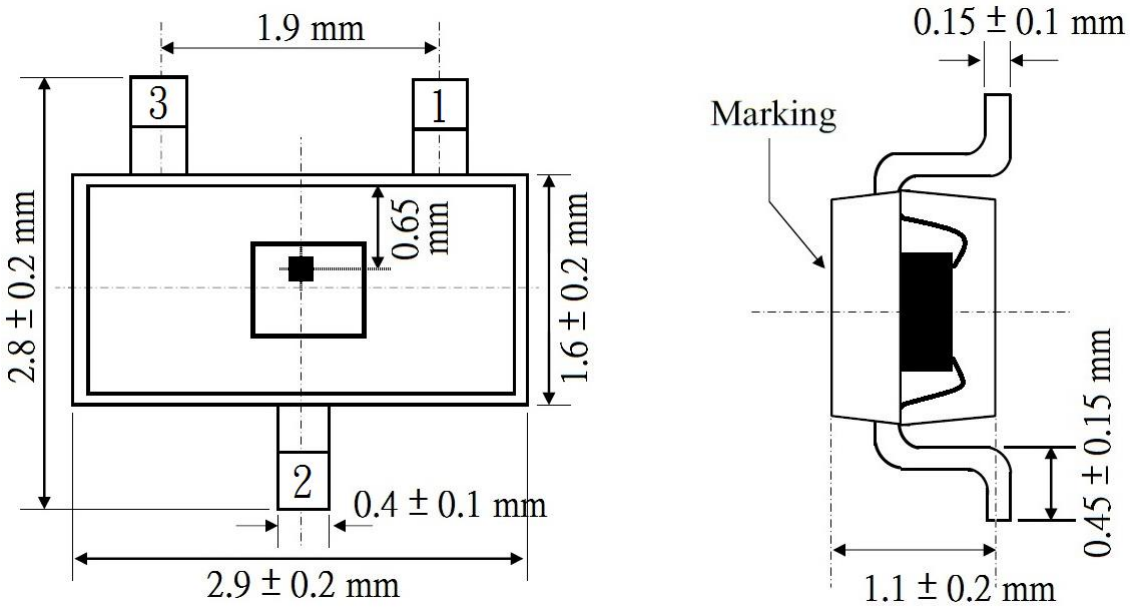
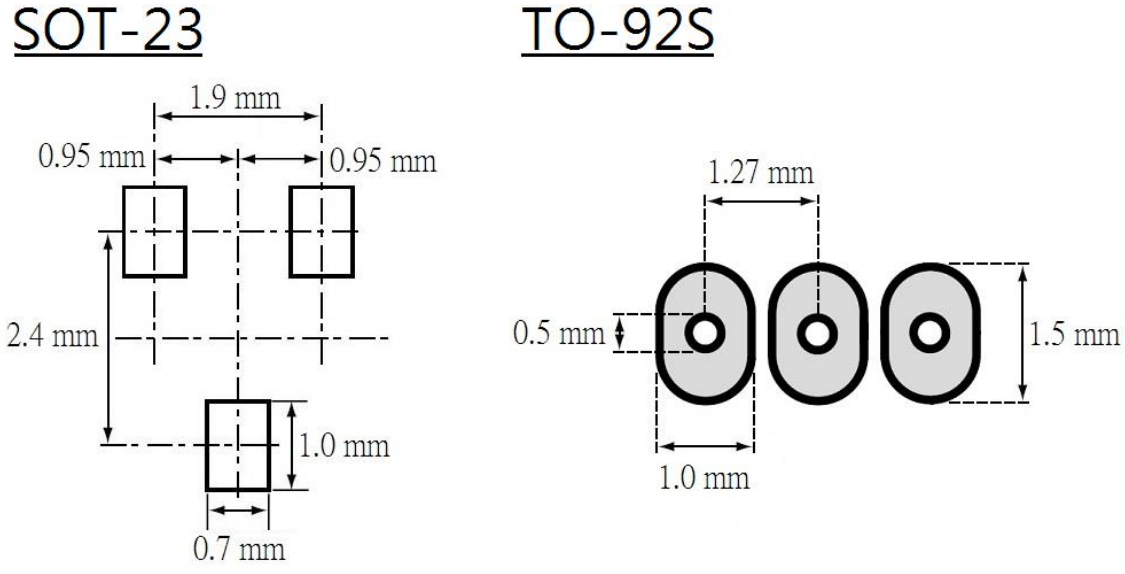
《**SOT-23**》



PCB Layout Reference View



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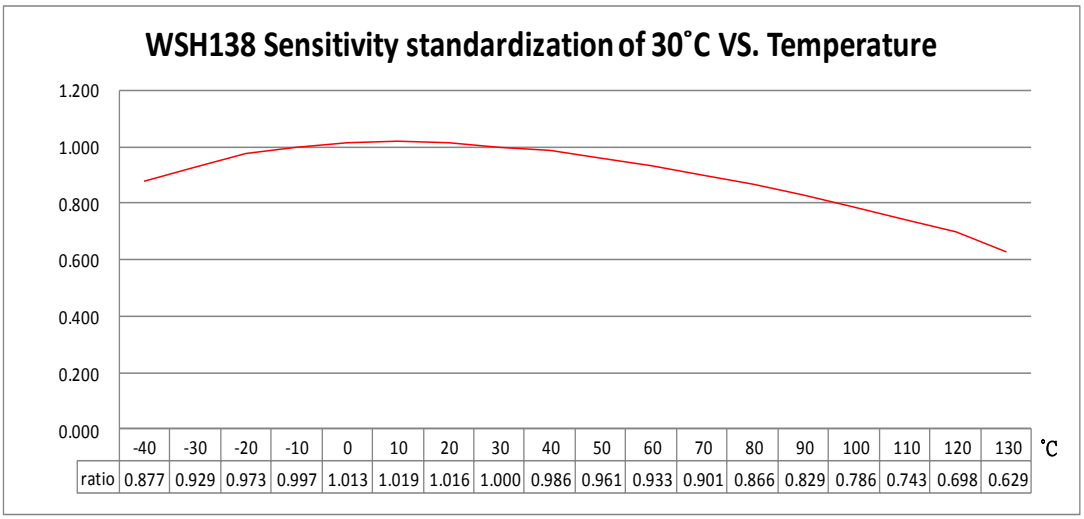
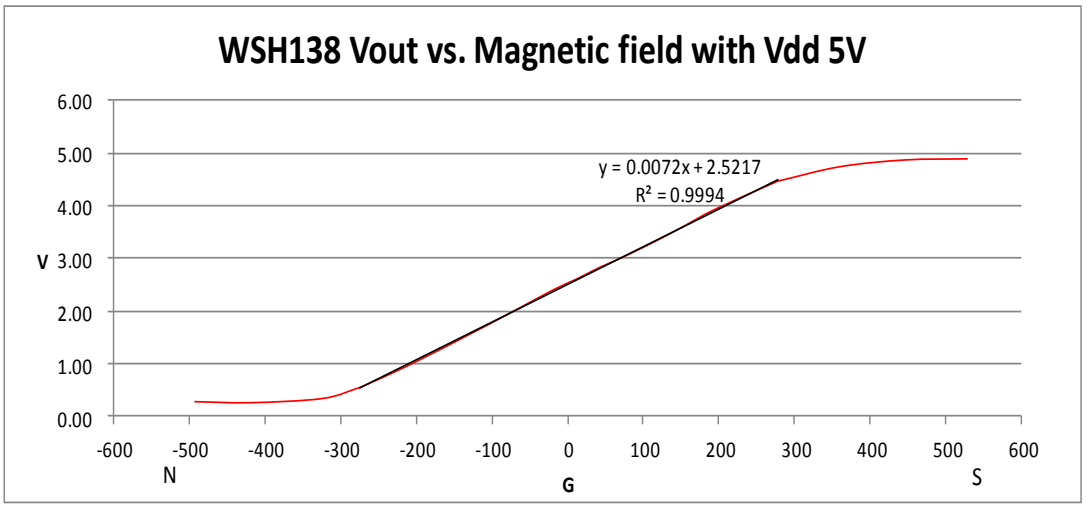
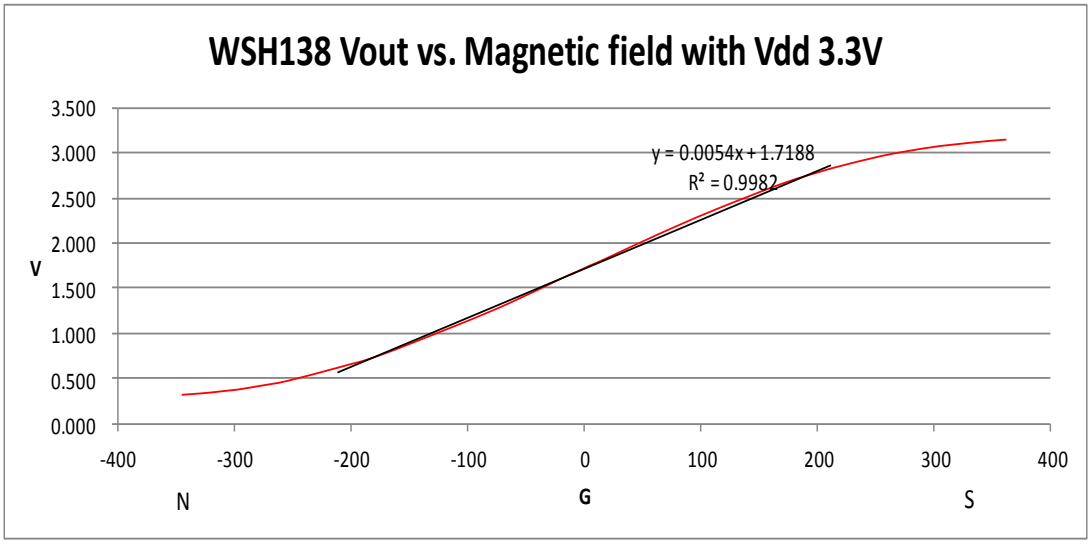
Characteristic Diagrams:







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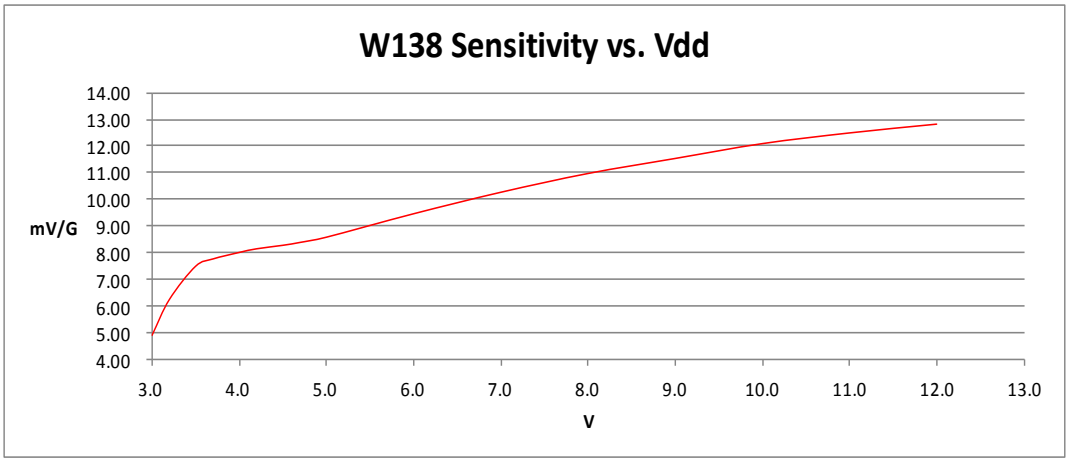

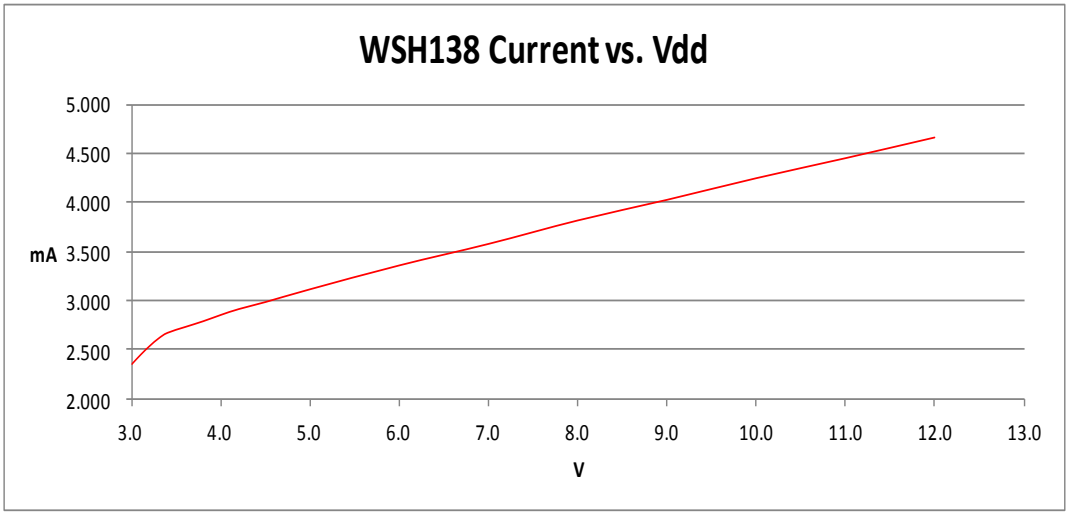

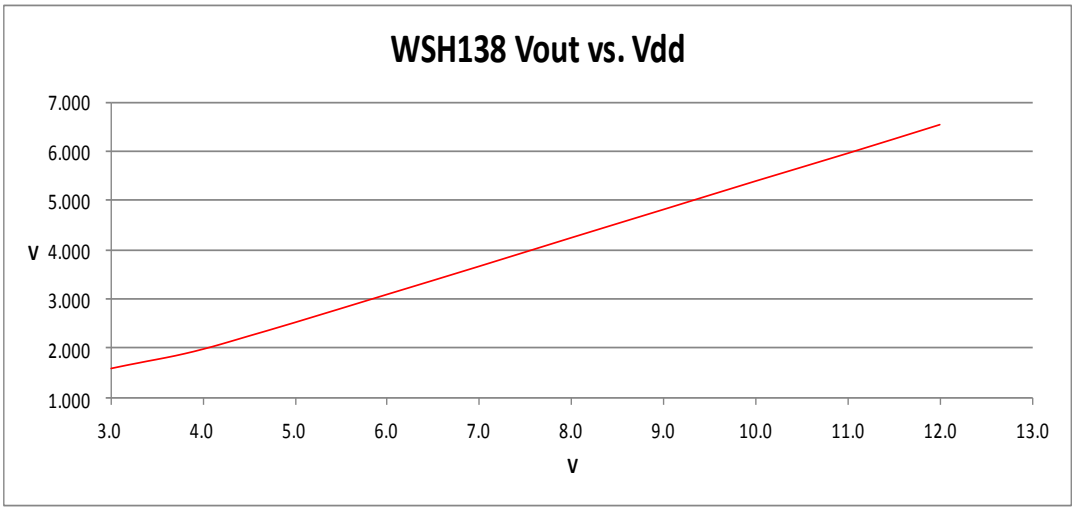

Precautions for the use of Hall Sensor IC: please refer to Winson Website-> Products->Application Note ->Hall Sensor IC Application Note: http://www.winson.com.tw/Product/83

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