
Hall Effect Base Linear AC Current Sensor

Features:

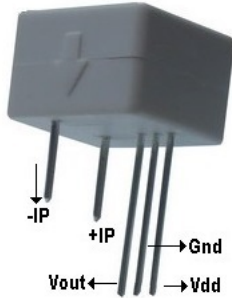
- Built-in AC to DC rectifier circuit
- 8.3 mΩ internal conductor resistance
- Output voltage proportional to AC and DC current
- Min. sensing current 0~3.0A at 5V voltage supply
- High Sensitivity 525 mV/A
- Wide operating voltage range 3.0~12 V.
- Low operating current 3.3 mA
- Nearly zero magnetic hysteresis.
- Ratiometric output from supply voltage
- 13K Hz bandwidth

Functional Description :

The Winson WCS2202 provides economical and precise solution for both DC and AC current sensing in industrial, commercial and communications systems. The unique package allows for easy implementation by the customer. Typical applications include motor control, load detection and management, over-current fault detection and any intelligent power management system etc...

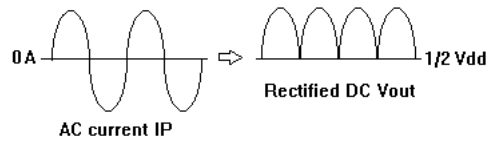
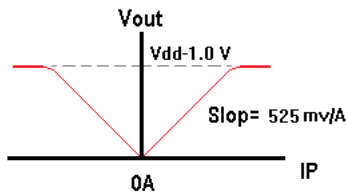
The WCS2202 consists of a precise, low-temperature drift linear hall sensor IC with temperature compensation and AC to DC rectifier circuit and a current path with 8.3 mΩ typical internal conductor resistance. This extremely low resistance can effectively reduce power loss, operating temperature and increase the reliability greatly. Applied current flowing through this conduction path generates a magnetic field which is sensed by the integrated Hall IC and converted into a proportional rectified DC voltage.

The terminals of the conductive path are electrically 1,000V isolated from the sensor leads. This allow the WCS2202 current sensor to be used in applications requiring electrical isolation without the use of opto-isolators or other costly isolation techniques and make system more competitive in cost.

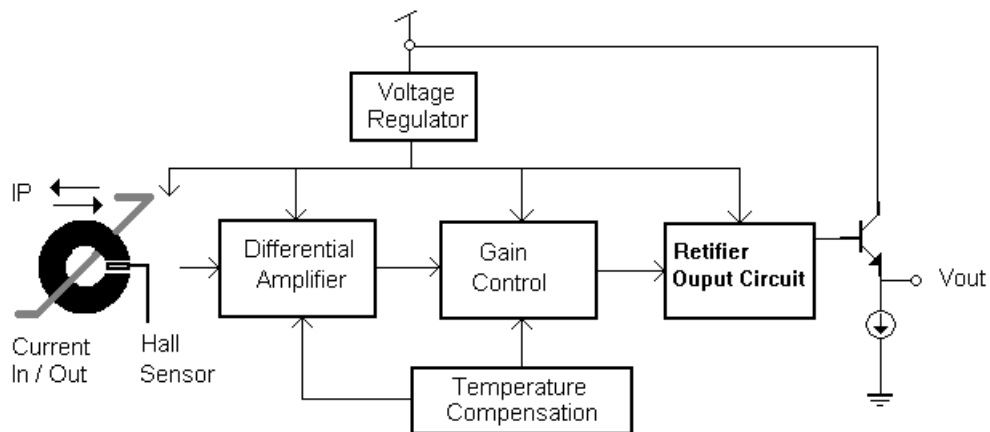


ABSOLUTE MAXIMUM RATING

Supply Voltage, Vdd	-----	12V
Pass Current, IP	-----	8A
Pass Current (10ms pulse) Ipulse	-----	20A
Output Current Sink	-----	0.4mA
Output Current Source	-----	2mA
Conductor Isolation Voltage	-----	1000V
Operating Temperature Range		
Ta	-----	-40 to +90 °C
Storage Temperature Range		
Ts	-----	-65 to +150 °C
Power Dissipation Pd	-----	1 W



Function Block:



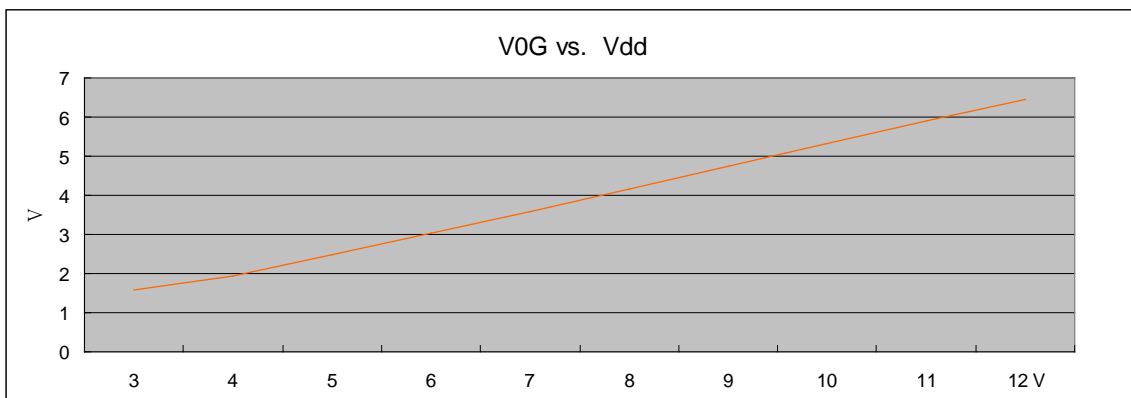
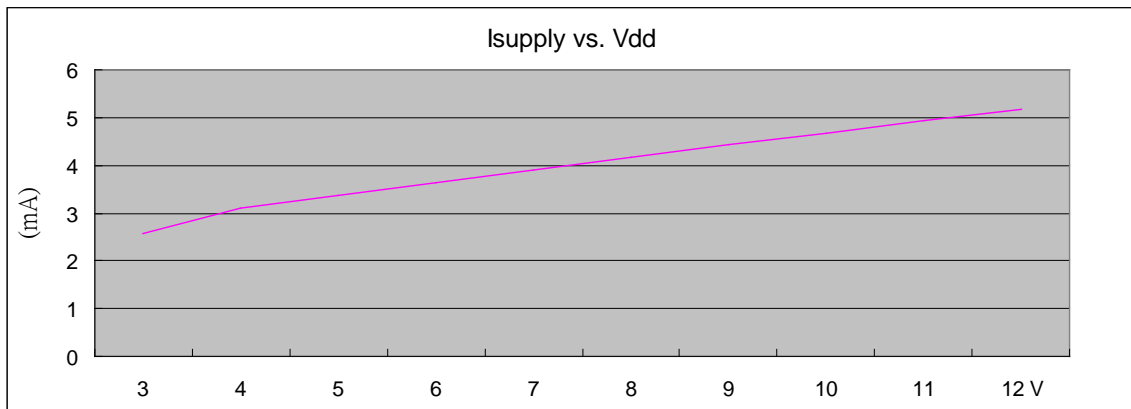
Winson reserves the right to make changes to improve reliability or manufacturability.

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	I _{supply}	I _P =0 A	—	3.3	6.0	mA
Zero Current Vout	V _{0G}	I _P =0 A	2.4	2.5	2.6	V
Primary Conductor Resistance	R _{primary}	I _P =2 A	—	8.3	—	mΩ
Sensitivity	ΔV _{out}	I _P = ± 2 A	450	525	600	mV/A
Current Offset	I _{offset}	V _{dd} =5V	—	0.1	—	A
Bandwidth	BW		—	13	—	kHz
Measurable Current Range	MCR	V _{dd} =5V (DC)	—	±3.0	—	A
		V _{dd} =5V (AC RMS)	—	2.0	—	
Temperature Drift	ΔV _{out}	I _p =0 A	—	±0.7	—	mV/°C

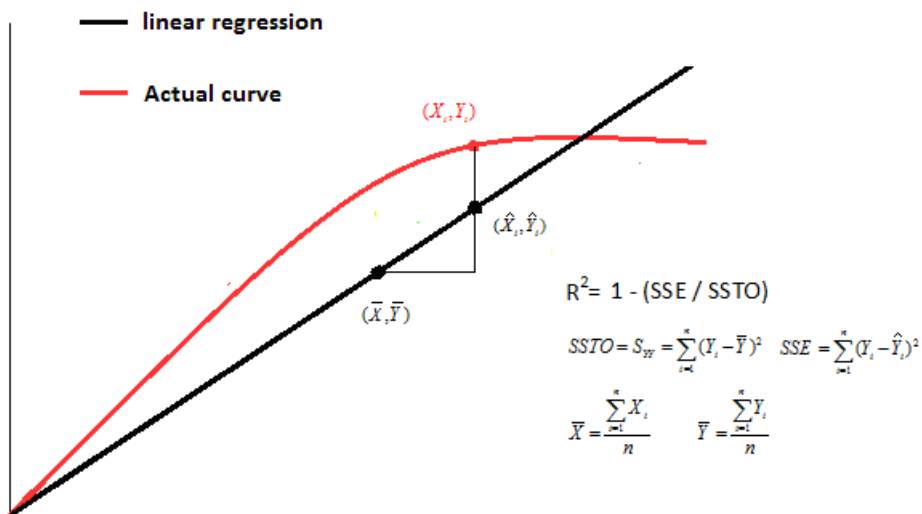
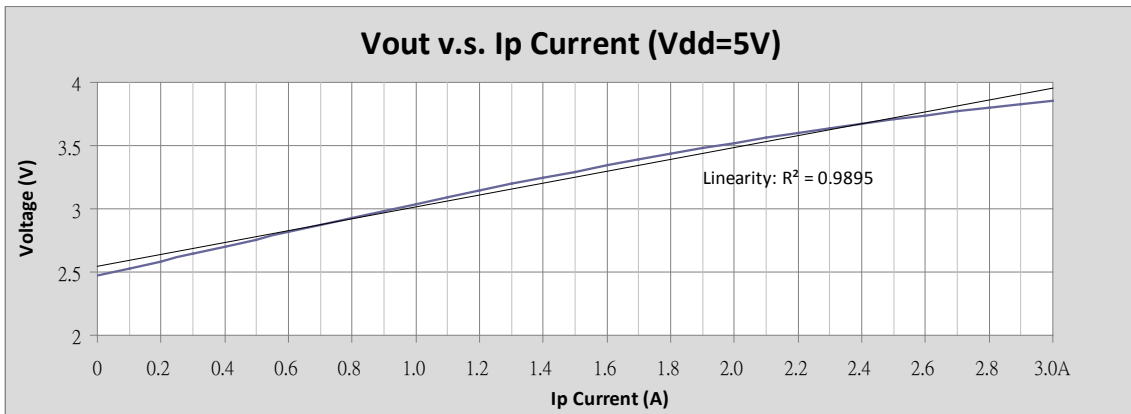
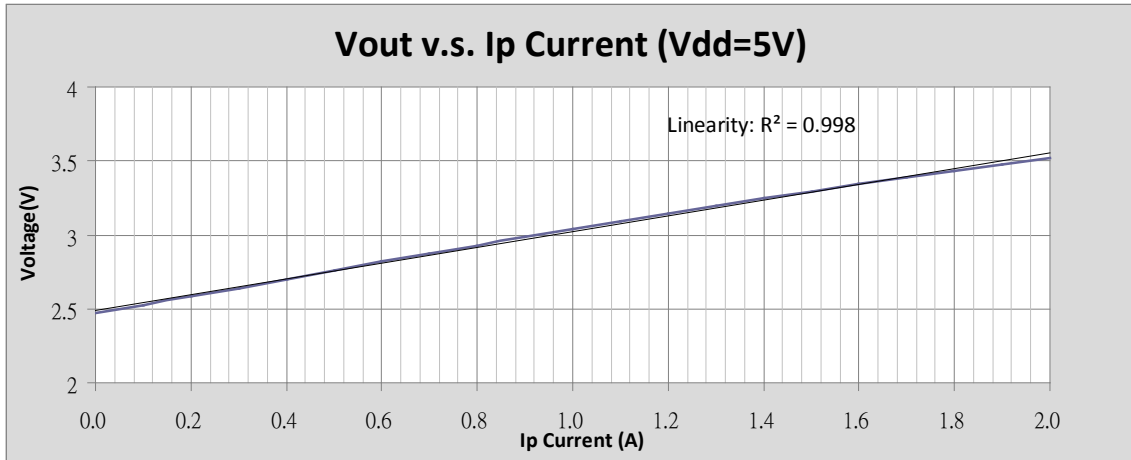
1. All output-voltage measurements are made with a voltmeter having an input impedance of at least 100kΩ

2. Do not apply any 'resistor load' on output pin, it will degrade IC's performance.

Electrical Diagram:


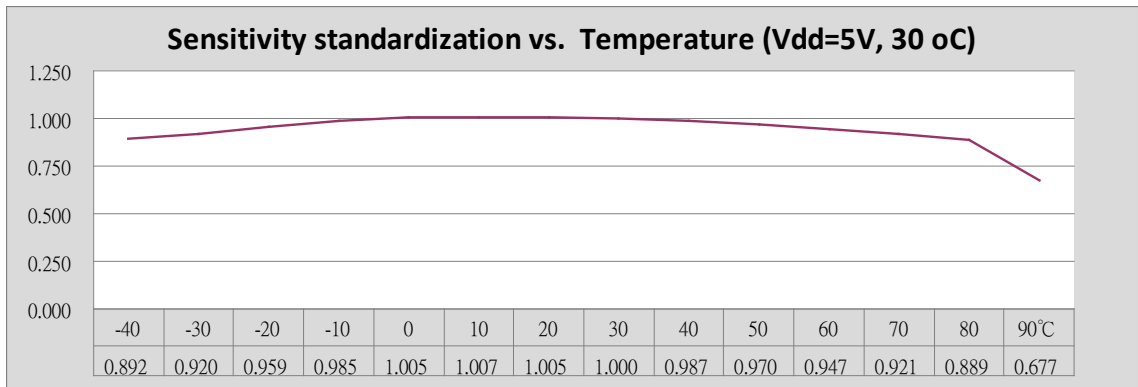
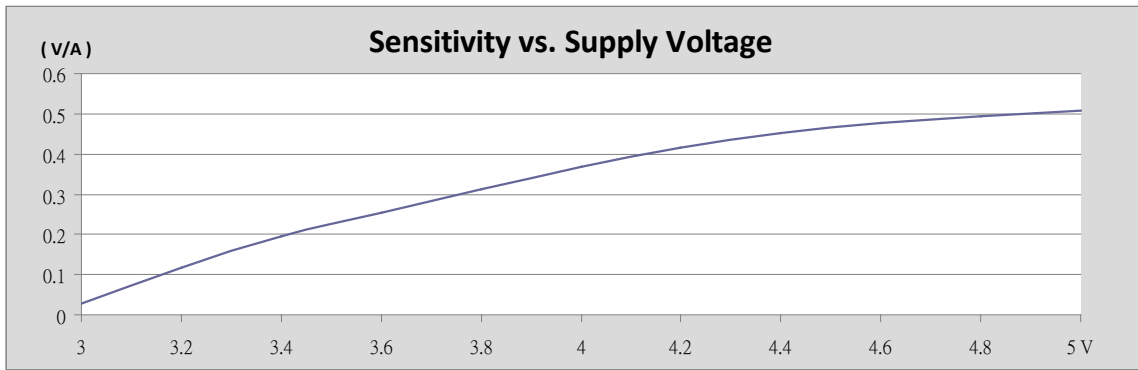
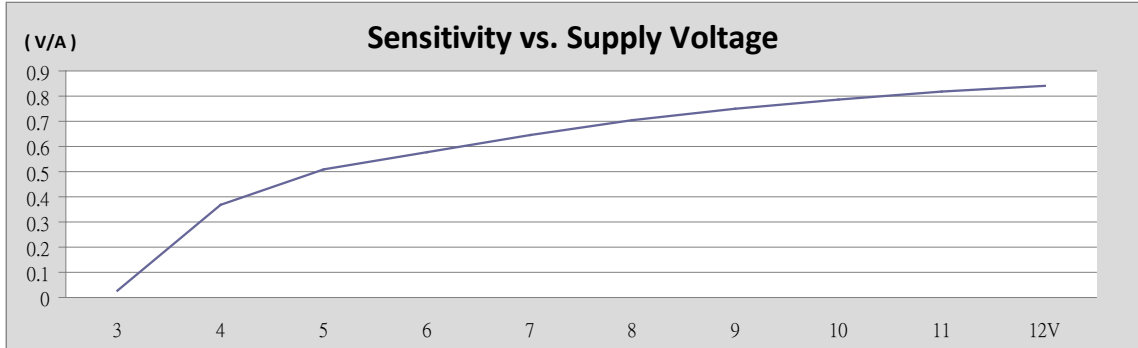
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Linearity:



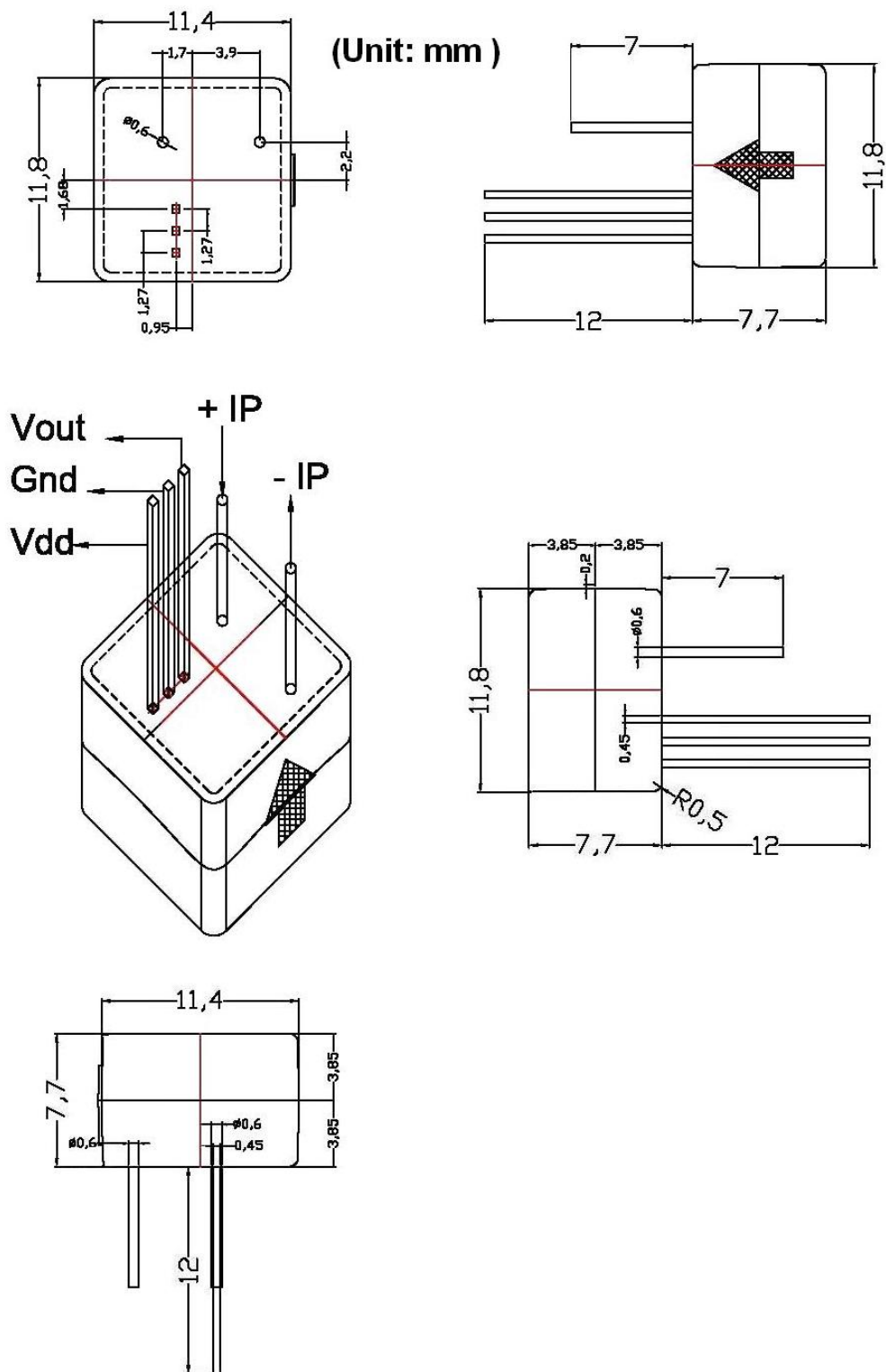
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Sensitivity:



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Package Information:



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