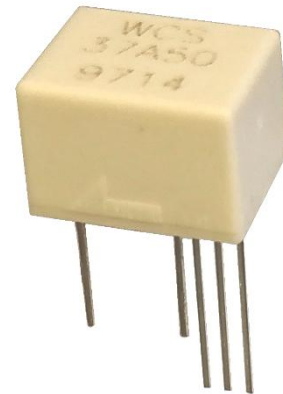


Hall Effect Base Linear Current Sensor

Features

- Low noise analog signal path
- 1.5 Ω internal conductor resistance
- Output voltage proportional to AC and DC current
- Min. sensing current 0 ~ 0.5 A at 5 V voltage supply
- High Sensitivity 3.5 mV/mA
- Wide operating voltage range 3.0 ~ 12 V
- Low operating current 3 mA
- Nearly zero magnetic hysteresis
- Ratiometric output from supply voltage
- 10K Hz bandwidth



Functional Description

The Winson WCS37A50 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...

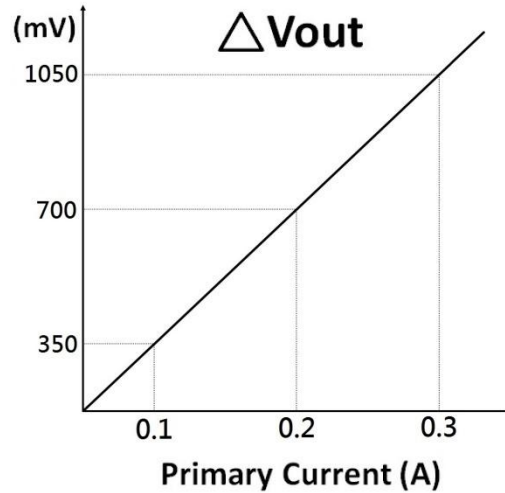
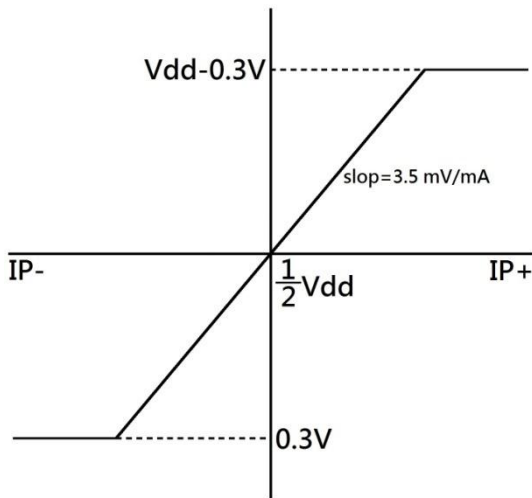
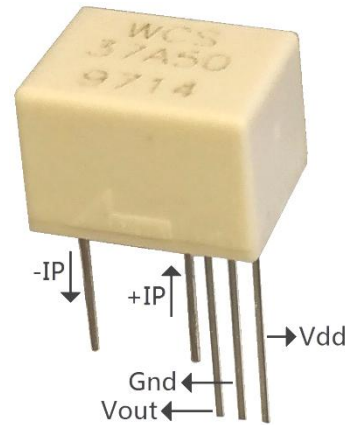
The WCS37A50 consists of a precise, low-temperature drift linear hall sensor IC with temperature compensation circuit and a current path with 1.5 Ω typical internal conductor resistance. This extremely low resistance can effectively reduce power loss, operating temperature and increase the reliability 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 voltage.

The terminals of the conductive path are electrically isolated from the sensor leads. This allow the WCS37A50 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.

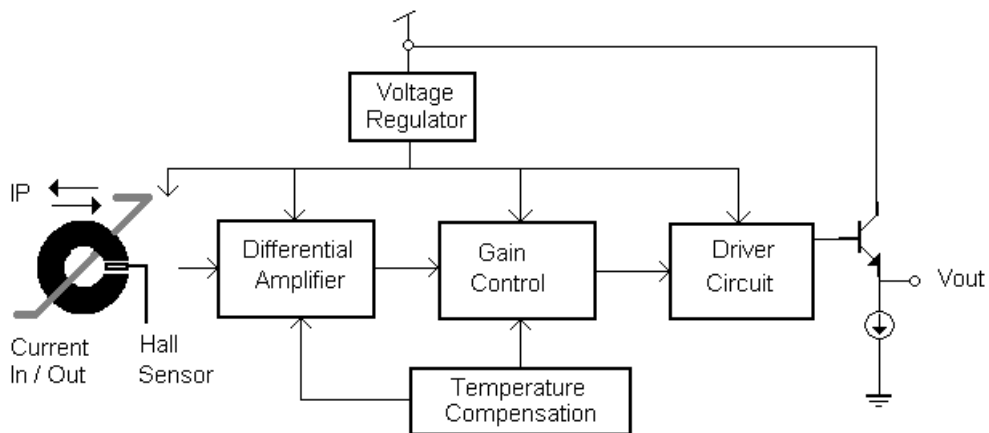
Winson reserves the right to make changes to improve reliability or manufacturability.

ABSOLUTE MAXIMUM RATING

Supply Voltage, Vdd	-----	14V
Pass Current, IP	-----	0.5A
Output Current Sink	-----	0.4mA
Output Current Source	-----	2mA
Conductor Isolation Voltage	-----	1000V
Operating Temperature Range Ta	---	-20°C ~ +125°C
Storage Temperature Range Ts	-----	-65°C ~ +150°C
Power Dissipation Pd	-----	1W



Function Block:



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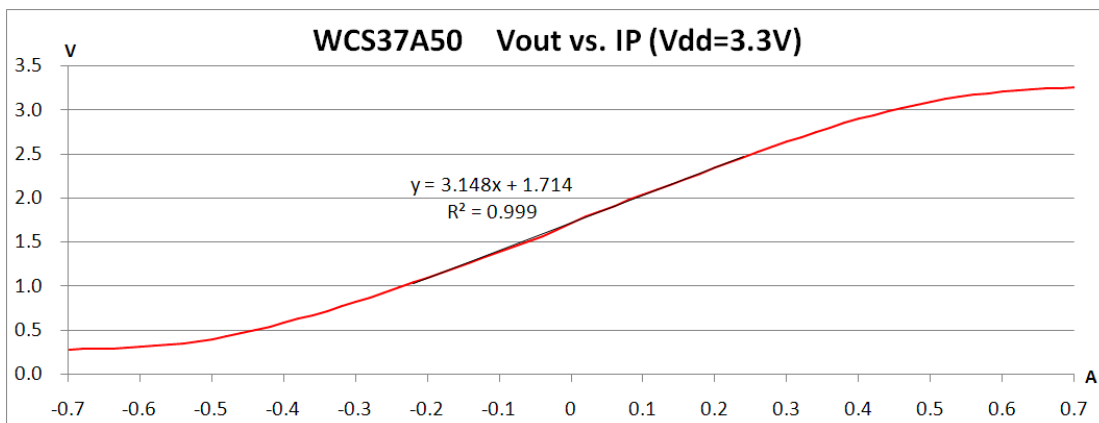
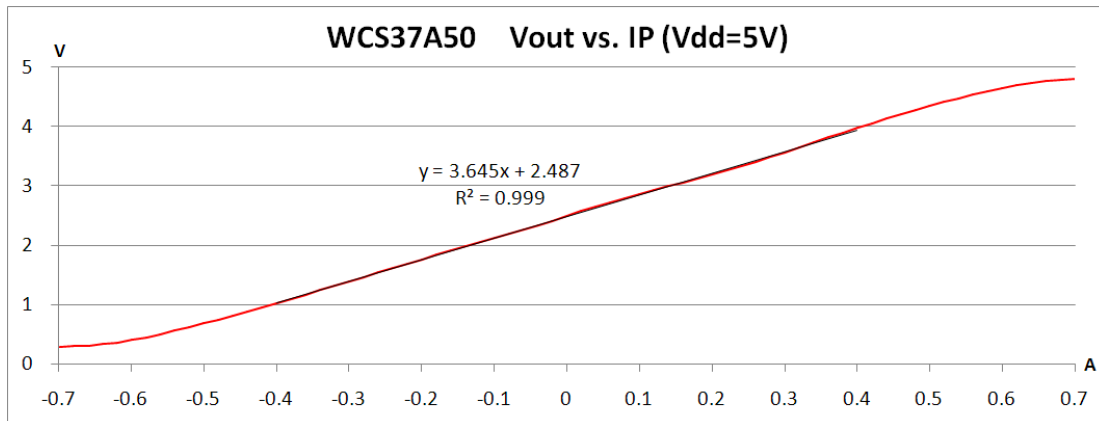
Electrical Characteristics:

(T=+25°C, Vdd=5.0V)

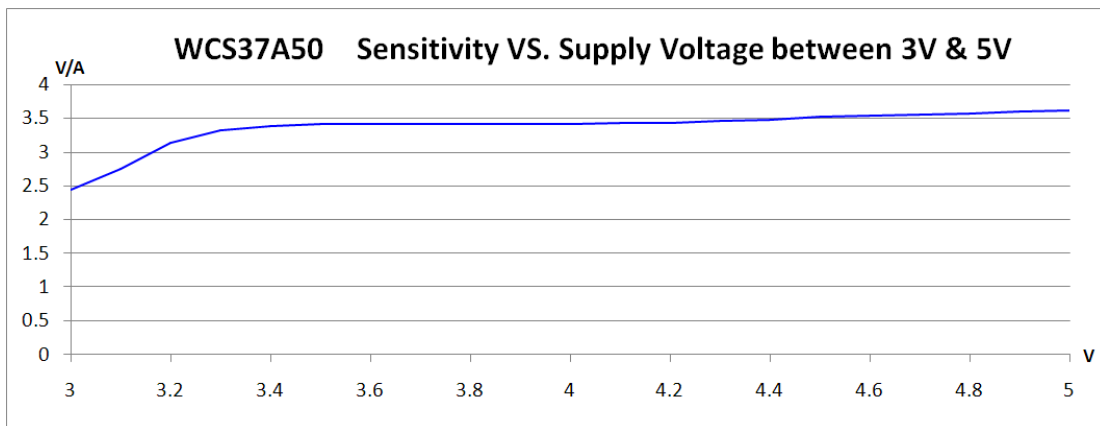
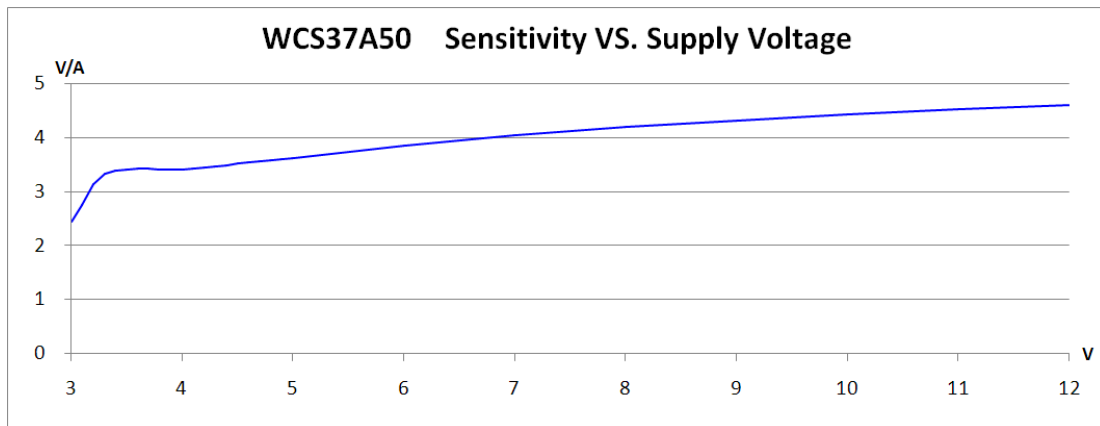
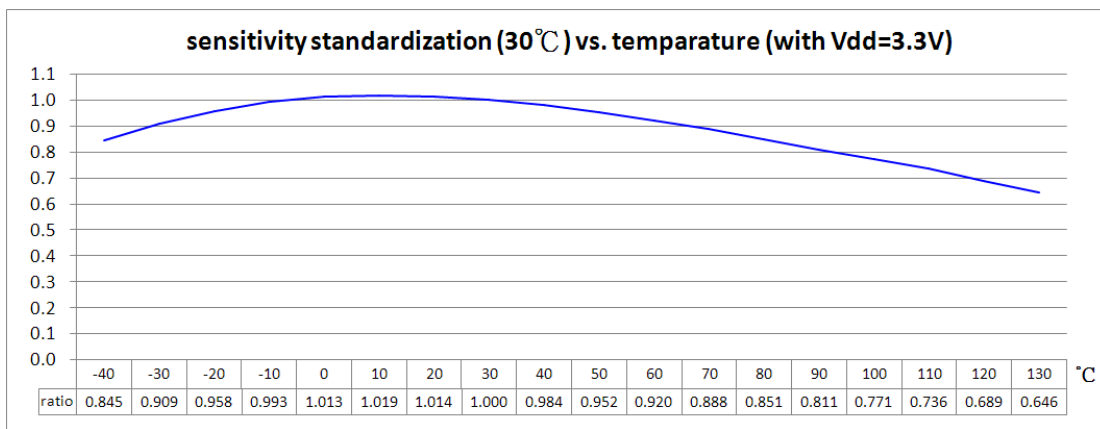
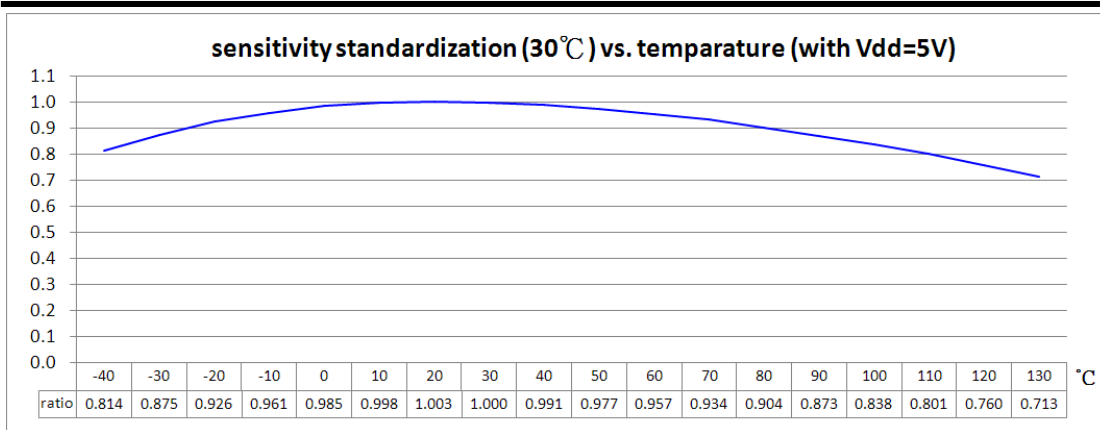
Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	Vdd	—	3.0	—	12	V
Supply Current	I _{supply}	IP = 0 A	—	3.5	6.0	mA
Zero Current Vout	V _{0G}	IP = 0 A	2.3	2.5	2.7	V
Primary Conductor Resistance	R _{primary}	IP = 0.12 A	—	1.5	—	Ω
Sensitivity	Δ Vout	IP = 0.2 A	3.0	3.5	4.0	V/A
Bandwidth	BW	—	—	10	—	kHz
Measurable Current Range	MCR	Vdd=5V (DC Mode)	—	±0.5	—	A
		Vdd=5V (AC RMS)	—	0.35	—	
Temperature Drift	Δ Vout	IP = 0 A	—	±0.5	—	mV/°C
Output Noise	V _{Np-p}	IP = 0 A	—	7.5	—	mV
	V _{Np-p(0.01uF)}	IP = 0 A, C = 0.01uF	—	1	—	

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.

Characteristic Diagrams:



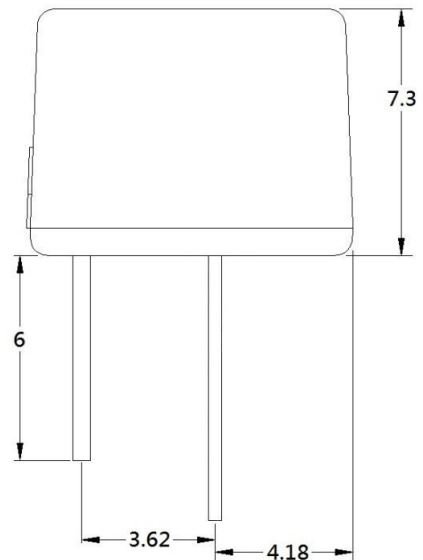
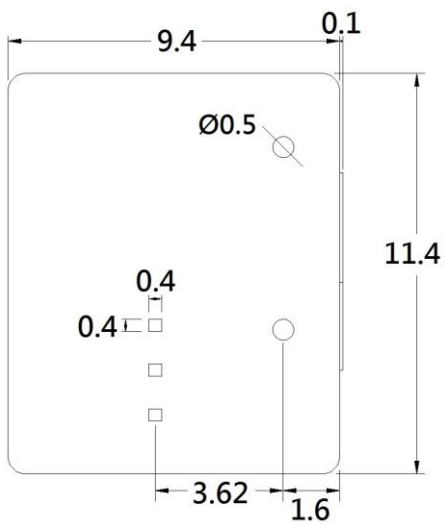
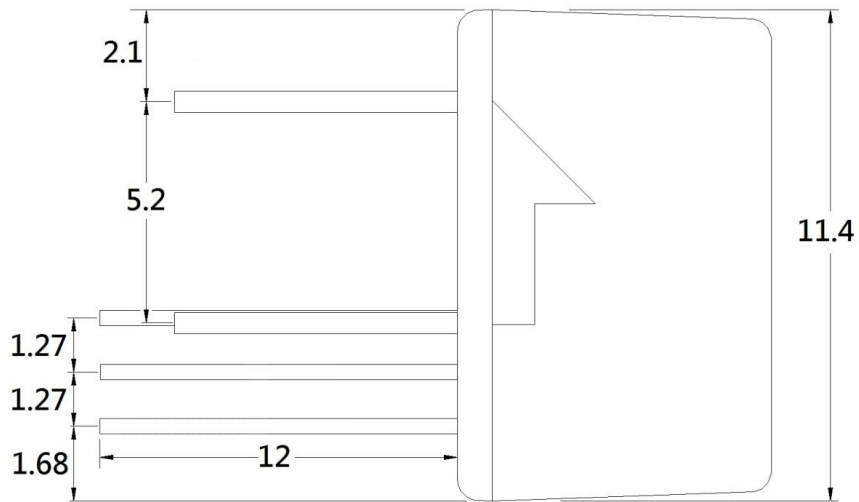
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Package Information:

unit : mm



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