Hall Effect Base Linear Current Sensor

Features:

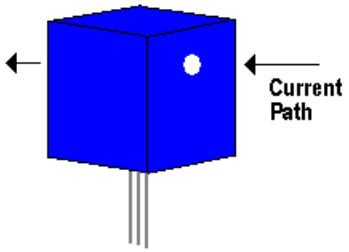
- Diameter 3mm conductor through hole
- Output voltage proportional to AC and DC current
- Min. sensing current 60A at 5V voltage supply
- High Sensitivity 33mV/A
- Wide operating voltage range 3.0~12 V.
- Low operating current 3mA
- Nearly zero magnetic hysteresis.
- Ratiometric output from supply voltage
- 23K Hz bandwidth

Functional Description :

The Winson WCS1700 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 WCS1700 consists of a precise, low-temperature drift linear hall sensor IC with temperature compensation circuit and a diameter 3mm through hole. Users can use system's own electric wire by pass it through this hole to measure passing current. This design allow system designers to monitor any current path without breaking or changing original system layout at all. Any current flowing through this hole will generate a magnetic field which is sensed by the integrated Hall IC and converted into a proportional voltage.

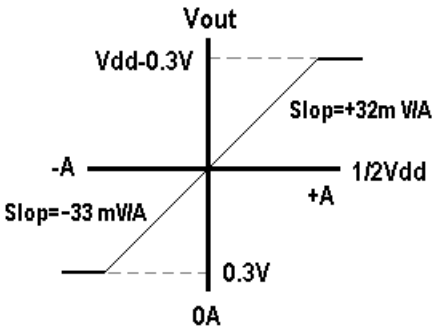
The terminals of the conductive path are electrically isolated from the sensor leads. This allow the WCS1700 current sensor to be used in applications requiring electrical isolation without the use of opto-isolators or other costly isolation techniques and make system more competitive in cost.



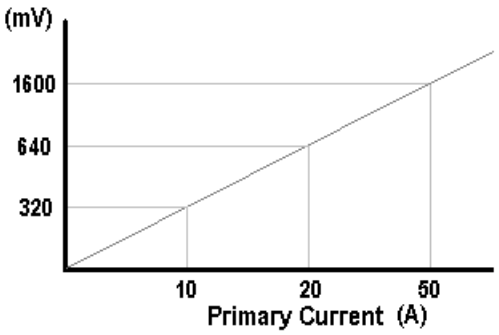
ABSOLUTE MAXIMUM RATING

Supply Voltage, Vdd	14V
Pass Through Wire Diameter	3mm
Output Current Sink	0.4mA
Output Current Source	2mA
Basic Isolation Voltage	4000V
Operating Temperature Range Ta	-20°C to +125°C
Storage Temperature Range Ts	-65°C to +150°C
Power Dissipation Pd	1 W

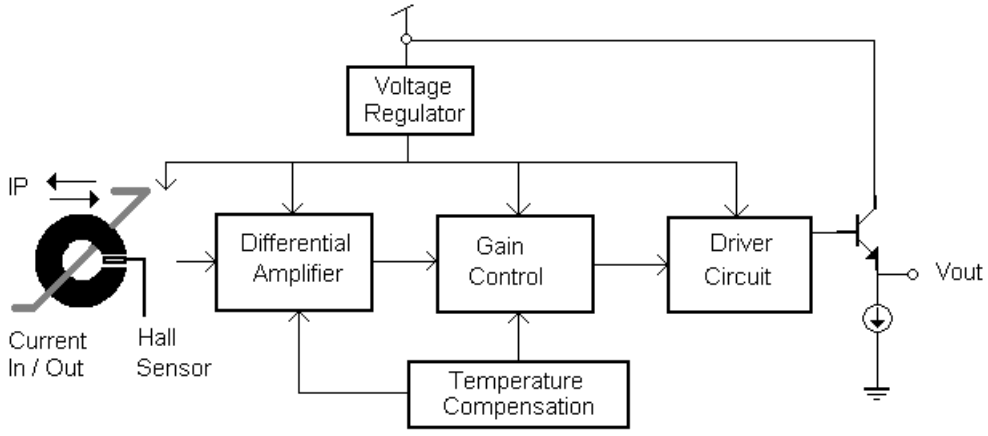
Vout vs. Primary Current



△ Vout vs. Primary Current



Function Block:



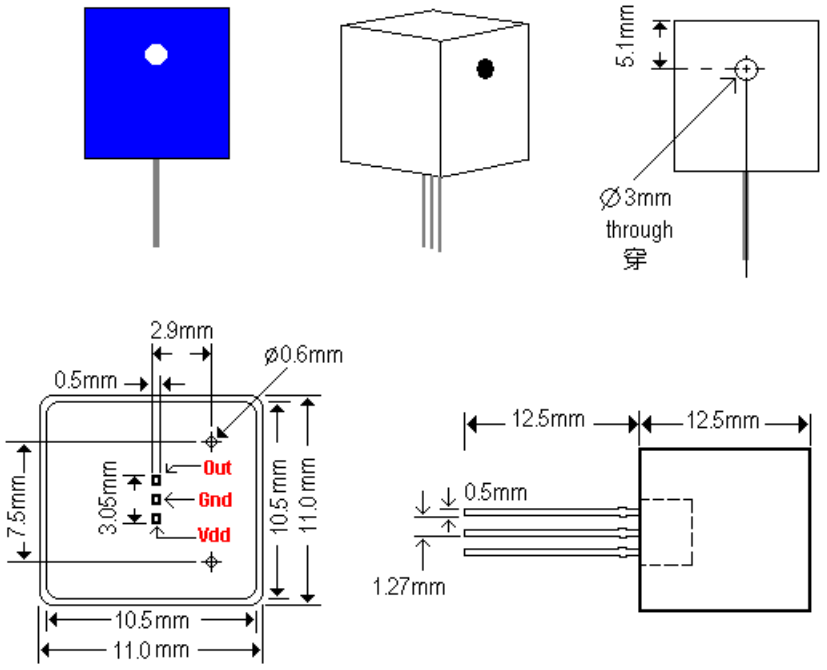
Winson reserves the right to make changes to improve reliability or manufacturability.

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	Isupply	IP =0 A	—	3.5	6.0	mA
Zero Current Vout	V0G	IP =0 A	2.4	2.5	2.6	V
Conductor Through Hole			—	3.0	—	mm
Sensitivity	△Vout	IP= +10 A	+29	+32	+35	mV/A
		IP= -10 A	-30	-33	-36	
Bandwidth	BW		—	23	—	kHz
Measurable Current Range	MCR	Vdd=5V	—	±60	—	A
		Vdd=12V	—	±120	—	
Temperature Drift	△Vout	Ip =0 A	—	±0.5	—	mV/℃

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

Package Information:



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