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| Hall Effect Base Linear Current Sensor |
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Features:

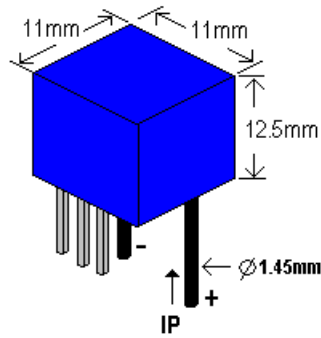
- Low noise analog signal path
- 0.6 m Ω internal conductor resistance
- Output voltage proportional to AC and DC current
- Min. sensing current 20A at 5V voltage supply
- High Sensitivity 66 mV/A
- Wide operating voltage range 3.0~12 V.
- Low operating current 3mA
- Nearly zero magnetic hysteresis.
- Ratiometric output from supply voltage
- 23K Hz bandwidth

Functional Description :

The Winson WCS1720 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 WCS1720 consists of a precise, low-temperature drift linear hall sensor IC with temperature compensation circuit and a current transformer with 0.6 m 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.

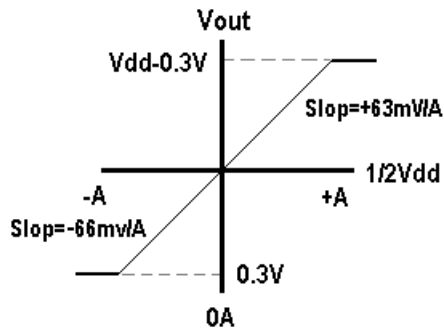
The terminals of the conductive path are electrically isolated from the sensor leads. This allow the WCS1720 current sensor to be used in applications requiring electrical isolation without the use of opto-isolators or other costly isolation techniques and make system more competitive in cost.



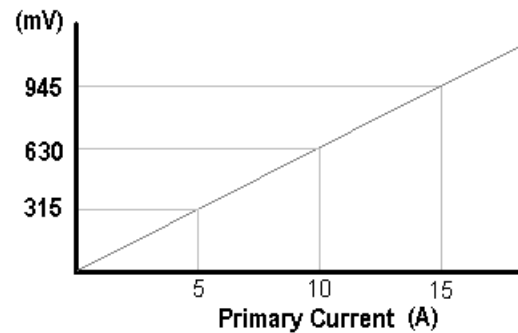
ABSOLUTE MAXIMUM RATING

| | |
|-----------------------------|-----------------|
| Supply Voltage, Vdd | 14V |
| Pass Current, IP | 60A |
| 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 |

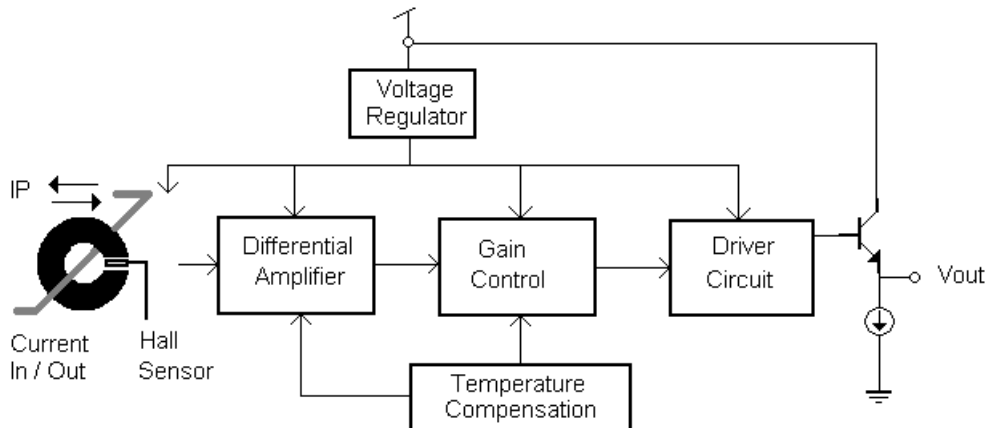
Vout vs. Primary Current



△ Vout vs. Primary Current



Function Block:



Electrical Characteristics:

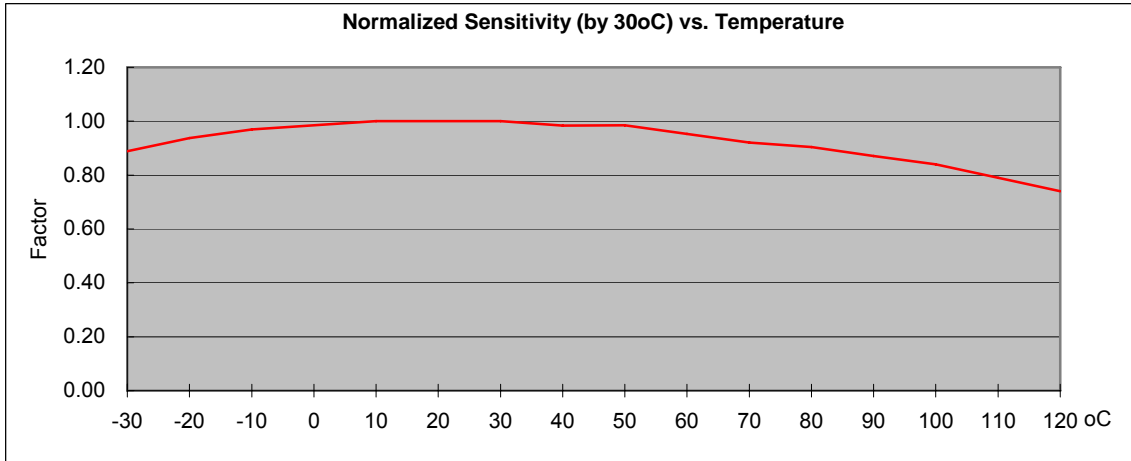
(T=+25°C, Vdd=5.0V)

| 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 |
| Primary Conductor Resistance | Rprimary | IP =10 A | — | 0.6 | — | mΩ |

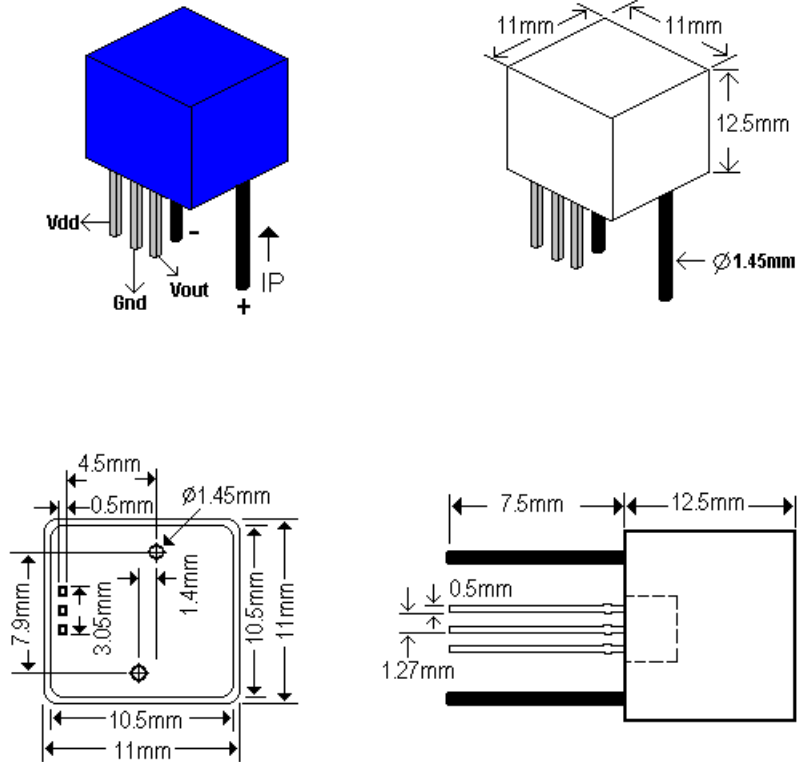
Winson reserves the right to make changes to improve reliability or manufacturability.

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|--------------------------|------------------|-----------|-----|-----------|-----|-------|
| Sensitivity | ΔV_{out} | IP= +10 A | +57 | +63 | +69 | mV/A |
| | | IP= -10 A | -60 | -66 | -72 | |
| Bandwidth | BW | | — | 23 | — | kHz |
| Measurable Current Range | MCR | Vdd=5V | — | ± 25 | — | A |
| | | Vdd=12V | — | ± 50 | — | |
| Temperature Drift | ΔV_{out} | IP = 0 A | — | ± 0.5 | — | mV/°C |

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



Package Information:



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