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| Hall Effect Base Linear Current Sensor |
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Features:

- Low noise analog signal path
- 98 mΩ internal conductor resistance
- Output voltage proportional to AC and DC current
- Min. sensing current 0~1.0A at 5V voltage supply
- High Sensitivity 2 mV/mA
- Wide operating voltage range 3.0~12 V.
- Low operating current 3mA
- Nearly zero magnetic hysteresis
- Ratiometric output from supply voltage
- 10K Hz bandwidth

**Functional Description :**

The Winson WCS2801 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...

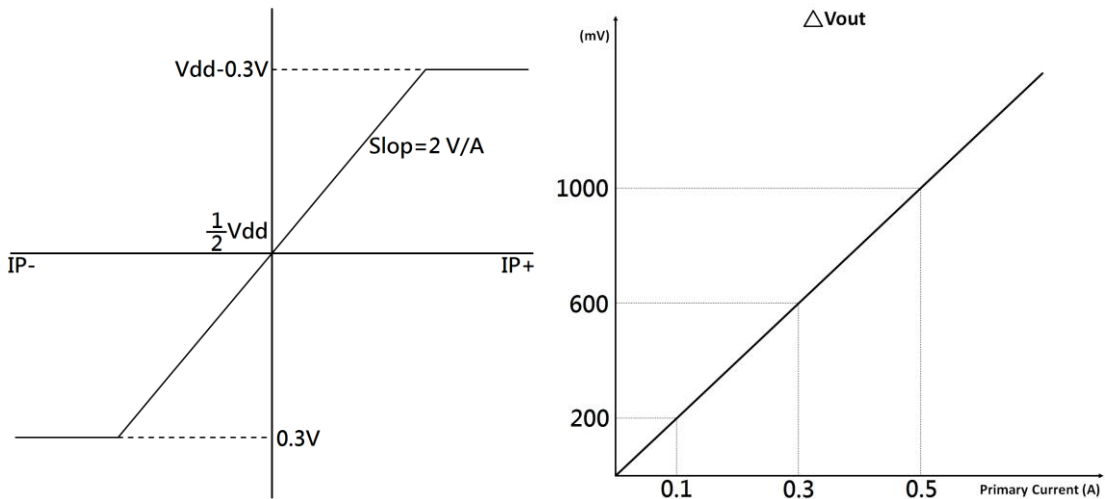
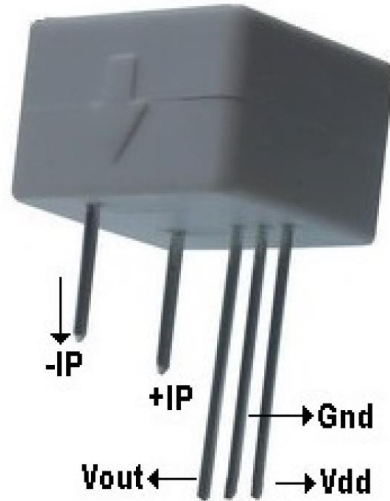
The WCS2801 consists of a precise, low-temperature drift linear hall sensor IC with temperature compensation circuit and a current path with 98 mΩ typical internal conductor resistance. This extremely low resistance can effectively reduce power loss, operating temperature and increase the reliability 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 voltage.

The terminals of the conductive path are electrically isolated from the sensor leads. This allow the WCS2801 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.

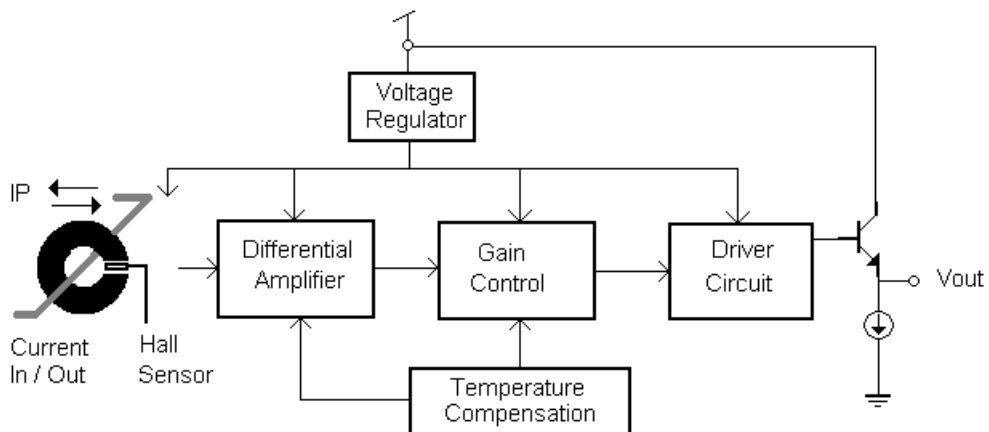
Winson reserves the right to make changes to improve reliability or manufacturability.

ABSOLUTE MAXIMUM RATING:

| | | |
|----------------------------------|-------|----------------|
| Supply Voltage, Vdd | ----- | 14V |
| Pass Current IP | ----- | 2.5A |
| Pass Current (10ms pulse) Ipulse | - | 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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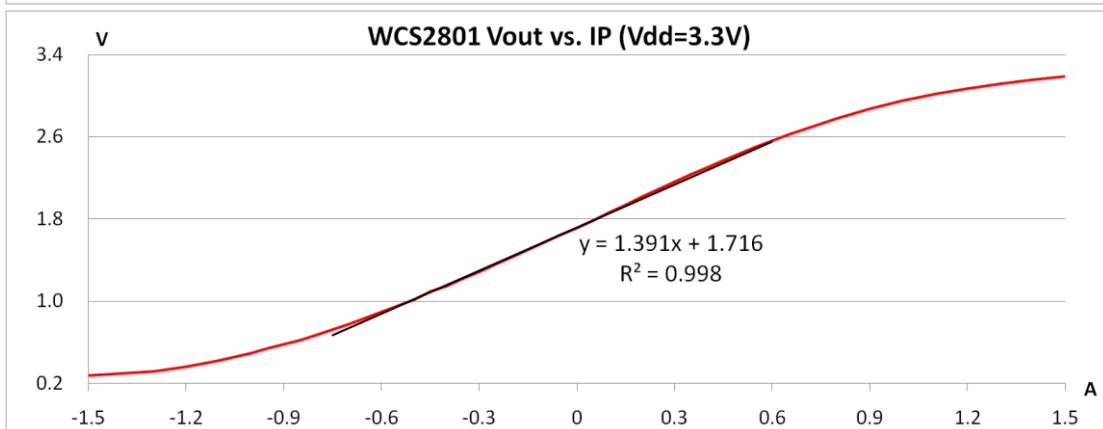
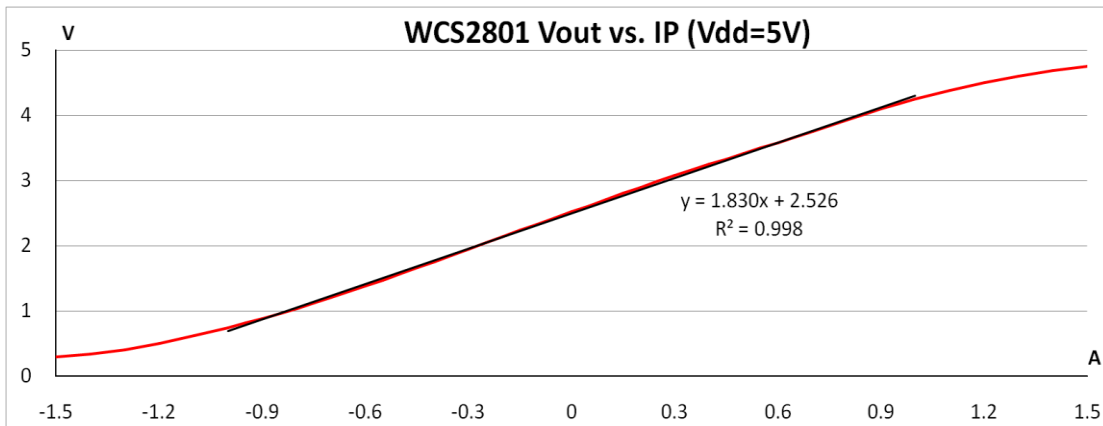
Electrical Characteristics:

(T=+25°C, Vdd=5.0V)

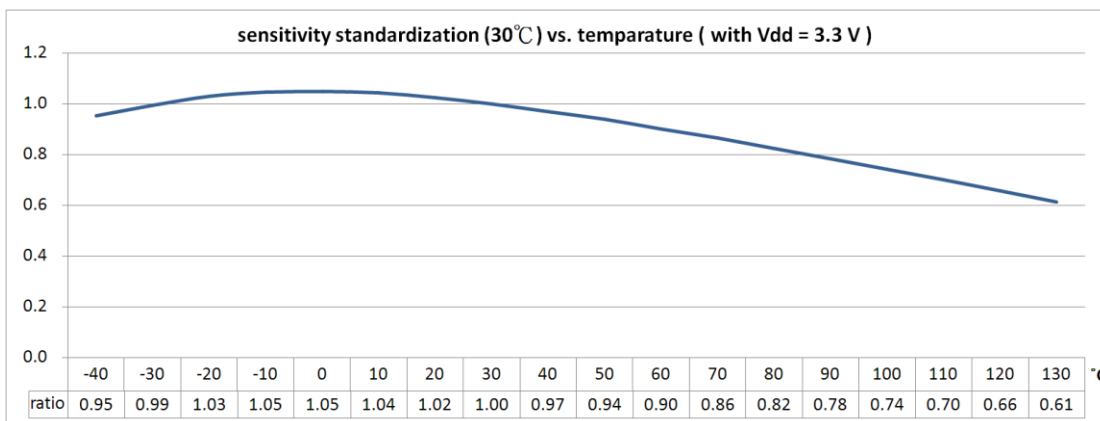
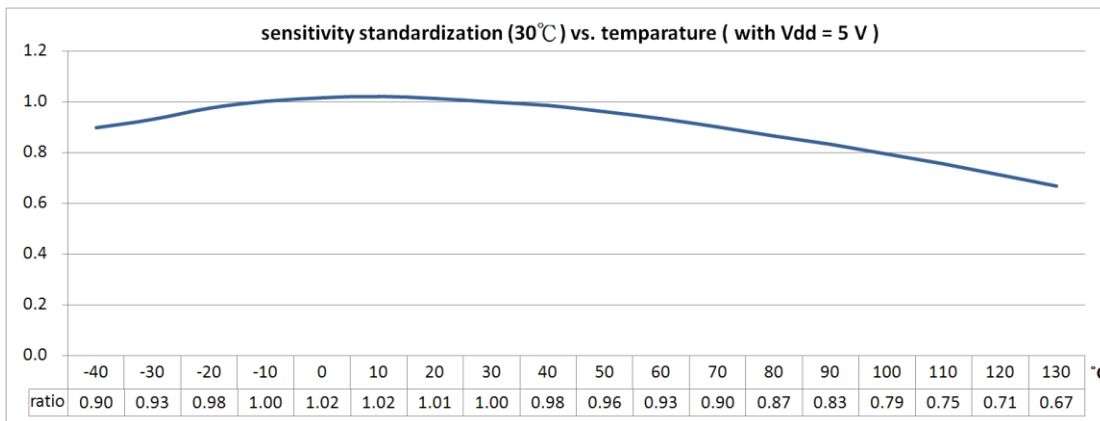
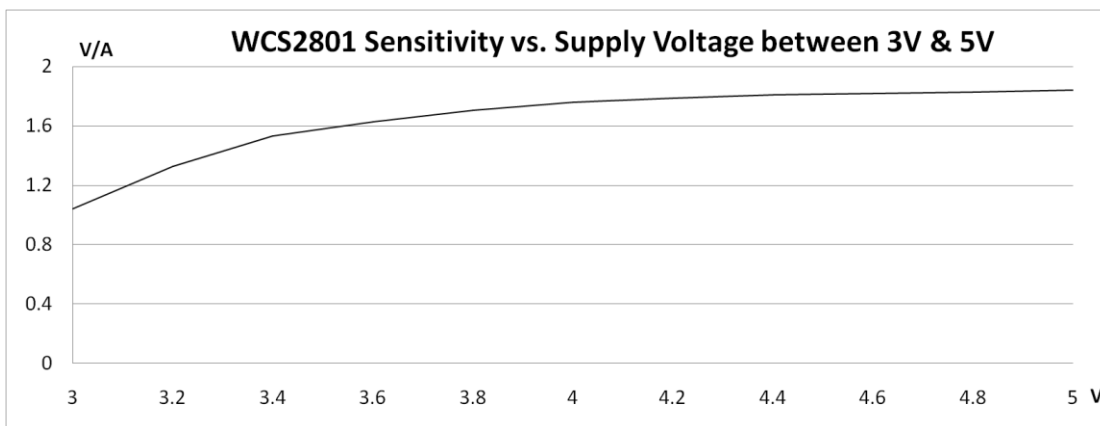
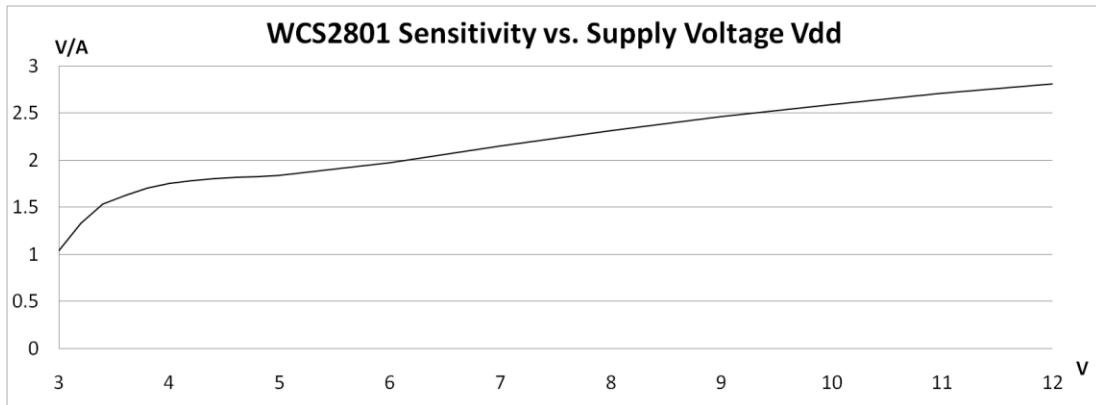
| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Units |
|------------------------------|---------------------------|----------------------------------|-----|------|-----|-------|
| Supply Voltage | Vcc | — | 3.0 | — | 12 | V |
| Supply Current | I _{supply} | I _P = 0 A | — | 3.4 | 5.0 | mA |
| Zero Current Vout | V _{0G} | I _P = 0 A | 2.3 | 2.5 | 2.7 | V |
| Primary Conductor Resistance | R _{primary} | I _P = 2 A | — | 98 | — | mΩ |
| Sensitivity | ΔV _{out} | I _P = ± 2.0 A | 1.7 | 2.0 | 2.3 | V/A |
| Bandwidth | BW | — | — | 10 | — | kHz |
| Measurable Current Range | MCR | Vdd=5V (DC Mode) | — | ±1.0 | — | A |
| | | Vdd=5V (AC RMS) | — | 0.7 | — | |
| Temperature Drift | ΔV _{out} | I _p = 0 A | — | ±1.0 | — | mV/°C |
| Output Noise | V _{Np-p} | I _p = 0 A | — | 15 | — | mV |
| | V _{Np-p(0.01uF)} | I _P = 0 A, C = 0.01uF | — | 3 | — | |

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:

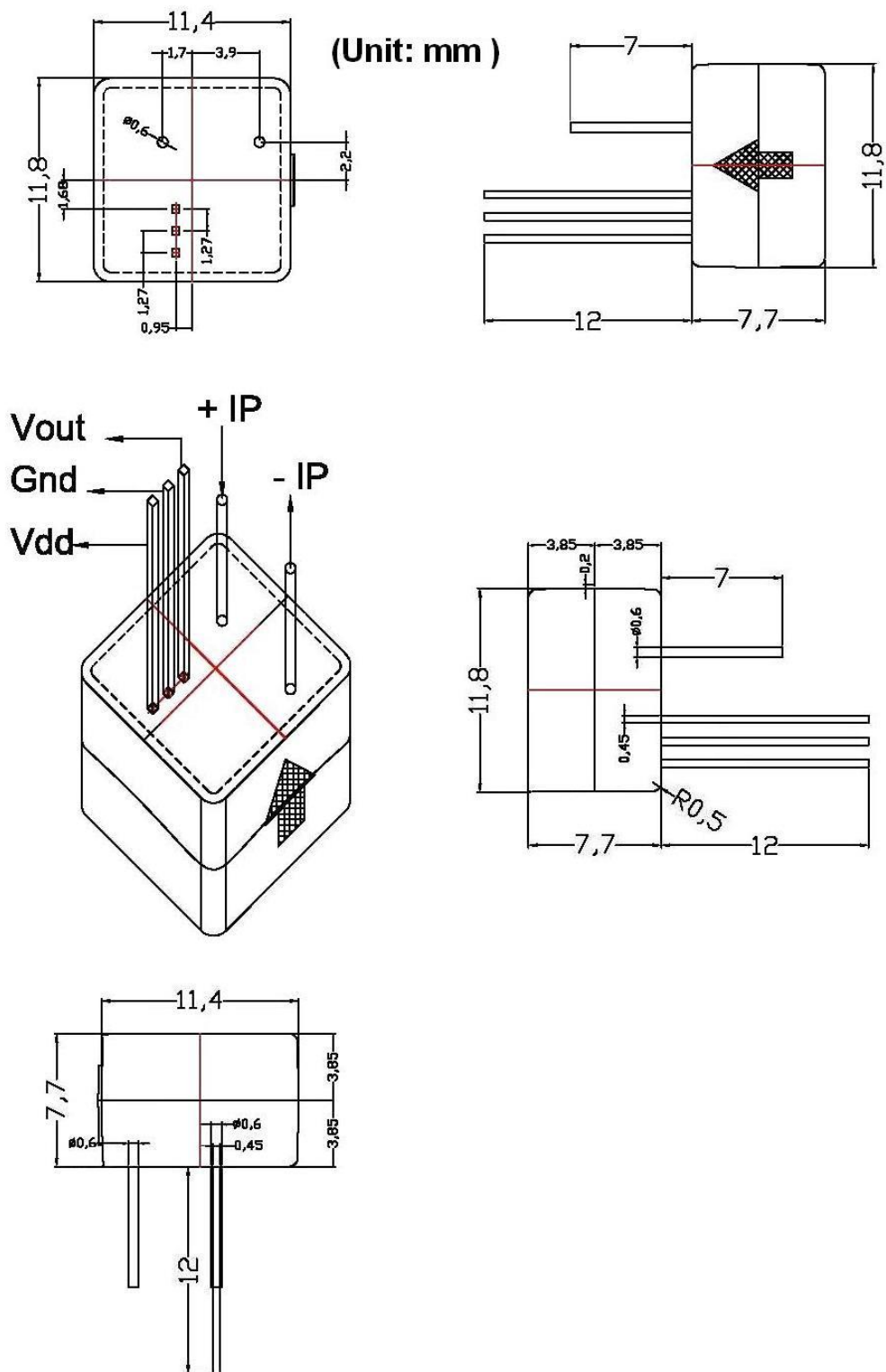


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Package Information:



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