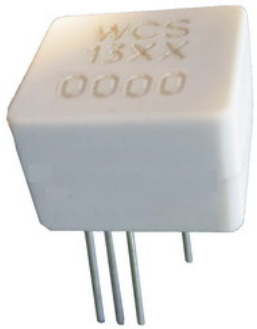
# WCS1301,1302,1303,1304

Hall Effect Base Current Switch

## Features:

- 8.3 mΩ internal conductor resistance
- Output "Low" when IP>= Iop
- Output "High" when IP < Irp
- Wide operating voltage range 2.6~18 V.
- Low operating current 2.0mA
- 10K Hz bandwidth
- Customized Spec. upon request




## Functional Description :

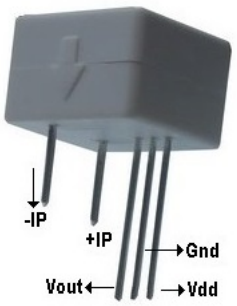
Winson's WCS1301,1302,1303 and 1304 provides cheap and convenient solution for current detection in industrial and commercial electronic systems. Typical applications include short circuit detection, load detection and over-current fault detection etc…

The WCS1301~4 consists of a precise, low-temperature drift hall switch IC with temperature compensation circuit and a current path with typical 8.3 mΩ internal conductor resistance. This extremely low resistance can effectively reduce power loss, operating temperature and increase the reliability greatly. Measured current IP flowing through this conduction path generates a magnetic field which is sensed by the integrated Hall switch IC and output "Low" when IP>=Iop and output "High" when IP<Irp.

The terminals of the conductive path are electrically isolated from the sensor leads. This allow the WCS1301~4 current switch 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.

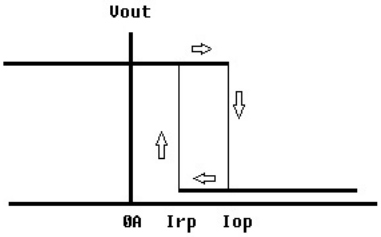
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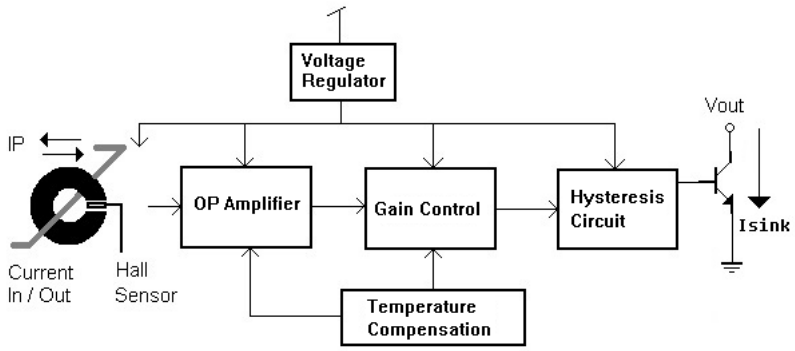



ABSULUTE MAXUMUN RATING

| | |
|---|---|
| Vout Breakdown Voltage | 28V |
| Pass Current IP | 8A |
| Pass Current (10 ms pulse) | 20A |
| Output Current Sink | 25mA |
| Conductor Isolation Voltage | 1000V |
| Operating Temperature Range Ta | -20 to +100°C |
| Storage Temperture Range Ts | -65 to +150°C |
| Power Dissipation Pd | 1W |




## Function Block:




## Electrical Characteristics: (T=+25°C, Vdd=5.0V )

| Characteristic | Symbol | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Supply Voltage | Vdd | — | 2.6 | — | 18 | V |
| Supply Current | Isupply | IP =0 A | — | 2.0 | 5.0 | mA |
| Vout Saturation Voltage | Vsat | IP> =Iop, Isink=10 mA | — | 0.2 | 0.6 | V |
| Output Leakage Current | Ileakage | Vdd=5V, IP < Irp | — | <0.1 | 10 | uA |
| Primary Conductor Resistance | Rprimary | IP= ± 5 A | — | 8.3 | — | mΩ |
| Bandwidth | BW | | — | 10 | — | kHz |
| Output Rise Time | Tr | IP<Irp, RL=2KΩ CL=20pf | — | 1.0 | 10 | us |
| Output Falling Time | Tf | IP>Iop, RL=2KΩ CL=20pf | — | 0.3 | 1.5 | us |

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

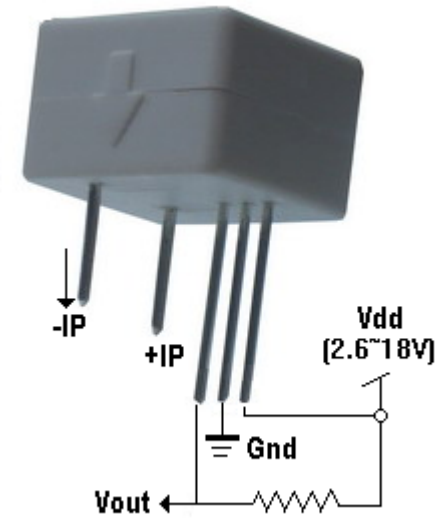
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Current Characteristics: **(T=+25°C, Vdd=5.0V )**

| Charactieristic | Symbol | Part No | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Operating Point | Iop | WCS1301 | 0.6 | 0.8 | 1.0 | A |
| | | WCS1302 | 1.0 | 1.5 | 2.0 | |
| | | WCS1303 | 2.0 | 2.5 | 3.0 | |
| | | WCS1304 | 3.0 | 3.5 | 4.0 | |
| Release Point | Irp | WCS1301 | 0.2 | | | A |
| | | WCS1302 | 0.5 | | | |
| | | WCS1303 | 1.5 | | | |
| | | WCS1304 | 2.2 | | | |
| Hysteresis Current | Ihys | | | 0.2 | 0.8 | A |

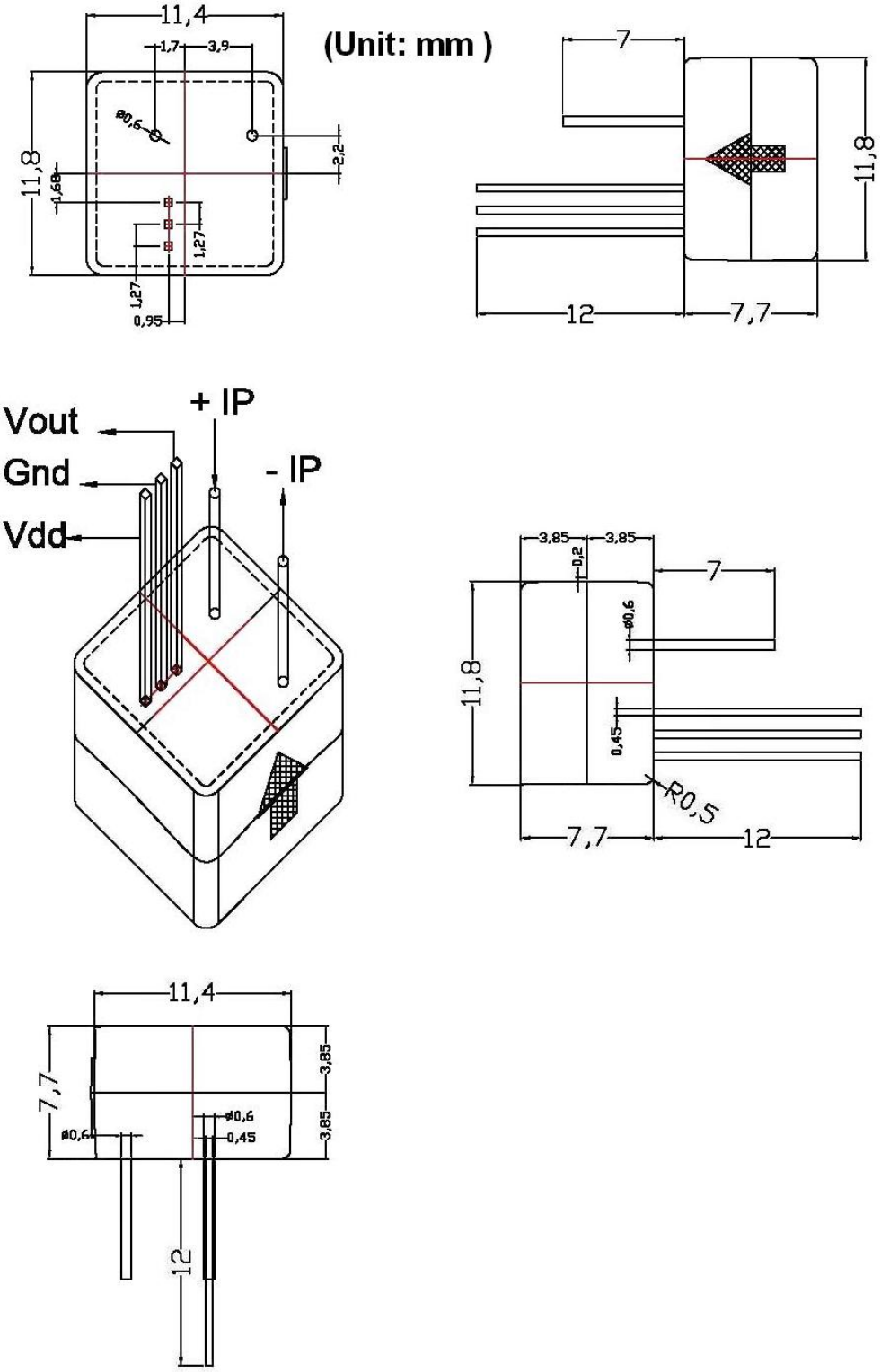
Application Circuit:




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Package Information:




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