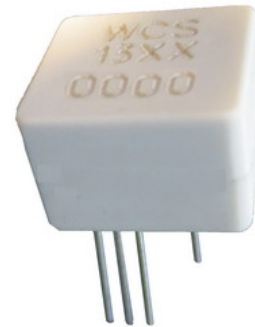


## Hall Effect Base Current Switch

### Features:

- 8.3 mΩ internal conductor resistance
- Output “Low” when  $I_P \geq I_{op}$
- Output “High” when  $I_P < I_{rp}$
- Wide operating voltage range 2.6~18 V.
- Low operating current 2.0mA
- 10K Hz bandwidth
- Customized Spec. upon request

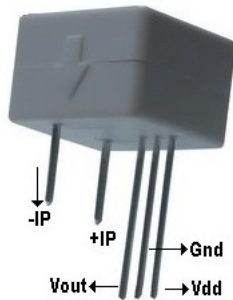


### Functional Description :

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...

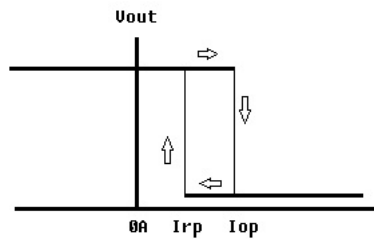
The WCS1301~4 consists of a precise, low-temperature drift hall switch IC with temperature compensation circuit and a current path with typical 8.3 mΩ internal conductor resistance. This extremely low resistance can effectively reduce power loss, operating temperature and increase the reliability greatly. Measured current  $I_P$  flowing through this conduction path generates a magnetic field which is sensed by the integrated Hall switch IC and output “Low” when  $I_P \geq I_{op}$  and output “High” when  $I_P < I_{rp}$ .

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.

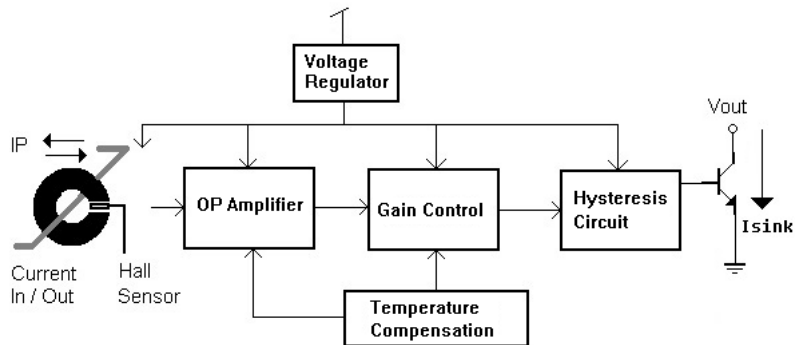


### ABSOLUTE MAXIMUM RATING

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 Temperature Range	
Ts	-65 to +150 °C
Power Dissipation Pd	1W



Function Block:



Electrical Characteristics:

(T=+25°C, V<sub>DD</sub>=5.0V)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Units
Supply Voltage	V <sub>DD</sub>	—	2.6	—	18	V
Supply Current	I <sub>supply</sub>	IP = 0 A	—	2.0	5.0	mA
Vout Saturation Voltage	V <sub>sat</sub>	IP > I <sub>op</sub> , I <sub>sink</sub> = 10 mA	—	0.2	0.6	V
Output Leakage Current	I <sub>leakage</sub>	V <sub>DD</sub> = 5V, IP < I <sub>rp</sub>	—	<0.1	10	uA
Primary Conductor Resistance	R <sub>primary</sub>	IP = ± 5 A	—	8.3	—	mΩ
Bandwidth	BW		—	10	—	kHz
Output Rise Time	Tr	IP < I <sub>rp</sub> , RL = 2KΩ CL = 20pf	—	1.0	10	us
Output Falling Time	Tf	IP > I <sub>op</sub> , 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

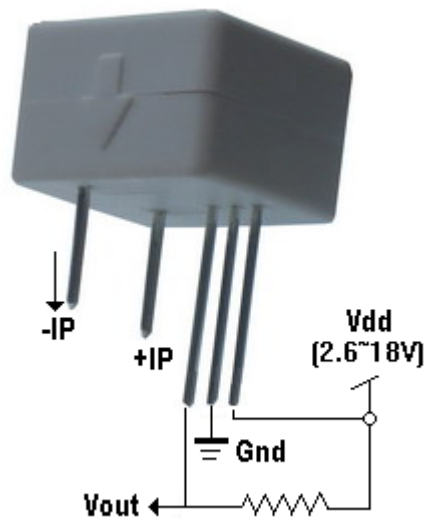
Winson reserves the right to make changes to improve reliability or manufacturability.

Current Characteristics:

( $T=+25^{\circ}\text{C}$ ,  $V_{\text{dd}}=5.0\text{V}$ )

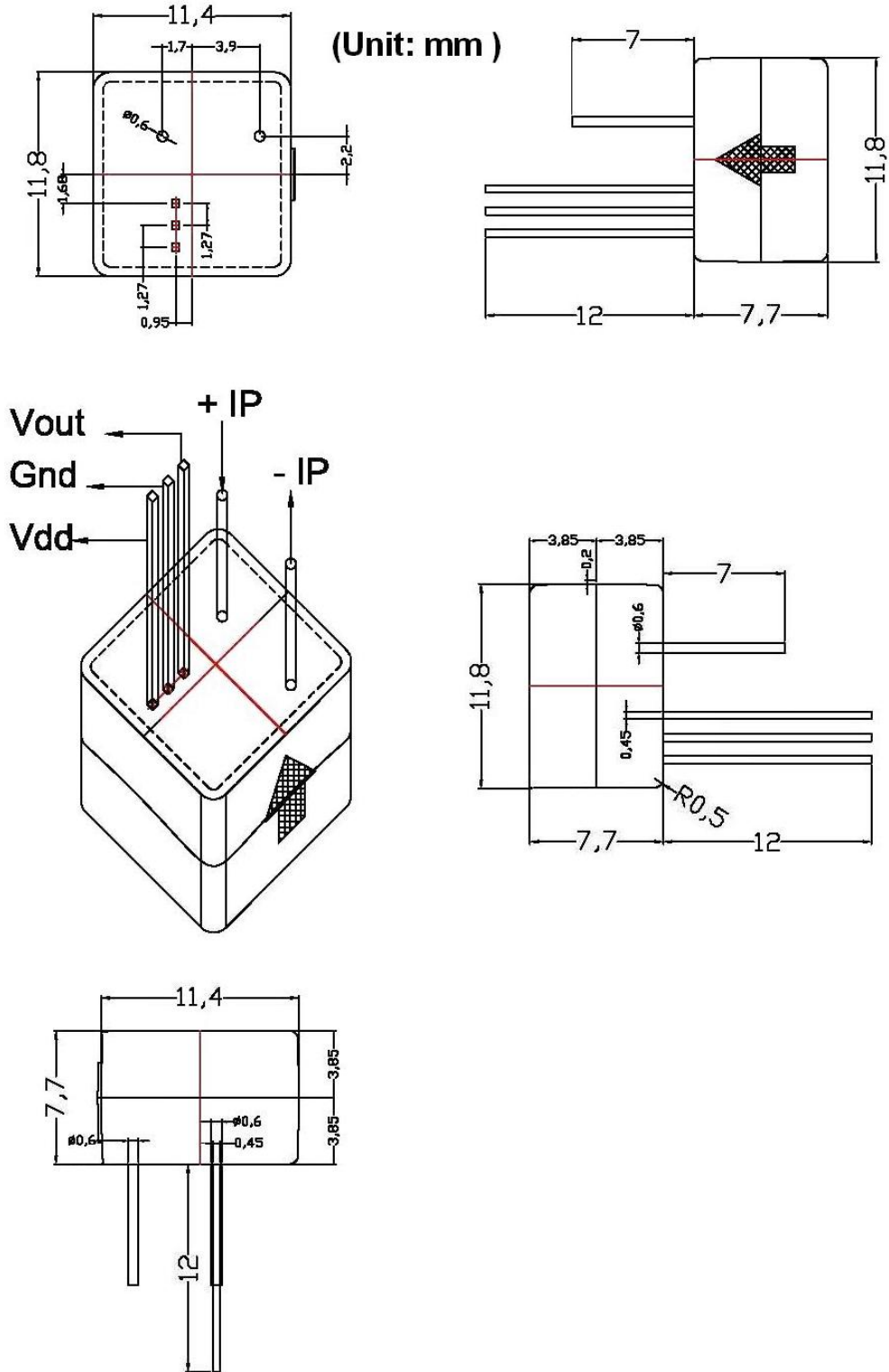
Characteristic	Symbol	Part No	Min.	Typ.	Max.	Unit
Operating Point	Iop	WCS1301	0.6	0.8	1.0	A
		WCS1302	1.0	1.5	2.0	
		WCS1303	2.0	2.5	3.0	
		WCS1304	3.0	3.5	4.0	
Release Point	Irp	WCS1301	0.2			A
		WCS1302	0.5			
		WCS1303	1.5			
		WCS1304	2.2			
Hysteresis Current	Ihys			0.2	0.8	A

Application Circuit:



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

Package Information:



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