



陕西信鸿磁业科技有限公司

SHAANXI SHINHOM ENTERPRISE CO.,LTD

HBC50DS5 Hall-effect Current Sensor Series

HBC50DS5 series is a new generation of current sensor based on the principle of Hall-effect. It can be used for detecting DC、pulse and various irregular waveform current under electrical isolation between output and input.

Electrical characteristics

	Type	HBC06DS5	HBC15DS5	HBC25DS5	HBC50DS5	
I_{PN}	Primary nominal input current	6	15	25	50	A
I_P	Measuring primary current range	19.2	48	80	150	A
R_M	Measurement resistance	100	100	50	50	Ω
V_{SN}	Nominal output voltage	$0.625 \pm 0.5\%$	$0.625 \pm 0.5\%$	$0.625 \pm 0.5\%$	$0.625 \pm 0.5\%$	V
K_N	Turns ratio	1:960	1:1200	1:2000	1:2000	
V_C	Supply voltage	+5 ($\pm 5\%$)				V
I_C	Current loss	20				mA
V_d	Insulation voltage	2.5KV AC/50Hz/1min				

Dynamic characteristics

ε_L	Linearity	≤ 0.1		%FS
X	Precision	$T_A = 25^\circ\text{C}$	± 0.7	q
V_0	Offset voltage	$T_A = 25^\circ\text{C}$	$2.5 \pm 0.5\%$	V
V_{OT}	Offset voltage temperature drift	$I_P = 0$ $T_A = -40 \sim +85^\circ\text{C}$	± 0.5	mV/ $^\circ\text{C}$
T_R	Response time	< 500		ns
f	Band width (-1dB)	DC~200		KHz

Generic characteristics

T_A	Operation temperature	$-40 \sim +85$	$^\circ\text{C}$
T_S	Storage temperature	$-40 \sim +125$	$^\circ\text{C}$
	Standard		

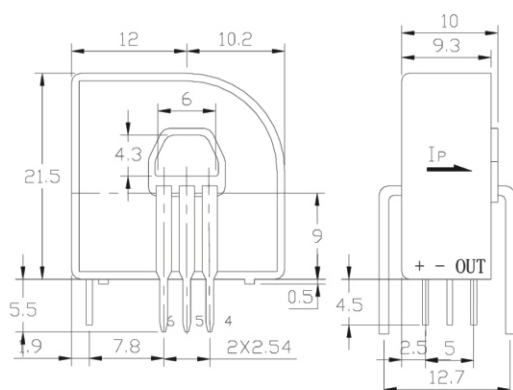
Advantages

- ◆ excellent precision ,good linearity, better anti-jamming capability
- ◆ easy to installation
- ◆ low temperature drift, quick response time, broad frequency band width
- ◆ PCB installation
- ◆ good over-current capability, competitive quality /price rate

Typical applications

- ◆ alternating current variable-speed generator tracking
- ◆ electric welding equipment for the control of the welding current
- ◆ DC generator static electricity commutation
- ◆ UPS, SMPS

package outline (mm)



Usage declaration: when I_P flows from terminal 1, 2, 3 to terminal 6, 5, 4, V_{out} is forward direction . For 50A primary current , customers had better use thick wire through the magnetic core hole to measure.

Connection diagram:

Primary	Primary rated current I_{PN} (A)	Primary resistance (m Ω)	Primary inductance (μ H)	connection
1	$\pm 6 (\pm 15, \pm 25, \pm 50)$	0.18	0.013	IN OUT
2	$\pm 3 (\pm 7.5, \pm 1.25, \pm 25)$	0.81	0.05	IN OUT
3	$\pm 2 (\pm 5, \pm 8.3, \pm 16.6)$	1.62	0.12	IN OUT

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