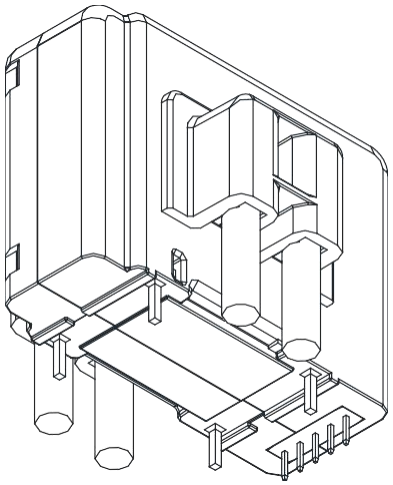
HS66-A-PB Series current sensor

Function description:

This series of sensors is based on Hall technology and closed-loop principle. It is suitable for measuring irregular current under DC, AC, pulse and various isolation conditions.

◆Features:

- ◆ Closed-loop principle
- ◆ Voltage type output
- ◆ Single power supply
- ◆ Low temperature bleaching
- ◆ Strong anti-interference ability
- ◆ Wide measuring range



◆ Application field:

- ◆ AC variable speed and servo motor drive
- ◆ Battery power application
- ◆ Uninterruptible power supply (UPS)
- ◆ Switching Power Supply (SMPS)
- ◆ Welding power supply application
- ◆ Photovoltaic inverter

Model list:

Model number	Rated input currentI_{PN} (A)	Measuring range I_{PM} (A)
HS66-100A-PB	100	±270
HS66-150A-PB	150	±450
HS66-200A-PB	200	±450

HS66-100A-PB Parameter list

argument	symbol	unit	Minimum value	Typical value	Maximum value	remark
Electrical parameter						
Primary side rated current	I_{PN}	A		100		
Primary current measurement range	I_{PM}	A		±270		
Supply voltage	V_C	V	4.75	5	5.25	
Output voltage	V_{OUT}	V		$V_{OUT}=G_{th} \times I_P$		@V_C=5V, @V_{OUT} to V_{REF}
Zero output voltage	V_{QOV}	V	2.48	2.5	2.52	@V_C=5V, I_P=0A
Reference voltage	V_{REF}	V	2.48	2.5	2.52	@V_C=5V, I_P=0A
Electrical bias voltage @IP=0	V_{OE}	mV	-2.5	-	2.5	V_{OUT}-V_{REF}
Theoretical gain	G_{th}	mV/A		6.25		
Current consumption	I_C	mA		18 + Ip/N_s*1000	20+ Ip/N_s*1000	N_s=1300 turns
Magnetic bias current	I_{OM}	mA	-104	-	104	
Rated output @IPN	V_{FS}	V		0.625		V_{OUT}-V_{REF}
Performance parameter						
Nonlinear error	ε_L	%of I_{PN}	-0.15	-	0.15	@Zero error is not includedV_{OE}
Gain error	ε_S	%of I_{PN}	-0.65	-	0.65	
Gain error temperature coefficient	TCS	ppm/K		-	70	ppm/K of I_{PN}
Total error at normal temperature	ε_{tot}	%of I_{PN}	-	-	0.95	
Total error @85 ℃	ε_{tot}	%of I_{PN}	-	-	1.25	
Reference voltage temperature coefficient	TCU_{REF}	ppm/K	-100	-	100	
Response time	t_r	μS	-	-	3	
Band width	BW	kHz	200	-	-	@±3dB
Universal parameter						
Operating ambient temperature	T_A	℃		-40….+105		
Storage ambient temperature	T_S	℃		-55….+125		

HS66-150A-PB Parameter list

argument	symbol	unit	Minimum value	Typical value	Maximum value	remark
Electrical parameter						
Primary side rated current	I_{PN}	A		150		
Primary current measurement range	I_{PM}	A		±450		
Supply voltage	V_C	V	4.75	5	5.25	
Output voltage	V_{OUT}	V		$V_{OUT}=G_{th}$ x I_P		@V_C=5V, @V_{OUT} to V_{REF}
Zero output voltage	V_{QOV}	V	2.48	2.5	2.52	@V_C=5V, I_P=0A
Reference voltage	V_{REF}	V	2.48	2.5	2.52	@V_C=5V, I_P=0A
Electrical bias voltage @IP=0	V_{OE}	mV	-2.5	-	2.5	V_{OUT}-V_{REF}
Theoretical gain	G_{th}	mV/A		4.166		
Current consumption	I_C	mA		18 + Ip/N_S*1000	20 + Ip/N_S*1000	N_S=1300 turns
Magnetic bias current	I_{OM}	mA	-156	-	156	
Rated output @IPN	V_{FS}	V		0.625		V_{OUT}-V_{REF}
Performance parameter						
Nonlinear error	ε_L	%of I_{PN}	-0.15	-	0.15	@Zero error is not includedV_{OE}
Gain error	ε_S	%of I_{PN}	-0.65	-	0.65	
Gain error temperature coefficient	TCS	ppm/K		-	70	ppm/K of I_{PN}
Total error at normal temperature	ε_{tot}	%of I_{PN}	-	-	0.95	
Total error @85 ℃	ε_{tot}	%of I_{PN}	-	-	1.25	
Reference voltage temperature coefficient	TCU_{REF}	ppm/K	-100	-	100	
Response time	t_r	μS	-	-	3	
Band width	BW	kHz	200	-	-	@±3dB
Universal parameter						
Operating ambient temperature	T_A	℃		-40….+105		
Storage ambient temperature	T_S	℃		-55….+125		

HS66-200A-PB Parameter list

argument	symbol	unit	Minimum value	Typical value	Maximum value	remark
Electrical parameter						
Primary side rated current	I_{PN}	A		200		
Primary current measurement range	I_{PM}	A		±450		
Supply voltage	V_C	V	4.75	5	5.25	
Output voltage	V_{OUT}	V		$V_{OUT}=G_{th}$ x I_P		@V_C=5V， @V_{OUT} to V_{REF}
Zero output voltage	V_{QOV}	V	2.48	2.5	2.52	@V_C=5V， I_P=0A
Reference voltage	V_{REF}	V	2.48	2.5	2.52	@V_C=5V， I_P=0A
Electrical bias voltage @IP=0	V_{OE}	mV	-2.5	-	2.5	V_{OUT}-V_{REF}
Theoretical gain	G_{th}	mV/A		3.125		
Current consumption	I_C	mA		18 + Ip/N_s*1000	20 + Ip/N_s*1000	N_s=1300 turns
Magnetic bias current	I_{OM}	mA	-208	-	208	
Rated output @IPN	V_{FS}	V		0.625		V_{OUT}-V_{REF}
Performance parameter						
Nonlinear error	ε_L	%of I_{PN}	-0.18	-	0.18	@不包含零点误差V_{OE}
Gain error	ε_S	%of I_{PN}	-0.65	-	0.65	
Gain error temperature coefficient	TCS	ppm/K		-	70	ppm/K of I_{PN}
Total error at normal temperature	ε_{tot}	%of I_{PN}	-	-	1.1	
Total error @85 ℃	ε_{tot}	%of I_{PN}	-	-	1.4	
Reference voltage temperature coefficient	TCU_{REF}	ppm/K	-100	-	100	
Response time	t_r	μS	-	-	3	
Band width	BW	kHz	200	-	-	@±3dB
Universal parameter						
Operating ambient temperature	T_A	℃		-40….+105		
Storage ambient temperature	T_S	℃		-55….+125		

Attention:

(1) Output voltage VOUT, zero output voltage VQOV, theoretical gain Gth and power supply VC are disproportionately dependent;

(2) The frequency of the current to be measured should be limited to the sensor frequency band, otherwise it will cause overheating of the magnetic core and chip;

(3) The wrong wiring method may damage the sensor;

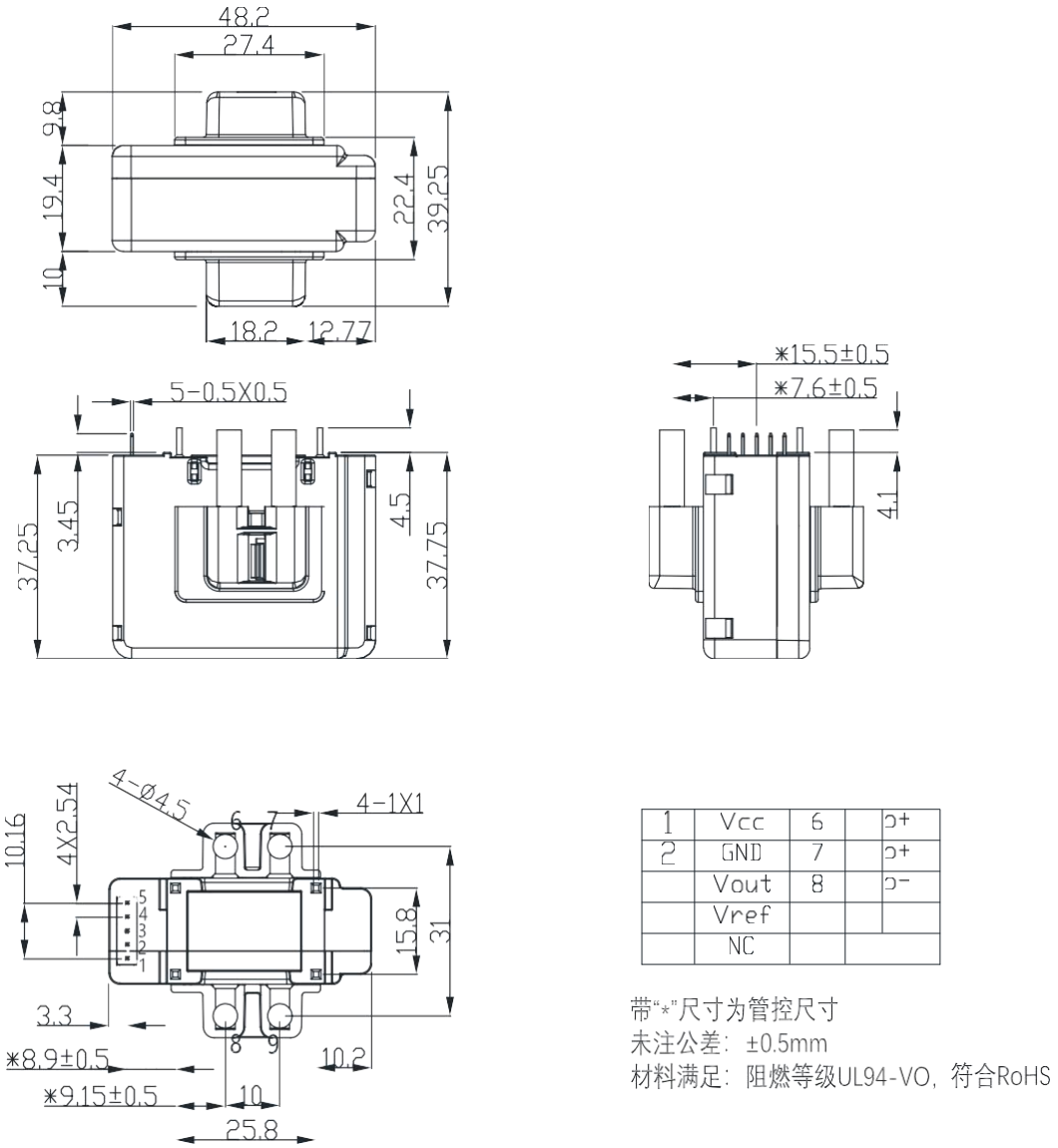
Insulation characteristic:

argument	symbol	unit	Numerical value	remark
Ac isolation withstand voltage test RMS @ 50Hz,1min	U_D	KV	3	
Impulse withstand voltage	U_{Ni}	KV	8	
Creepage distance	d_{CP}	mm	12.9	
Electrical clearance	d_{CI}	mm	12.9	
Relative marking index	CTI	-	600	

Maximum limit:

argument	symbol	unit	Numerical value
Supply voltage	V_{Cmax}	V	7
Maximum primary conductor temperature	T_{Bmax}	℃	110
Maximum primary current	I_{Pmax}	A	$10\times I_{PN}$
Electrostatic discharge voltage (HBM - Human body model)	$U_{ESD\ HBM}$	kV	4

Machine size: (unit:mm)

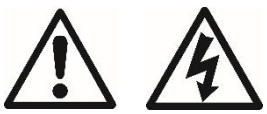


1	Vcc	6		ɔ+
2	GND	7		ɔ+
	Vout	8		ɔ-
	Vref			
	NC			

带"*"尺寸为管控尺寸
未注公差：±0.5mm
材料满足：阻燃等级UL94-VO，符合RoHS

Attention:

Sensors must comply with IEC61010-1 standards. Sensors must be installed in electronic or electrical equipment that meets application standards and safety requirements in accordance with the instructions for use.

Watch out. Watch out for shocks. 

When the sensor is working, some parts may be subjected to dangerous voltages (such as the primary busbar, power supply), and ignoring these will result in damage and serious danger. The sensor is a built-in device, and its conductive part must be guaranteed not to be touched by the outside world after installation. Protective case or shielding cover can be added if necessary. The main power supply must be able to be disconnected