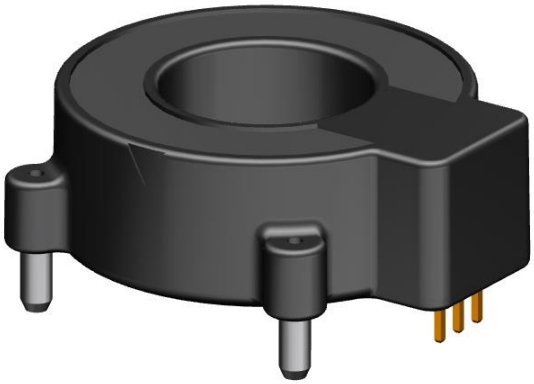
SINOMAGS 希 磁 科 技

Current Sensor

Product Series: SHK-VBS-T

Part number: SHK-VBS-A1-600-S2

VERSION： Ver 1.3



Sinomags Technology Co., Ltd

Web site: www.sinomags.com

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1. Introduction

The SHK-VBS-A series current sensor is based on Hall technology, and it has an open-loop design. It is suitable for DC, AC pulsed and any kind of irregular current measurement under the isolated conditions.

Typical applications

- AC Variable speed drives
- Electric welder power supply
- Motor driver

General parameter

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 125
Storage temperature	T_stg	℃	-40 ~ 125
Mass	m	g	30

Absolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage （not-destructive）	V_{CC}	V	6
ESD rating（HBM）	U_{ESD}	kV	4

Remark: the unrecoverable damage may occur when the product works on the conditions over the absolute maximum ratings. Long-time working on the absolute maximum ratings may cause the degradation on performance and reliability.

Isolation parameter

Parameter	Symbol	Unit	Value	Comment
RMS voltage for AC test 50Hz/1 min	Ud	kV	4	
Case material			V0 according to UL 94	

2. Electrical Data

Condition：T_A = 25℃，Vcc = 5V

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		600		SHK-VBS-A1-600-S2
Current range (refer remark)	I_{PM}	A	-600		600	SHK-VBS-A1-600-S2
Supply voltage	Vcc	V		5 ± 5%		SHK-VBS-A1-600-S2
Current consumption	Icc	mA		15		@ V_{CC}= 5.0 V
Quiescent voltage Vout @ 0 A	Voff	V	Vcc/2-0.025	Vcc/2	Vcc/2+0.025	@ T_a = 25℃, V_{CC} = 5.0 V
Peak output voltage (Vout @ ±I_{PM}) – Voff	V_FS	V		± 2		SHK-VBS-A1-600-S2
Internal output resistance	R_out	Ω		5		Vout
Theoretical gain (Typ)	G_th	mV/A		3.33		SHK-VBS-A1-600-S2
Rated linearity error	Non-L	% I_{PN}		± 1		±I_{PN}
Step response time	t_res	μs		3.5		@90% of I_{PN}
Frequency bandwidth (-3dB)	BW	kHz		100		No RC circuit
Output voltage noise DC ~ 14 kHz DC ~ 140 kHz	Vnoise	mVpp		 20 30		SHK-VBS-A1-600-S2
Accuracy @ 25℃	X	% of I_{PM}		±1.5		SHK-VBS-A1-600-S2
Accuracy @ -40℃ ~ 125℃	X_TRange	% of I_{PM}	-3.5		3.5	SHK-VBS-A1-600-S2

3. Dimension & Pin Definitions