

Current Sensor

Product Series: STK-BS-A2

Part number: STK-600BS-A2
STK-800BS-A2

VERSION: Ver 1.2



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1. Introduction

STK-BS-A2 series current sensor is based on Hall, 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

- Battery supplied applications
- Motor driver
- Electric welder power supply
- UPS

General parameter

Parameter	Symbol	Unit	Value
Working temperature	T _A	°C	-40 ~ 85
Storage temperature	T _{stg}	°C	-40 ~ 85
Mass	m	g	220

Absolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage (not-destructive)	V _{CC}	V	± 18
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

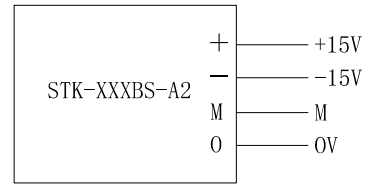
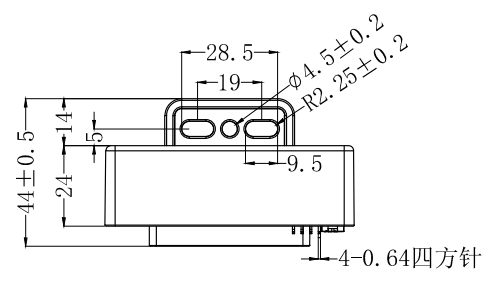
Parameter	Symbol	Unit	Value	Comment
RMS voltage for AC test 50Hz/1 min	U _d	kV	5	
Clearance distance (pri. -sec)	d _{Cl}	mm	13.5	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	8.5	Shortest path along device body
Case material			V0 according to UL 94	

2. Electrical Data

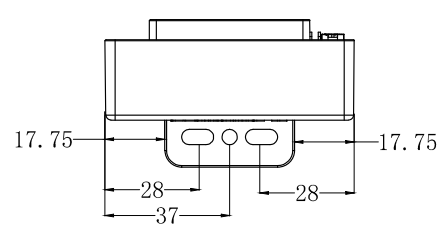
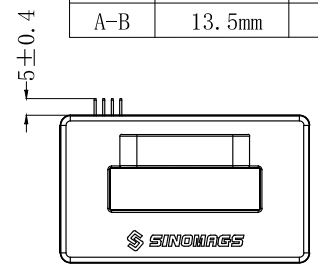
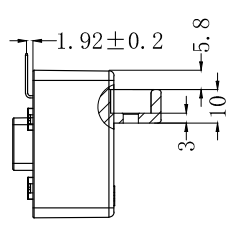
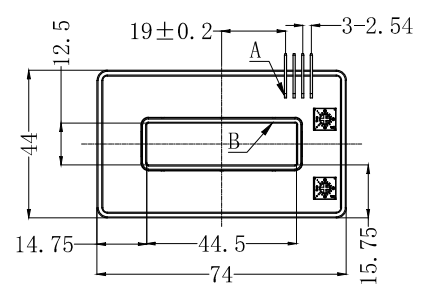
Condition: $T_A = 25^{\circ}\text{C}$, $V_{CC} = \pm 12 \sim \pm 15\text{V}$

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		600		STK-600BS-A2
				800		STK-800BS-A2
Current range (refer remark)	I_{PM}	A	-1800		1800	STK-600BS-A2
			-2400		2400	STK-800BS-A2
Supply voltage	V_{CC}	V	± 12	± 15		All
Current consumption	I_{CC}	mA		± 20		All
Quiescent voltage $V_{out} @ 0\text{A}$	V_{off}	V	-0.04	0	0.04	All
Peak output voltage ($V_{out} @ \pm I_{PN}$) - V_{off}	V_{FS}	V		± 4		All
Internal output resistance	R_{out}	Ω		100		V_{out}
Theoretical gain (Typ)	G_{th}	mV/A		6.67		STK-600BS-A2
				5		STK-800BS-A2
Rated linearity error	Non-L	% I_{PN}	-1		1	$\pm I_{PN}$
Step response time	t_{res}	μs		3	5	@90% of I_{PN}
Frequency bandwidth (-3dB)	BW	kHz		25		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 100 kHz	V_{noise}	mVpp		20		All
				30		
Accuracy @ 25°C	X	% of I_{PN}	-1		1	All
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K	-1		1	@ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$
Temperature coefficient of V_{OUT}	TCV_{OUT}	%/K	-0.1		0.1	@ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

3. Dimension & Pin Definitions



	d _{CI}	d _{CP}
A-B	13.5mm	8.5mm



Tolerance	
X.	±0.5
.X	±0.25
.XX	±0.1
.XXX	±0.05

Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.5
Unit :mm

