

Current Sensor

Product Series: STK-BS/T

Part number: STK-200BS/T & STK-400BS/T &
STK-500BS/T & STK-600BS/T &
STK-800BS/T & STK-1000BS/T &
STK-1200BS/T & STK-1500BS/T

VERSION: Ver 2.3



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CONTENT

1.	Introduction.....	2
2.	Electrical Data.....	3
3.	Dimension & Pin Definitions.....	5

1. Introduction

STK-BS/T 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 ~ 105
Storage temperature	T _{stg}	°C	-40 ~ 105
Mass	m	g	300

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	4.9	
Clearance distance (pri. -sec)	d _{Cl}	mm	11	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	11	Shortest path along device body
Case material			V0 according to UL 94	

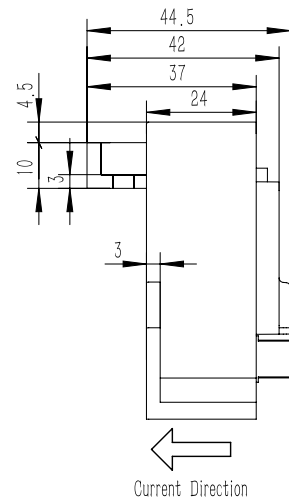
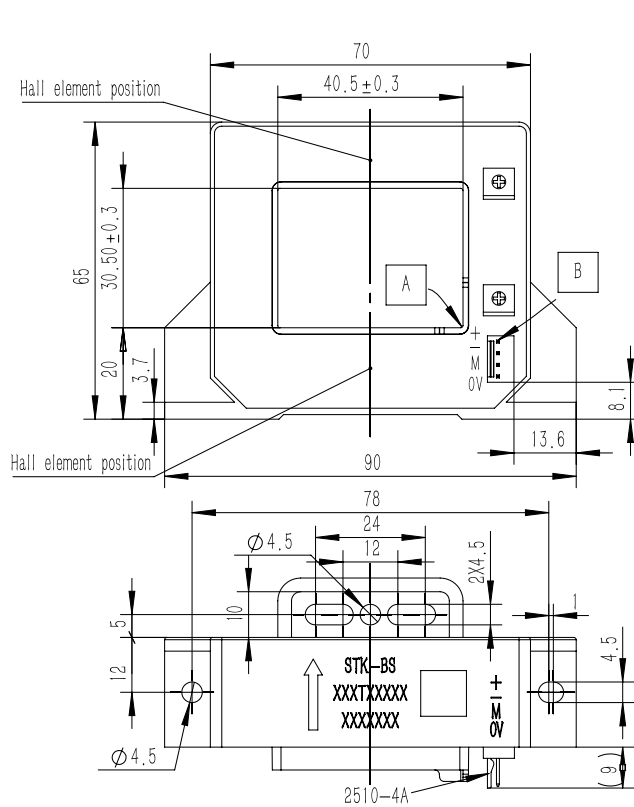
2. Electrical Data

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

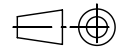
Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		200		STK-200BS/T
				400		STK-400BS/T
				500		STK-500BS/T
				600		STK-600BS/T
				800		STK-800BS/T
				1000		STK-1000BS/T
				1200		STK-1200BS/T
				1500		STK-1500BS/T
Current range (refer remark)	I_{PM}	A	-600		600	STK-200BS/T
			-1200		1200	STK-400BS/T
			-1500		1500	STK-500BS/T
			-1800		1800	STK-600BS/T
			-2400		2400	STK-800BS/T
			-2500		2500	STK-1000BS/T
			-2500		2500	STK-1200BS/T
			-2500		2500	STK-1500BS/T
Supply voltage	V_{CC}	V		$\pm 12 \sim \pm 15$		STK-200BS/T STK-400BS/T STK-500BS/T STK-600BS/T STK-800BS/T STK-1000BS/T STK-1200BS/T STK-1500BS/T
Current consumption	I_{CC}	mA		± 20		All
Quiescent voltage $V_{out} @ 0\text{A}$	V_{OFF}	V	-0.04	0	0.04	STK-200BS/T STK-400BS/T STK-500BS/T STK-600BS/T STK-800BS/T STK-1000BS/T STK-1200BS/T STK-1500BS/T
Peak output voltage ($V_{out} @ \pm I_{PN}$) – V_{OFF}	V_{FS}	V		± 4		STK-200BS/T STK-400BS/T STK-500BS/T STK-600BS/T

						STK-800BS/T STK-1000BS/T STK-1200BS/T STK-1500BS/T
Internal output resistance	R _{out}	Ω		100		V _{out}
Theoretical gain (Typ)	G _{th}	mV/A		20		STK-200BS/T
				10		STK-400BS/T
				8		STK-500BS/T
				6.66		STK-600BS/T
				5		STK-800BS/T
				4		STK-1000BS/T
				3.33		STK-1200BS/T
				2.66		STK-1500BS/T
Rated linearity error	Non-L	% I _{PN}		± 1		$\pm I_{PN}$
Step response time	t _{res}	μs		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}	mV _{pp}		20		STK-200BS/T STK-400BS/T STK-500BS/T STK-600BS/T STK-800BS/T STK-1000BS/T STK-1200BS/T STK-1500BS/T
				30		
Accuracy @ 25°C	X	% of I _{PN}		± 1		All
Temperature coefficient of V _{OE}	TCV _{OE}	mV/K		± 1		@ -40°C ~ 80°C
				± 1.5		@ 80°C ~ 105°C
Temperature coefficient of V _{OUT}	TCV _{OUT}	%/K		± 0.1		@ -40°C ~ 105°C

3. Dimension & Pin Definitions



	d_{cl}	d_{cp}
A-B	11 mm	11 mm



1. Material: Fit UL94-V0 & RoHS requirements;
2. General tolerance: ± 0.5 ;
3. Unit: mm