

Current Sensor

Product Series: STK-BS/H

Part number: STK-50BS/H4 & STK-75BS/H4 &
STK-100BS/H4

VERSION: Ver1.0



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1. Introduction

STK-BS/H 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

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

General parameter

Parameter	Symbol	Unit	Value
Working temperature	T _A	°C	-40 ~ 80
Storage temperature	T _{stg}	°C	-40 ~ 85
Mass	m	g	36

Absolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage (not-destructive)	V _{CC}	V	15V
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

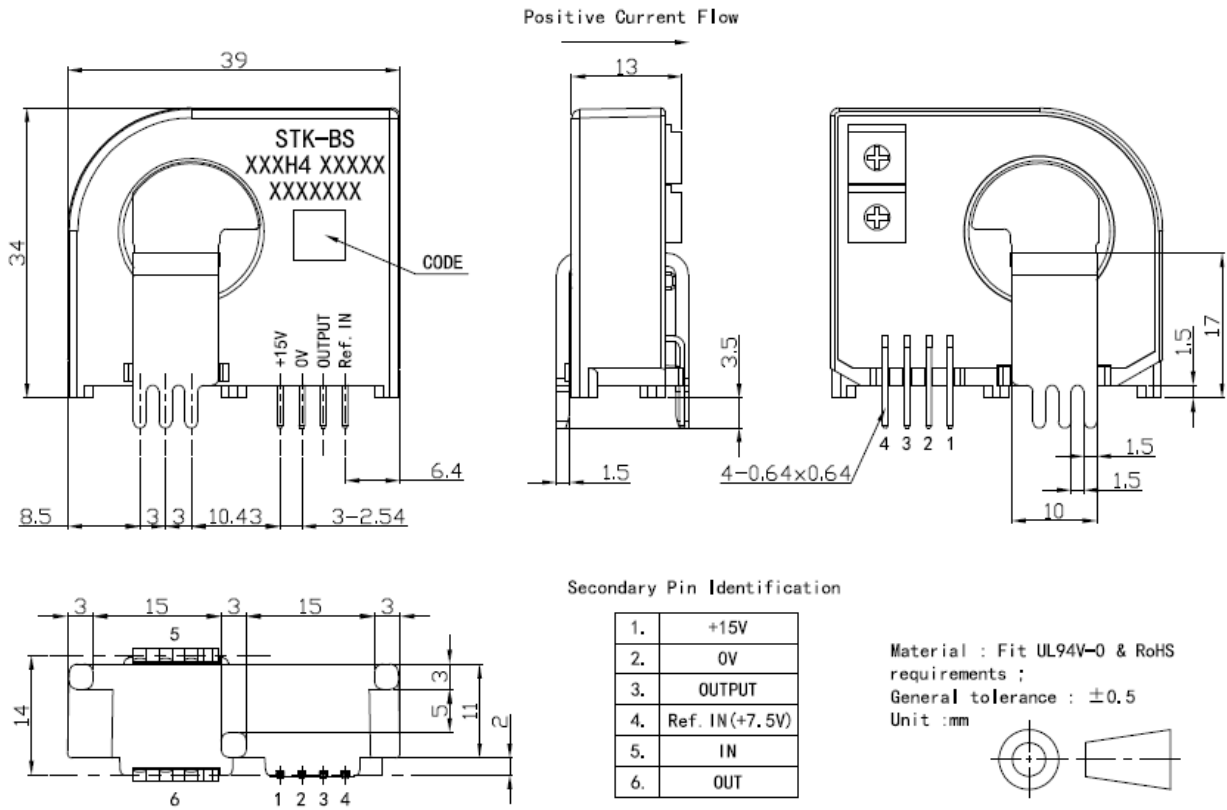
Parameter	Symbol	Unit	Value	Comment
RMS voltage for AC test 50Hz/1 min	U _d	kV	2.5	
Clearance distance (pri. -sec)	d _{Cl}	mm	4.5	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	4.5	Shortest path along device body
Case material			V0 according to UL 94	

2. Electrical Data

 Condition: $T_A = 25^{\circ}\text{C}$, $V_c = 15\text{V} * (1 \pm 5\%)$

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		50		STK-50BS/H4
				75		STK-75BS/H4
				100		STK-100BS/H4
Current range (refer remark)	I_{PM}	A	-150		150	STK-50BS/H4
			-225		225	STK-75BS/H4
			-450		450	STK-100BS/H4
Supply voltage	V_{CC}	V	14.25	+ 15	15.75	All
Current consumption	I_{CC}	mA			15	All
Quiescent voltage $V_{out} @ 0\text{ A}$	V_{off}	V	$V_{CC}/2 - 0.05$	$V_{CC}/2$	$V_{CC}/2 + 0.05$	All
Peak output voltage ($V_{out} @ \pm I_{PN}$) – V_{off}	V_{FS}	V	± 1.68	± 1.66	± 1.64	All
Internal output resistance	R_{out}	Ω		100		V_{out}
Theoretical gain (Typ)	G_{th}	mV/A		33.2		STK-50BS/H4
				22.1		STK-75BS/H4
				16.6		STK-100BS/H4
Rated linearity error	Non-L	% I_{PN}		± 1		$\pm I_{PN}$
Step response time	t_{res}	μs		3		@90% of I_{PN}
Frequency bandwidth (-3dB)	BW	kHz		50		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 100 kHz	V_{noise}	mVpp		20		All
				30		
Accuracy @ 25°C	X	% of I_{PM}		± 1		All
Accuracy @ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$	X_{TRange}	% of I_{PM}		± 2		All

3. Dimensions of STK- BS/H4



Revision History

Number	Description	Responsible	Date
V1.0	Release	Z.T. Mi	2021-11-26