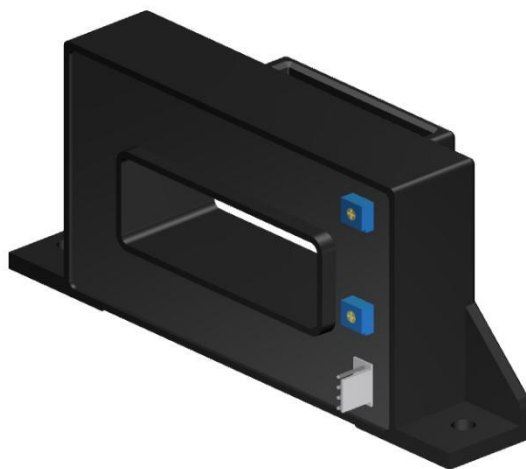


Current Sensor

Product Series: STK-BS/X6

Part number: STK-500BS/X6 & STK-600BS/X6 &
STK-850BS/X6 & STK-1000BS/X6 &
STK-1200BS/X6 & STK-1500BS/X6 &
STK-2000BS/X6 & STK-2500BS/X6

VERSION: Ver 1.4



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1. Introduction

STK-BS/X6 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	450

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	12.7	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	15.7	Shortest path along device body
Case material			V0 according to UL 94	

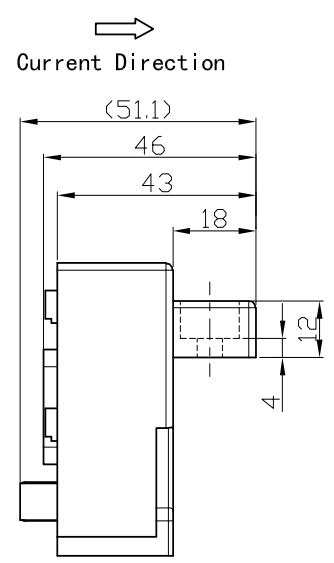
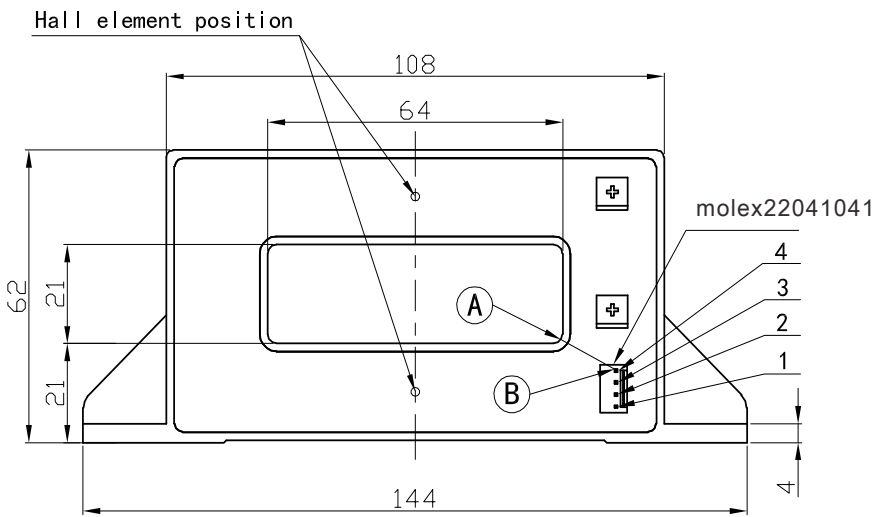
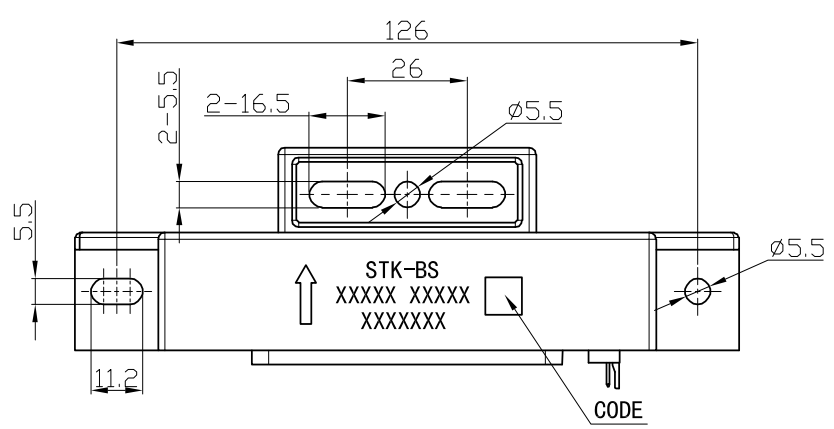
2. Electrical Data

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		500		STK-500BS/X6
				600		STK-600BS/X6
				850		STK-850BS/X6
				1000		STK-1000BS/X6
				1200		STK-1200BS/X6
				1500		STK-1500BS/X6
				2000		STK-2000BS/X6
				2500		STK-2500BS/X6
Current range (refer remark)	I_{PM}	A	-1500		1500	STK-500BS/X6
			-1800		1800	STK-600BS/X6
			-2550		2550	STK-850BS/X6
			-3000		3000	STK-1000BS/X6
			3600		3600	STK-1200BS/X6
			-4500		4500	STK-1500BS/X6
			-5500		5500	STK-2000BS/X6
			-5500		5500	STK-2500BS/X6
Supply voltage	V_{CC}	V		$\pm 12 \sim \pm 15$		STK-500BS/X6 STK-600BS/X6 STK-850BS/X6 STK-1000BS/X6 STK-1200BS/X6 STK-1500BS/X6 STK-2000BS/X6 STK-2500BS/X6
Current consumption	I_{CC}	mA		± 20		All
Quiescent voltage $V_{out} @ 0\text{A}$	V_{off}	V	-0.04	0	0.04	STK-500BS/X6 STK-600BS/X6 STK-850BS/X6 STK-1000BS/X6 STK-1200BS/X6 STK-1500BS/X6 STK-2000BS/X6 STK-2500BS/X6
Peak output voltage ($V_{out} @ \pm I_{PN}$) - V_{off} ; $R_L = 10\text{k}\Omega$	V_{FS}	V		± 4		STK-500BS/X6 STK-600BS/X6 STK-850BS/X6 STK-1000BS/X6

						STK-1200BS/X6 STK-1500BS/X6 STK-2000BS/X6 STK-2500BS/X6
Internal output resistance	R _{out}	Ω		100		V _{out}
Theoretical gain (Typ)	G _{th}	mV/A		8		STK-500BS/X6
				6.66		STK-600BS/X6
				4.7		STK-850BS/X6
				4		STK-1000BS/X6
				3.33		STK-1200BS/X6
				2.66		STK-1500BS/X6
				2		STK-2000BS/X6
				1.6		STK-2500BS/X6
Rated linearity error	Non-L	% I _{PN}		± 1		±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-500BS/X6 STK-600BS/X6 STK-850BS/X6 STK-1000BS/X6 STK-1200BS/X6 STK-1500BS/X6 STK-2000BS/X6 STK-2500BS/X6
				30		
Accuracy @ 25°C	X	% of I _{PN}		± 1		All
Temperature coefficient of V _{OE}	TCV _{OE}	mV/K		± 1		@ -40°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	12.7mm	15.7mm

Terminals

1	+15V
2	-15V
3	Output
4	0V

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

