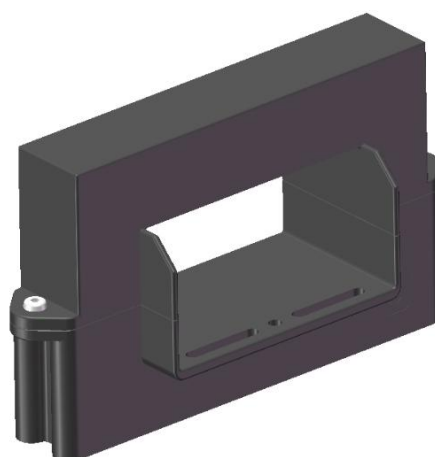


Current Sensor

Product Series: STK-BS/X2

Part number: STK-BS/3000X2
STK-BS/6000X2

VERSION: Ver2.6



Sinomags Technology Co., Ltd

Web site: www.sinomags.com

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1. Introduction

STK-BS/X2 series current sensor 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	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	5.6	
Clearance distance (pri. -sec)	d _{Cl}	mm	22	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	36	Shortest path along device body
Case material			V0 according to UL 94	

Measuring current table

Product	Optimized Range I _{pn} (A)	Sensitivity, (mV/A)	T(°C)
STK-BS/3000X2	±3000 A	2	-40 ~ 85
STK-BS/6000X2	±6000 A	1	-40 ~ 85

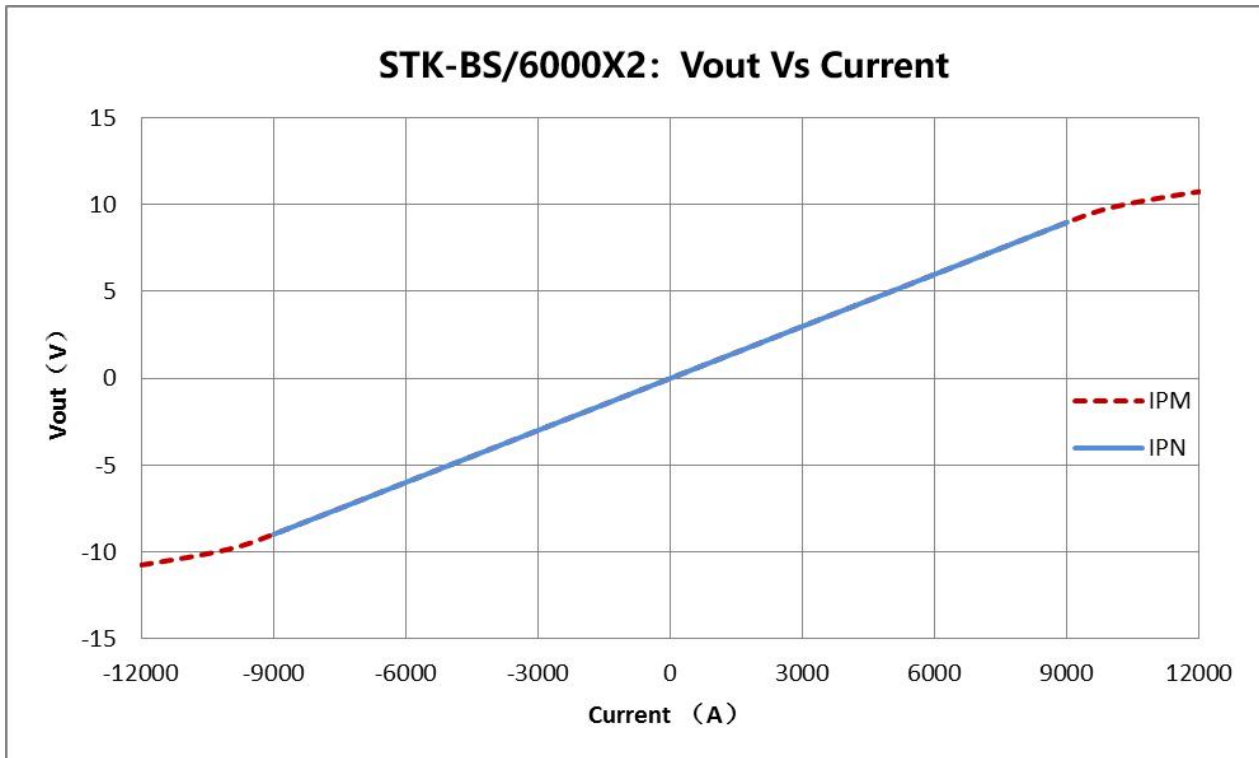
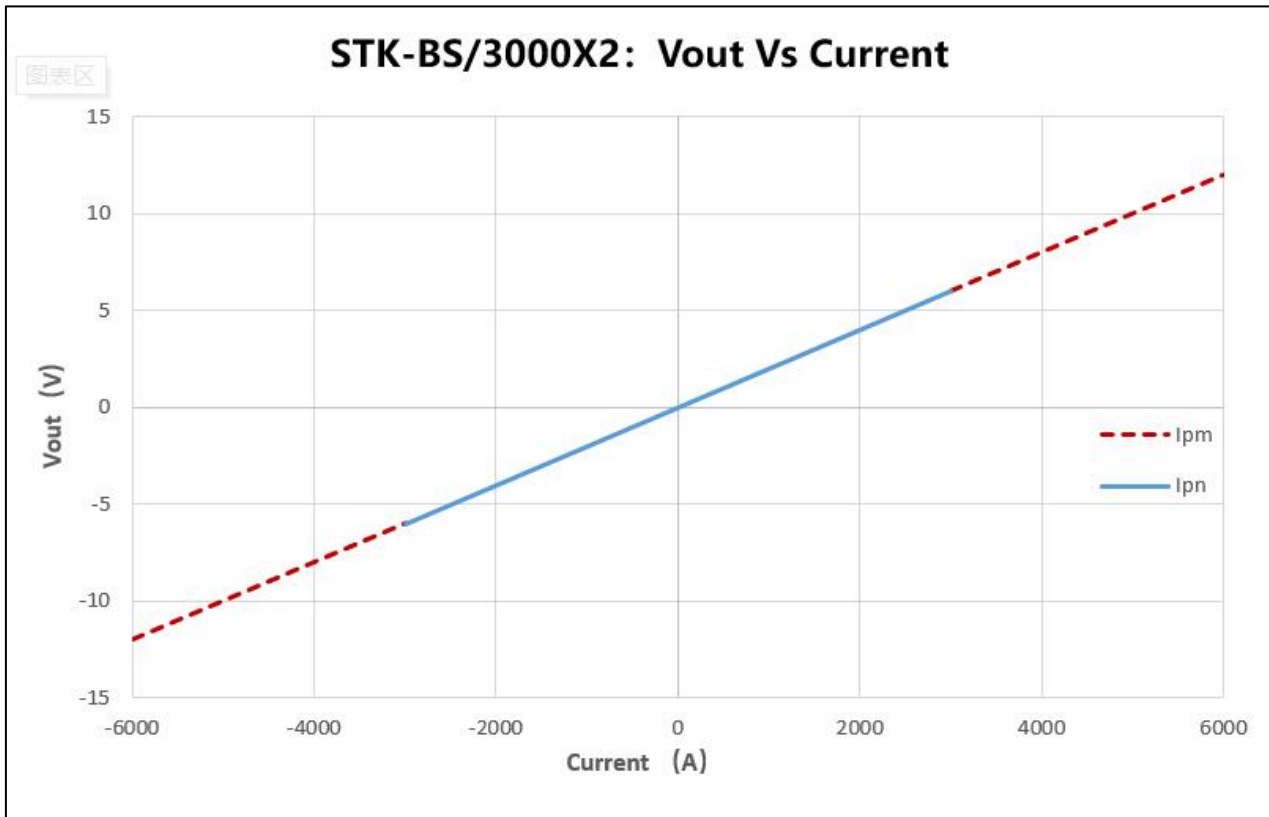
2. Electrical Data

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

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_{PN}	A		3000		STK-BS/3000X2
				6000		STK-BS/6000X2
Linear Current range	I_{PL}	A	-4500		4500	STK-BS/3000X2
			-9000		9000	STK-BS/6000X2
Detect Current range	I_{PM}	A	-6000		6000	STK-BS/3000X2
			-12000		12000	STK-BS/6000X2
Supply voltage	V_{CC}	V		± 15		
Current consumption	I_{CC}	mA		± 20		All
Quiescent voltage $V_{out} @ 0\text{ A}$	V_{off}	V	-0.04	0	0.04	
Peak output voltage ($V_{out} @ \pm I_{PN}$) – V_{off}	V_{FS}	V		± 6		
Internal output resistance	R_{out}	Ω		100		V_{out}
Theoretical gain (Typ)	G_{th}	mV/A		2		STK-BS/3000X2
				1		STK-BS/6000X2
Rated linearity error	Non-L	% I_{PN}		± 1		$\pm I_{PN}$
Linearity error @ I_{PM}	Non-L	% I_{PL}		± 2		$\pm I_{PL}$
Step response time	t_{res}	ms		0.2		@90% of I_{PN}
Frequency bandwidth (-3dB)	BW	kHz		1		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 100 kHz	V_{noise}	mVpp		20 30		STK-BS/6000X2
Accuracy @ 25°C	X	% of I_{PN}		± 1		All
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K		± 1		@ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$
Temperature coefficient of V_{OUT}	TCV_{OUT}	%/K		± 0.1		@ $-40^{\circ}\text{C} \sim 85^{\circ}\text{C}$

Remark:

3. Output voltage VS primary current



4. Dimension & Pin Definitions

