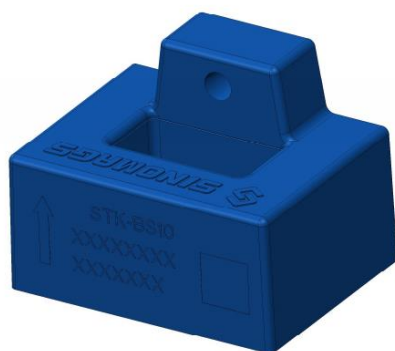


Current Sensor

Product Series: STK-BS10

Part number: STK-100BS10&
STK-150BS10&
STK-200BS10&
STK-300BS10&
STK-400BS10&
STK-500BS10&
STK-600BS10

Version: Ver 1.3



Sinomags Technology Co., Ltd

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1. Summary

STK-BS10 series current sensor is based on Hall and 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
- Electric welder power supply
- Inverter
- Switched model power supplies (SMPS)

General parameter

Parameter	Symbol	Unit	Value
Working temperature	T _A	°C	-40 ~ 105
Storage temperature	T _{stg}	°C	-40 ~ 105
Mass	m	g	52.8

Absolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage (not-destructive)	V _C	V	±18
ESD rating (HBM)	U _{ESD}	kV	4

Remark: the unrecoverable damage may occur when the product works on the conditions over the aBS10olute maximum ratings. Long-time working on the aBS10olute 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	
Clearance distance (pri. -sec)	d _{Cl}	mm	4.4	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	6.8	Shortest path along device body
Case material			V0 according to UL 94	

Selection Guide

Product	Primary nominal current	Current range
STK-100BS10	100 A	300 A
STK-150BS10	150 A	450 A
STK-200BS10	200 A	600 A
STK-300BS10	300 A	900 A
STK-400BS10	400 A	900 A
STK-500BS10	500 A	900 A
STK-600BS10	600 A	900 A

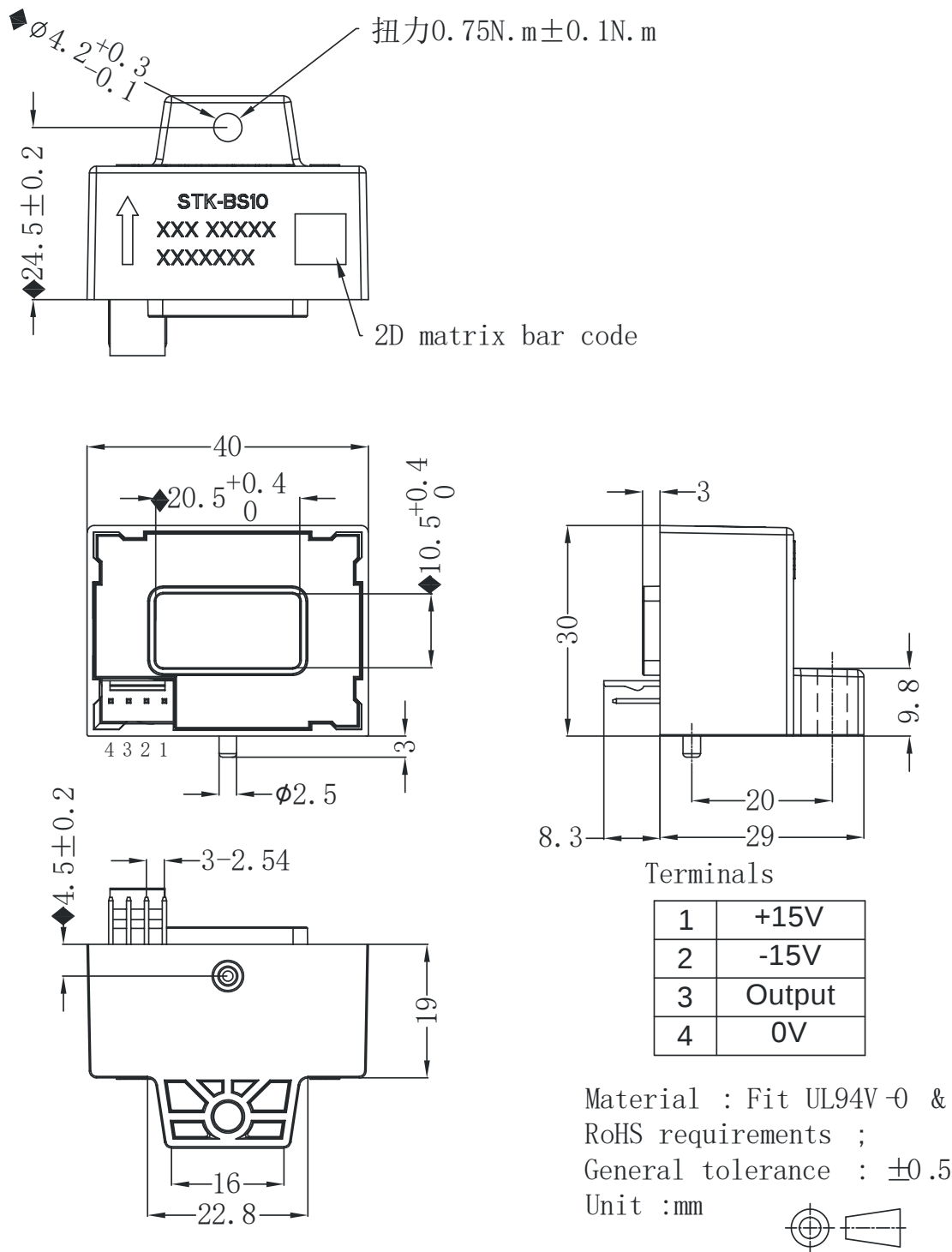
2. Electrical data of STK-BS10

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		100		STK-100BS10
				150		STK-150BS10
				200		STK-200BS10
				300		STK-300BS10
				400		STK-400BS10
				500		STK-500BS10
				600		STK-600BS10
Current range	I_{PM}	A	-300		300	STK-100BS10
			-450		450	STK-150BS10
			-600		600	STK-200BS10
			-900		900	STK-300BS10
			-900		900	STK-400BS10
			-900		900	STK-500BS10
			-900		900	STK-600BS10
Supply voltage	V_{CC}	V		$\pm 15 \pm 5\%$		
Current consumption	I_{CC}	mA		± 15		
Rated output voltage	V_{FS}	V	± 3.96	± 4	± 4.04	$(V_{out} @ \pm I_{PN}) - V_{off}$
Internal output resistance	R_{out}	Ω		100		V_{out}
Quiescent voltage	V_{off}	V	-0.05	0	0.05	$V_{out} @ 0\text{ A}$
Theoretical gain	G_{th}	mV/A		40		STK-100BS10
				26.66		STK-150BS10
				20		STK-200BS10
				13.33		STK-300BS10
				10		STK-400BS10
				8		STK-500BS10
				6.67		STK-600BS10
Rated linearity error	Non-L	% I_{PN}		± 1		$\pm I_{PN} @ 25^{\circ}\text{C}$
Step response time	t_{res}	μs		4		STK-100BS10 @90% of I_{PN}
						STK-150BS10 @90% of I_{PN}
						STK-200BS10 @90% of I_{PN}
						STK-300BS10 @90% of I_{PN}

				2		Others @90% of I_{PN}
Frequency bandwidth (-3dB)	BW	kHz		50		STK-50BS10 RC circuit
				70		STK-100BS10 RC circuit
						STK-150BS10 RC circuit
				90		STK-200BS10 RC circuit
				100		STK-300BS10 RC circuit
				150		Others RC circuit
Output voltage noise DC ~ 14 kHz	Vnoise	mVpp		10		ALL
Accuracy @ T_A	X	% of I_{PN}		± 1		@ 25°C
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



- Mating connector P/N A2543WV-4P