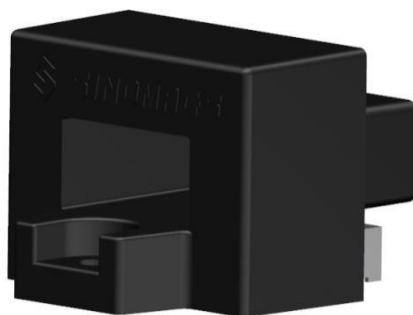


Current Sensor

Product Series: STK-BS2

Part number: STK-500BS2

Version: Ver 1.1



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1. Summary

STK-BS2 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 ~ 85
Storage temperature	T _{stg}	°C	-40 ~ 85
Mass	m	g	40

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 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	
Clearance distance (pri. -sec)	d _{Cl}	mm	3.7	Shortest distance through air
Creepage distance (pri. -sec)	d _{Cp}	mm	20.8	Shortest path along device body
Case material			V0 according to UL 94	

Selection Guide

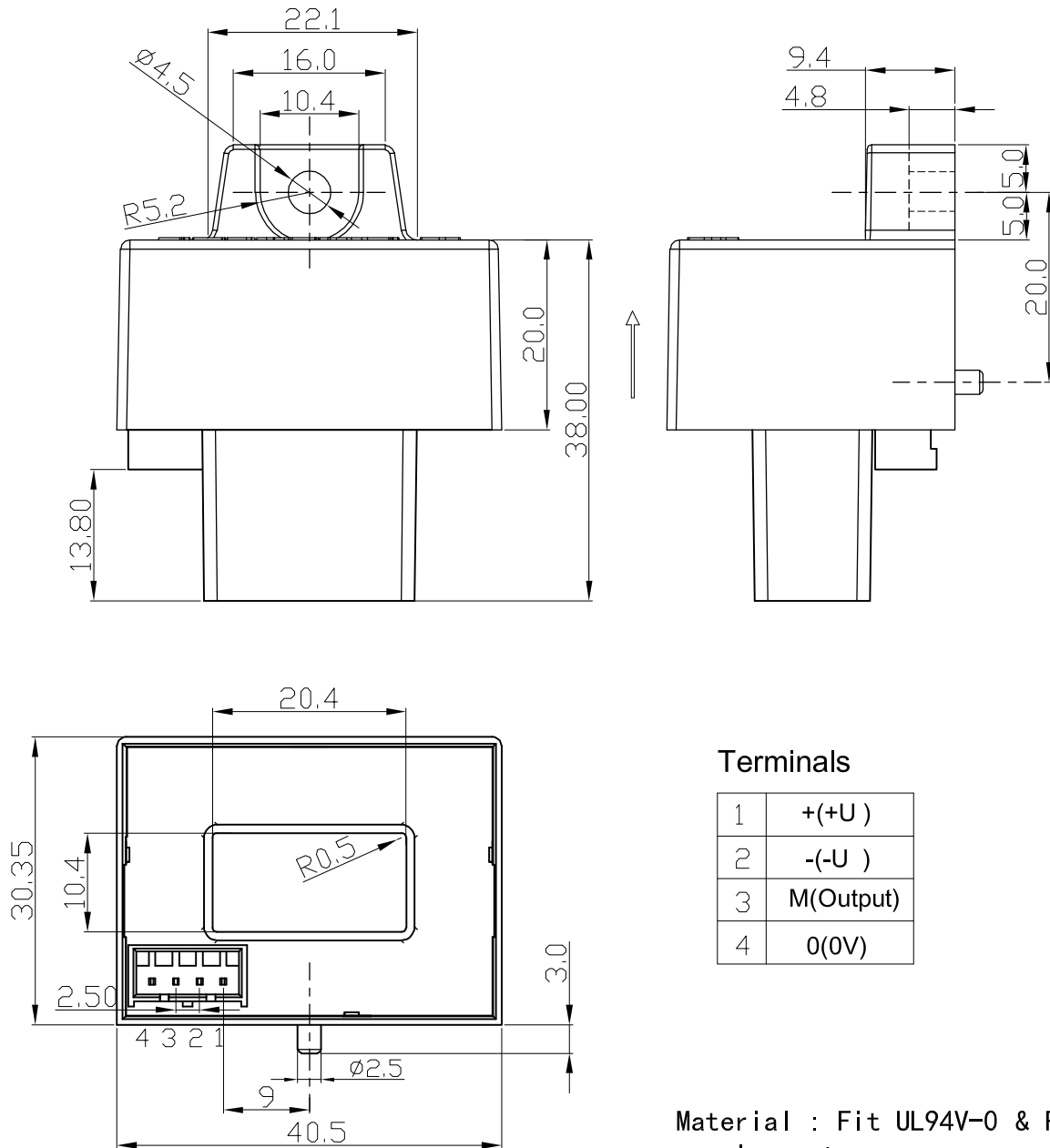
Product	Primary nominal current	Current range
STK-500BS2	500 A	900 A

2. Electrical data of STK-BS2

 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		500		STK-500BS2
Current range	I_{PM}	A	-900		900	STK-500BS2
Supply voltage	V_{CC}	V		$\pm 15 \pm 5\%$		
Current consumption	I_{CC}	mA		± 15		
Rated output voltage	V_{FS}	V		± 4		$(V_{out} @ \pm I_{PN}) - V_{off}$
Internal output resistance	R_{out}	Ω		100		V_{out}
Quiescent voltage	V_{off}	V	-0.04	0	0.04	$V_{out} @ 0\text{ A}$
Theoretical gain	G_{th}	mV/A		8		STK-500BS2
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		50		No RC circuit
Output voltage noise DC ~ 10 kHz	V_{noise}	mVpp		50		STK-500BS2
				20		Others
Accuracy @ $T_A = 25^{\circ}\text{C}$	X	% of I_{PN}		± 1		@ 25°C
Temperature coefficient of V_{OE}	TCV_{OE}	mV/K		± 2		STK-500BS2
				± 1		Others
Temperature coefficient of V_{OUT}	TCV_{OUT}	%/K		± 0.1		All

3. Dimension & Pin definitions



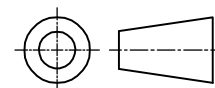
Terminals

1	+(+U)
2	-(-U)
3	M(Output)
4	0(0V)

Material : Fit UL94V-0 & RoHS requirements ;

General tolerance : ± 0.5

Unit :mm



Revision History

Number	Description	Responsible	Date
V1.0	初版	Z.T. Mi	2021-5-20
V1.1	更新电气间距、爬电距离	Z.T. Mi	2021-7-6