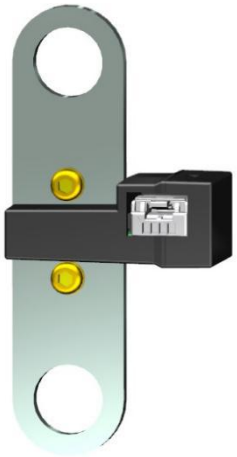
Current Sensor

Product Series:	STK-GB/D
Part number:	STK-600GB/D STK-800GB/D
Version:	Ver 3.2



Sinomags Technology Co., Ltd

Web site: www.sinomags.com

CONTENT

1. Description

The STK-GB/D series current sensor is based on TMR (tunnel magnetoresistance) technology 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 driver
- Converter
- Uninterrupted Power Supply (UPS)
- Electric welder power supply
- Switched model power supply (SMPS)
- DC/DC power supply

General parameter

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 125
Storage temperature	T_stg	℃	-40 ~ 125
Mass	m	g	30 (without busbar)

Absolute maximum rating

Parameter	Symbol	Unit	Value
Supply voltage	Vcc	V	6.5
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	Ud	kV	4	
Clearance distance (pri. -sec)	dCl	mm	8	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	8	Shortest path along device body
Case material			V0 according to UL 94	

Measuring current table

Product	**Nominal current**	**Measuring range**
STK-600GB/D	300 A	±600 A
STK-800GB/D	400 A	±800 A

2. Electrical data STK-600GB/D

Condition：T_A = 25℃, Vcc = 5 V (unless specified)

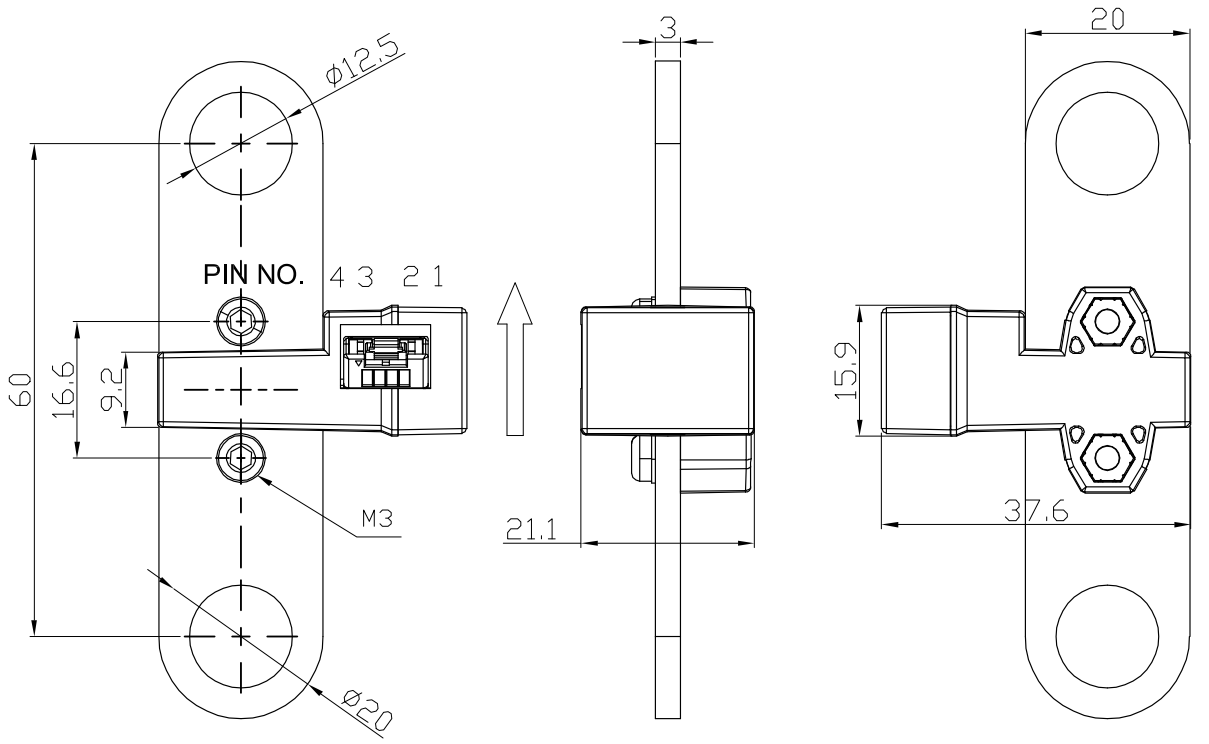
Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_pn	A	-300		300	
Primary current measuring range	I_pm	A	-600		600	
Supply voltage	Vcc	V	4.75	5	5.25	
Current consumption	Icc	mA		10		
Quiescent voltage	Voff	V	2.470	2.5	2.530	Vout @ 0 A
Rated output voltage	V_FS	V		±1		(Vout @ ±I_pn) – Voff
Internal output resistance	R_out	Ω		2		
Theoretical gain	G_th	mV/A		3.33		1 V @ I_pn
Rated linearity error	Non-L	%I_pn		±1		Within ±I_pn
Step response time	t_res	μs		3		@90% of I_pn
Delay time	t_delay	μs		1		400 kHz sine wave
Frequency bandwidth (-3dB)	BW	kHz		300		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 500 kHz	Vnoise	mVpp		 20 30		
Accuracy @ 25℃	X_T	% of I_pm		±1		
Accuracy @ -40℃ ~ 105℃	X_T	% of I_pm		±3		

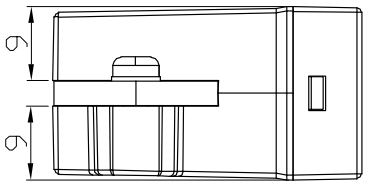
3. Electrical data STK-800GB/D

Condition：T_A = 25℃, Vcc = 5 V (unless specified)

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Primary nominal current	I_pn	A	-400		400	
Primary current measuring range	I_pm	A	-800		800	
Supply voltage	Vcc	V	4.75	5	5.25	
Current consumption	Icc	mA		10		
Quiescent voltage	Voff	V	2.470	2.5	2.530	Vout @ 0 A
Rated output voltage	V_FS	V		±1		(Vout @ ±I_pn) – Voff
Internal output resistance	R_out	Ω		2		
Theoretical gain	G_th	mV/A		2.5		1 V @ I_pn
Rated linearity error	Non-L	%I_pn		±1		Within ±I_pn
Step response time	t_res	μs		3		@90% of I_pn
Delay time	t_delay	μs		1		400 kHz sine wave
Frequency bandwidth (-3dB)	BW	kHz		300		No RC circuit
Output voltage noise DC ~ 10 kHz DC ~ 500 kHz	Vnoise	mVpp		 20 30		
Accuracy @ 25℃	X_T	% of I_pm		±1		
Accuracy @ -40℃ ~ 105℃	X_T	% of I_pm		±3		

4. Dimension & Pin definitions





Terminals

1	NC
2	Vout
3	GND
4	+5V

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