SINOMAGS 希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES： STB-CAS/FB

PRODUCT PART NUMBER： STB-25CAS/FB

VERSION： Ver 1.0

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

CONTENT

1. Description

STB-CAS/FB series current sensors are based on close loop principle. The sensor can detect the current with DC, AC, pulse and irregular wave shape with current output.

Typical application

- AC variable speed drives and servo motor drives
- Battery supplied applications
- Power Supplies for welding applications
- Uninterruptible Power Supplies (UPS)
- Static converters for DC motor drives
- Switched Mode Power Supplies (SMPS)

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	˚C	-40 ~ 85
Storage temperature	T_S	˚C	-40 ~ 85
Mass	m	g	12
Supply voltage (-40˚C…105˚C)	V_{CC}	V	5

Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40˚C…105˚C)	Vcc_{max}	V	7

Isolation parameters

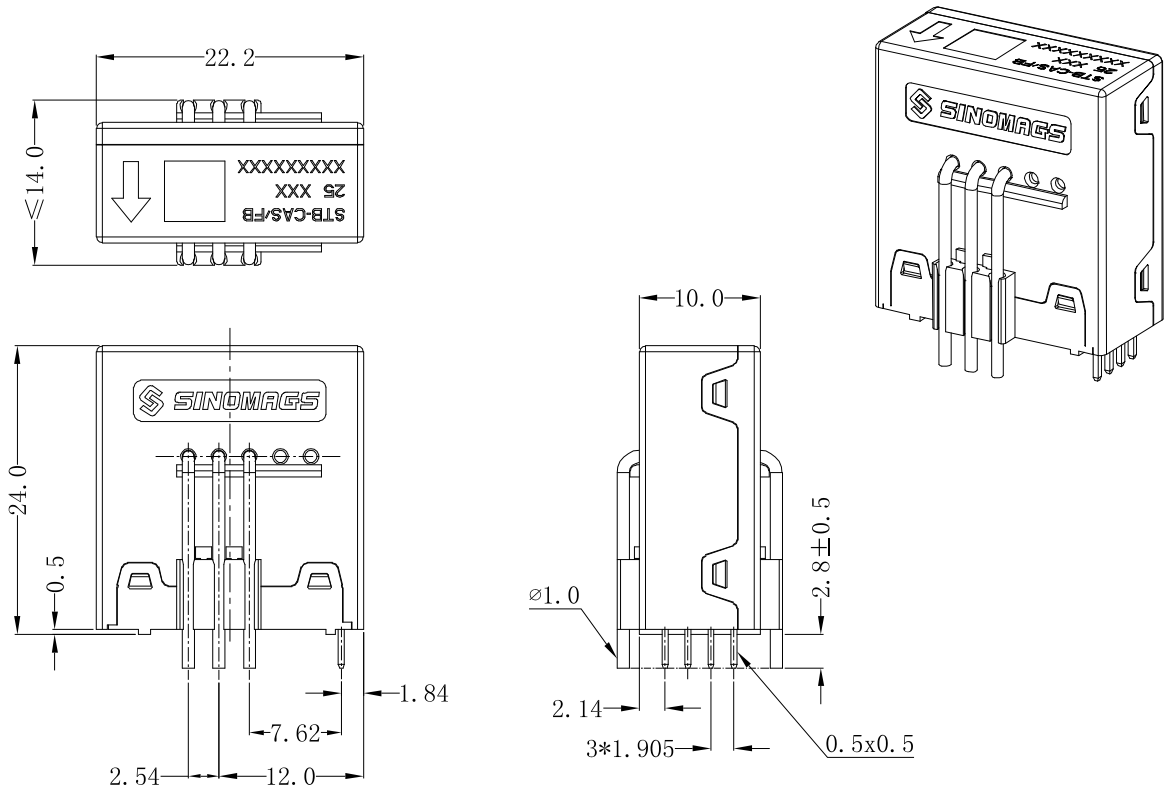
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	4	
Impulse withstand voltage 1.2/50μs	U_W	kV	8	
Clearance distance (pri. -sec)	dCl	mm	7.4	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	8.0	Shortest path along device body
Case material	-	-	V0	According to UL 94
Comparative tracking index	CTI		600	

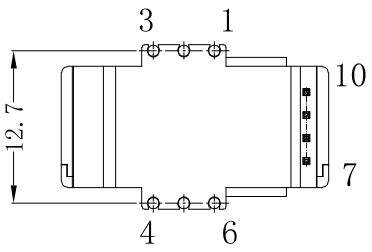
2. STB-25CAS/FB Electrical parameters

Condition: V_{CC} = 5V, T_A= 25℃ unless specified

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal r.m.s. current	I_{PN}	A		25		
Primary current measuring range	I_{PM}	A	-50.1		50.1	T_A=85°C, R_M = 24.3 Ω
Measuring resistance	R_M	Ω	1		100	
Secondary nominal current	I_{SN}	mA		12.5		
Turns ratio	K_N	NT		1…3 :2000		1,2,3
Internal virtual reference voltage	V_{Ref}	V		2.5±0.005		I_P=0A
Thermal Drift of reference voltage	TCV_{Ref}	ppm/°C			50	T_A=-40℃~85°C
Supply voltage	V_{CC}	V	4.75	5	5.25	
Current consumption	I_{CC}	mA		15 + I_S		I_S=I_P/K_N
Offset current	I_O	mA		0.01	0.05	I_P=0A T_A= 25 °C
	I_{Oges}				0.15	including I_O,I_{Ot},I_{OT}
Long term drift Offset current I_O	I_{Ot}	mA		0.05		
Offset current temperature drift I_O	I_{OT}	mA		0.05		T_A=-40℃~85°C
Hysteresis current (caused by primary current 3 xI_{PN})	I_{OH}	mA	-0.1	0.04	0.1	I_P=0A
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time	Δt (I_{Pmax})	μs		0.2	1	d_i/d_t=100A/μs
Response time	t_r	μs		0.2	1	90% of I_{PN}
Frequency bandwidth	f	kHz			200	
Accuracy	X	%	-0.5		0.5	T_A=25℃ I_{PN}
Temperature drift of X	X_{Ti}	%	-0.1		0.1	T_A=-40℃~85°C
Resistance of secondary coil	R_S	Ω	0		63	T_A = 85 °C
Primary coil resistance per turn	R_p	mΩ	0		1	T_A = 25 °C

3. STB-25CAS/FB Dimensions:





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