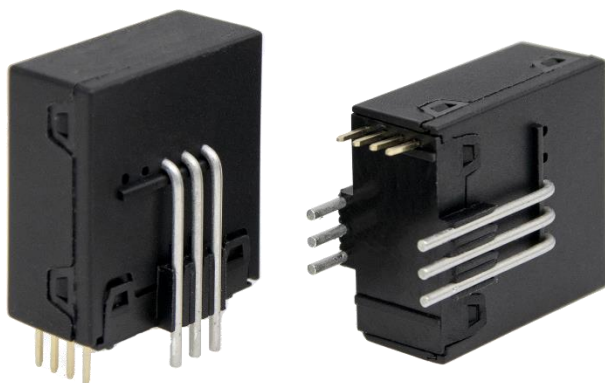


CURRENT SENSOR

PRODUCT SERIES: STB-CAS/FB

PRODUCT PART NUMBER: STB-25CAS/FB

VERSION: Ver 1.1



Sinomags Technology Co., Ltd

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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	12.5
Supply voltage (-40°C...105°C)	V_{CC}	V	5

Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40°C...105°C)	V_{CCmax}	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: $V_{CC} = 5V$, $T_A = 25^\circ C$ 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	$T_A=85^\circ C$, $R_M = 24.3 \Omega$
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/ $^\circ C$			50	$T_A=-40^\circ C \sim 85^\circ C$
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	$I_P=0A$ $T_A=25^\circ C$
	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		$T_A=-40^\circ C \sim 85^\circ C$
Hysteresis current (caused by primary current $3 \times I_{PN}$)	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	$\Delta t (I_{Pmax})$	μs		0.2	1	$d_i/d_t=100A/\mu s$
Response time	t_r	μs		0.2	1	90% of I_{PN}
Frequency bandwidth	f	kHz			200	
Accuracy	X	%	-0.5		0.5	$T_A=25^\circ C$ I_{PN}
Temperature drift of X	X_{Ti}	%	-0.1		0.1	$T_A=-40^\circ C \sim 85^\circ C$
Resistance of secondary coil	R_S	Ω	0		63	$T_A = 85^\circ C$
Primary coil resistance per turn	R_p	m Ω	0		1	$T_A = 25^\circ C$

3. STB-25CAS/FB Dimensions:

