受控
2024-11-11

CURRENT SENSOR

PRODUCT SERIES: STB-LA/F

PRODUCT PART NUMBER: STB-230LA/F

VERSION: Ver 1.0

Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

CONTENT

1.   Description

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

Typical application

- ○ Solar inverter
- ○ Uninterruptible Power Supplies (UPS)
- ○ Variable frequency converter
- ○ Direct-current dynamo
- ○ Switched model power supplies (SMPS)

General parameters

Parameter	Symbol	Unit	Value	Remark
Working environment temperature	T_A	℃	-40 ~ 85	
Sensor operating limit temperature	T_{SL}	℃	-40 ~ 90	
Limit temperature of primary conductor	T_{LP}	℃	105	STB-LA/F
Mass	m	g	48	STB-LA/F

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage	Vcc_{max}	V	±15.75
Maximum primary current	$I_{PN_{max}}$	A	$5*I_{PN}$

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.
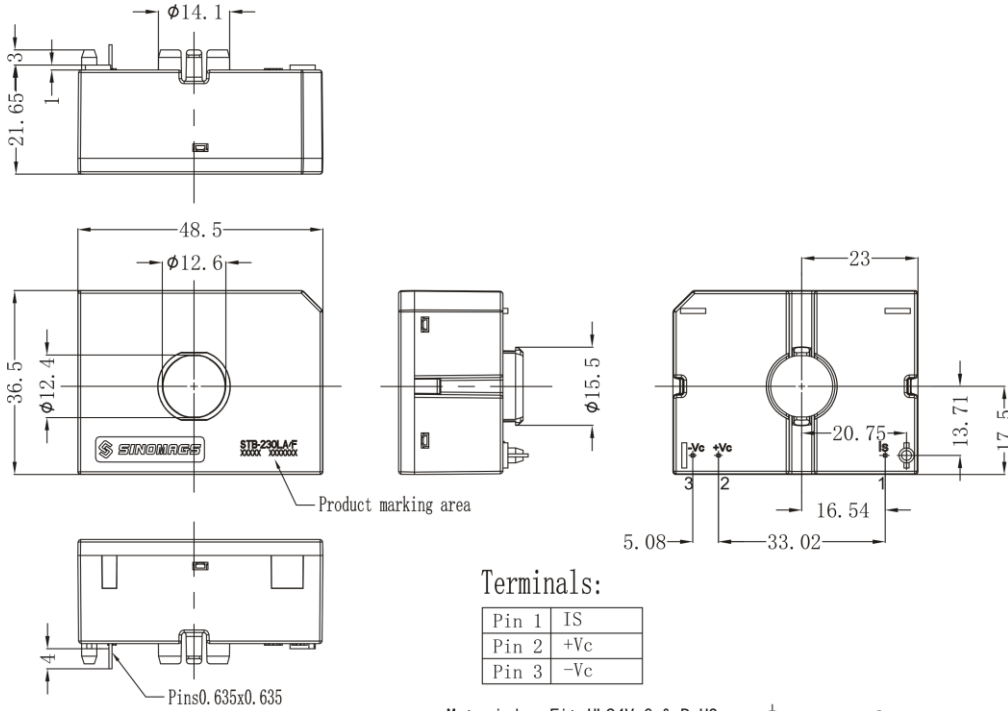
Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	3	
Impulse withstand voltage 1.2/50μs	U_W	kV	9.8	
Clearance distance (pri. -sec)	dCl	mm	12	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	12	Shortest path along device body

2.   Electrical parameters (STB-230LA/F)

Parameters	Symbol	Unit	Min.	Typ.	Max.	Remark
Primary nominal RMS current	I_{PN}	A		230		
Measuring resistance	R_M	Ω	10		100	V_{CC} = ±15V
Primary current measuring range	I_{PM}	A	-425		425	V_{CC} = ±15V, R_M = 27Ω (t_{max}= 10sec)
			-220		220	V_{CC} = ±15V, R_M < 50 Ω (t_{max}= 1min)
Secondary nominal current	I_{SN}	mA		115		
Turns ratio	K_N			1:2000		
Supply voltage	V_{CC}	V	±15	±15.375	±15.75	
Consumption current	I_{CC}	mA		18	22	I_P=0
Offset current	I_O	mA		0.02	0.05	I_P=0 T_A= 25 ℃
	I_{Oges}				0.07	including I_O,I_{Ot}, I_{OT}
Long term drift Offset current I_O	I_{Ot}	mA		0.025	0.07	
Offset current temperature drift I_O	I_{OT}	mA		0.025	0.07	T_A=-40℃~85℃
Hysteresis current (caused by primary current 3 xI_{PN})	I_{OH}	mA		0.025	0.05	I_P=0
Supply voltage rejection ratio	$\Delta I_O/\Delta V_C$	mA/V			0.01	
Linearity error within I_{PN}	ε_L	% of I_{PN}			0.1	
Delay time	$\Delta t (I_{PM})$	μs		0.5	1	d_i/d_t=100A/μs
Response time	t_r	μs		1	2	
-3 dB band width	BW	kHz	100			
Accuracy	X	%		0.1	0.5	I_{PN} T_A=25℃
Temperature drift of X	X_{Ti}	%			0.1	T_A= -40 ... 85°C
Resistance of secondary coil	R_S	Ω			44	T_A= 85°C

受控

3.   Dimensions: STB-230LA/F

Product marking area

STB-230LA/F
XXXXX XXXXXX

Pins0.635x0.635

Terminals:

Pin 1	IS
Pin 2	+Vc
Pin 3	-Vc

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