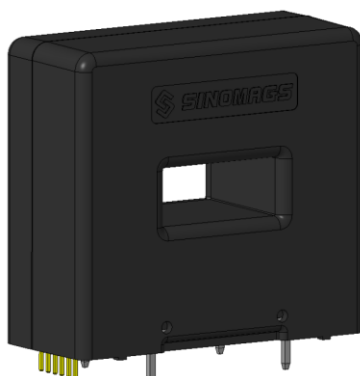


CURRENT SENSOR

PRODUCT SERIES: STB-50LA/AM3

PRODUCT PART NUMBER: STB-50LA/AM3

VERSION: Ver 1.2



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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1. Description

STB-50LA/AM3 series current sensors are based on close loop principle with TMR technology. The sensor can detect AC arc current detection function.

Typical application

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

General parameters

Parameter	Symbol	Unit	Value	Remark
Working temperature	T_A	°C	-40 ~ 105	105°C, I _{max}
Storage temperature	T_stg	°C	-40 ~ 105	
Mass	m	g	115	STB-50LA/AM3

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage	V _{cc_max}	V	15
Maximum primary current	I _{p_max}	A	600
Continuous Working Current	I _{cont}	A	450
ESD rating (HBM)	U _{ESD_HBM}	kV	4
High temperature and humidity	T_HAST	-	85°C&85%RH (1000h)

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

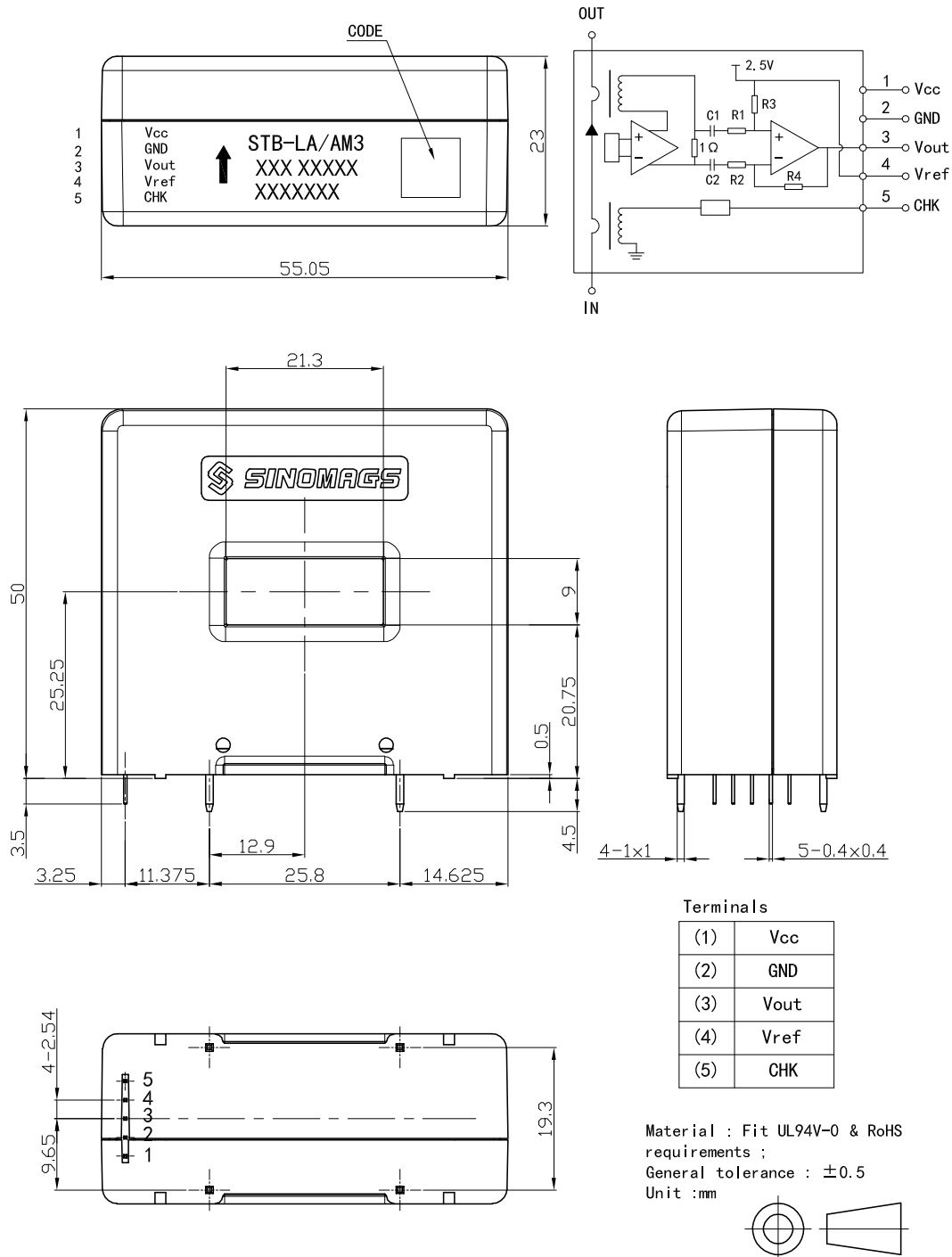
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U _d	kV	4	
Impulse withstand voltage 1.2/50μs	Ū _w	kV	8	
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	600	

2. Electrical parameters (STB-50LA/AM3)

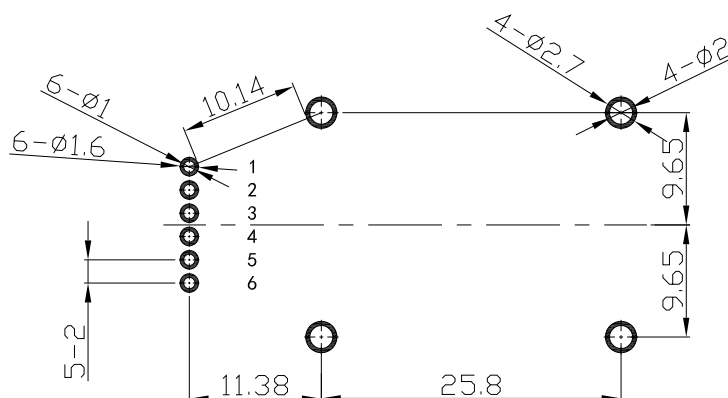
Condition: $V_{cc} = 12.0\text{ V}$, $R_L = 10\text{ k}\Omega$, $T_A = 25^\circ\text{C}$, unless specified.

Parameters	Symbol	Unit	Min.	Typ.	Max.	Remark
Primary nominal rms current	I_{pn}	A		50		
Supply voltage	V_{cc}	V		12		
Self-Checking voltage	V_{chk}	V	3.3		5.25	AC wave, 2K~100K
Consumption current	I_c	mA	$10 + I_{pn}/NS \times 1000$			NS = 2250
Reference voltage	V_{ref}	V	2.48	2.5	2.52	
Electrical offset voltage	V_{oe}	mV	-10		10	100 % tested ($V_{out} - V_{ref}$) @ 0 A
Full-scale voltage	V_{fs}	V		2		V_{out} @ I_{pn}
Theoretical sensitivity	G_{th}	mV/A		40		2V @ I_{pn}
Sensitivity error	G_{err}	% of I_{pn}	-3		3	
Linearity error within I_{pn}	ξ_L	% of I_{pn}	-0.15		0.15	@25°C
-3 dB band width	BW	kHz	0.5		100	
Noise DC ~ 10 kHz DC ~ 100 kHz	V_{noise}	mVpp		5 6		
Accuracy	X	% of I_{pn}	-10		10	@In@TEMP
Self-Checking p-p	I_{chk}	A	1.7	2	2.3	

3. Dimensions: STB-50LA/AM3



4. PCB footprint (STB-50LA/AM3)



Assembly on PCB

- Recommended PCB hole diameter: 1.1 mm for secondary pins, 2 mm for retention pin.
- Maximum PCB thickness: 2.4 mm (can be customized per request).
- Wave soldering profile: maximum 265°C for 10 seconds.