SINOMAGS
希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES: STB-LA/B

PRODUCT PART NUMBER: STB-100LA/B
STB-100LA/B-N

VERSION: Ver 1.1

CONTENT

1. Description

STB-LA/B 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	˚C	-40 ~ 85	
Sensor operating limit temperature	T_{SL}	˚C	-40 ~ 90	
Limit temperature of primary conductor	T_{LP}	˚C	105	
Mass	m	g	19.5	STB-100LA/B
			14.5	STB-100LA/B-N

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage	Vcc_{max}	V	±18
Maximum primary current	$I_{PN_{max}}$	A	5*I_{PN}
ESD rating (HBM)	U_ESD_HBM	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 parameters

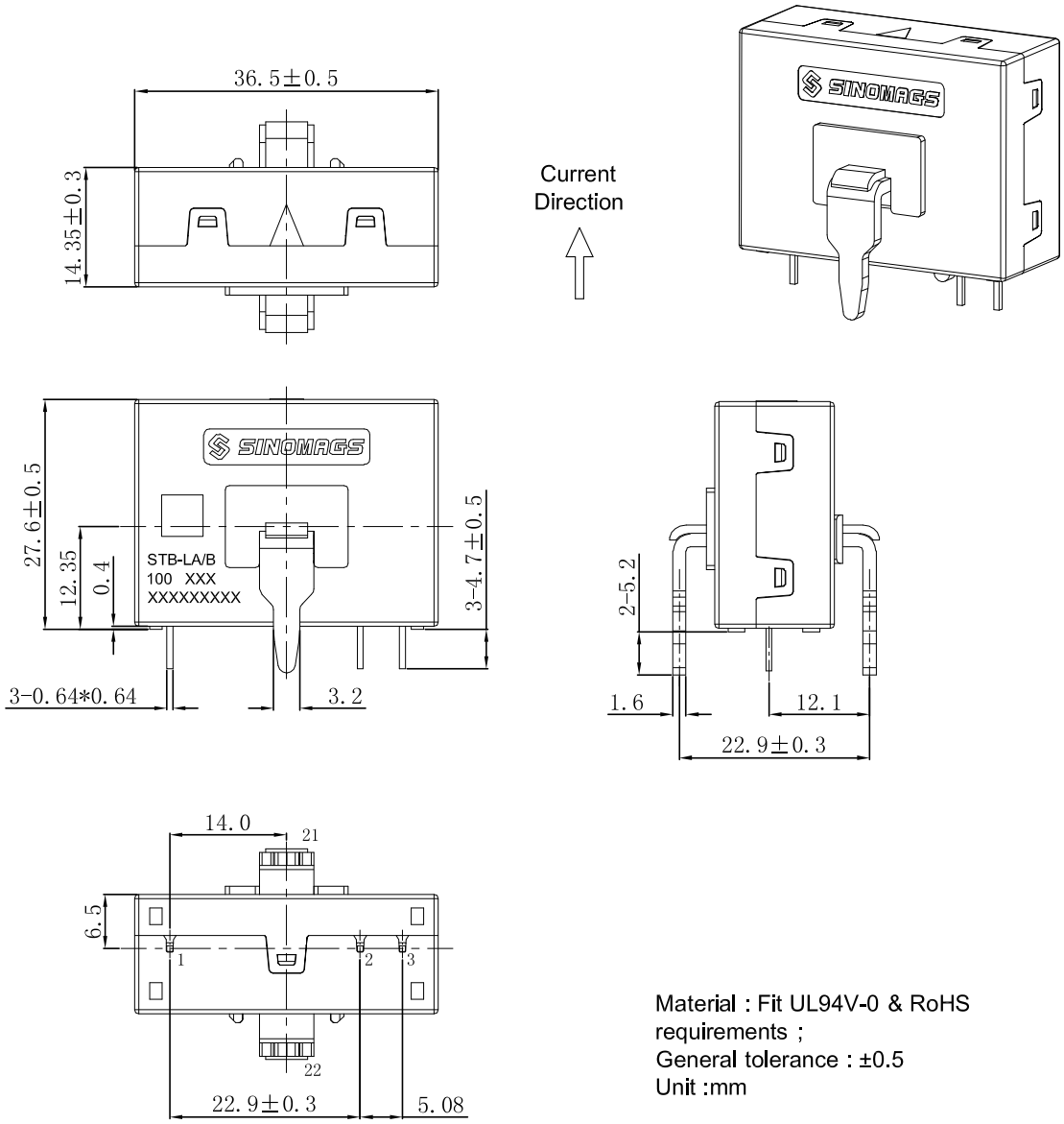
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	1.8	
Impulse withstand voltage 1.2/50μs	U_W	kV	8	
Clearance distance (pri. -sec)	dCl	mm	12	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	12	Shortest path along device body

2. Electrical parameters (STB-100LA/B、STB-100LA/B-N)

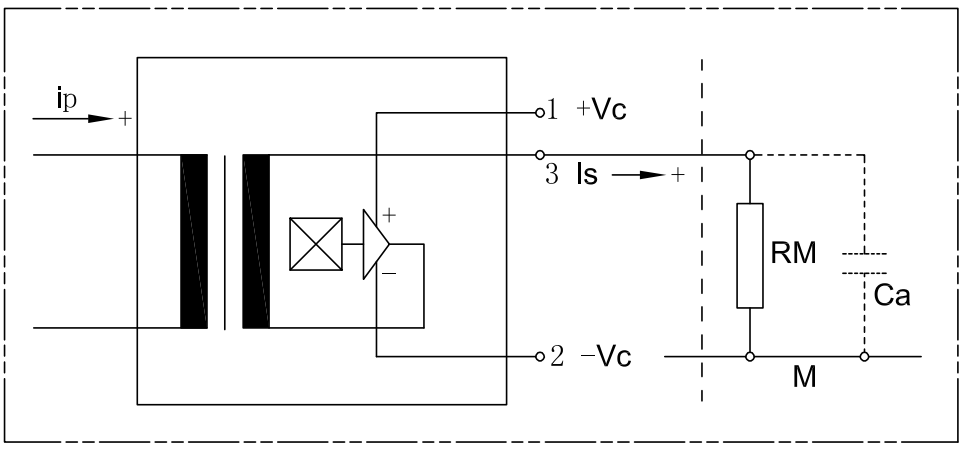
Condition: V_{CC}= 5.0 V, T_A = 25℃, unless specified.

Parameters	Symbol	Unit	Min.	Typ.	Max.	Remark
Primary nominal rms current	I_{PN}	A		100		
Measuring resistance	R_M	Ω	0		200	V_{CC} = ±12V
			5		400	V_{CC} = ±15V
Primary current measuring range	I_{PM}	A	-188		188	V_{CC} = ±12V, R_M = 5 Ω (T_{max}= 10sec)
			-236		236	V_{CC} = ±15V, R_M = 5 Ω (T_{max}= 10sec)
Secondary nominal current	I_{SN}	mA		50		
Turns ratio	K_N			1:2000		
Supply voltage	V_{CC}	V	±11.4	±12 or ±15	±15.75	
Consumption current	I_{CC}	mA		18		
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			
Offset current temperature drift I_O	I_{OT}	mA	0.025			T_A=-40℃~85°C
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	$\Delta t\ (I_{Pmax})$	ns		200		d_i/d_t=100A/μs
Response time	t_r	μs		1		
-3 dB band width	BW	kHz		200		
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			114	T_A= 85°C
Primary coil resistance per turn	R_p	mΩ		0.1		T_A= 25°C

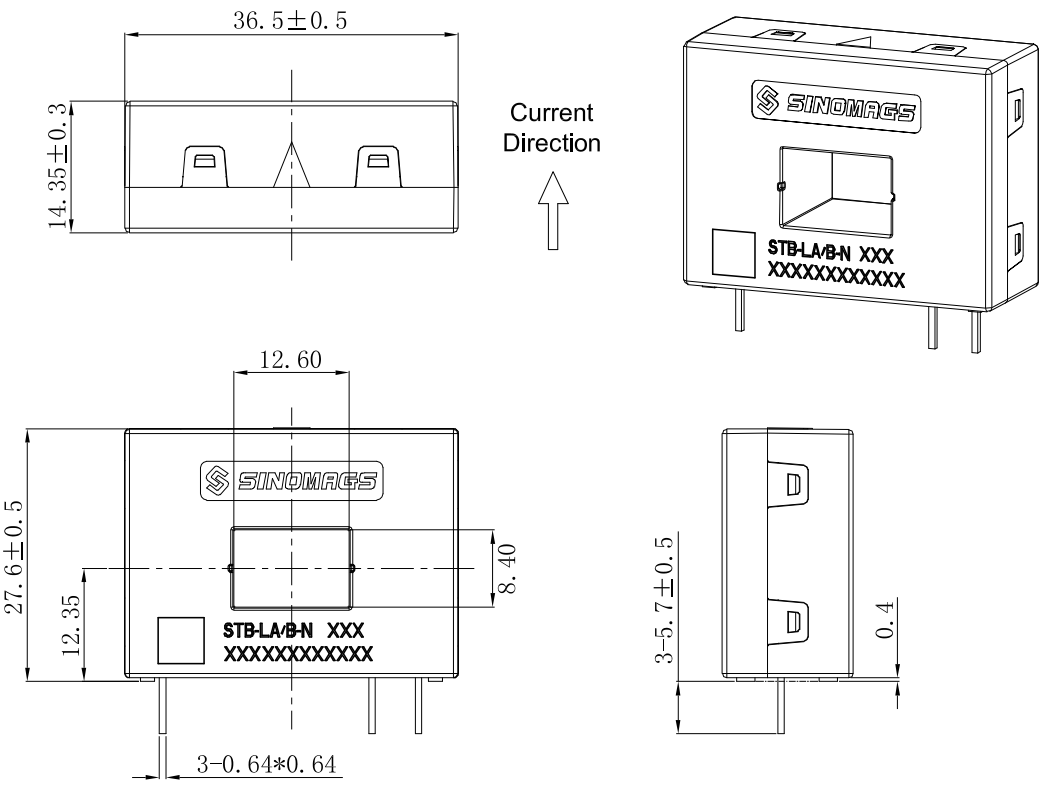
3. Dimensions: STB-100LA/B



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



4. Dimensions: STB-100LA/B-N



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Unit :mm