SINOMAGS
希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES: STB-LA/B

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

VERSION: Ver 1.4

CONTENT

1. Description

STB-LA/B 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

- Solar inverter
- Variable frequency converter
- Uninterruptible Power Supplies (UPS)
- Direct-current dynamo
- 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 ~ 90
Mass	m	g	14.5 (STB-LA/B-N) 19.5(STB-LA/B)
Supply voltage (-40˚C…105˚C)	V_{CC}	V	±15
Clearance (component without solder pad)	S_{Clear}	mm	12(STB-LA/B)
Creepage (component without solder pad)	S_{Creep}	mm	12(STB-LA/B)
System voltage overvoltage category 3	V_{sys}	V	600
Working voltage (table 7 acc. to EN61800-5-1) over voltage category 2	V_{work}	V	1000
Rated discharge voltage (Recurring peak voltage)	U_{PD}	V	1225
Max. potential difference acc. to UL 508		V_{AC}	600

Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40˚C…85˚C)	Vcc_{max}	V	±18

Inspection (Measurement after temperature balance of the samples at room temperature)

Parameter	Symbol	Unit	Value	Remark
Test voltage, rms, 1 s , pin 1 – 3 vs. hole	U_d	KV_{RMS}	1.8	M3014
Partial discharge voltage (RMS)	U_{PDE} $U_{PDE} * 1.875$	KV_{RMS}	1.3 1.625	M3024

Type Testing (Pin 1 - 3 to hole)

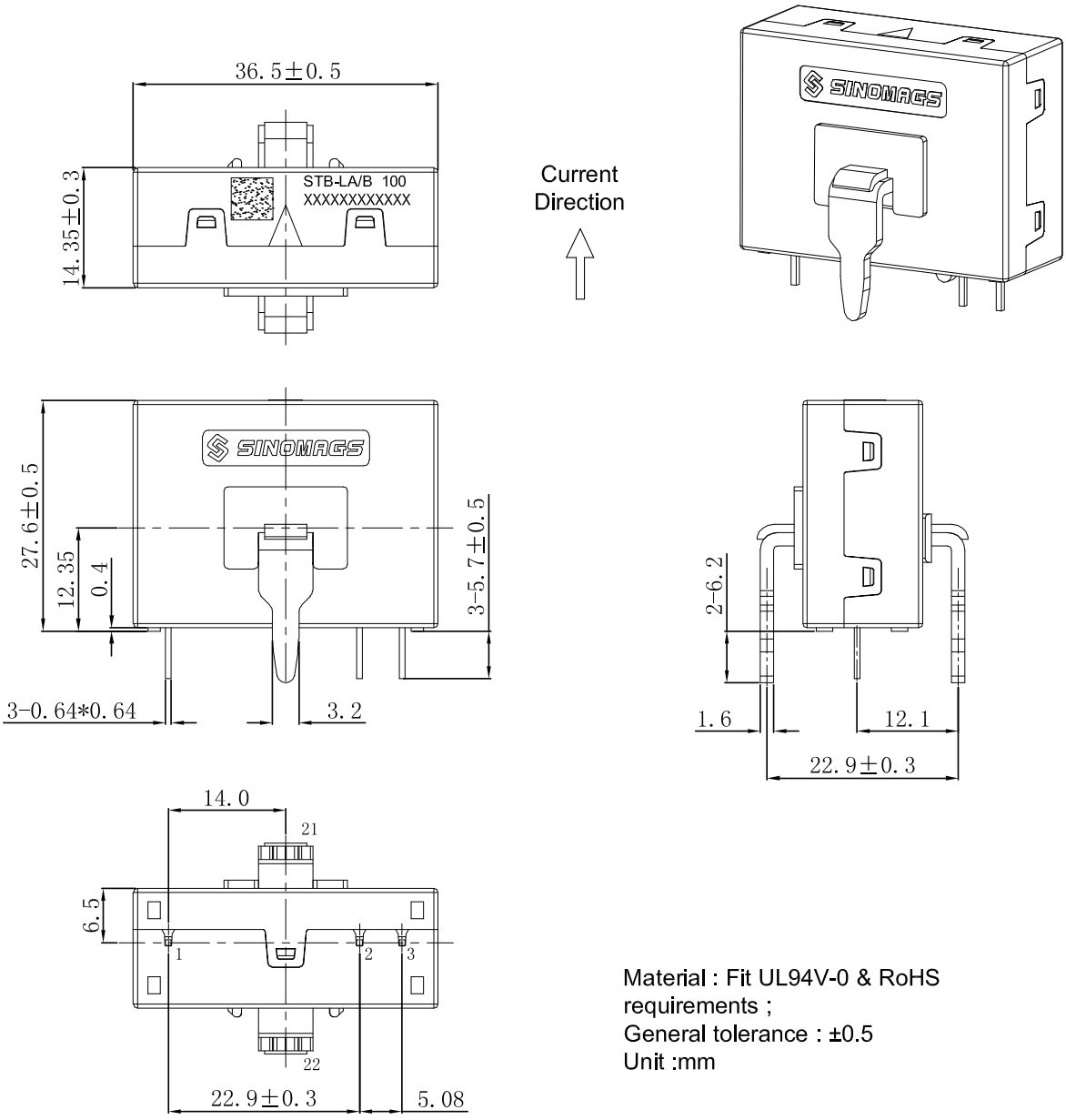
Parameter	Symbol	Unit	Value	Remark
Impulse test (1.2μs/50μs wave form)	U_W	KV	8	M3064
Test voltage, 5s	U_d	KV_{RMS}	3.6	M3014
Partial discharge voltage	U_{PDE} $U_{PDE} * 1.875$	KV_{RMS}	1.3 1.625	M3024

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

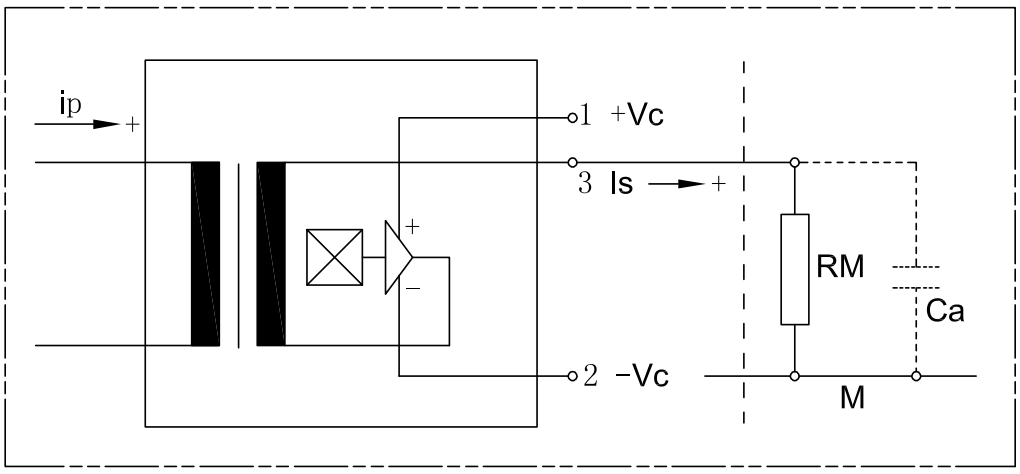
Condition: V_{CC}= ±15.0 V, T_A = 25℃, unless specified.

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 °C
	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	Δt (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

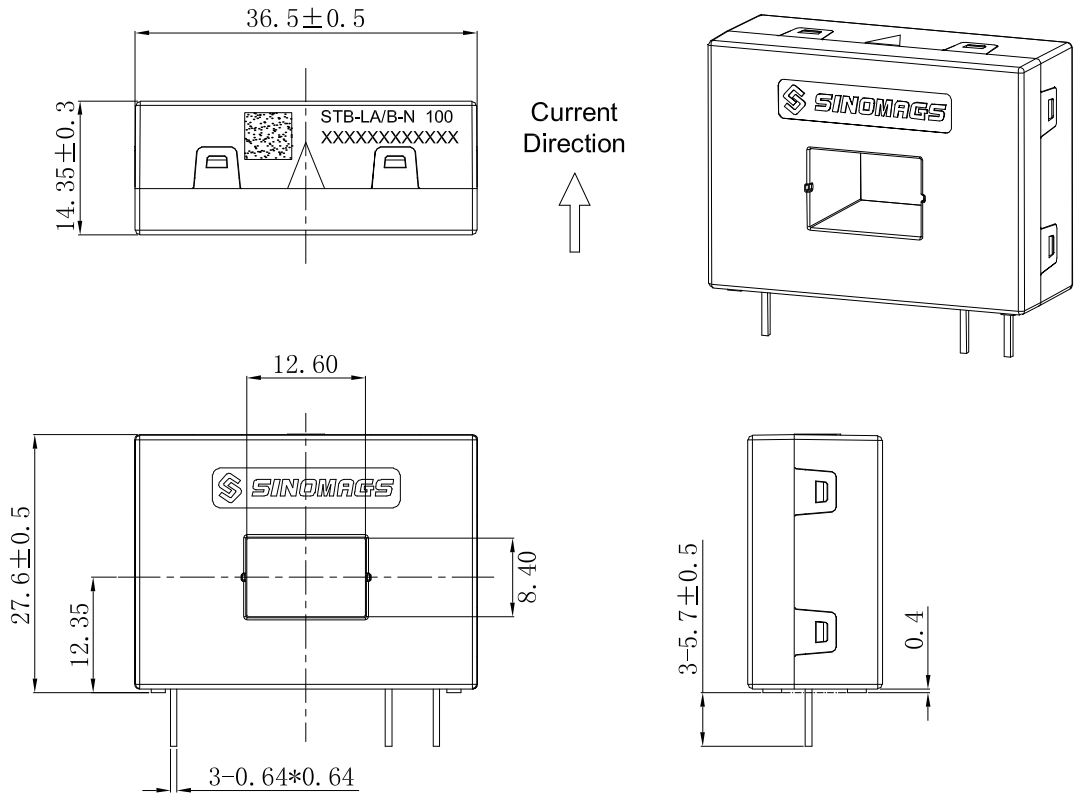
3. Dimensions: STB-100LA/B

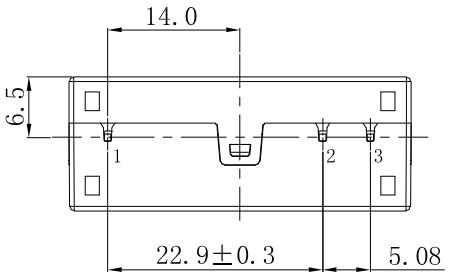


Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.5
Unit :mm



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





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