

CURRENT SENSOR

PRODUCT SERIES: STB-LF7

PRODUCT PART NUMBER: STB-180LF7

VERSION: Ver 1.6



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1. Description

STB-LF7 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

- Static converters for DC motor drives
- AC variable speed and servo motor drives
- Power supplies for welding applications
- Switched model power supplies (SMPS)
- UPS
- Battery supplied applications

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	°C	-30 ~ 80
Storage temperature	T_S	°C	-40~ 85
Mass	m	g	50

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage (-15°C...85°C)	$V_{CC_{max}}$	V	±15.75
Maximum primary conductor temperature	$T_{B_{max}}$	°C	85

Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	600
Maximum surrounding air temperature	°C	85

Isolation parameters

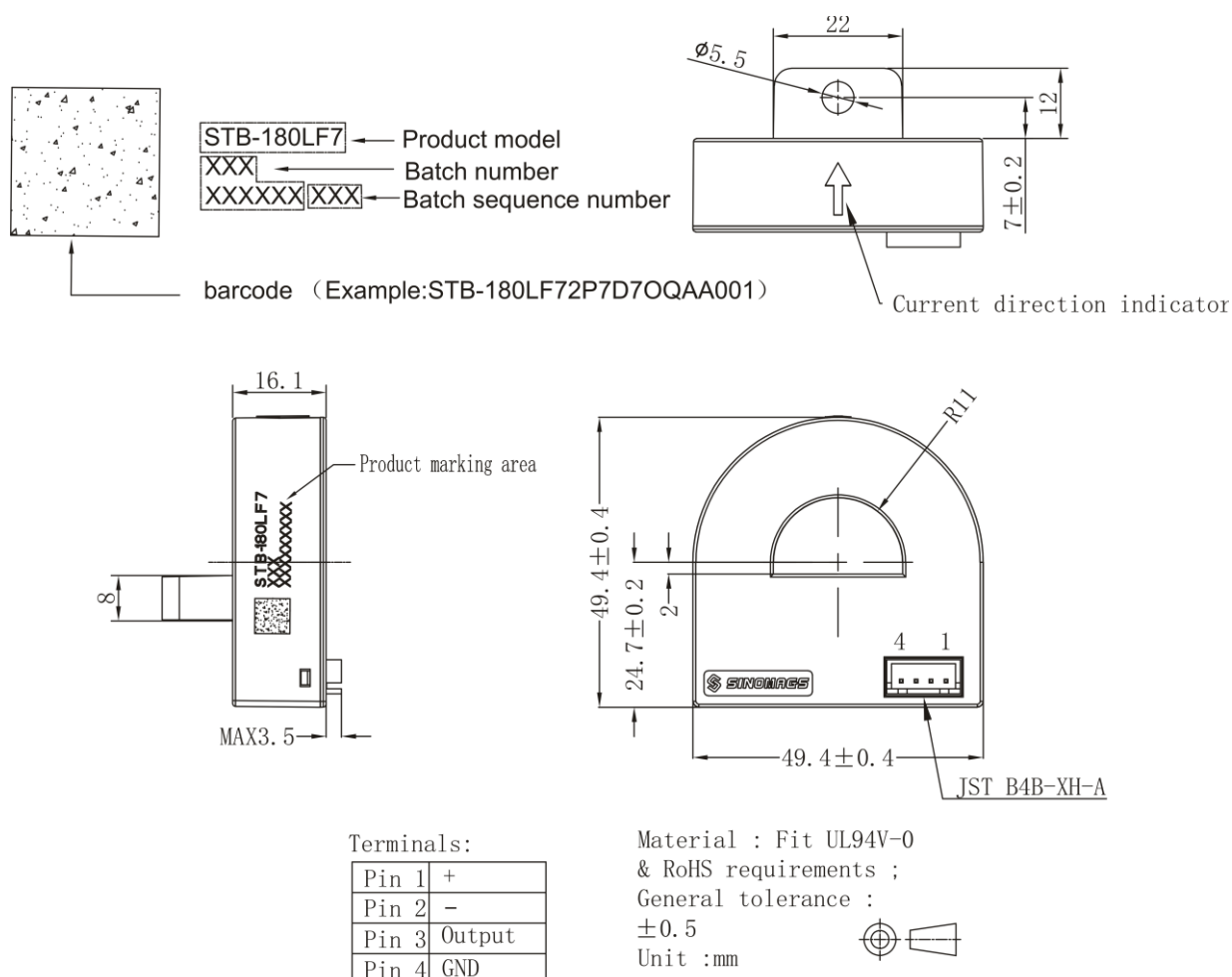
Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	5	
Case material	-	-	V0	According to UL 94 PBT+30%GF (RoHS and REACH compliant)
Comparative tracking index	CTI		600	
Insulation resistance	I_R	MΩ	>2000	1000V

2. STB-180LF7 Electrical parameters

Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$, $R_M = 1.5 \sim 50 \Omega$ unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A		180		
Primary current measuring range	I_{PM}	A	-540		540	$V_{CC} = \pm 15V$
Measuring resistance@ ± 180 A max	R_M	Ω	0		30	$\pm 180A_{max}$
Resistance of secondary winding	R_S	Ω		52		
Secondary nominal RMS current	I_{SN}	mA		$I_O \pm 45$		
Supply voltage	V_{CC}	V	± 14.25	15	± 15.75	
Current consumption	I_{CC}	mA		$16 + I_S$		
Conversion ratio	K_N	NT		1:4000		
Offset current	I_O	mA	-0.2		+0.20	$I_P = 0$, $T_A = 25^\circ C$
Temperature drift of I_O	I_{OT}	mA	-0.6	± 0.20	+0.6	$-40^\circ C \dots 85^\circ C$
Residual output Temp. Coef	I_{ORT}	mA/ $^\circ C$	-0.01		0.01	
Residual current after $3 \times I_{PN}$	I_{OM}	mA	-0.3		0.3	
Linearity error	ε_L	%			0.3	
Output Temp. Coef.	ε_{LT}	%/ $^\circ C$	-0.02		0.02	
Response time	t_r	μs			1	90% of I_{PN}
di/dt accurately followed	di/dt	A/ μs	100			
Frequency bandwidth	BW	kHz			200	-1 dB band width
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-1		1	$T_A = 25^\circ C$

3. Dimensions:



Mechanical characteristics

- General tolerance ± 0.5 mm
- Connection of secondary 4 pins
- Recommended fastening torque 3.5 N·m