

CURRENT SENSOR

PRODUCT SERIES: STB-LF8

PRODUCT PART NUMBER: STB-88LF8
STB-35LF8

VERSION: Ver 1.6



Sinomags Technology Co., Ltd.

Web site: www.sinomags.com

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1. Description

STB-LF8 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

- Windmill inverters
- AC variable speed and servo motor drives
- Test and measurement
- Switched model power supplies (SMPS)
- Battery supplied applications
- UPS
- Static converters for DC motors drives

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	°C	-40 ~ 85
Storage temperature	T_S	°C	-40 ~ 90
Mass	m	g	90(STB-88LF8)
Standards			EN 50178

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage (-15°C...85°C)	V_{CCmax}	V	± 15.75
Maximum primary conductor temperature	T_{Bmax}	°C	85
Maximum steady state primary current	I_{PNmax}	A	240

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	S	MΩ	>2000	

2. STB-88LF8 Electrical parameters

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

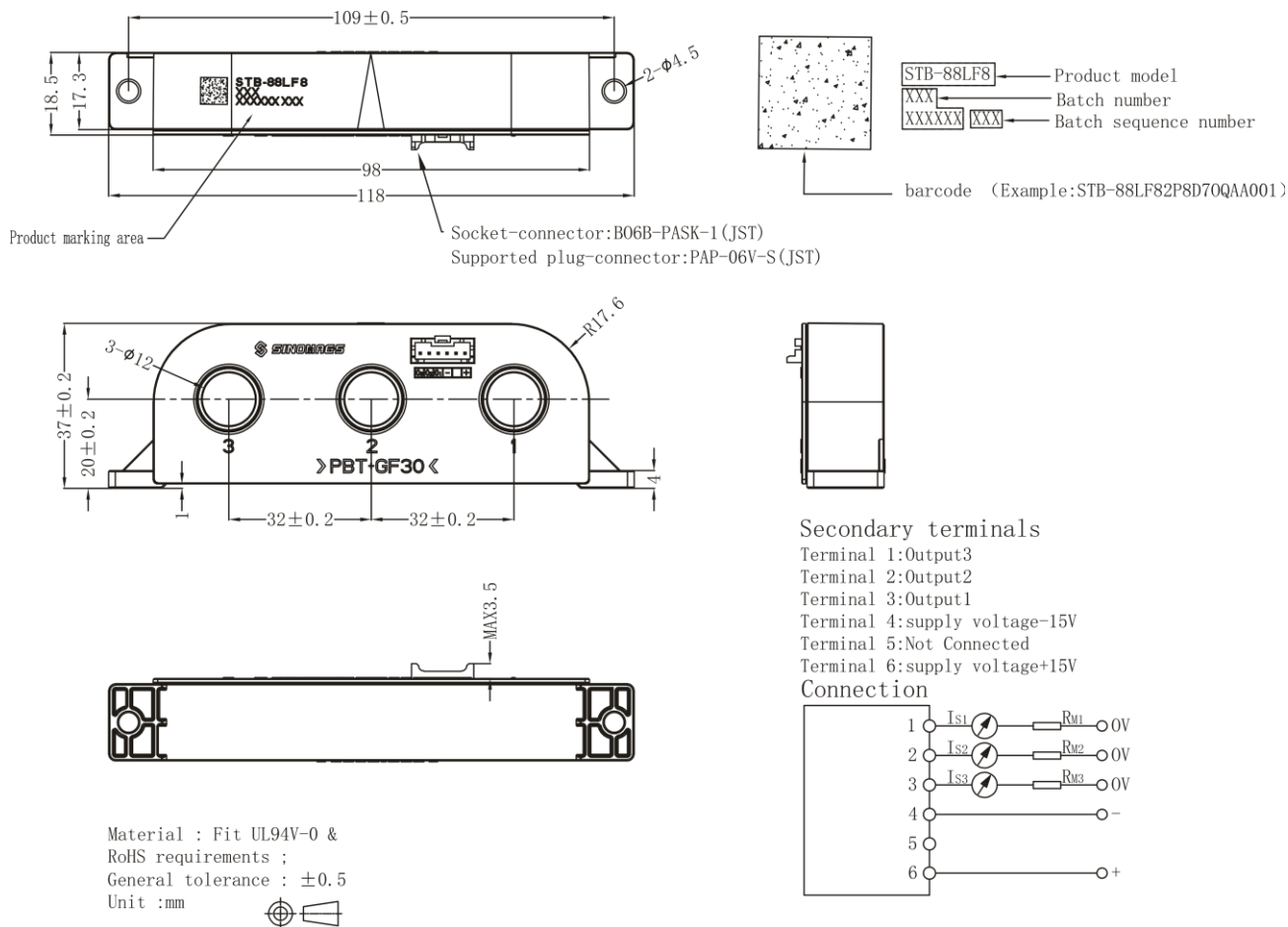
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal RMS current	I_{PN}	A		88		
Primary current measuring range	I_{PM}	A	-240		240	$V_{CC} = \pm 15V$
Measuring resistance@ $\pm 88 A$ max	R_M	Ω	0		95	$\pm 176A_{max}$
			0		45	$\pm 240A_{max}$
Resistance of secondary winding	R_S	Ω				$T_A = 70^\circ C$
						$T_A = 85^\circ C$
Supply voltage	V_{CC}	V	± 14.25		± 15.75	
Current consumption	I_{CC}	mA		$40 + I_{S1} + I_{S2} + I_{S3}$		
Conversion ratio	K_N	NT		1:4000		
Secondary nominal RMS current	I_{SN}	mA		22		
Offset current $T_A = 25^\circ C$	I_O	mA	-0.2		0.2	$I_P = 0A$
Temperature drift of I_O	I_{OT}	mA	-0.9	± 0.2	0.9	$-40^\circ C \sim 85^\circ C$
Residual output Temp. Coef	I_{ORT}	mA/ $^\circ C$	-0.01		0.01	$-40^\circ C \sim 85^\circ C$
Residual current after $3 \times I_{PN}$	I_{OM}	mA	-0.2		0.2	
Linearity error	ε_L	%			0.6	
Output Temp. Coef.	ε_{LT}	%/ $^\circ C$	-0.02		0.02	$-40^\circ C \sim 85^\circ C$
Reaction time	t_{d10}	μs			0.5	10% of I_{PN}
Response time	t_{d90}	μs			1	90% of I_{PN}
di/dt accurately followed	di/dt	A/ μs	200			
Frequency bandwidth (-3 dB)	BW	kHz	DC		200	
Total error at I_{PN}	X	% of I_{PN}	-1		1	$T_A = 25^\circ C$

3. STB-35LF8 Electrical parameters

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

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A	-35		35	
Primary current measuring range	I_{PM}	A	-105		105	$V_{CC} = \pm 15V$
Measuring resistance@ ± 35 A	R_M	Ω	0		180	
Resistance of secondary winding	R_S	Ω			52	$T_A = 25^\circ C$
Supply voltage	V_{CC}	V	± 14.25	$\pm 15V$	± 15.75	
Current consumption	I_{CC}	mA		40 + $I_{S1}+I_{S2}+I_{S3}$		
Conversion ratio	K_N	NT		1:2000		
Secondary nominal RMS current	I_{SN}	mA		17.5		I_{PN}
Offset current $T_A = 25^\circ C$	I_O	mA	-0.2		0.2	$I_p = 0A$
Temperature drift of I_O	I_{OT}	mA	-0.9	± 0.2	0.9	$-40^\circ C \sim 85^\circ C$
Residual output Temp. Coef	I_{ORT}	mA/ $^\circ C$	-0.01		0.01	$-40^\circ C \sim 85^\circ C$
Residual current after 3 x I_{PN}	I_{OM}	mA	-0.2		0.2	
Linearity error	ε_L	%			0.5	
Output Temp. Coef.	ε_{LT}	%/ $^\circ C$	-0.02		0.02	$-40^\circ C \sim 85^\circ C$
Reaction time	t_{d10}	μs			0.5	10% of I_{PN}
Response time	t_{d90}	μs			1	90% of I_{PN}
di/dt accurately followed	di/dt	A/ μs	200			
Frequency bandwidth (-3 dB)	BW	kHz	DC		200	
Total error at I_{PN}	X	% of I_{PN}	-1		1	$T_A = 25^\circ C$

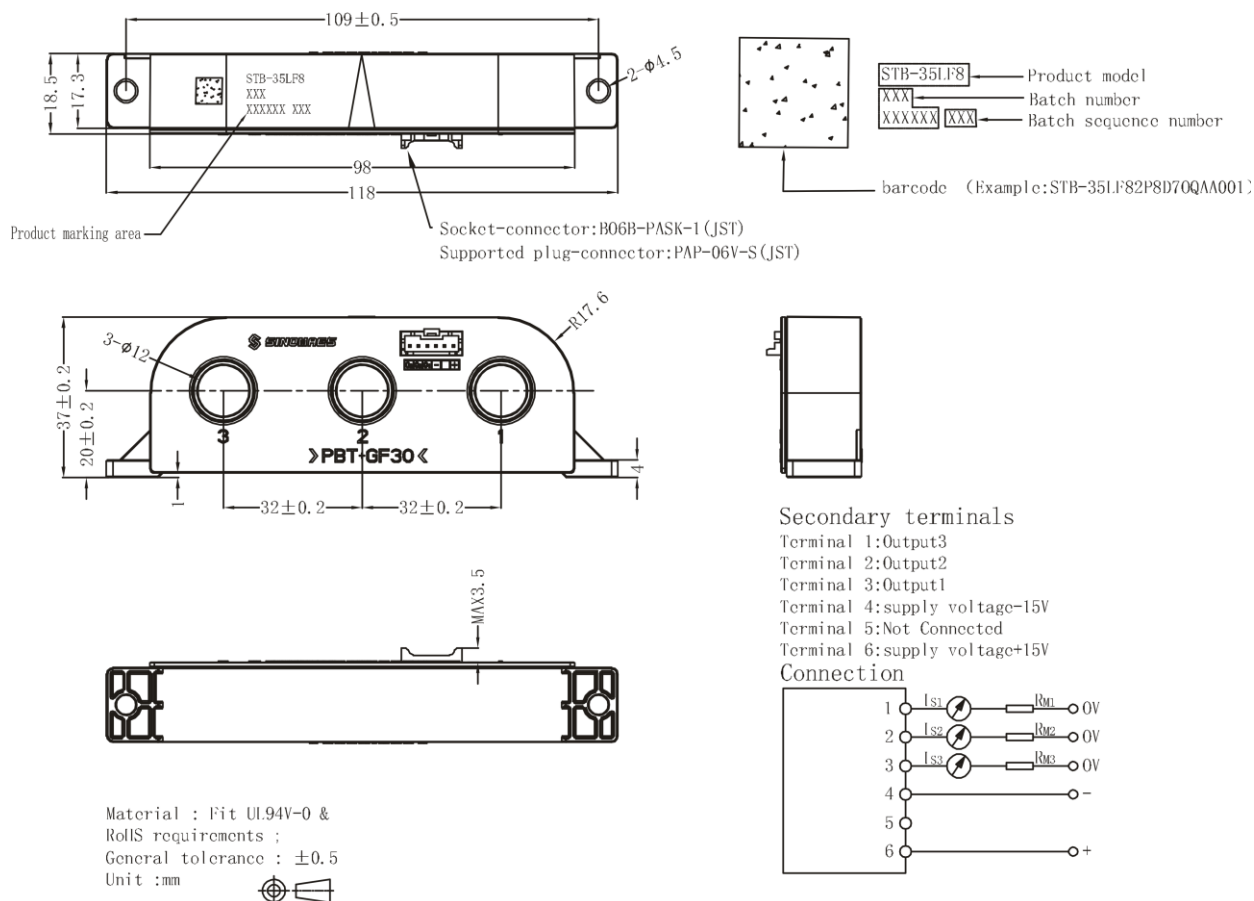
4. STB-88LF8 Dimensions:



Mechanical characteristics

- General tolerance ±0.5 mm
- Primary through-hole 12 mm
- Connection of secondary 6 pins

5. STB-35LF8 Dimensions:



Mechanical characteristics

- General tolerance ±0.5 mm
- Primary through-hole 12 mm
- Connection of secondary 6 pins