SINOMAGS 希 磁 科 技

CURRENT SENSOR

PRODUCT SERIES：	STB-LF2
PRODUCT PART NUMBER：	STB-200LF2-D STB-200LF2-DG3 STB-300LF2 STB-300LF2-LG3 STB-300LF2-LA4 STB-300LF2-DA4
VERSION：	Ver 2.5

CONTENT

1. Description

STB-LF2 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
- Test and measurement
- UPS
- AC variable speed and servo motor drives
- Switched model power supplies (SMPS)

General parameters

Parameter	Symbol	Unit	Value
Sensor operating temperature	T_A	˚C	STB-200LF2-D :-40 ~ 85 STB-200LF2-DG3 :-40 ~ 85 STB-300LF2 :-40 ~ 70 STB-300LF2-LG3 :-40 ~ 70 STB-300LF2-LA4 :-40 ~ 70 STB-300LF2-DA4 :-40 ~ 85
Storage temperature	T_S	˚C	STB-200LF2-D :-40 ~ 90 STB-200LF2-DG3 :-40 ~ 90 STB-300LF2 :-40 ~ 85 STB-300LF2-LG3 :-40 ~ 85 STB-300LF2-LA4 :-40 ~ 85 STB-300LF2-DA4:-40 ~ 90
Mass	m	g	130
Supply voltage (-40˚C…105˚C)	V_{CC}	V	±15

Absolute parameters

Parameters	Symbol	Unit	Value
Maximum supply voltage (-40˚C…105˚C)	Vcc_{max}	V	±16
Maximum primary conductor temperature	$T_{B_{max}}$	˚C	100

Ratings

Parameter	Unit	Value
Primary involved potential	V AC/DC	1500
Maximum surrounding air temperature	˚C	70
Primary current	A	0…600

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	U_d	kV	5	
Impulse withstand voltage 1.2/50μs	U_W	kV	5	
Clearance distance (pri. -sec)	dCl	mm	10.2	Shortest distance through air
Creepage distance (pri. -sec)	dCp	mm	11	Shortest path along device body
Case material	-	-	V0	According to UL 94
Comparative tracking index	CTI		600	

2. STB-200LF2-D & STB-200LF2-DG3 Electrical parameters

Condition: V_{CC} = ±15V, T_A= 25℃ unless specified

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A		±200		
Primary current measuring range	I_{PM}	A	-500		500	V_{CC} =±15V
Measuring resistance	R_M	Ω	0		10	I_P: ±300
			0		5	I_P: ±500
Secondary nominal current	I_{SN}	A	-0.1		0.1	I_P=±200
Secondary current measuring range	I_S	A	-0.25		0.25	I_P=±500
Supply voltage	V_{CC}	V	±12		±15	
Current consumption	I_{CC}	mA		16 + I_S		I_S=I_P/N_S
Turns ratio	N_S	NT		2000		
Nominal sensitivity	S_N	mA/A		0.5		
Offset current	I_{OE}	mA	-0.1		0.1	
Offset current temperature drift	I_{OT}	mA	-0.2		0.2	-40℃ ~ 90℃
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_{PN}	$t_{d\,10}$	μs			1	10% of I_{PN}
Delay time @ 90 % of I_{PN}	$t_{d\,90}$	μs			1	90% of I_{PN}
-3 dB band width	BW	kHz			100	
Accuracy@ I_{PN}	X	%	-0.3		0.3	T_A=25℃
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.3		0.3	-40℃…90℃
Resistance of secondary winding	R_S	Ω		17		T_A = 70 °C
				14		T_A = 25 °C

3. STB-300LF2 & STB-300LF2-LG3 & STB-300LF2-LA4 Electrical parameters

Condition: Vcc = ±15V, , T_A = 25℃ unless specified.

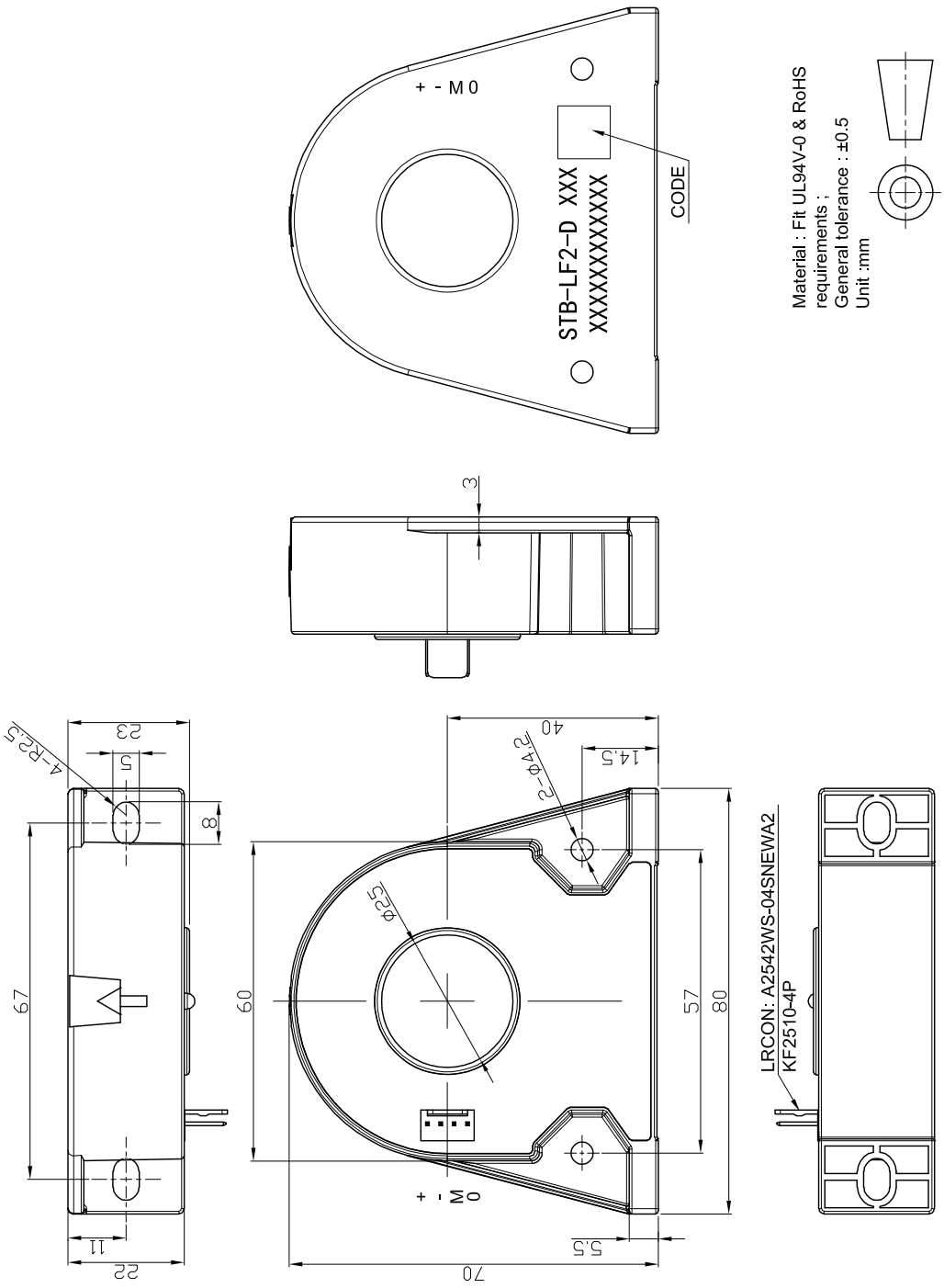
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A		±300		
Primary current measuring range	I_{PM}	A	-600		600	V_{CC}=±15V
Measuring resistance	R_M	Ω	0		10	I_P： ±300
			0		5	I_P： ±600
Secondary nominal current	I_{SN}	A	-0.15		0.15	I_P=±300
Secondary current measuring range	I_S	A	-0.3		0.3	I_P=±600
Supply voltage	V_{CC}	V	±12		±15	
Current consumption	I_{CC}	mA		16 + I_S		I_S=I_P/N_S
Turns ratio	N_S	NT		2000		
Nominal sensitivity	S_N	mA/A		0.5		
Offset current	I_{OE}	mA	-0.1		0.1	
Offset current temperature drift	I_{OT}	mA	-0.2		0.2	-40℃ ~ 70℃
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_PN	$t_{d\,10}$	μs			1	10% of I_{PN}
Delay time @ 90 % of I_PN	$t_{d\,90}$	μs			1	90% of I_{PN}
-3 dB band width	BW	kHz			100	
Accuracy	X	%	-0.3		0.3	T_A=25℃
Total error at I_{PN}	ε_{tot}	%	-0.3		0.3	-40℃…70℃
Resistance of secondary winding	R_S	Ω		17		T_A= 70 °C
				14		T_A = 25 °C

4. STB-300LF2 -DA4 Electrical parameters

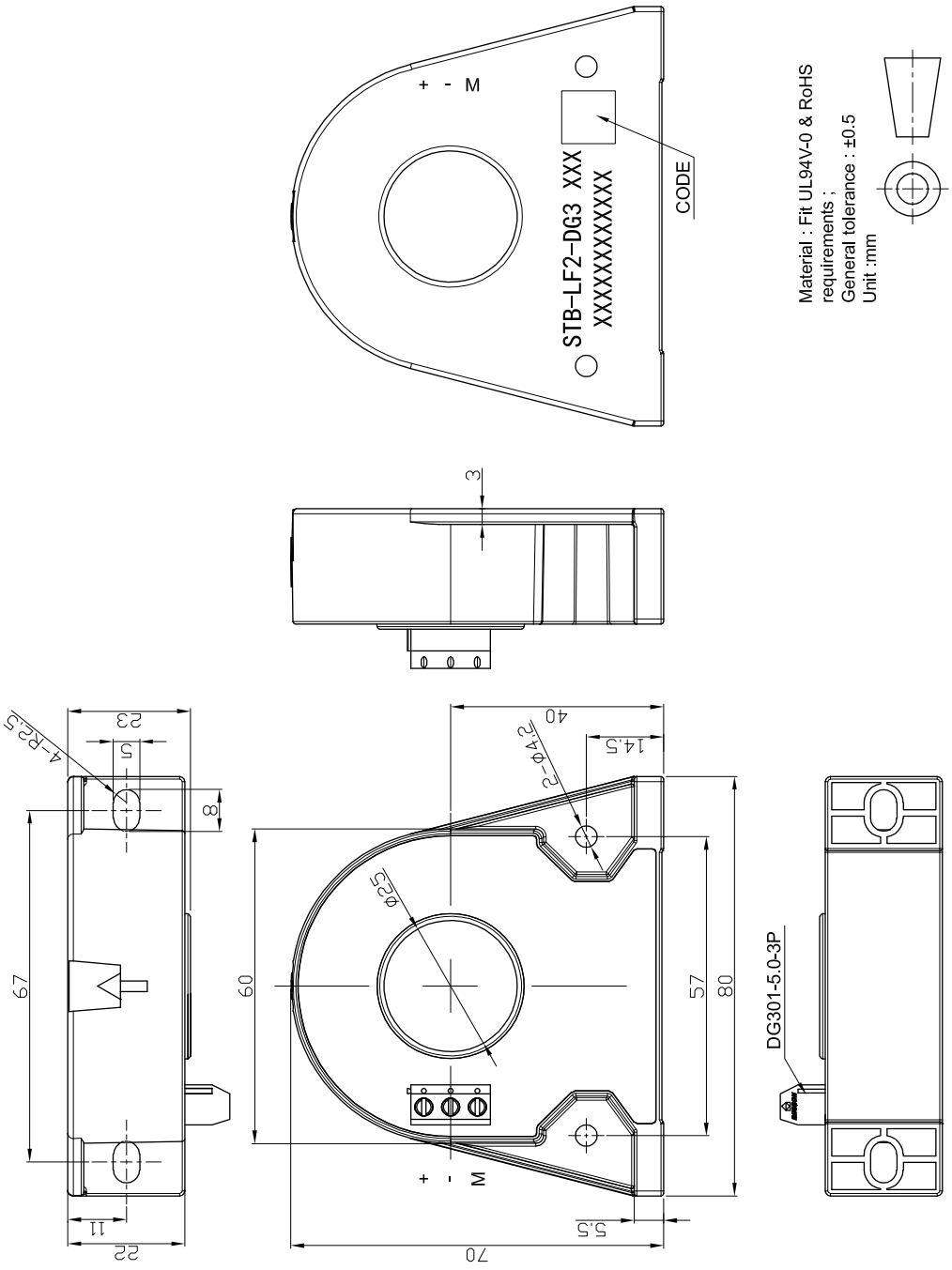
Condition: Vcc = ±15V, , T_A = 25℃ unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A		±300		
Primary current measuring range	I_{PM}	A	-600		600	V_{CC}=±15V
Measuring resistance	R_M	Ω	0		10	I_P: ±300
			0		5	I_P: ±600
Secondary nominal current	I_{SN}	A	-0.15		0.15	I_P=±300
Secondary current measuring range	I_S	A	-0.3		0.3	I_P=±600
Supply voltage	V_{CC}	V	±12		±15	
Current consumption	I_{CC}	mA		16 + I_S		I_S=I_P/N_S
Turns ratio	N_S	NT		2000		
Nominal sensitivity	S_N	mA/A		0.5		
Offset current	I_{OE}	mA	-0.1		0.1	
Offset current temperature drift	I_{OT}	mA	-0.2		0.2	-40℃ ~ 90℃
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_PN	$t_{d\,10}$	μs			1	10% of I_{PN}
Delay time @ 90 % of I_PN	$t_{d\,90}$	μs			1	90% of I_{PN}
-3 dB band width	BW	kHz			100	
Accuracy	X	%	-0.3		0.3	T_A=25℃
Total error at I_{PN}	ε_{tot}	%	-0.3		0.3	-40℃…90℃
Resistance of secondary winding	R_S	Ω		17		T_A= 90 °C
				14		T_A = 25 °C

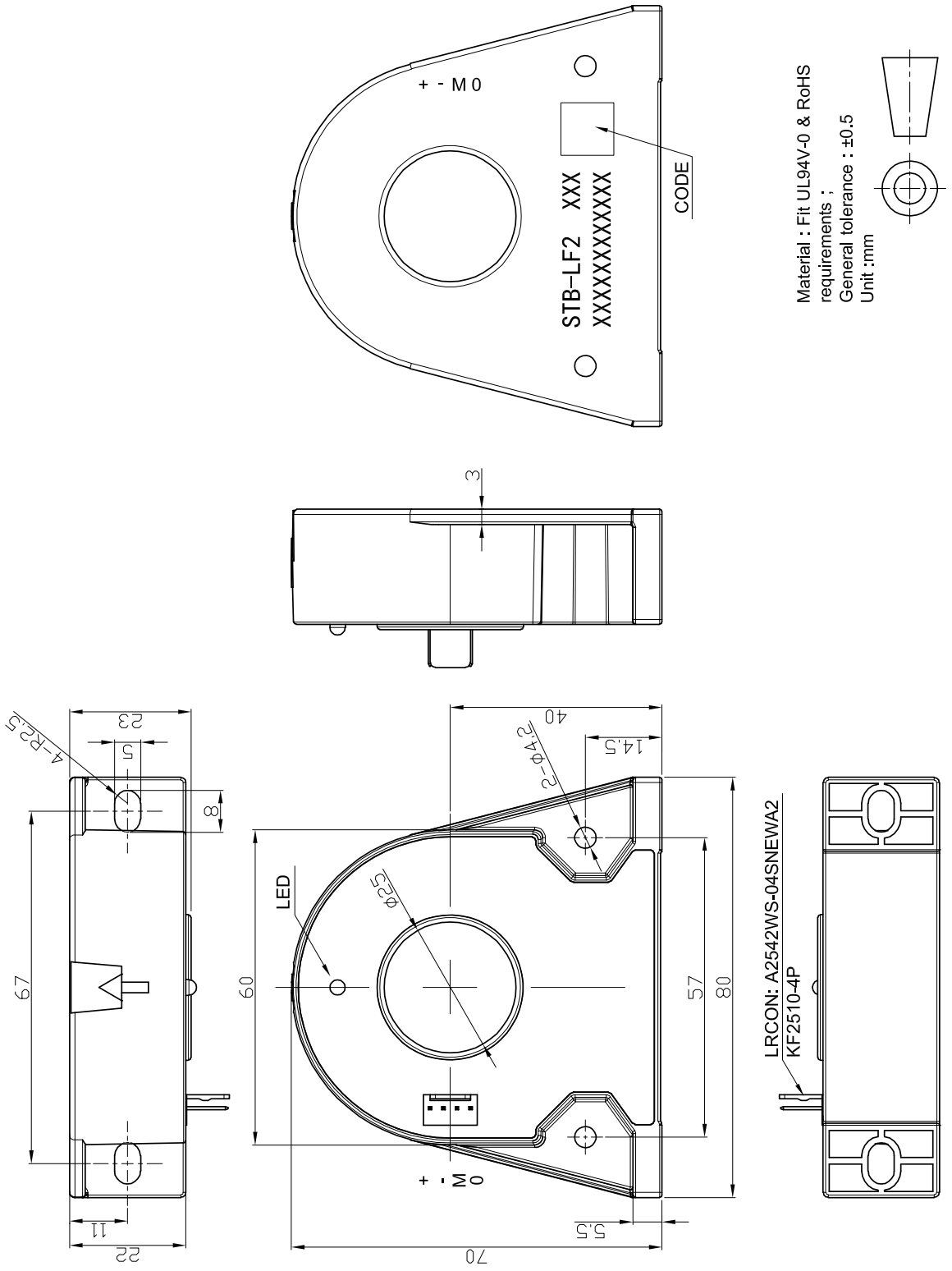
5. STB-200LF2-D Dimensions:



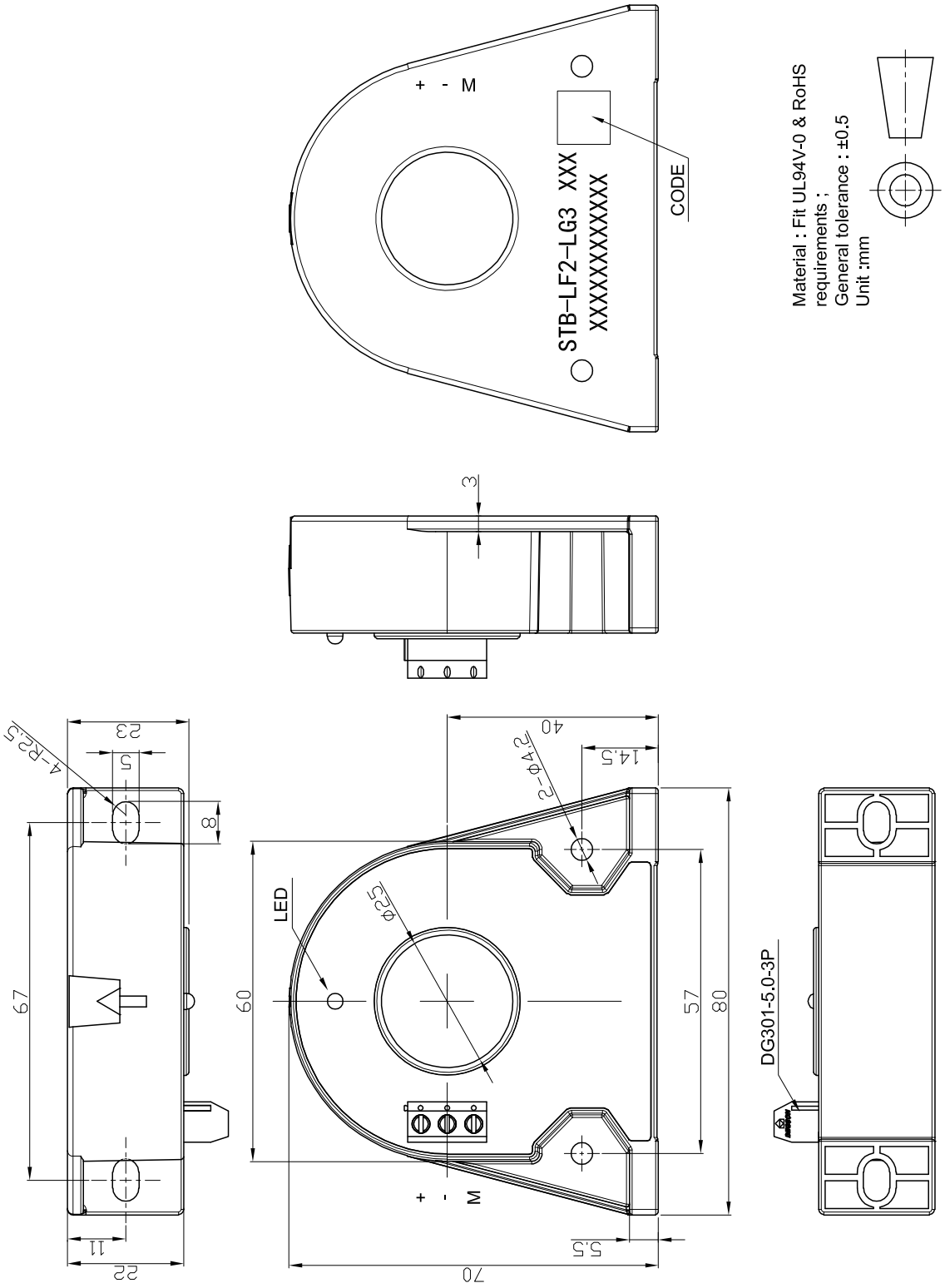
6. STB-200LF2-DG3 Dimensions:



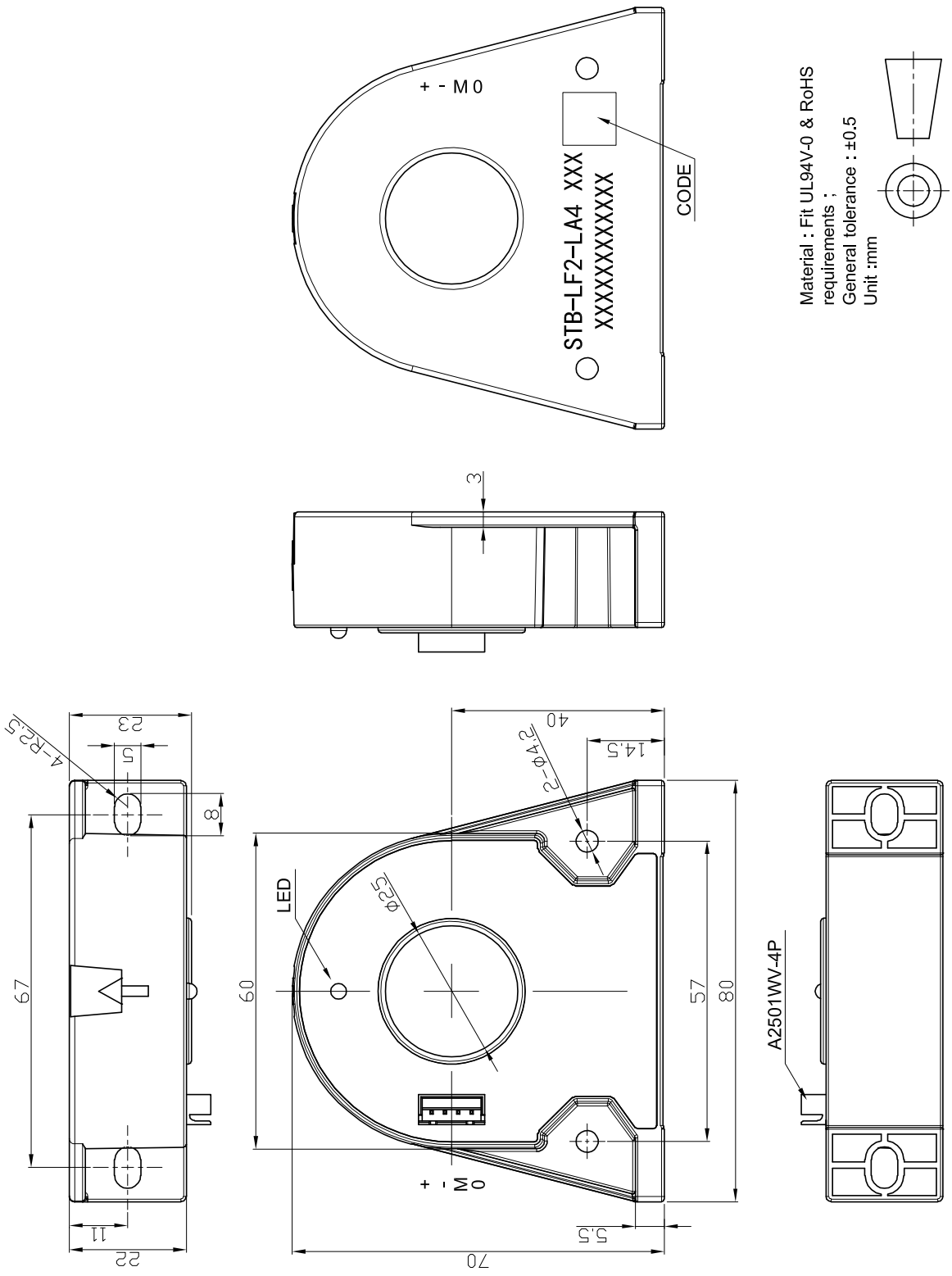
7. STB-300LF2 Dimensions



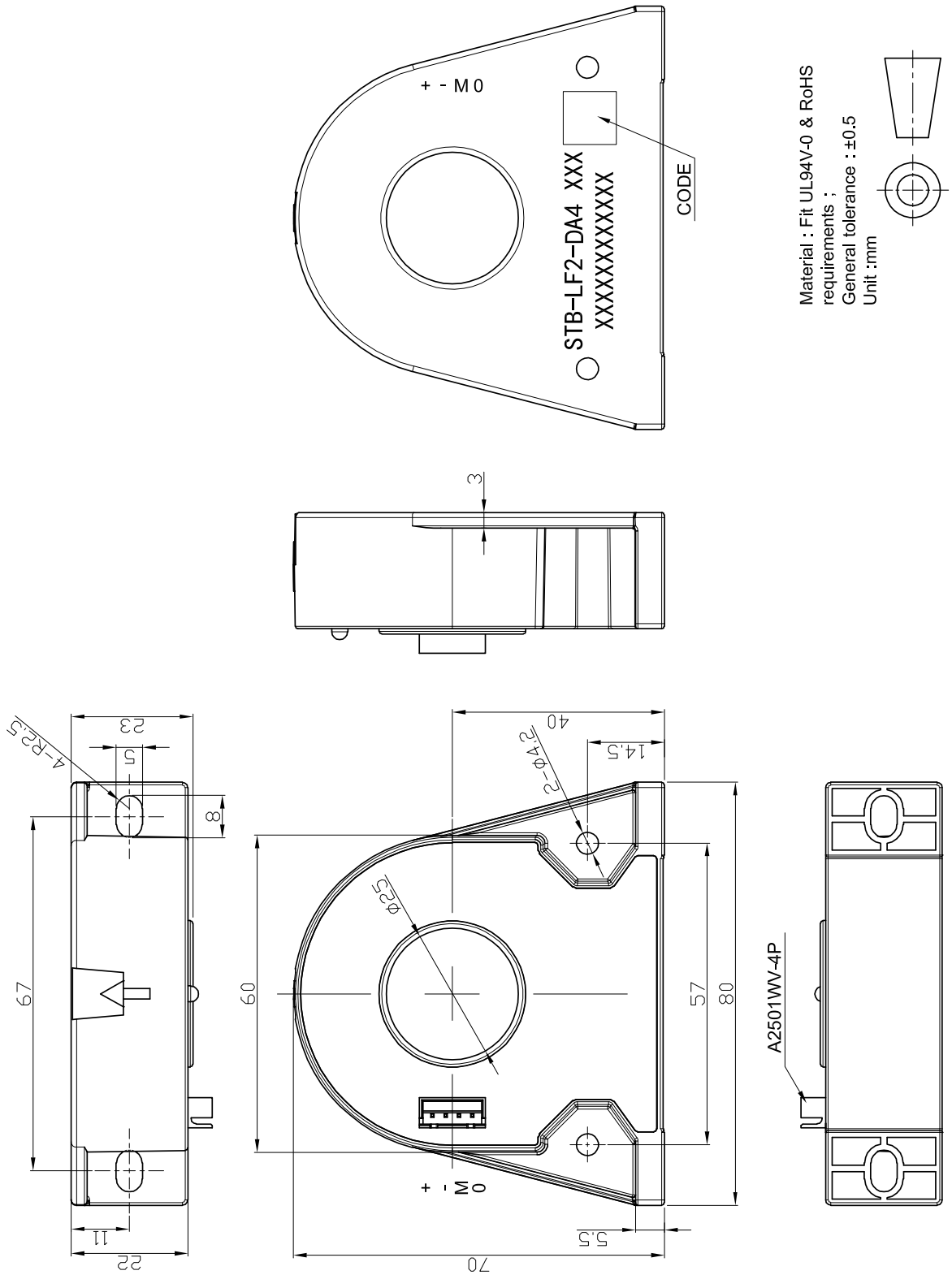
8. STB-300LF2-LG3 Dimensions



9. STB-300LF2-LA4 Dimensions:



10. STB-300LF2-DA4 Dimensions:



11. Mechanical characteristics

- General tolerance ±0.5 mm
- Primary through-hole ⌀ 25 mm
- Transducer fastening
  Horizontal position 2 holes ⌀4.2 mm
  2 M4 steel screws
  Recommended fastening torque 2.1 N·m (±10 %)
- Transducer fastening
  Vertical position 2 holes ⌀ 5 mm
  2 M4 steel screws
  Recommended fastening torque 2.1 N·m (±10 %)
- Connection of secondary

Product model	Connector	Connector plating
STB-200LF2-DG3	DG301-5.0-3P	tin
STB-200LF2-D	A2542WS-04SNEWA2	tin
STB-300LF2	A2542WS-04SNEWA2	tin
	Molex 22-29-2041	gold
STB-300LF2-LG3	DG301-5.0-3P	tin
STB-300LF2-LA4	A2501WV-4P	tin
STB-300LF2-DA4	A2501WV-4P	tin