

CURRENT SENSOR

PRODUCT SERIES: STB-LF2

STB-200LF2-D
STB-200LF2-DG3

PRODUCT PART NUMBER: STB-300LF2
STB-300LF2-LG3
STB-300LF2-LA4

VERSION: Ver 2.1



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

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
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
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)	$V_{CC_{max}}$	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 1.2/50 μ s	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: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$ unless specified

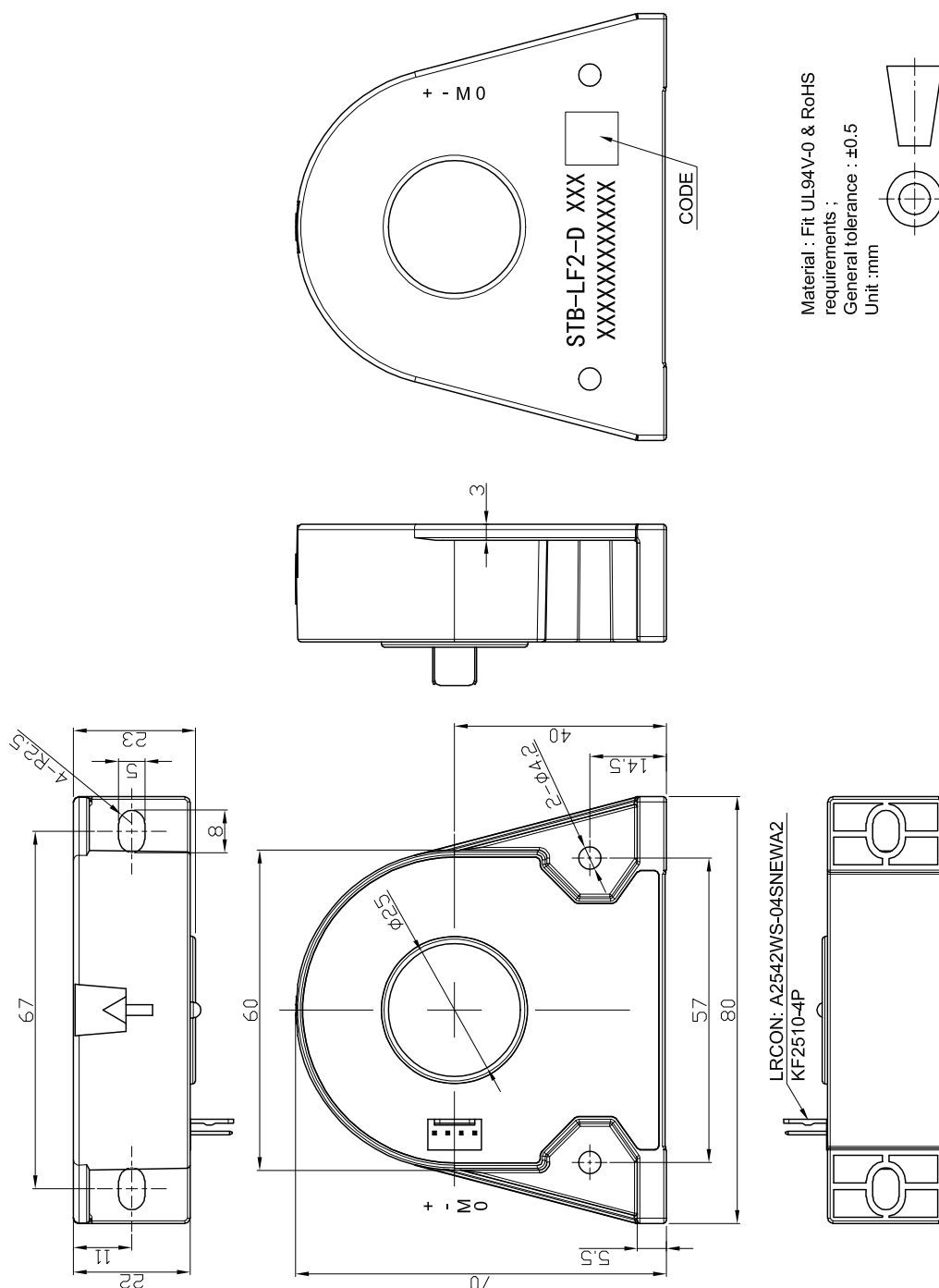
Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A		± 200		
Primary current measuring range	I_{PM}	A	-500		500	$V_{CC} = \pm 15V$
Measuring resistance	R_M	Ω	0		10	$I_P: \pm 300$
			0		5	$I_P: \pm 500$
Secondary nominal current	I_{SN}	A	-0.1		0.1	$I_P = \pm 200$
Secondary current measuring range	I_S	A	-0.25		0.25	$I_P = \pm 500$
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	$-40^\circ C \sim 90^\circ C$
Linearity error	ε_L	% of I_{PN}	-0.1		0.1	
Delay time @ 10 % of I_{PN}	t_{d10}	μs			1	10% of I_{PN}
Delay time @ 90 % of I_{PN}	t_{d90}	μs			1	90% of I_{PN}
-3 dB band width	BW	kHz			100	
Accuracy@ I_{PN}	X	%	-0.3		0.3	$T_A = 25^\circ C$
Total error at I_{PN}	ε_{tot}	% of I_{PN}	-0.3		0.3	$-40^\circ C \dots 90^\circ C$
Resistance of secondary winding	R_S	Ω		17		$T_A = 70^\circ C$
				14		$T_A = 25^\circ C$

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

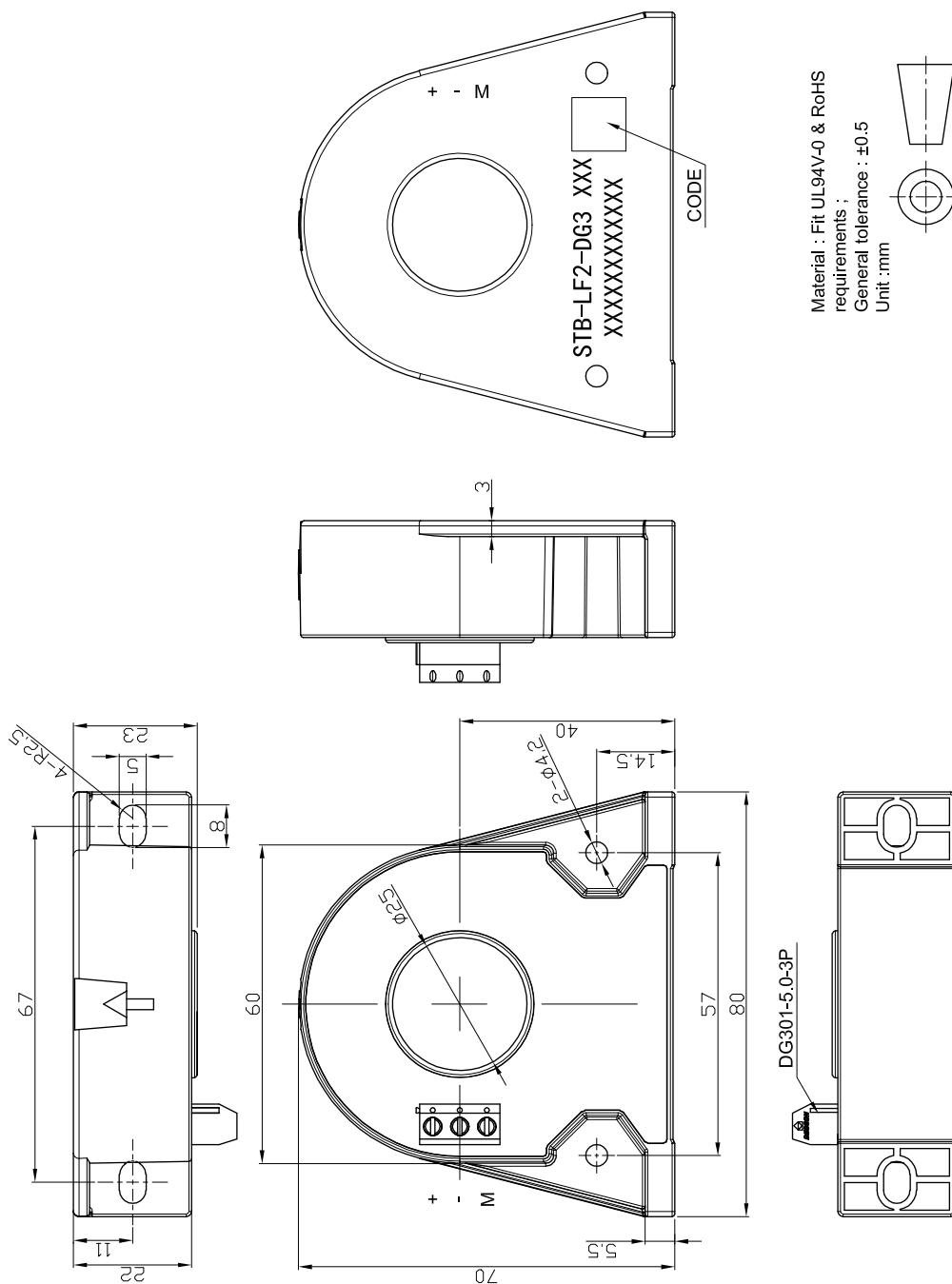
Condition: $V_{CC} = \pm 15V$, $T_A = 25^\circ C$ unless specified.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal current	I_{PN}	A		± 300		
Primary current measuring range	I_{PM}	A	-600		600	$V_{CC} = \pm 15V$
Measuring resistance	R_M	Ω	0		10	$I_P: \pm 300$
			0		5	$I_P: \pm 600$
Secondary nominal current	I_{SN}	A	-0.15		0.15	$I_P = \pm 300$
Secondary current measuring range	I_S	A	-0.3		0.3	$I_P = \pm 600$
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	$-40^\circ C \sim 70^\circ C$
Linearity error	ε_L	% of I_{PN}	-0.01		0.01	
Delay time @ 10 % of I_{PN}	t_{d10}	μs			1	10% of I_{PN}
Delay time @ 90 % of I_{PN}	t_{d90}	μs			1	90% of I_{PN}
-3 dB band width	BW	kHz			100	
Accuracy	X	%	-0.3		0.3	$T_A = 25^\circ C$
Total error at I_{PN}	ε_{tot}	%	-0.3		0.3	$-40^\circ C \dots 70^\circ C$
Resistance of secondary winding	R_S	Ω		17		$T_A = 70^\circ C$
				14		$T_A = 25^\circ C$

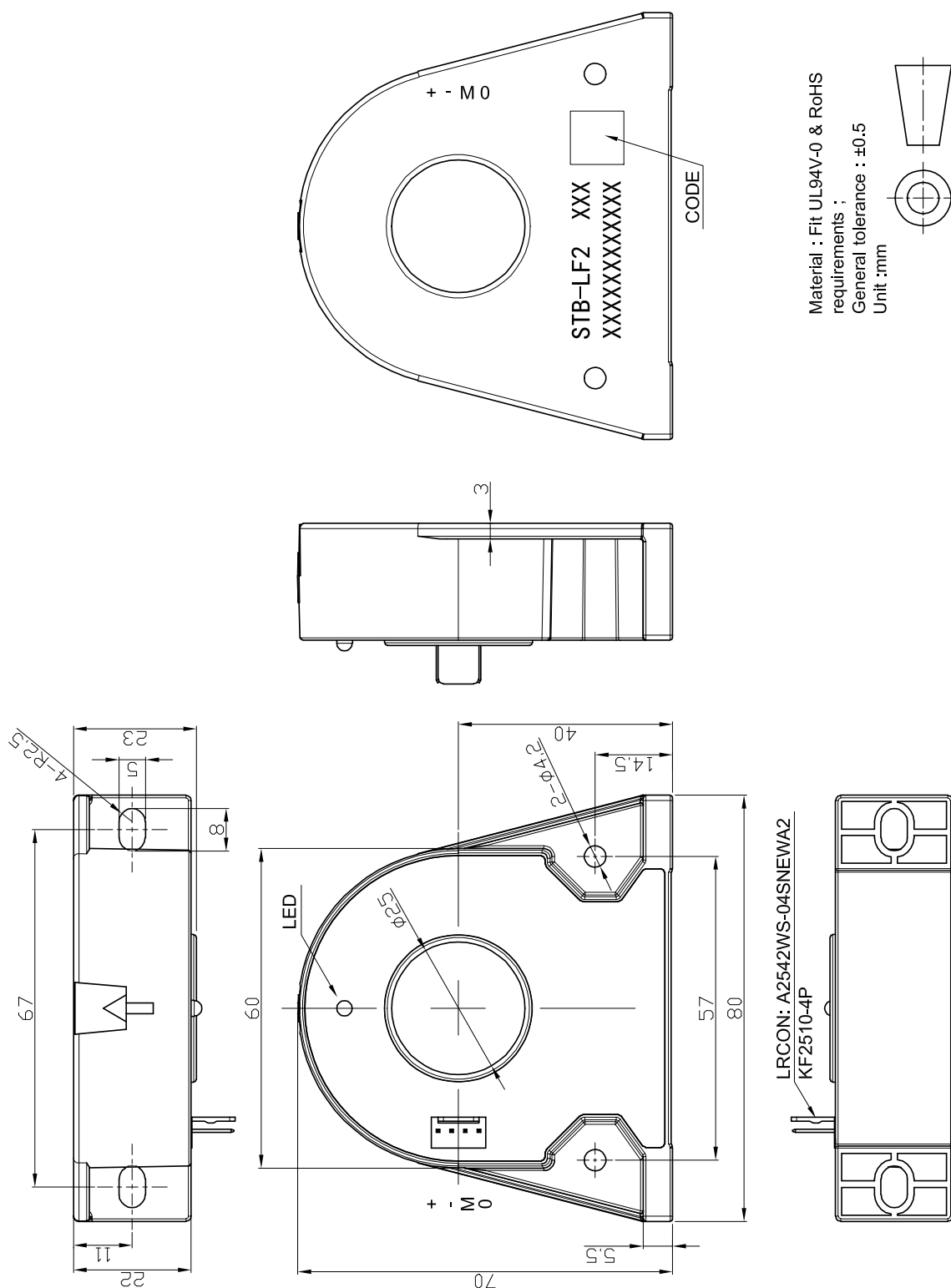
4. STB-200LF2-D Dimensions:

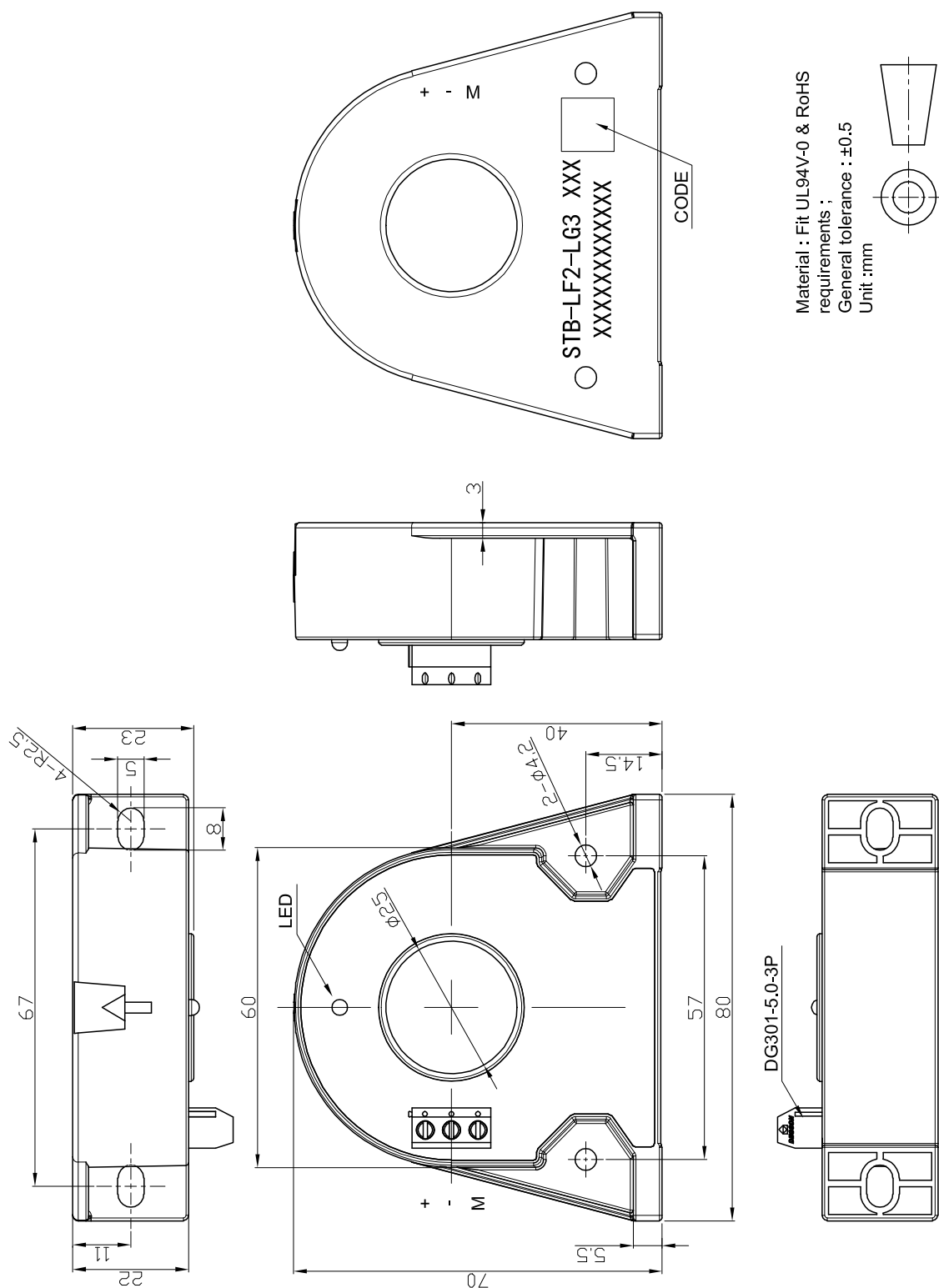


5. STB-200LF2-DG3 Dimensions:

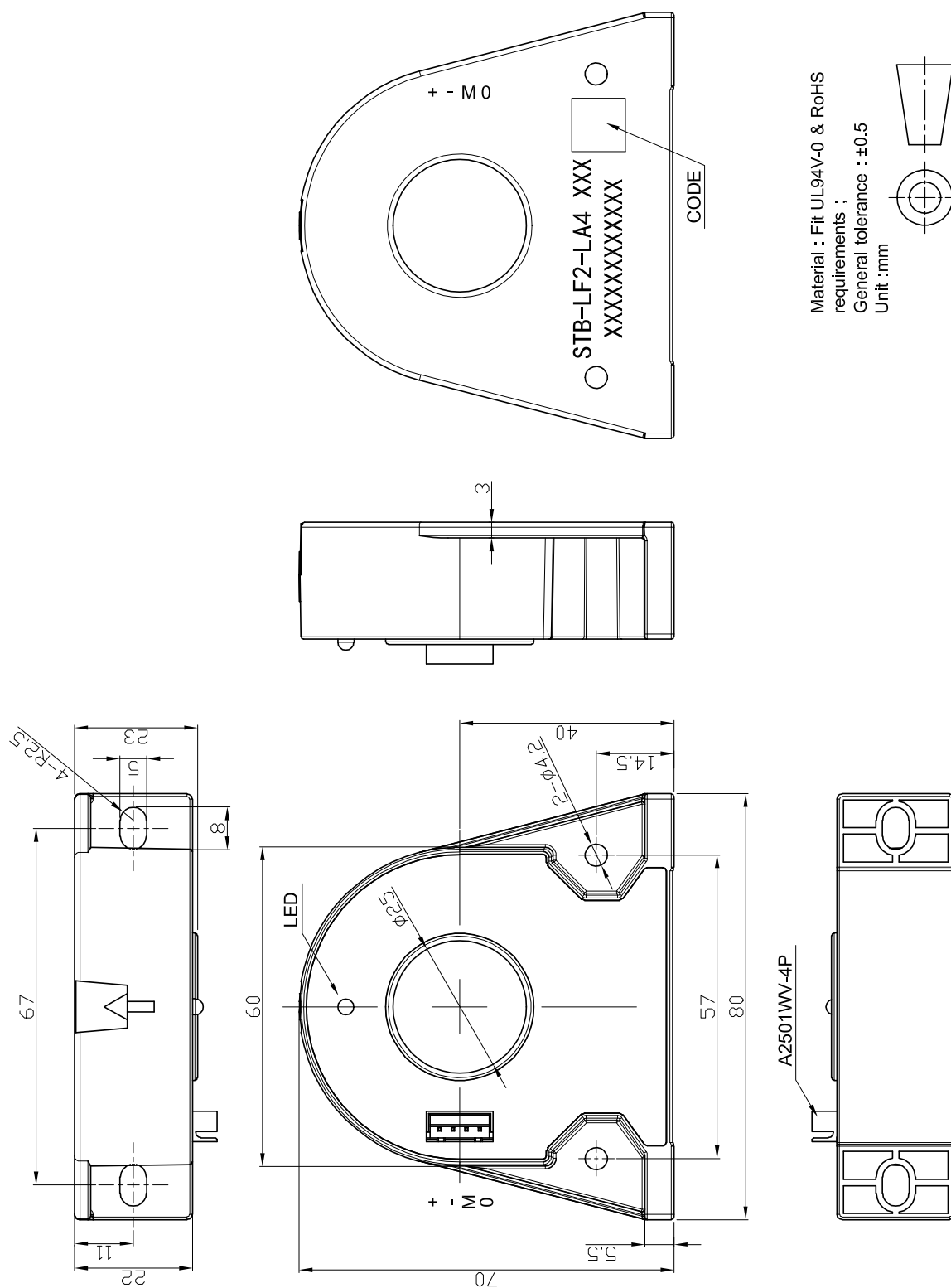


6. STB-300LF2 Dimensions





8. STB-300LF2-LA4 Dimensions:



9. Mechanical characteristics

- General tolerance ± 0.5 mm
- Primary through-hole $\varnothing 25$ mm
- 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