目　　录

1. Description

STK-CTS/G series current sensors are based on open loop principle with TMR technology. The sensor can detect those current with DC, AC, pulse and irregular wave shape. Because of its very wide frequency band width of DC ~ 700 kHz, the sensor can detect both of string current and the ARC current at the same time. With build-in coil, the sensor supports the self-check function.

Typical application

- String current in PV
- AC current detection
- Variable speed driving
- MPPT
- ARC current detection
- Switch mode power supply

General parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Storage temperature	T_stg	℃	-40 ~ 105
Mass	m	g	10

Absolute parameters

Parameters	Symbol	Unit	Value
Supply voltage	V_C	V	5.5
ESD rating (HBM)	U_{ESD}	kV	4

Remark: the unrecoverable damage may occur when the product works on the conditions over the absolute maximum ratings. Long-time working on the absolute maximum ratings may cause the degradation on performance and reliability.

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
Isolation voltage, 50 Hz,1 min	Ud	kV	4	
Clearance	dCl	mm	> 8	Shortest distance through air
Creepage distance	dCp	mm	> 8	Shortest distance along device body
Case material			V0 according to UL 94	

2. STK-15CTS/G parameters

Condition: Vcc = 5.0 V, T_A = 25℃, unless specified.

Parameters	Symbol	Unit	Min.	Typ.	Max.	Remark
Primary current	I_pn	A		15		
Maximum current	I_pm	A	-15		15	
Supply voltage	Vcc	V	4.75	5	5.25	
Consumption current	Icc	mA		5	10	
Full-scale output	V_FS	V		±1.25		((Vout@I_pn)-(Vout@(-I_pn)))/2
Output resistance	R_out	Ω		1		@ Vout
Offset voltage	Voff	V	1.63	1.65	1.67	Vout @ 0 A
Theoretical gain	G_th	mV/A		83.3		1.25 V @ I_pn
Gain error	Err_G	%G_th	-0.5		0.5	Adjusted @25℃
Non-linearity	Non-L	%I_pn	-0.5		0.5	±I_pn
Step response time	t_res	μs		1		@90% of I_{PN}
Delay time	t_delay	μs		1		@ 500 kHz
-3 dB band width	BW	kHz		400		
Noise DC ~ 10 kHz DC ~ 100 kHz	Vnoise	mVpp		 15 25		
Accuracy @ RT	X	% of I_pn	-1		1	@ 25℃
Accuracy	X_TRange	% of I_pn	-2		2	-40℃ ~ 85℃

3. Frequency band width

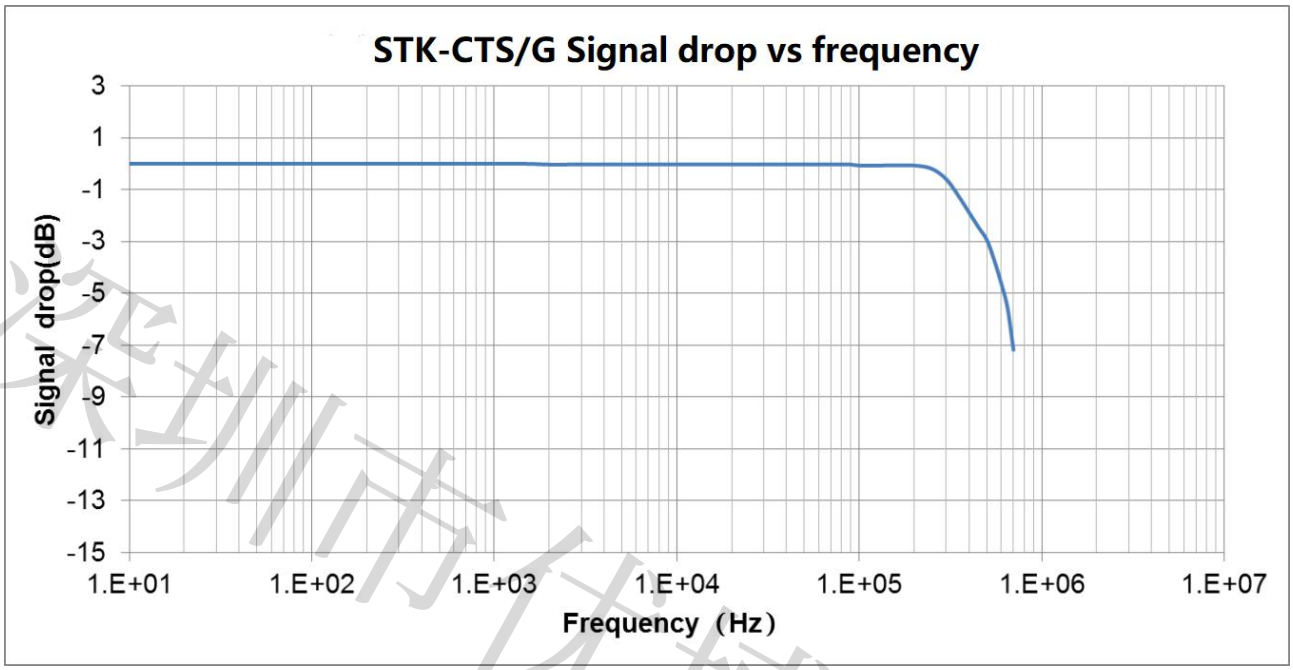


Fig.1 the band width of STK-CTS/G series current sensors.

4. Step response time

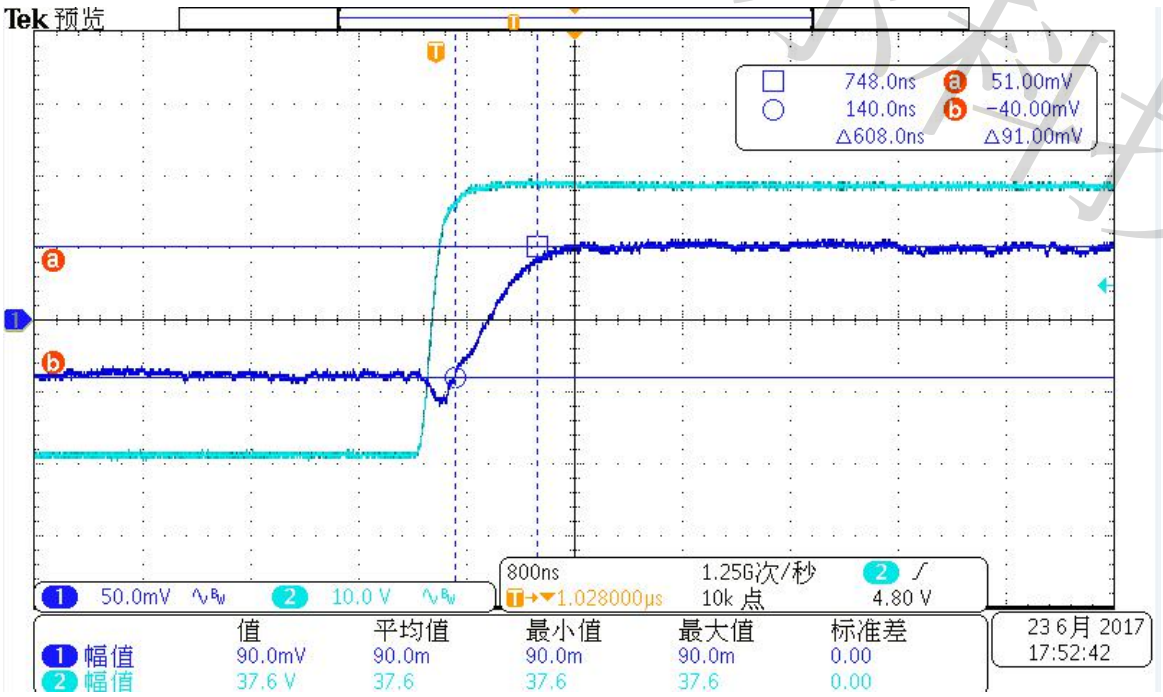


Fig.2 the step response time of STK-CTS/G current sensors. The light blue is primary current, while the dark blue is output signal of current sensor. The step response time is less than 1 µs.

5. Frequency delay performace

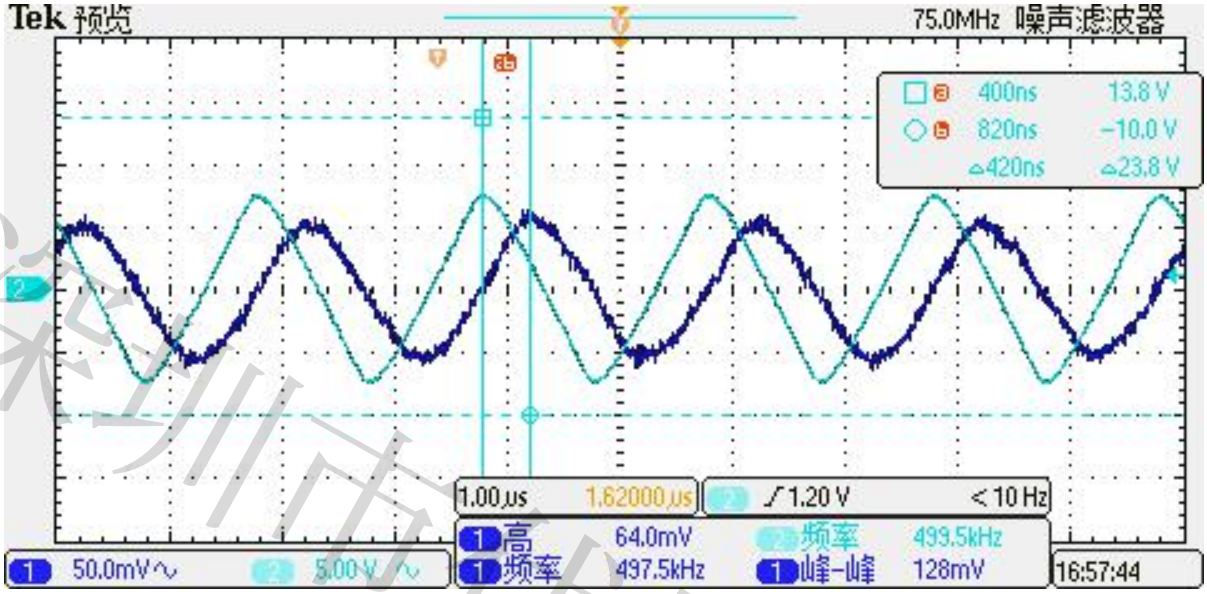
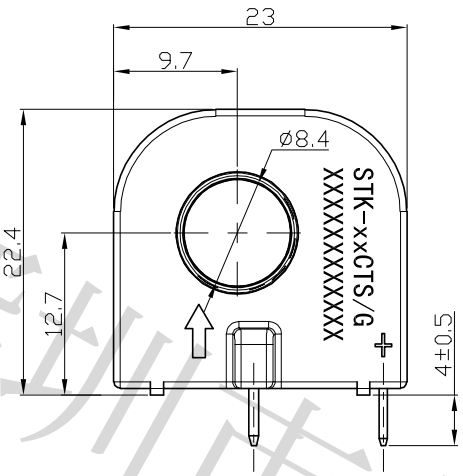
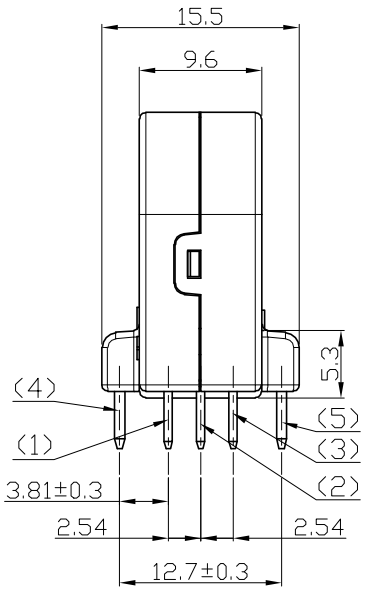
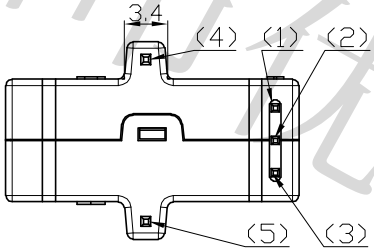


Fig.3 when detection the primary current with a frequency of 500 kHz. The delay time from primary current (light blue) to the output of the sensor (dark blue) is less than 1 µs.

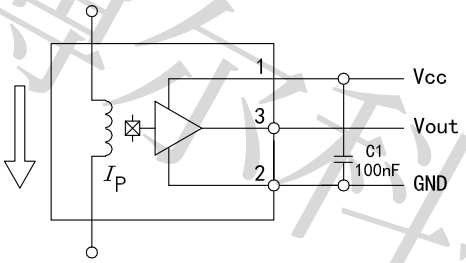
6. STK-CTS/G: Dimensions & Pins & Footprint

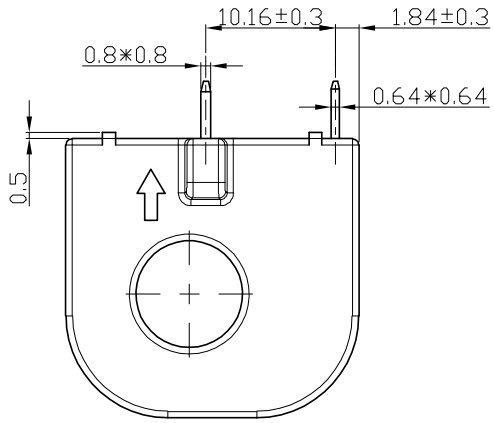






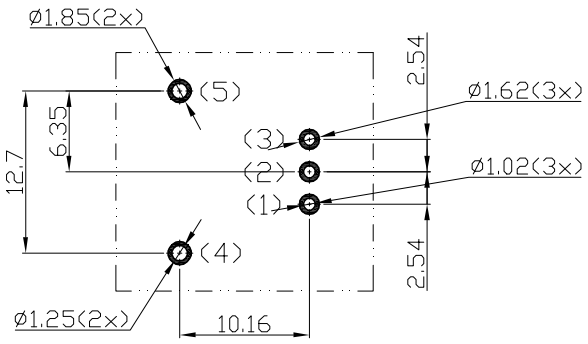
Connection





Terminals

(1)	Vcc
(2)	GND
(3)	Vout
(4)	NC
(5)	NC



Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.2
Unit :mm