



# CURRENT SENSOR

Application

## 电流传感器 应用

Founded in 2013, Sinomags is dedicated to the development and production of magnetic sensors. we have four subsidiary companies in Germany, Wuxi, Ningbo, and Bengbu.

The company's R&D team consists of more than 250 R&D personnel with a number of experts in the field of magnetism and power electronics as the core, covering the design development and production of the whole industrial chain from xMR wafers to sensor modules.

**1200/250 employees**

1200 employees, 150 R&D staff

**500 Mpcs**

Wafer capacity 150 million pcs/year

**100 Mpcs**

2022 *current sensor* production capacity exceeds 100 million

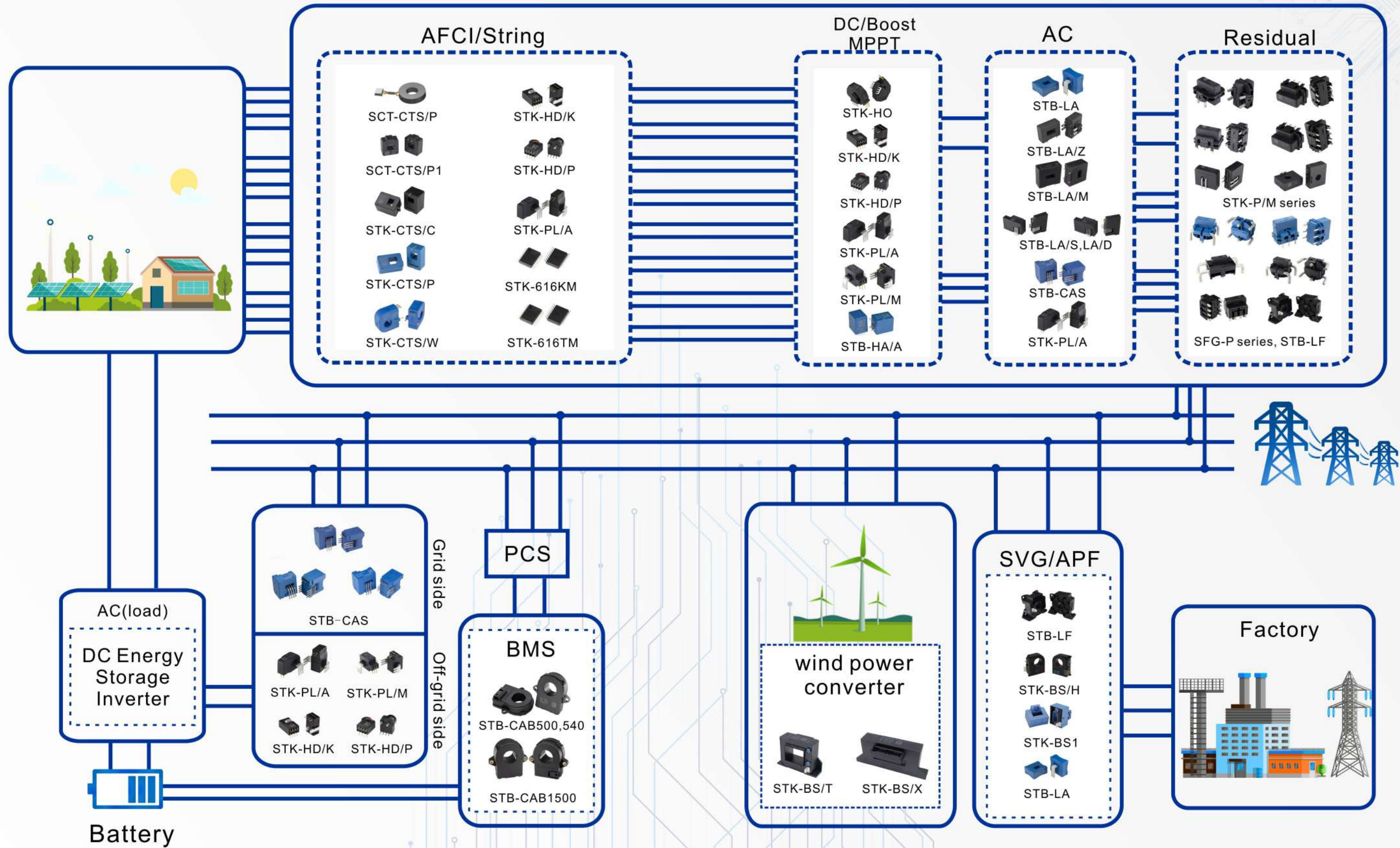
**250 Mpcs**

Cumulative *current sensor* shipments of approximately 250 million units



- Wuxi  
R&D & Headquarter
- Bengbu  
Production for Current Sensor
- Ningbo  
R&D & Production for Current Sensor
- Mainz  
Waferfab for magnetic sensor
- Wetzlar  
R&D Center for magnetic sensor

# New Energy Application



## ◎ Features

- Meet the requirements for high pressure and high altitude
- Meet the requirements for high frequency
- Development based on underlying application requirements

### ◎Electrical parameters

Product	Out			ESD rating (HBM)	Application
	Voltage	Current	Self-inspection Inductance(μH)		
SCT-CTS/P1	○		NA	0.4 ~ 1	AFCI
SCT-CTS/P2~P5	○		135 ~ 205	0.8 ~ 2	

### ◎Electrical parameters

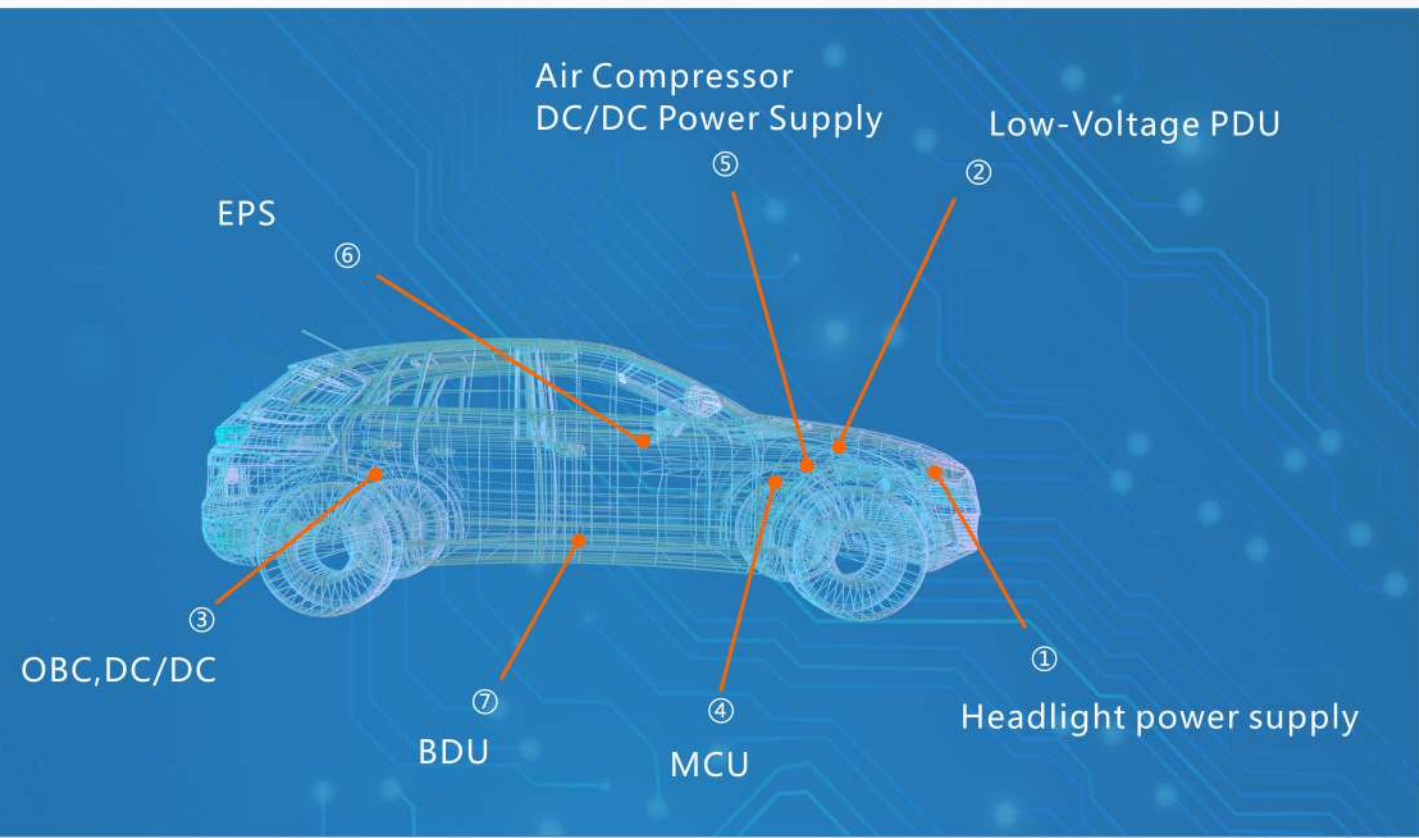
Product	Out			V <sub>cc</sub> (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STK-CTS/C	○			5	12.8 ~ 16	32 ~ 40	400	1	AFCI
STK-CTS/P	○			5	10 ~ 50	20 ~ 50	400	1	
STK-CTS/W	○			5	15 ~ 25	15 ~ 25	400	1	String
STK-616KMF	○			3.3	40 ~ 65	40 ~ 65	1000	0.5	
STK-616EML	○			5	20 ~ 65	20 ~ 65	600	0.9	
STK-616TML	○			5, 3.3	40 ~ 65	40 ~ 65	600	0.9	
STK-616TMF	○			5, 3.3	40 ~ 65	40 ~ 65	1500	0.3	
STK-PL/A	○			5	10 ~ 50	25 ~ 125	400	1.5	
STK-PL/M	○			5	80 ~ 180	200 ~ 450	500	1	
STK-HD/K	○			5	32 ~ 50	80 ~ 125	600	1	
STK-HD/P	○			5, 3.3	5 ~ 30	10 ~ 75	600	1	
STK-HO	○			5	60 ~ 150	150 ~ 375	150	2	
STK-HD/K	○			5	32 ~ 50	80 ~ 125	600	1	MPPT
STK-HD/P	○			5, 3.3	5 ~ 30	10 ~ 75	600	1	
STK-PL/A	○			5	10 ~ 50	25 ~ 125	400	1.5	
STK-PL/M	○			5	80 ~ 180	200 ~ 450	500	1	
STB-HA/A	○			±15	10 ~ 60	30 ~ 180	150	1.5	

### ◎Electrical parameters

Product	Out			V <sub>cc</sub> (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STB-CAS	○			5	15 ~ 75	51 ~ 220	400	0.3	AC
STB-CAS/F	○			5	6 ~ 75	20 ~ 220	400	0.3	
STB-LA/S	○			5	100	±220	300	0.5	
STB-LA/D			○	±15	55 ~ 100	55 ~ 175	150	0.5	
STB-LA(N)			○	12 ~ 15	100 ~ 150	200 ~ 240	150	0.5	
STB-LA/Z(/ZN)	○			5	150 ~ 200	300 ~ 450	300	0.3	
STB-LA/M	○			5	300	±600	300	0.6	
SFG-P	○			5	0.3 ~ 5	0.5 ~ 10	15	50	Residual
SFG-P/N1	○			5	0.3 ~ 5	0.5 ~ 10	15	50	
SFG-P/P2F	○			5	0.3 ~ 3	0.5 ~ 5	15	50	
SFG-P/P3	○			5	3 ~ 5	5 ~ 8	15	50	
SFG-P/P4	○			5	3 ~ 5	5 ~ 8	15	50	
SFG-P/S	○			5	0.3 ~ 1	0.5 ~ 1.7	0.7	700	
STK-P/M	○			5	0.3 ~ 1.02	0.5 ~ 1.7	0.7	700	
STK-PL/A	○			5	10 ~ 50	25 ~ 125	400	1.5	AC(Load )
STK-PL/M	○			5	80 ~ 180	250 ~ 450	500	1	
STK-HD/K	○			5	32 ~ 50	80 ~ 125	600	1	
STK-HD/P	○			5, 3.3	5 ~ 30	10 ~ 75	600	1	BMS
STB-CAB		○		12	500 ~ 1500	500 ~ 1500	NA	NA	
STK-BS/T	○			±15	200 ~ 1500	600 ~ 2500	25	5	
STK-BS/X	○			±15	500 ~ 2500	1500 ~ 5500	25	5	
STB-CAS	○			5	15 ~ 75	51 ~ 220	400	0.3	



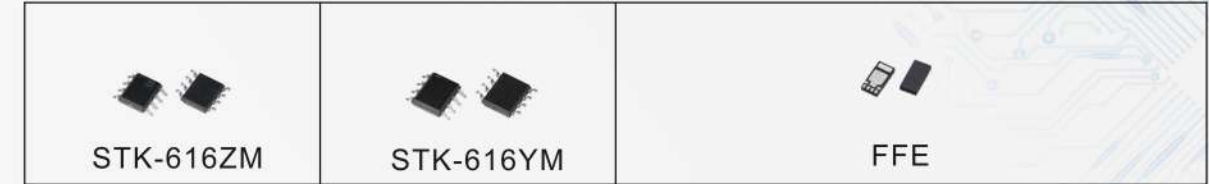
# EV / Automotive Application



## ◎ Features

- AEC-Q100 Qualified
- ISO26262 (certification in progress)
- Wide range of current detection
- Excellent EMC performance

### ① Headlight power supply



### ② Low-Voltage PDU



### ③ OBC, DC/DC



### ④ MCU



### ⑤ Air Compressor & DC/DC Power Supply



⑥ EPS

 STK-600/M	 STK-600/M-M	 STK-616VG	 STK-616YM
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⑦ BDU

 SHK-VBS/D	 SHK-VBS6/S2	 STB-CAB500,540	 STB-CAB1500
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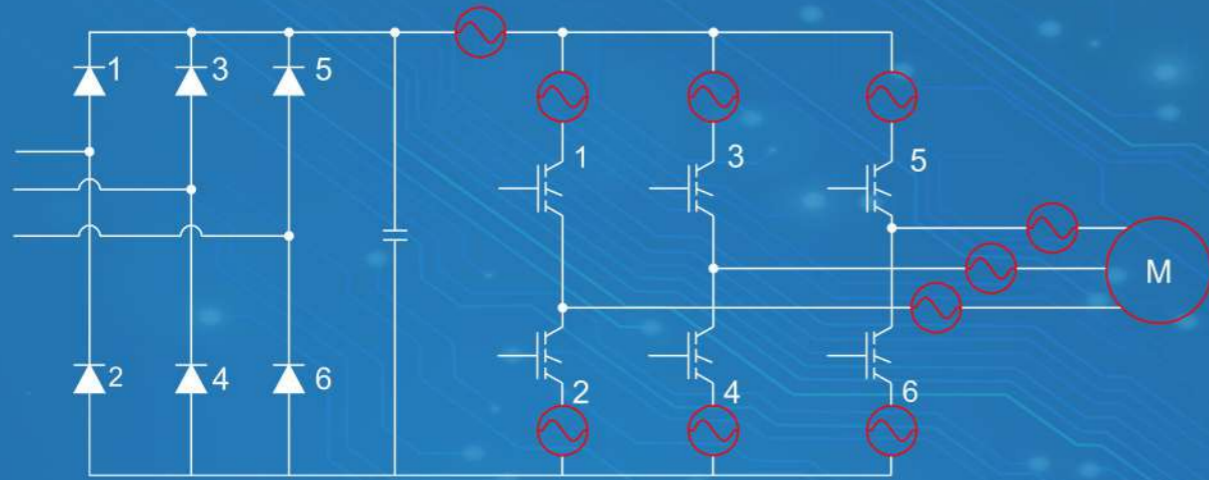
◎Electrical parameters

Product	Out			Vcc (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STB-CAB		○		12	500~1500	500~1500	NA	NA	BDU
SHK-VBS/D-A	○			5	75~1000	75~1000	10	18	
SHK-VBS/D-B	○			5	75~750	75~750	10	18	
SHK-VBS/D-C	○			5	75~500	75~500	10	18	
SHK-VBS6/S2	○			5	100~1500	100~1500	40	2	
SHK-VBS/T3	○			5	545	±1090	100	3.5	MCU
SHK-VBS/T4	○			5	545	±1090	100	3.5	
SHK-VBS/T5	○			5	300	300	40	2	
SHK-VBS/T6	○			5	800~1200	800~1200	40	2	
SHK-VBS/T7	○			5	600	300、600	40	2	
SHK-VBS/T8	○			5	300~1200	300~1200	40	4	
SHK-VBS/T9	○			5	900	900	40	2	
SHK-VBS/TE	○			5	200	300	40	4	
SHK-VBS/TF	○			5	300	200	100	3.5	
SHK-VBS/TG	○			15	50~150	150~450	60	7	
SHK-VBS/TH	○			5	660	660	40	2	
SHK-VBS2/D	○			5	545	±1090	NC	3.5	
SHK-VBS3/S5	○			5	400~900	400~900	100	3.5	
SHK-VBS5/S2	○			5	100~900	100~900	100	3.5	
SHK-VBS6/S2	○			5	100~1500	100~1500	40	2	

◎Electrical parameters

Product	Out			Vcc (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STK-PL/A	○			5	10~50	25~125	400	1.5	Charging Piles
STK-PL/M	○			5	80~180	250~450	500	1	
STK-600/M-M	○			5, 3.3	50~100	50~250	120	4.6	
STK-600/M	○			5, 3.3	50~100	50~400	120	4.6	Electric motorcycle
SHK-VBS/TE	○			5	200	300	40	4	
STK-LBS/6G	○			5	100~1000	100~1000	250	3	Air Compressor & DC/DC Power Supply
SHK-VBS6	○			5	100~1500	100~1500	40	2	
STK-600/M	○			5, 3.3	50,100	50~400	120	4.6	
STK-600/M-M	○			5, 3.3	50,100	50~250	120	4.6	
STK-616KML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616KMF	○			5, 3.3	40~65	40~65	1000	0.2	
STK-616TML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.2	
STK-616BML	○			5, 3.3	12.5~25	37.5~75	600	0.9	
STK-616DML	○			5, 3.3	15~65	15~65	600	0.9	
STK-616EML	○			5, 3.3	20~65	20~65	600	0.9	Headlight power supply
STK-616ZM	○			5, 3.3	20~50	20~50	2000	0.05	
STK-616YM	○			5, 3.3	20~65	20~65	350	1.2	OBC
STK-600/M	○			5, 3.3	50, 100	50~400	120	4.6	
STK-616KMF	○			5, 3.3	40~65	40~65	1000	0.5	
STK-616TML	○			5, 3.3	40~65	40~65	600	0.9	EPS
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.3	
STK-600/M	○			5, 3.3	50,100	50~400	120	4.6	EPS
STK-600/M-M	○			5, 3.3	50,100	50~250	120	4.6	
STK-616YML	○			5, 3.3	20~50	20~50	400	1	PDU
CFS1000	○			5	10~1000	30~1200	500	1	
STK-616KMF	○			5, 3.3	40~65	40~65	1000	0.5	
STK-616TML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.3	
STK-616ZMF	○			5, 3.3	20~50	20~50	2000	0.05	
STK-616YML	○			5, 3.3	20~50	20~50	400	1	

# Driver Application



## — PRODUCT —

### ◎ Features

- High accuracy
- Low noise
- Wide current detection range
- Fast response time

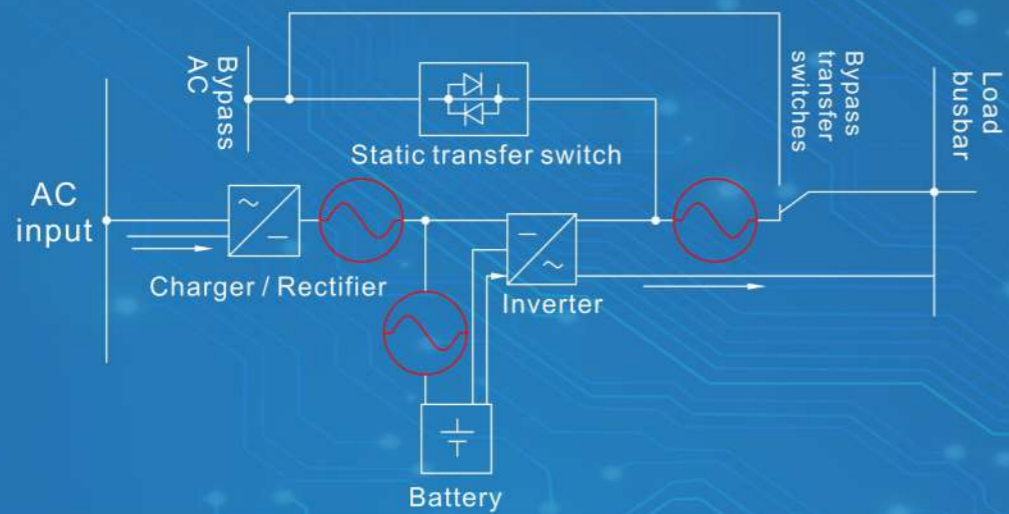
 STB-CAS	 STB-CAS/F	 STK-616KM, TM	 STK-616EM, DM	 STK-BS1
 STK-BS/S1	 STK-BS/H	 STK-BS/T	 STK-BS/X	 STB-LA
 STB-LA/Z	 STK-HD/P	 STK-HD/S	 STB-600/M	 STB-600/M-M
 STK-600	 STK-HA/A	 STB-HA/A3	 STK-PL/A	 STK-PL/M

### ◎ Electrical parameters

Product	Out			V <sub>cc</sub> (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STB-CAS/F	○			5	6~75	20~220	400	0.3	Servo Drive
STK-616KML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616KMF	○			5, 3.3	40~65	40~65	1000	0.2	
STK-616TML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.2	
STK-616BML	○			5, 3.3	12.5~25	37.5~75	600	0.9	
STK-616DML	○			5, 3.3	15~65	15~65	600	0.9	
STK-616EML	○			5, 3.3	20~65	20~65	600	0.9	
STK-HD/P	○			5, 3.3	5~30	10~75	600	1	
STK-HD/S	○			5	3~10	7.5~25	150	2	
STK-PL/A	○			5	10~50	25~125	400	1.5	
STK-PL/M	○			5	80~180	200~450	500	1	
STK-BS/S1	○			5	50~600	150~1100	60	3.5	
STK-BS/H	○			±15	50~400	150~600	50	3	
STK-BS/H4	○			15	50~100	150~450	50	3	
STK-BS/T	○			±15	200~1500	600~2500	25	5	
STK-BS/X	○			±15	500~2500	1500~5500	25	5	
STK-HD/P	○			5, 3.3	5~30	10~75	600	1	
STK-HD/Q	○			5	25~50	30~60	100	1	
SHK-600VBS3	○			5	600	600	100	3.5	
SHK-VBS6	○			5	100~1500	100~1500	40	2	
STB-HA/A3	○			15	10~20	30~60	150	3	
STK-600/M-M	○			5, 3.3	50, 100	50~250	120	4.6	
STK-600/M	○			5, 3.3	50, 100	50~250	120	4.6	
STK-616KML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616KMF	○			5, 3.3	40~65	40~65	1000	0.2	
STK-616TML	○			5, 3.3	40~65	40~65	600	0.9	
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.2	
STK-616BML	○			5, 3.3	12.5~25	37.5~75	600	0.9	
STK-616DML	○			5, 3.3	15~65	15~65	600	0.9	
STK-616EML	○			5, 3.3	20~65	20~65	600	0.9	
STB-CAS/x	○			5	15~75	51~220	400	0.3	
STB-CAS/F	○			5	6~75	20~220	400	0.3	
STB-HA/A	○			±15	50~60	150~180	150	1.5	
STB-LA		○		12~15	100~150	200~240	150	0.5	
STB-LA/Z	○			5	100~200	300~450	300	0.3	

Variable frequency drive

# UPS Application



## — PRODUCT —

### © Features

- High precision
- Fast response time
- Wide frequency bandwidth
- Wide detection range

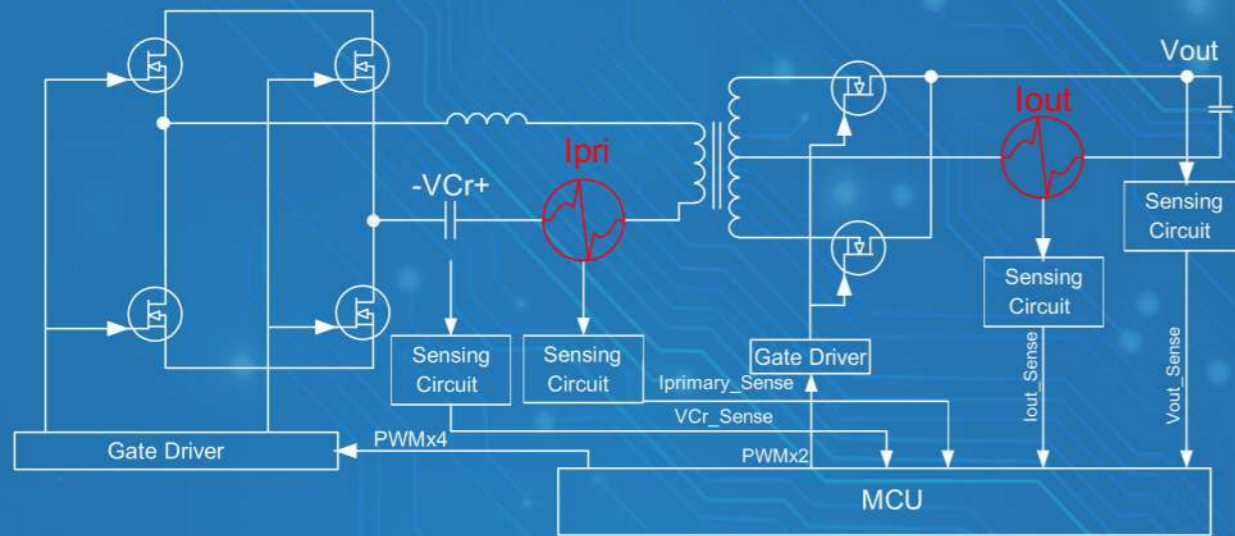


### © Electrical parameters

Product	Out			Vcc (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Application
	Voltage	Digital	Current						
STK-600/M-M	○			5, 3.3	50, 100	50~250	120	4.6	UPS
STK-BS1	○			±15	50~600	150~900	50	5	
STK-BS/S1	○			5	50~600	150~1100	60	3.5	
STK-BS/H	○			±15	50~400	150~600	50	3	
STK-BS/T	○			±15	200~1500	600~2500	25	5	
STK-HD/K	○			5	32~50	80~125	600	1	
STK-HD/P	○			5, 3.3	5~30	10~75	600	1	
STK-HO	○			5	60~150	150~375	150	2	
STK-PL/A	○			5	10~50	25~120	400	1.5	
STK-PL/M	○			5	80~180	250~450	500	1	
STB-CAS/x	○			5	15~75	51~220	400	0.3	
STB-CAS/F	○			5	6~75	20~220	400	0.3	
STB-HA/A	○			±15	50~60	150~180	150	1.5	
STB-HA/Y	○			±15	50	±150	150	1.5	
STB-LA(/N)		○		12~15	100~150	200~240	150	0.5	
STB-LA/S	○			5	100	±220	300	0.5	
STB-LA/D		○		±15	25~100	55~175	150	0.5	
STB-LA/Z	○			5	150~200	300~450	300	0.3	
STK-HO/B	○			5	50~135	120~325	1000	0.2	



# High-frequency Current Detection



## — PRODUCT —

### ◎ Features

- Very high frequency band width, 2 MHz
- Very fast response time, 50 ns
- Coreless design enables the small dimensions
- OCD (over current detection) function available
- Common-mode field rejection. (core-less design)



STK-616TMF



STK-616KMF



STK-616ZMF



STK-HD/P/G



STK-HD/K/G



STK-HD/S/G



STK-600/F



STK-PL/AG



STB-HO/B



STB-LF/G

### ◎ Electrical parameters

Product	Out			Vcc (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Acc. (%FS)
	Voltage	Digital	Current						
STK-616KMF	○			3.3	40~65	40~65	1000	0.2	3
STK-616ZMF	○			5	20~50	20~50	2000	0.05	3.5
STK-616TMF	○			5, 3.3	40~65	40~65	1500	0.3	3.5
STK-600/F	○			5	50	200~400	1000	0.4	3.5
STK-PL/AG	○			5	10~50	25~125	800	0.4	2
STK-HD/S/G	○			5	3~10	7.5~25	600	0.4	1.5
STK-HD/K/G	○			5	20~50	50~125	1000	0.4	1.5
STK-HD/P/G	○			5, 3.3	5~30	12.5~75	1000	0.4	3
STB-LF/G	○			±15	100	200	1000	0.2	3
STK-HO/B	○			5	50~100	125~250	1000	0.2	3

# Current sensor — Coreless solution



## Electrical parameters

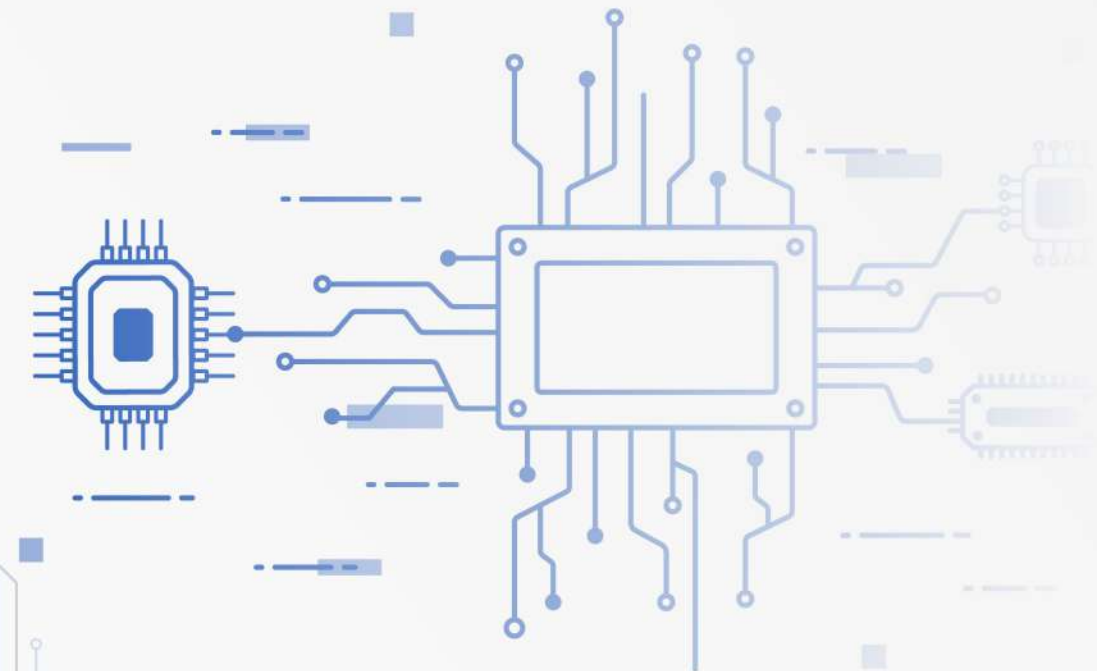
Product	V <sub>cc</sub> (V)	I <sub>pn</sub> (A)	I <sub>pm</sub> (A)	f <sub>band</sub> (kHz)	t <sub>r</sub> (μs)	Acc (%FS)
STK-616V	5, 3.3	50~150	55~172	150	1.5	3.5
STK-616Y	5, 3.3	20~50	22~57.5	150	1.5	3.5
STK-616Y/250B3	3.3	250	-50~300	150	1.5	3.5
STK-616KMF	3.3	40~65	40~65	1000	0.2	3
STK-616ZMF	5	20~50	20~50	2000	0.05	3.5
STK-616EML	5	20~65	20~65	600	0.9	3.5
STK-616TML	5, 3.3	40~65	40~65	600	0.9	3.5
STK-616TMF	5, 3.3	20~65	20~65	500	0.2	3.5
STK-616YML	5, 3.3	20~65	20~65	350	1.2	3.5
STK-LBS/6G	5	100~1000	100~1000	250	3	3.5
STK-LBS/S	3.3	200	200	250	3	2
STK-616KML	5, 3.3	40~65	40~65	600	0.9	3
STK-616KMF	5, 3.3	40~65	40~65	1000	0.2	3
STK-616TML	5, 3.3	40~65	40~65	600	0.9	3.5
STK-616TMF	5, 3.3	40~65	40~65	1500	0.2	3.5
STK-616BML	5, 3.3	12.5~25	37.5~75	600	0.9	3.5
STK-616DML	5, 3.3	15~65	15~65	600	0.9	3.5
STK-616EML	5, 3.3	20~65	20~65	600	0.9	3.5
CFS-1000	5	10~1000	30~1200	500	1	1

## Features

- Frequency band width of up to 150~2000 kHz
- Response time of down to 0.05~1.5 μs
- Open loop design
- Coreless design enables the small dimensions
- Differential magnetic field detection design supports the common-mode field rejection.
- OCD (over current detection) function available
- Support supply voltage of 3.3 V or 5.0 V

## Application

- Solar energy
- Motor driver
- Uninterruptible power supply
- Switching Mode Power supply
- EV charger
- EV OBC
- EV DC/DC



# Electric Vehicle Charging Pile



IEC Standard (Residual)

UL Standard (Residual)

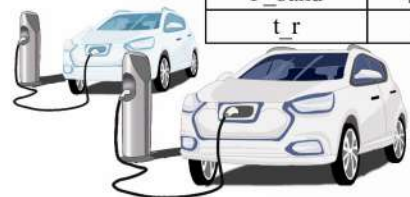
Full range of products and ranges

## Electric Vehicle Charging Pile

Charging pile module					
Applied Current Sensor					
PN-01	STB-CAS		PN-01	STK-600/F	
PN-02	STB-CAS/F		PN-02	STK-600/M	
			PN-03	STK-600/M-M	
I <sub>PN</sub>	6.0 ~ 75	A	I <sub>PN</sub>	50 ~ 400	A
F <sub>band</sub>	400.0	kHz	F <sub>band</sub>	120 ~ 1000	kHz
t <sub>r</sub>	0.3	μs	t <sub>r</sub>	0.2 ~ 4.6	μs

Charging pile module					
Applied Current Sensor					
PN-01	STK-616TM		PN-01	STK-HD/P, STK-HD/P/G	
PN-02	STK-616KM		PN-02	STK-HD/K, STK-HD/K/G	
I <sub>PN</sub>	40 ~ 65	A	I <sub>PN</sub>	5.0 ~ 50	A
F <sub>band</sub>	600 ~ 1500	kHz	F <sub>band</sub>	600 ~ 1000	kHz
t <sub>r</sub>	0.2 ~ 0.9	μs	t <sub>r</sub>	1.0	μs

Charging pile module			Residual current		
Applied Current Sensor					
PN-01	STK-PL/A		PN-01	SFG-CPL/A	
PN-02	STK-PL/AG		PN-02	SFG-CPL/B	
PN-03	STK-PL/M				
I <sub>PN</sub>	10 ~ 180	A	I <sub>PM</sub>	300	mA
F <sub>band</sub>	400 ~ 1000	kHz	F <sub>band</sub>	2.0	kHz
t <sub>r</sub>	0.2 ~ 1.5	μs	t <sub>r</sub>	Follow IEC 62752	



# PV Micro-inverter



Low cost

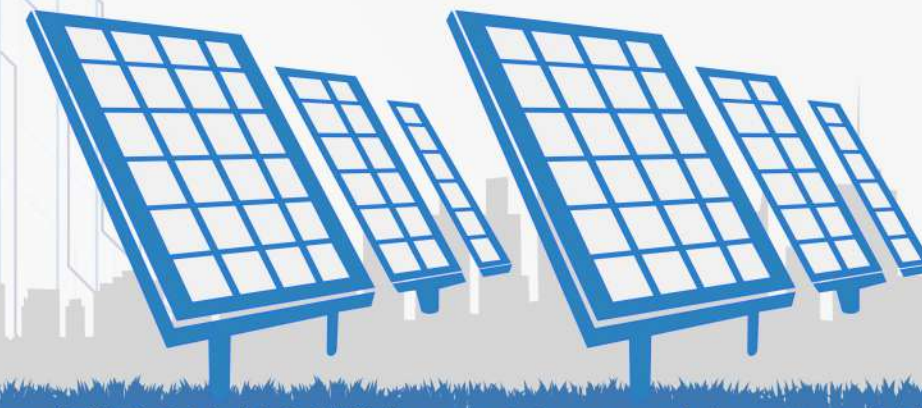
Small size

High frequency

## Type: Micro-inverter (Power: 0.5 ~ 2 kw)

AFCI Function			MPPT function		
Applied Current Sensor					
PN-01	SCT-CTS/P1		PN-01	STK-616YM	
			PN-02	STK-HD/SG	
DCR	0.4 ~ 1.0	Ω	I <sub>PN</sub>	3.0 ~ 50	A
Induc. L	0.4 ~ 0.5	mH	F <sub>band</sub>	400 ~ 1600	kHz
I <sub>PM</sub>	50	A	t <sub>r</sub>	0.2 ~ 1.0	μs

AC current					
Applied Current Sensor					
PN-01	STK-616TM				
PN-02	STK-616KM				
PN-03	STK-HD/SG				
I <sub>PN</sub>	3.0 ~ 65		A		
F <sub>band</sub>	600 ~ 1500		kHz		
t <sub>r</sub>	0.2 ~ 0.9		μs		



# Residential Energy Storage Inverter (Single-P)



Small size  
Low cost  
Full range of products

Type: Single-P (Energy storage) (Power: 3~10 kw)

AFCI Function			MPPT function		
Applied Current Sensor					
PN-01	SCT-CTS/P1		PN-01	STK-PL/A	
			PN-02	STK-616TM, STK-616KM	
			PN-03	STK-HD/K, STK-HD/P, STK-HD/S	
DCR	0.4 ~ 1.0	$\Omega$	I <sub>PN</sub>	3.0 ~ 65	A
Induc. L	0.4 ~ 0.5	mH	F <sub>band</sub>	150 ~ 1500	kHz
I <sub>PM</sub>	50	A	t <sub>r</sub>	0.2 ~ 2.0	$\mu$ s

AC current			Residual current		
Applied Current Sensor					
PN-01	STK-PL/A		PN-01	STK-1.0P/M1S-1	
PN-02	STB-CAS/R/F		PN-02	STK-0.3P/M1	
PN-03	STK-HD/K, STK-HD/P, STK-HD/S				
I <sub>PN</sub>	3.0 ~ 50	A	I <sub>PN</sub>	0.3, 1	A
F <sub>band</sub>	150 ~ 600	kHz	F <sub>band</sub>	0.7	kHz
t <sub>r</sub>	0.3 ~ 2.0	$\mu$ s	t <sub>r</sub>	700.0	$\mu$ s

DCDC to Battery		
Applied Current Sensor		
PN-01	STK-PL/A	
PN-02	STK-616TM, STK-616KM	
PN-03	STK-HD/K, STK-HD/P, STK-HD/S	
I <sub>PN</sub>	3.0 ~ 65	A
F <sub>band</sub>	150 ~ 1500	kHz
t <sub>r</sub>	0.2 ~ 2.0	$\mu$ s

# Residential Energy Storage Inverter (Three-P)



Low cost  
Small size  
High frequency

Type: Three-P (Energy storage) (Power: 5-10kw)

AFCI Function			String current		
Applied Current Sensor					
PN-01	SCT-CTS/P1, SCT-CTS/P2~P5		PN-01	STK-CTS/P5, STK-CTS/P6	
DCR	0.4 ~ 1.0, 0.8 ~ 2	$\Omega$	I <sub>PN</sub>	10 ~ 32	A
Induc. L	0.4 ~ 0.5, 0.53 ~ 0.58	mH	F <sub>band</sub>	400.0	kHz
I <sub>PM</sub>	50, 150	A	t <sub>r</sub>	1.0	$\mu$ s

MPPT function			AC current		
Applied Current Sensor					
PN-01	STK-PL/A		PN-01	STB-CAS/R/F	
PN-02	STK-616TM		PN-02	STK-PL/A	
PN-03	STK-616KM		PN-03	STK-HD/K	
PN-04	STK-HD/K, STK-HD/P, STK-HD/S				
I <sub>PN</sub>	3.0 ~ 65	A	I <sub>PN</sub>	10 ~ 50	A
F <sub>band</sub>	150 ~ 1500	kHz	F <sub>band</sub>	400 ~ 600	kHz
t <sub>r</sub>	0.2 ~ 2.0	$\mu$ s	t <sub>r</sub>	0.3 ~ 1.5	$\mu$ s

Residual current			AC (load)		
Applied Current Sensor					
PN-01	SFG-0.3P/S2		PN-01	STB-CAS/R/K	
			PN-02	STK-PL/A	
				STK-HD/K, STK-HD/P	
I <sub>PN</sub>	0.3	A	I <sub>PN</sub>	5 ~ 75	A
F <sub>band</sub>	0.7	kHz	F <sub>band</sub>	400 ~ 600	kHz
t <sub>r</sub>	700.0	$\mu$ s	t <sub>r</sub>	0.3 ~ 1.5	$\mu$ s