SINOMAGS 希磁科技

SENSITEC MAGNETORESISTIVE SENSORS

Current Sensor













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Sinomags Technology (www.sinomags.com)

Sensitec GmbH (www.sensitec.com)

Locations

manufacturing, research and development
on several locations in
China, Portugal and Germany

Wuxi

- Headquater with Administration
- Sales Department
- Current Sensor R&D Department
- Prototype Production
- Customized Solutions
- Wafer Testcenter

Bengbu

- recent site with 30000 m²
- designed for 1000 employees
- clean room conditions
- smart factory level for Current Sensor production

Ningbo

- smart factory for Current Sensor production
- R&D Center for Current Sensors
- Quality Department
- Testcenter
- Warehouse
- Shipping Department

Mainz / Wetzlar

- Waferfab No.1
- development and production of Sensors based on the MR-effect
- research and development team for AMR, GMR and TMR Types
- Test - & Quality department

Braga

- Waferfab No.2
- development and production of Sensors based on the TMR-effect
- research and development team
- Test - & Quality department

Our Mission

is to contribute to the global transformation to clean energy generation

Sinomags was founded in 2013 by a group of physicists and engineers from the hard disk industry. A high degree of knowledge in the field of magnetic sensors based on the magnetoresistive effect and the conviction that this technology is more capable of reading and writing information on hard disks, formed the basis and the drive for the product development of high-precision current measuring systems. But there was something else that inspired the group to go down this path. At this time when air pollution reached high levels worldwide, they wanted to make a contribution for future generations. Sinomags products are designed to help advance new technologies that reduce carbon emissions. It was foreseeable that energy would undergo a change, from the type of production and also the utilization. The generation of electricity from wind, sun and water requires precise and reliable measuring systems to function properly and to protect them from damage. The use of electricity in alternative drives such as E-cars and E-bikes or security systems such as uninterruptible power supply also requires very precise information about consumption, charging and dangerous overcurrents.

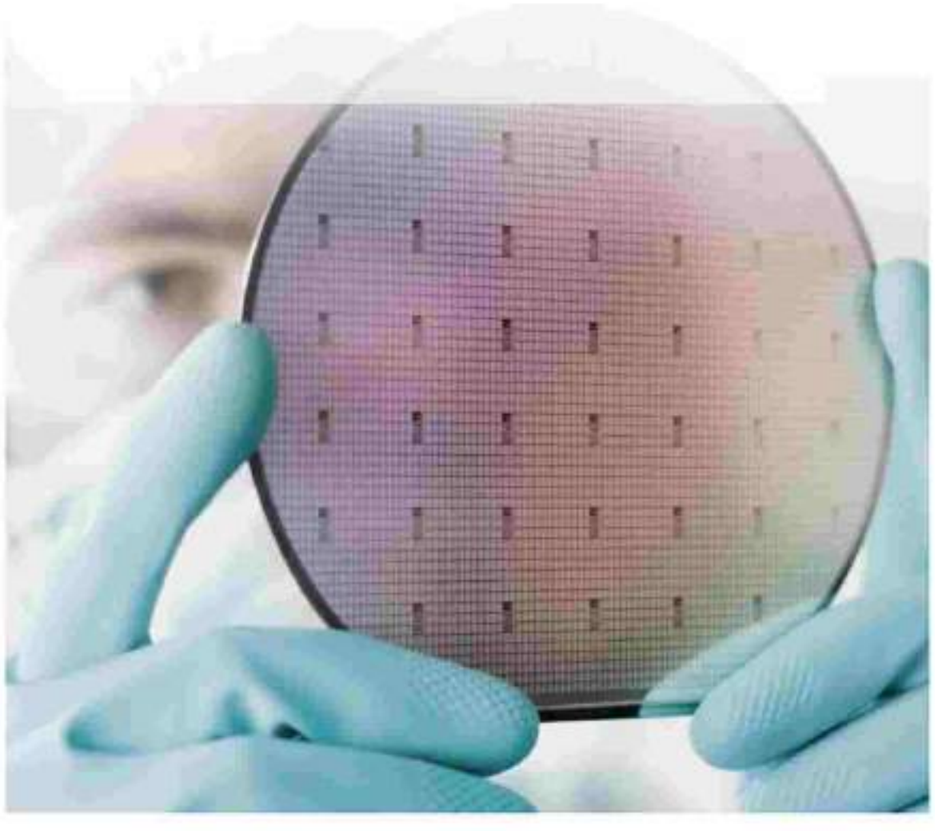
Today Sinomags is a group of 3 hightech companies with independent intellectual property rights with more than 1000 employees at 5 locations in China, Germany and Portugal. More than 200 patents bear witness to the knowledge and experience that the researchers and developers have accumulated over the years. A wide portfolio of products from the field of current measurement is available for the different industries. The target customers are coming from the area of the renewable energy sector, but solutions for the manufacturing industry are also available.The quality standards meet the highest demands of a global company such as: ISO 9001, IATF16949

Technology

everything starts with a magnetic sensor

The basis of all product developments from the companies of the Sinomags group are special sensors that react to magnetic field. There are various technologies such as Hall sensors, fluxgate or simple coils and there are sensors based on the magnetoresistive effect. This technology is one of the core capabilities of the Sinomag's engineers.

What is the magnetoresistive effect?



MR Sensor Technology

The MagnetoResistive Effect, »MR-Effect«, has been known for 150 years. However, its use in sensor applications was first made practically possible through the development of thin-film technology some 30 years ago. Since this time, MR sensors have consistently opened up new application fields in magnetic field measurement, be it in an electronic compass, in path- or angle-measuring systems, or in small potential-free current sensors.

The term MR sensor is a collective term for sensors based on a range of different, but related physical principles. All MR effects have in common that the electrical resistance of the sensor changes due to the influence of a magnetic field. By adept arrangement of the structure of the sensor quite different tasks can be solved, to sense for example a magnetic field angle, magnetic field strength or a magnetic field gradient

The **Anisotropic MagnetoResistive (AMR) effect** was discovered by Thomson in 1857 and occurs in ferromagnetic materials, whose specific impedance changes with the direction of the applied magnetic field. Ther esistance change is in the order of a few percent and this effect can be used even for very weak magnetic fields

The **Tunnel MagnetoResistive (TMR) effect,** discovered by Julliere in 1975, occurs in layer systems consisting of at least two ferromagnetic layers and a thin isolation layer. The tunnel resistance between both layers depends on the angle of both magnetization directions.

The **Giant MagnetoResistive (GMR) effect** was first discovered in 1988 by Fert and Grünberg, who were awarded with the Nobel Prize for Physics in 2007 for this achieve- ment. This effect occurs in layer systems with at least two ferromagnetic layers and a single non-magnetic, metallic intermediate layer. If the magnetization in these layers is non-parallel, the resistance is larger than if the magnetization is parallel. The difference may reach up to 50 %, thus the name "giant". The change in resistance does not depend on the direction of the current.

The characteristics of GMR sensors can be modified by stacking several layers with different properties and magnetizations. This allows the characteristic curve to be targeted on the specific requirements of a particular measurement application.

In 1993 von Helmholt et al discovered the **Colossal MagnetoResistive (CMR)** effect. This effect occurs in perowskitic, manganese based oxides, which change their resistance in the presence of a magnetic field.

Of all the known physical effects, by which a solid changes its properties due to magnetism, MR technology has particularly interesting and convincing advantages. The MR-effect enables weak magnetic fields to be detected and delivers a signal with an excellent signal-to-noise relationship.

All available technologies are used in the Sinomags current sensors. Depending on the measuring task, we select the magnetic sensor that best solves the task due to its physical advantages. TMR sensors covers the largest part of the portfolio. The advantage here is the ability of the engineers to adapt the sensor chip at any time.

The solution to a current measurement task begins with the TMR chip design

Contents

Product Series/PartNumber

Module Level

SINOMAGS
Current Sensor

Module Level
Residual Current Detection

Chip Level

Chip Level Sensitec-CFS1000

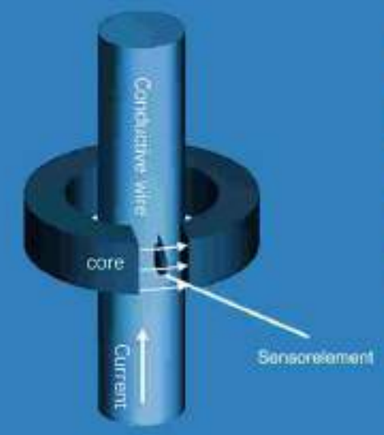
High Frequency Product

Current Sensors

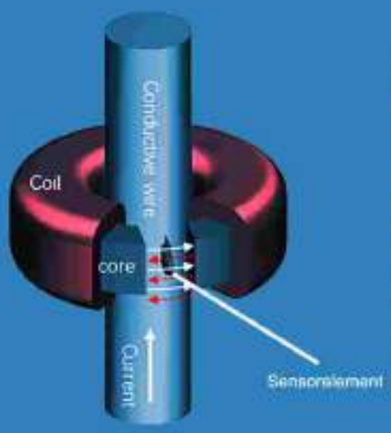
Module Level

The Module Level Current Sensors from Sinomags are either closed-loop or open-loop, in a compact design for PCB mounting

Open-loop current sensors measure AC and DC currents and provide electrical isolation between the circuit being measured and the output of the sensor (the primary current is measured without electrical contact with the primary circuit, providing galvanic isolation). Less expensive than their closed-loop cousins, open-loop current sensors are generally preferred in battery-powered circuits given their low-operating power requirements and small footprint features.Closed-loop sensors measure AC and DC currents and provide electrical isolation. They offer fast response, high linearity, and low temperature drift. The current output of the closed-loop sensor is relatively immune to electrical noise. The Closed-loop sensor is sometimes called a 'Zero-Flux' sensor because its sensorelement feeds back an opposing current into a secondary coil, wound on the magnetic core to zero the flux produced in the magnetic core by the primary current. Closed-loop sensors are often the sensor of choice when high accuracy is essential.



Open loop current sensors
consist of a sensorelement mounted in the air gap of a magnetic core. A conductor produces a magnetic field comparable to the current. The magnetic field is concentrated by the core and measured by the Sensorelement. The signal from the Sensor generator is low, so it is amplified, and it is this amplified signal that becomes the sensor's output. Open-loop sensors normally have circuitry that provides temperature compensation and calibrated high-level voltage output. While they have a definite price advantage over closed-loop counterparts, their downside is that they can be prone to saturation and temperature drift. The drift can be minimized to some extent, however, by injecting a positive coeficient in the control current to reduce the drift in sensitivity over temperature.



Closed-loop sensors
measure AC and DC currents and provide electrical isolation, a fast response,high linearity, and low temperature drift. Their current output is impressively immune to electrical noise. Known for high accuracy, they are comprised of a Sensorelement mounted in the air gap of a magnetic core, a coil around the core, and a current amplifier. The current carrying conductor placed through the aperture of the sensor produces a magnetic field that is proportionate to the current. This field is concentrated by the core and sensed by the Sensorelement, which is connected to the input of the current amplifier and drives the coil. The current through the coil produces an opposing field, provided by the current through the aperture. The output of this sensor is proportionate to both the aperture current and the number of turns of the coil.

Product Series: SCT-CTS

SCT-CTS/P1

SCT-CTS

Features	Application
· SCT-CTS/P series products have built-in coils to detect the weak high frequency current signal. Products are designed to support the AFCI function..	· Arc current detection supporting AFCI function

◎Absolute parameters

Parameter	Symbol	Unit	Value
ESD rating（HBM）	U_{ESD}	kV	4

◎Isolation parameter

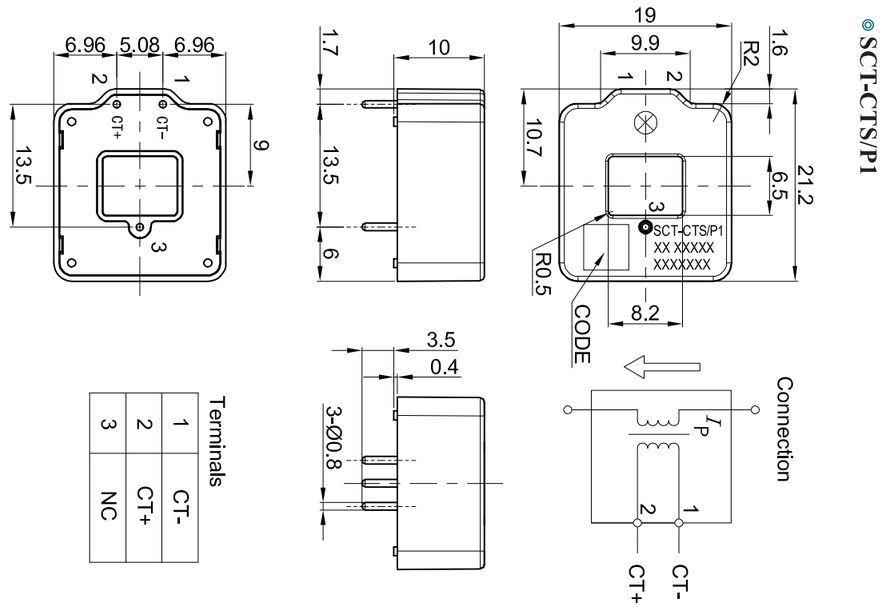
Paramete	Symbol	Unit	Value	Remark
Clearance (pri. -sec)	Dcl	mm	>5. 57	SCT-CTS/P1
Creepage (pri. -sec)	Dcp	mm	>5. 57	
Clearance (pri. -sec)	Dcl	mm	>270	SCT-CTS/P2,P3,P4,P5
Creepage (pri. -sec)	Dcp	mm	>270	
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

SINOMAGS
Current Sensor

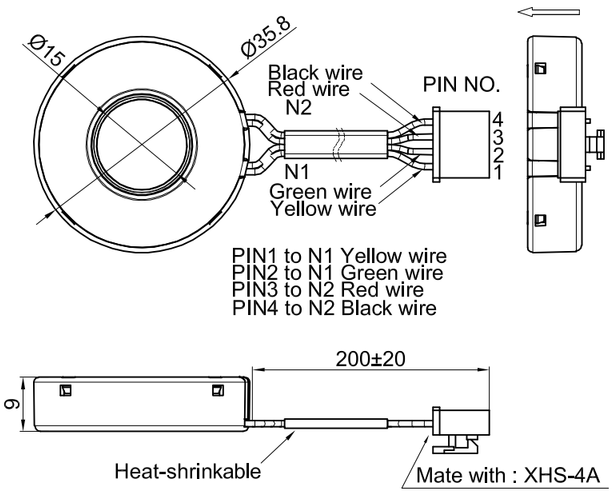
◎Electrical parameters

Product	Partnumber	Out					
		Voltage	Current	Self-inspection Inductance(μH)	Induction coil Inductance(μH)	Self-inspection Resistance(Ω)	Induction coil Resistance(Ω)
SCT-CTS/P1	SCT-CTS/P1	○		NA	400~500	NA	0.4~1
SCT-CTS	SCT-CTS/P2	○		135~205	530~580	0.4~1	0.8~2
	SCT-CTS/P3	○		135~205	530~580	0.4~1	0.8~2
	SCT-CTS/P4	○		135~205	530~580	0.4~1	0.8~2
	SCT-CTS/P5	○		135~205	530~580	0.4~1	0.8~2

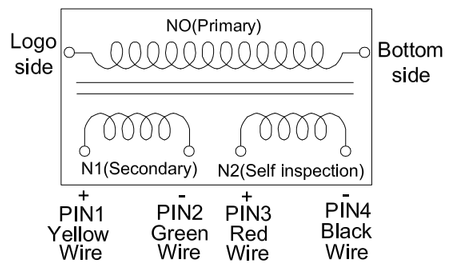
◎SCT-CTS/P1



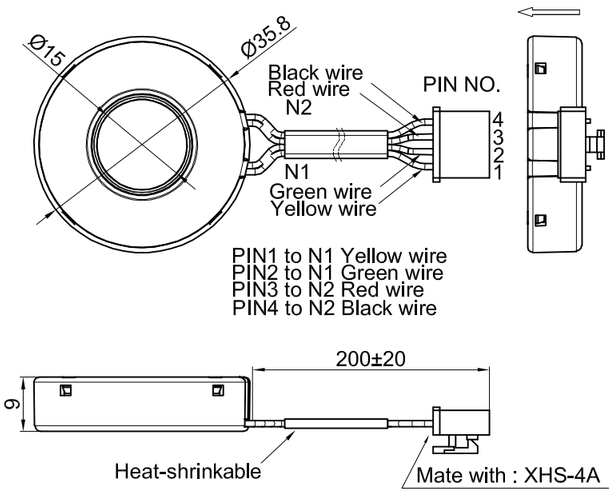
SCT-CTS/P4



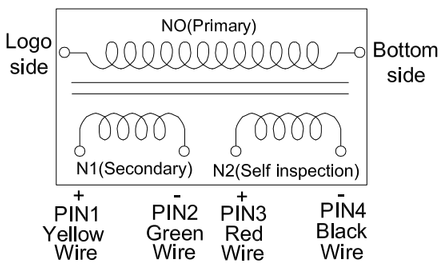
Schematic diagram



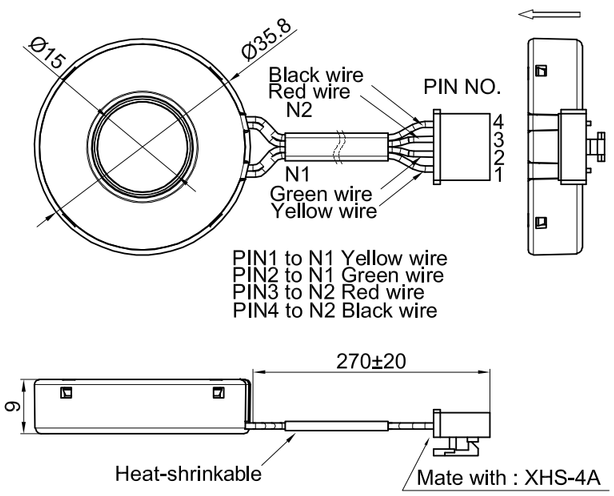
SCT-CTS/P5



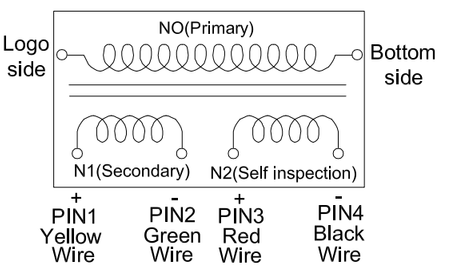
Schematic diagram



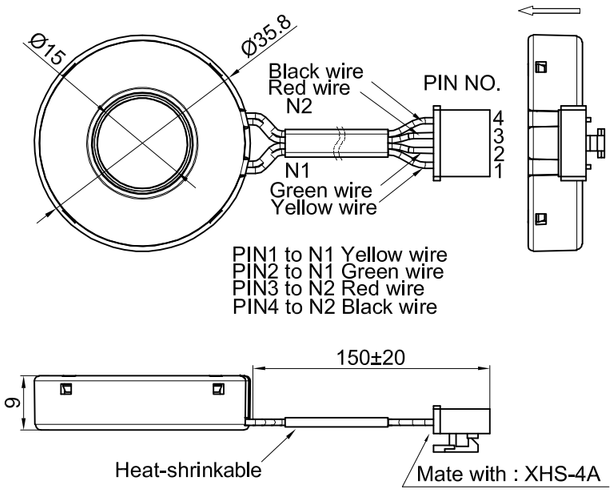
SCT-CTS/P2



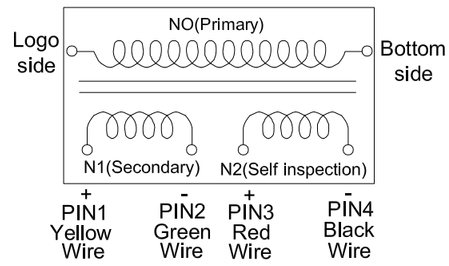
Schematic diagram



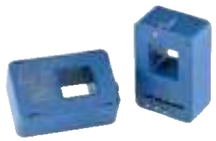
SCT-CTS/P3



Schematic diagram



Product Series: STK-CTS



STK-CTS/P1

STK-CTS/P5

STK-CTS/P6

STK-CTS/PR

STK-CTS/C1

Features

- Open loop design
- Fast response time of 1 μs
- Wide frequency band width of 400 kHz
- Ferrite magnetic core
- TMR sensing technology
- Build-in coil supports AFCI function (STK-CTS/C)
- High isolation voltage

Application

- Solar energy
- PV String current detection
- Switching Mode Power Supply
- Arc current detection (for AFCI)

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating（HBM）	U_{ESD}	kV	4

◎Isolation parameter

Paramete	Symbol	Unit	Value	Comment
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	$\hat{U}_W$	kV	6	
Clearance (pri. -sec)	Dcl	mm	> 8	See note ①
Creepage (pri. -sec)	D_cp	mm	> 8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

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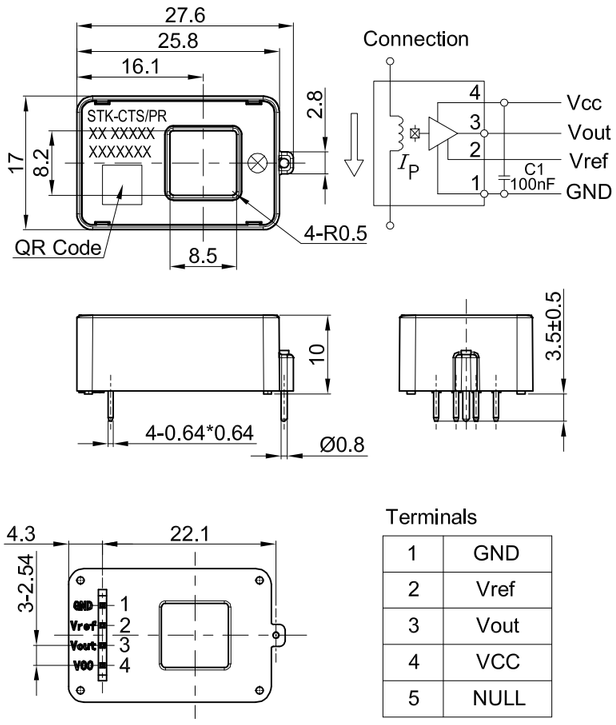
Current Sensor

◎Electrical parameters

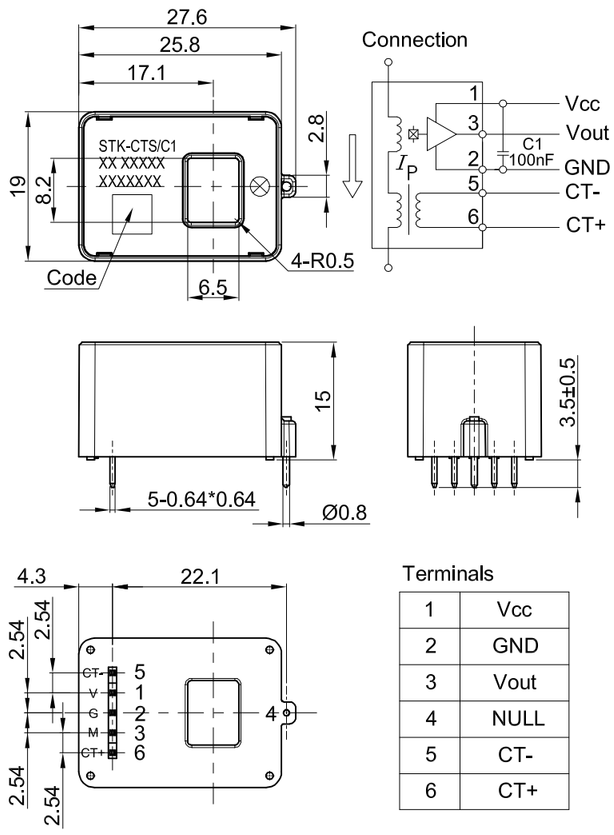
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-CTS/C	STK-32CTS/C1	○		±12.8	±32	5	2.5	NA	62.5	400	1	3			○
	STK-40CTS/C1	○		±16	±40	5	2.5	NA	50	400	1	3			○
STK-CTS/P	STK-20CTS/P1	○		20	±20	5	2.5	NA	100	400	1	2.5			○
	STK-25CTS/P1	○		25	±25	5	2.5	NA	80	400	1	2.5			○
	STK-32CTS/P1	○		±12.8	±32	5	2.5	NA	62.5	400	1	2.5			○
	STK-25CTS/P2	○		25	±25	5	1.65	NA	50	400	1	2.5			○
	STK-25CTS/P3	○		25	±25	5	2.5	NA	80	400	1	2.5			○
	STK-25CTS/P4	○		25	±25	5	1.65	NA	50	400	1	2.5			○
	STK-25CTS/P5	○		±10	±25	5	2.5	NA	80	400	1	3			○
	STK-32CTS/P5	○		±12.8	±32	5	2.5	NA	62.5	400	1	3			○
	STK-40CTS/P5	○		±16	±40	5	2.5	NA	50	400	1	3			○
	STK-50CTS/P5	○		±20	±50	5	2.5	NA	40	400	1	3			○
	STK-25CTS/P6	○		25	±25	5	2.5	NA	80	400	1	2.5			○
	STK-32CTS/P6	○		32	±32	5	2.5	NA	62.5	400	1	2.5			○
	STK-50CTS/PR	○		50	±50	5	2.5	2.5	40	400	1	2.5			○

STK-CTS/PR



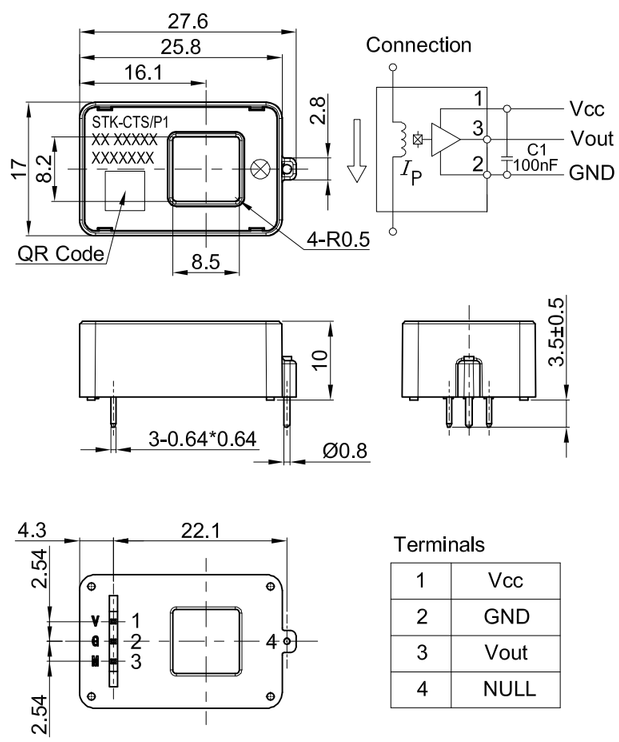
Terminals	
1	GND
2	Vref
3	Vout
4	VCC
5	NULL

STK-CTS/C1



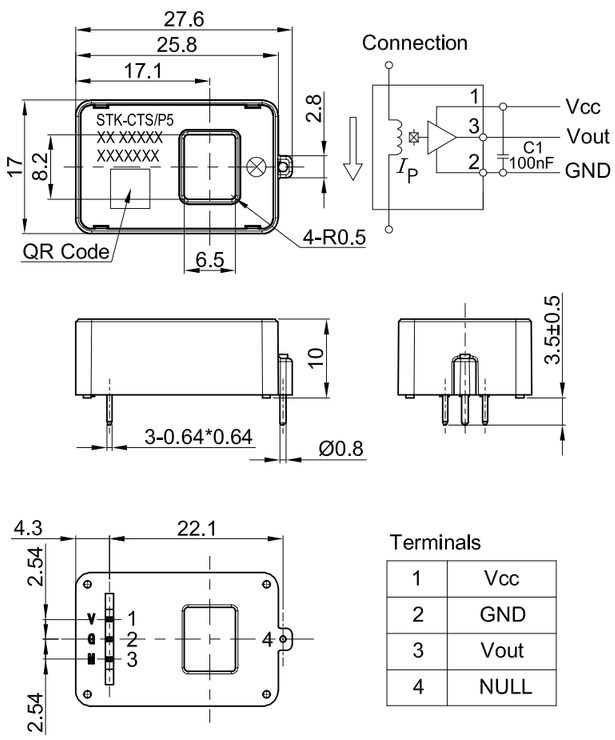
Terminals	
1	Vcc
2	GND
3	Vout
4	NULL
5	CT-
6	CT+

STK-CTS/P1



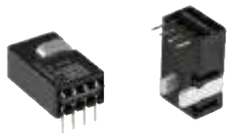
Terminals	
1	Vcc
2	GND
3	Vout
4	NULL

STK-CTS/P5



Terminals	
1	Vcc
2	GND
3	Vout
4	NULL

Product Series: STK-HD



STK-HD/K

STK-HD/P

STK-HD/Q

STK-HD/S

Features

- Open loop design
- Fast response time of 1 μs
- Wide frequency band width of 600 kHz
- Ferrite magnetic core
- TMR sensing technology
- High isolation voltage

Application

- Solar energy
- Uninterruptible power supply
- Motor driver
- Switching Mode Power Supply
- EV charger

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4

◎Isolation parameter

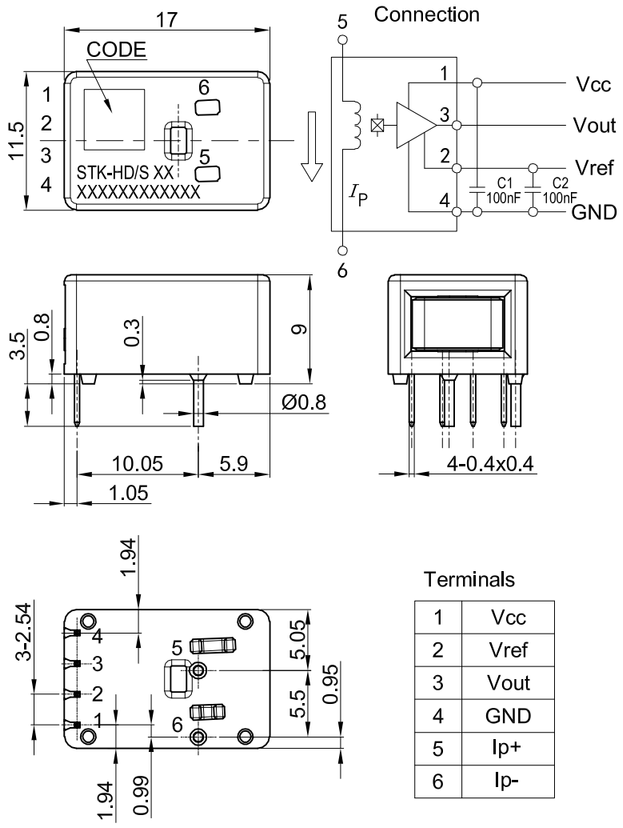
Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	6	
Clearance (pri. -sec)	Dcl	mm	9.6	See note ①
Creepage (pri. -sec)	Dcp	mm	9.6	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

SINOMAGS
Current Sensor

◎Electrical parameters

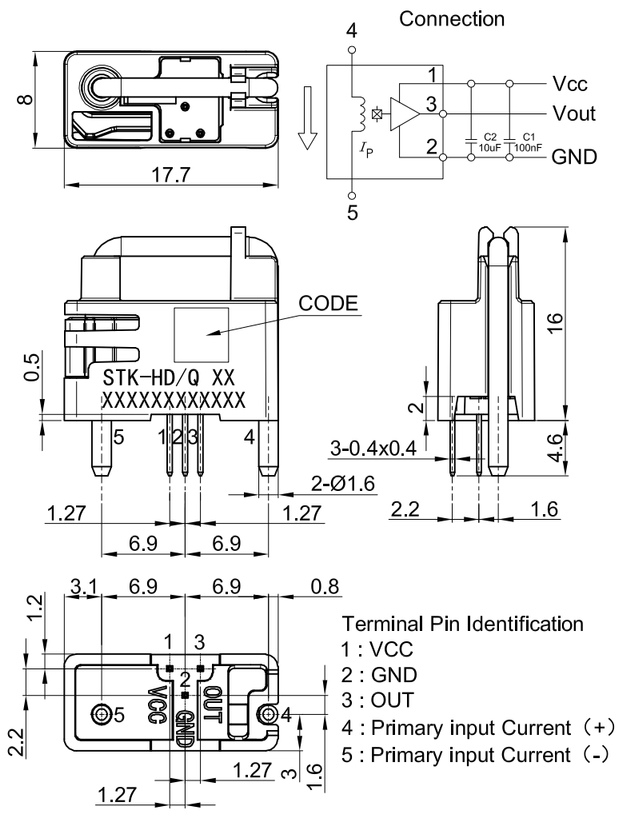
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-HD/K	STK-20HD/K	○		20	±50	5	2.5	2.5	40	600	1	1.5			○
	STK-32HD/K	○		32	±80	5	2.5	2.5	25	600	1	1.5			○
	STK-40HD/K	○		40	±100	5	2.5	2.5	20	600	1	1.5			○
	STK-50HD/K	○		50	±125	5	2.5	2.5	16	600	1	1.5			○
STK-HD/P	STK-05HD/P2	○		5	±12.5	5	2.5	2.5	160	600	1	3			○
	STK-10HD/P1	○		10	±10	5	2.5	2.5	200	600	1	3			○
	STK-10HD/P2	○		10	±25	5	2.5	2.5	80	600	1	3			○
	STK-15HD/P1	○		15	±15	5	2.5	2.5	133	600	1	3			○
	STK-15HD/P2	○		15	±37.5	5	2.5	2.5	53	600	1	3			○
	STK-20HD/P1	○		20	±20	5	2.5	2.5	100	600	1	3			○
	STK-20HD/P2	○		20	±50	5	2.5	2.5	40	600	1	3			○
	STK-25HD/P2	○		25	±62.5	5	2.5	2.5	32	600	1	3			○
	STK-30HD/P2	○		30	±75	5	2.5	2.5	26.7	600	1	3			○
	STK-10HD/P2S	○		10	±30	3.3	1.65	2.5	50	600	1	3			○
	STK-20HD/P1S	○		20	±20	3.3	1.65	2.5	62.5	600	1	3			○
	STK-20HD/P2S	○		20	±50	3.3	1.65	2.5	25	600	1	3			○
	STK-30HD/P2S	○		30	±75	3.3	1.65	2.5	16.7	600	1	3			○
STK-HD/Q	STK-25HD/Q	○		25	±30	5	2.5	NA	63	100	1	3			○
	STK-50HD/Q	○		50	±60	5	2.5	NA	27	100	1	3			○
	STK-50HD/Q1	○		50	±60	5	1.65	NA	17.82	100	1	3			○
STK-HD/S	STK-03HD/S	○		3	±7.5	5	2.5	2.5	267	150	2	1.5			○
	STK-05HD/S	○		5	±12.5	5	2.5	2.5	160	150	2	1.5			○
	STK-10HD/S	○		10	±25	5	2.5	2.5	80	150	2	1.5			○

STK-HD/S



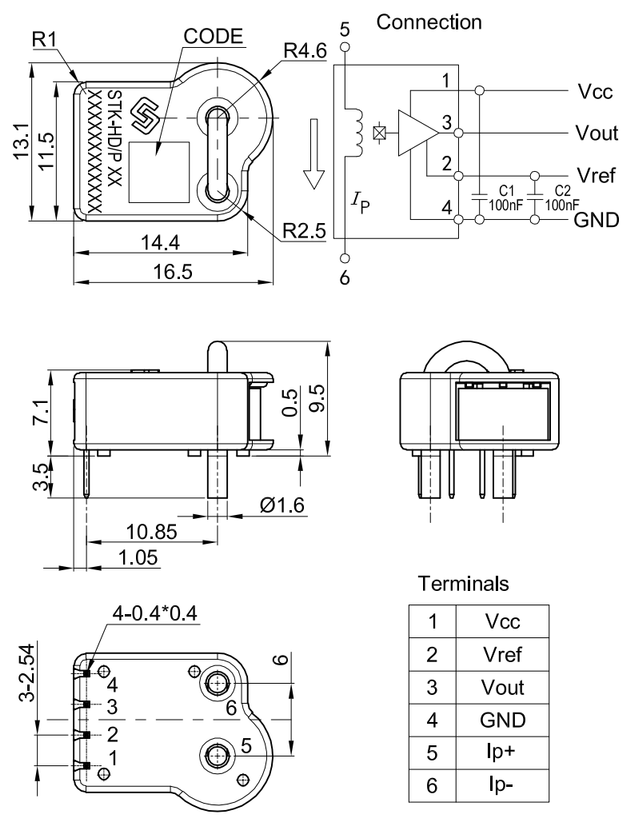
Terminals	
1	Vcc
2	Vref
3	Vout
4	GND
5	Ip+
6	Ip-

STK-HD/Q



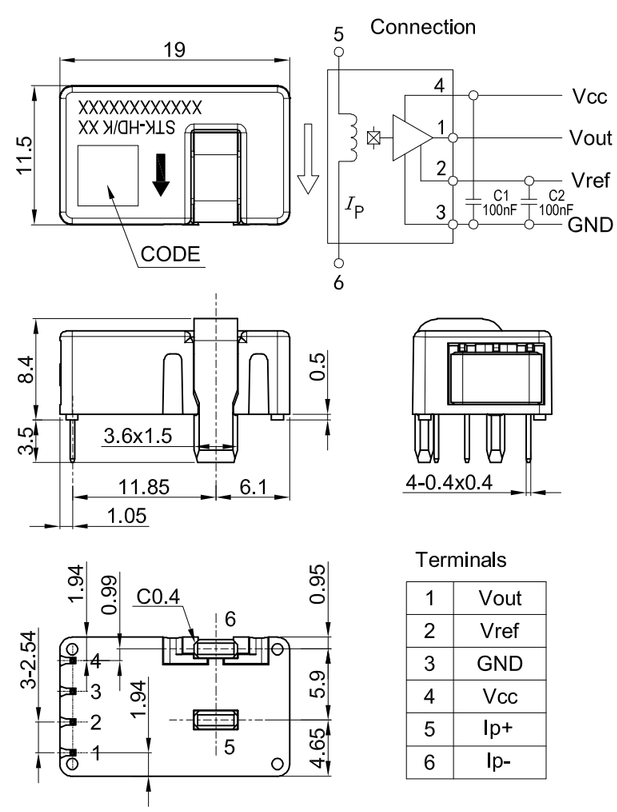
Terminal Pin Identification
1 : VCC
2 : GND
3 : OUT
4 : Primary input Current（+）
5 : Primary input Current（-）

STK-HD/P



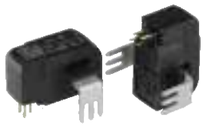
Terminals	
1	Vcc
2	Vref
3	Vout
4	GND
5	Ip+
6	Ip-

STK-HD/K



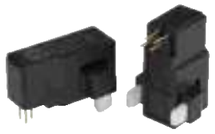
Terminals	
1	Vout
2	Vref
3	GND
4	Vcc
5	Ip+
6	Ip-

Product Series: STK-PL



STK-PL (80A, 120A)

STK-PL/A,STK PL/P1



STK-PL/Q

STK-PL/M

Features

- Open loop design
- Fast response time of 1.5 μs
- Wide frequency band width of 400 kHz
- Ferrite magnetic core
- TMR sensing technology
- High isolation voltage

Application

- Solar energy
- Switching Mode Power Supply
- Uninterruptible power supply
- EV charger
- Motor driver

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4
ESD rating(CDM)	U_{CDM}	kV	1.5

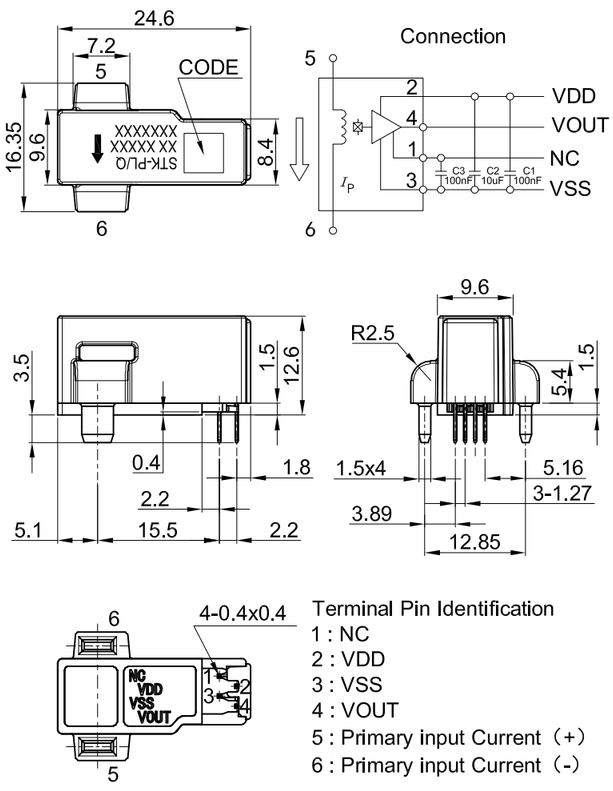
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	5	
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance (pri. -sec)	Dcl	mm	8	See note ①
Creepage (pri. -sec)	Dcp	mm	8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

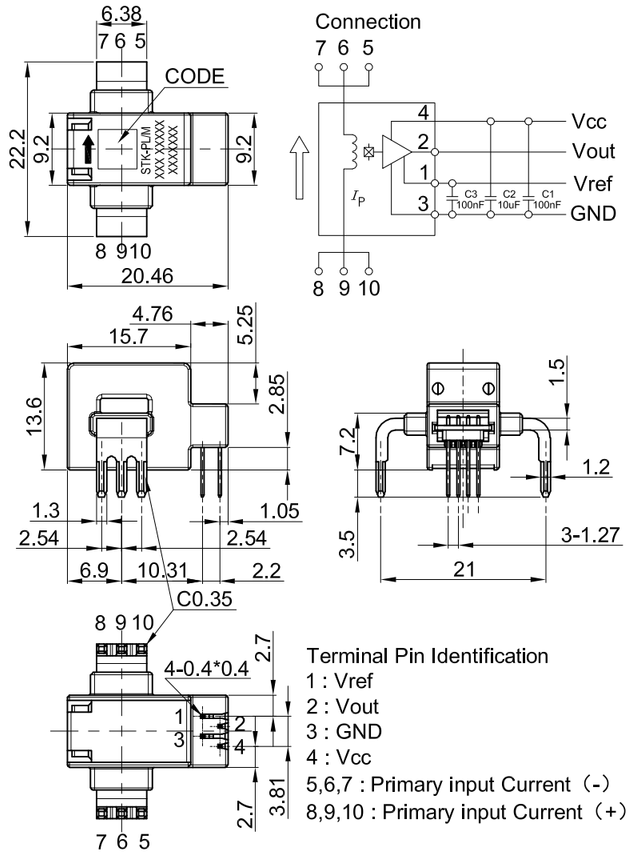
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-PL/A	STK-10PL/A	○		10	±25	5	2.5	2.5	80	400	1.5	2			○
	STK-20PL/A	○		20	±50	5	2.5	2.5	40	400	1.5	2			○
	STK-32PL/A	○		32	±80	5	2.5	2.5	25	400	1.5	2			○
	STK-40PL/A	○		40	±100	5	2.5	2.5	20	400	1.5	2			○
	STK-50PL/A	○		50	±125	5	2.5	2.5	16	400	1.5	2			○
STK-PL	STK-80PL	○		80	±200	5	2.5	2.5	10	200	3.5	3			○
	STK-120PL	○		120	±300	5	2.5	2.5	6.67	200	3.5	3			○
STK-PL/M	STK-80PL/M	○		80	±200	5	2.5	2.5	10	500	1	2			○
	STK-100PL/M	○		100	±250	5	2.5	2.5	8	500	1	2			○
	STK-120PL/M	○		120	±300	5	2.5	2.5	6.67	500	1	2			○
	STK-150PL/M	○		150	±375	5	2.5	2.5	5.33	500	1	2			○
	STK-180PL/M	○		180	±450	5	2.5	2.5	4.44	500	1	2			○
STK-PL/Q	STK-PL/Q4	○		50	±54	5	2.5	NA	40	300	1.5	3			○
	STK-PL/Q5	○		50	±85	5	2.5	NA	25	300	1.5	3			○
STK-PL/P1	STK-10PL/P1	○		10	±30	5	1.65	1.65	46	400	1.5	3			○
	STK-20PL/P1	○		20	±60	5	1.65	1.65	23	400	1.5	3			○
	STK-32PL/P1	○		32	±96	5	1.65	1.65	14.4	400	1.5	3			○
	STK-50PL/P1	○		50	±150	5	1.65	1.65	9.2	400	1.5	3			○

STK-PL/Q



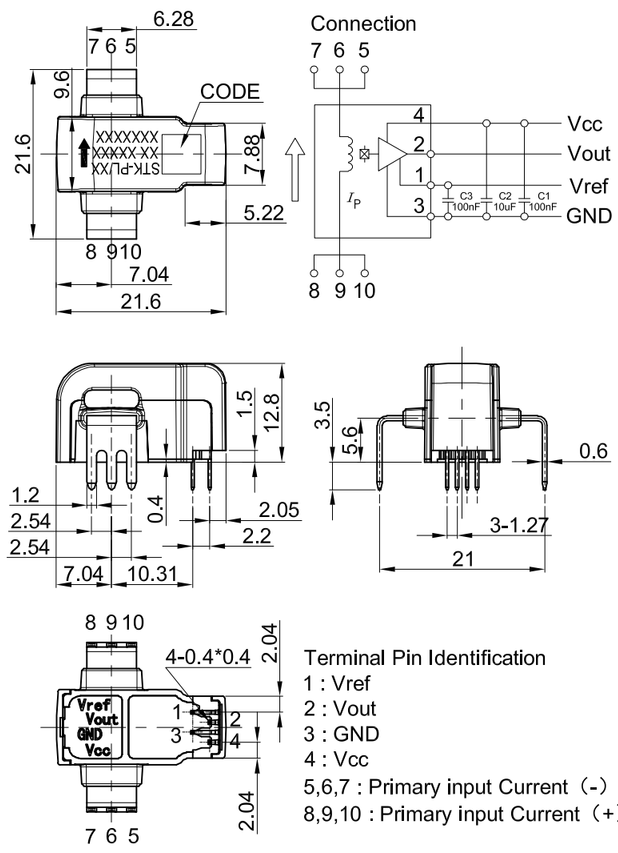
Terminal Pin Identification
1 : NC
2 : VDD
3 : VSS
4 : VOUT
5 : Primary input Current（+）
6 : Primary input Current（-）

STK-PL/M



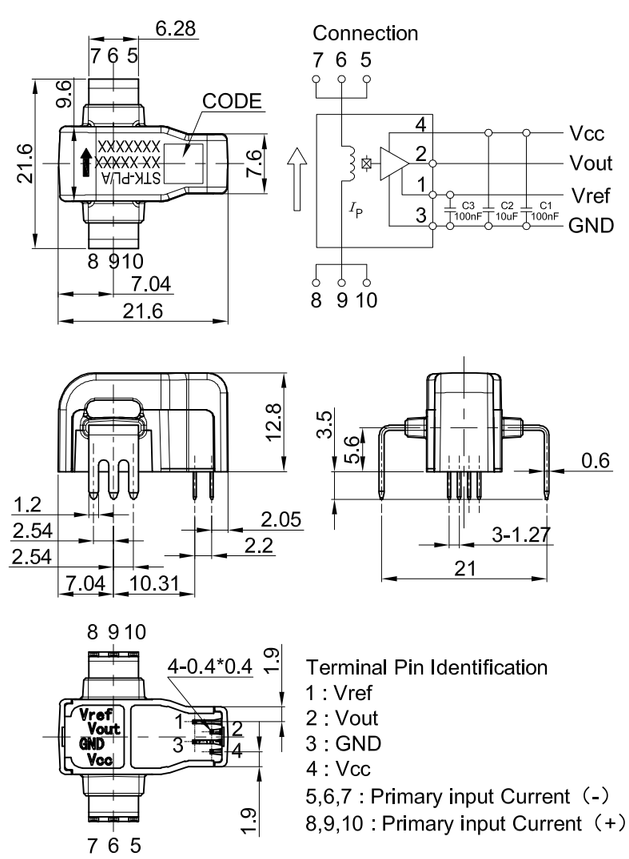
Terminal Pin Identification
1 : Vref
2 : Vout
3 : GND
4 : Vcc
5,6,7 : Primary input Current（-）
8,9,10 : Primary input Current（+）

STK-PL (80A, 120A)



Terminal Pin Identification
1 : Vref
2 : Vout
3 : GND
4 : Vcc
5,6,7 : Primary input Current（-）
8,9,10 : Primary input Current（+）

STK-PL/A, STK-PL/P1



Terminal Pin Identification
1 : Vref
2 : Vout
3 : GND
4 : Vcc
5,6,7 : Primary input Current（-）
8,9,10 : Primary input Current（+）

Product Series: STK-HO

STK-HO

STK-HO/B

Features
· Open loop design · Fast response time of 2 μs or 200 ns (STK-HO/B) · Wide frequency band width of 150 kHz or 1 MHz (STK-HO/B) · Ferrite magnetic core · TMR sensing technology · OCD (over current detection) function

Application
· Uninterruptible power supply · Motor driver · Switching Mode Power Supply

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating（HBM）	U_{ESD}	kV	4

◎Isolation parameter

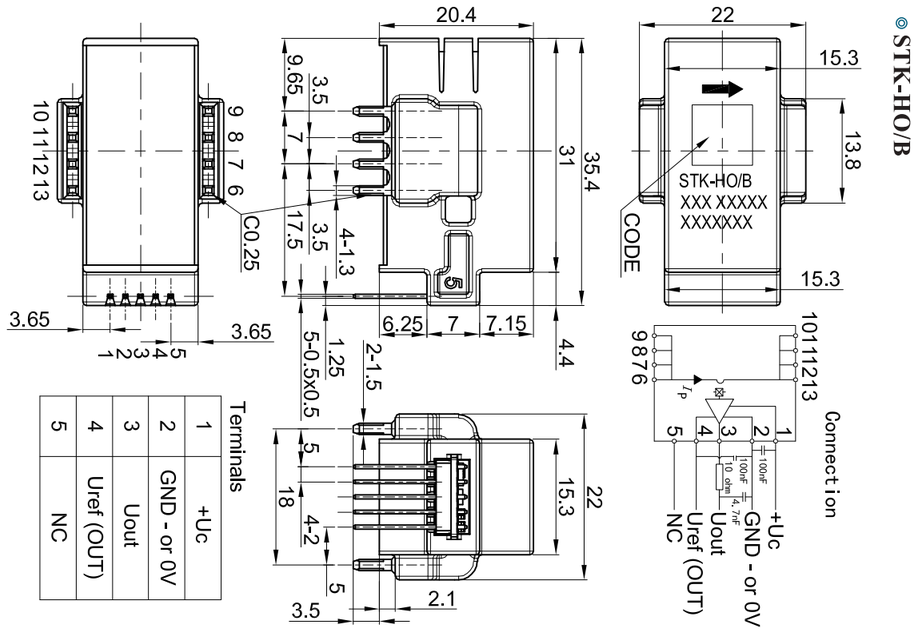
Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	$\hat{U}w$	kV	8	
Clearance (pri. -sec)	Dcl	mm	11.6	See note ①
Creepage (pri. -sec)	Dcp	mm	11.6	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

SINOMAGS
Current Sensor

◎Electrical parameters

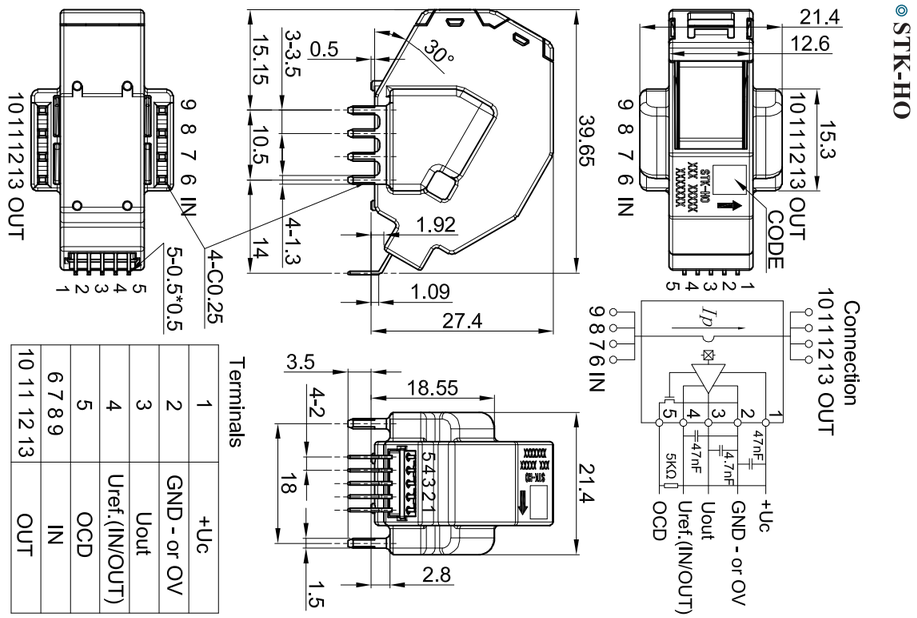
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-HO	STK-HO/60	○		60	±150	5	2.5	2.5	13.33	150	2	3			○
	STK-HO/120	○		120	±300	5	2.5	2.5	6.67	150	2	3			○
	STK-HO/150	○		150	±375	5	2.5	2.5	5.33	150	2	3			○
STK-HO/B	STK-50HO/B	○		±50	±125	5	2.5	2.5	16	1000	0.2	3			○
	STK-75HO/B	○		±75	±187.5	5	2.5	2.5	10.67	1000	0.2	3			○
	STK-100HO/B	○		±100	±250	5	2.5	2.5	8	1000	0.2	3			○
	STK-130HO/B	○		±130	±325	5	2.5	2.5	6.15	1000	0.2	3			○

◎ STK-HO/B



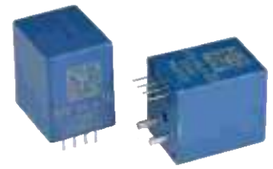
Terminals	
1	+Uc
2	GND - or 0V
3	Uout
4	Uref (OUT)
5	NC

◎ STK-HO



Terminals	
1	+Uc
2	GND - or 0V
3	Uout
4	Uref.(IN/OUT)
5	OCD
6 7 8 9	IN
10 11 12 13	OUT

Product Series: STB-HA



STB-HA/A (10 ~ 30)

STB-HA/A (50 ~ 60)

STB-HA/A3

STB-HA/Y

Features

- Close loop design
- Response time of 2.5 μs
- Frequency band width of 150 kHz
- Good nonlinearity
- Low thermal drift
- Supply voltage of ±15 V or +15 V (STB-HA/A3)
- High isolation voltage

Application

- Solar energy
- Uninterruptible power supply
- Motor driver
- Switching Mode Power Supply

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 85
Supply voltage	Vcc	V	±15
			15
ESD rating（HBM）	U_{ESD}	kV	4

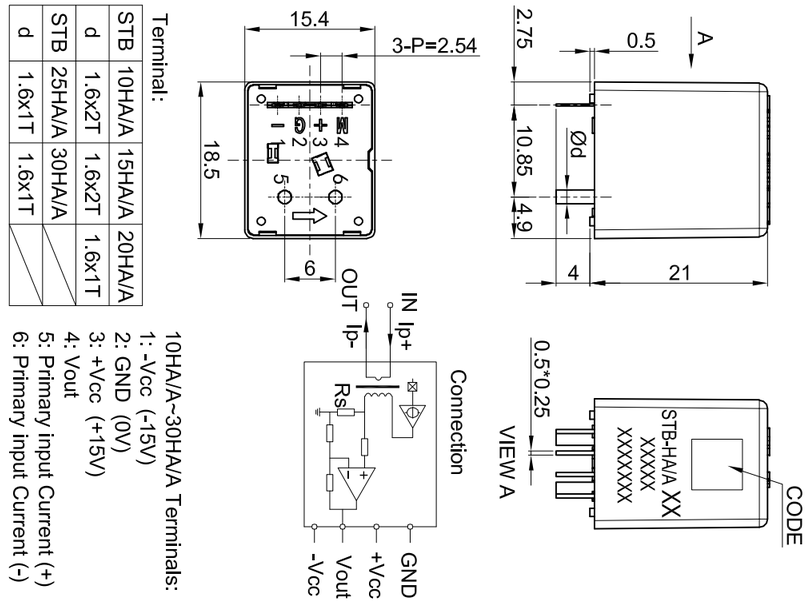
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	4	
Clearance (pri. -sec)	Dcl	mm	9.6	See note ①
Creepage (pri. -sec)	Dcp	mm	9.6	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Out		Nominal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Open-loop	
		Voltage	Current										Close-loop		
				I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STB-HA/A	STB-10HA/A	○		10	±30	±15+5%	0	NA	400	150	1.5	0.8(1.5)		○	
	STB-15HA/A	○		15	±45	±15+5%	0	NA	266.67	150	1.5	0.8(1.5)		○	
	STB-20HA/A	○		20	±60	±15+5%	0	NA	200	150	1.5	0.8(1.5)		○	
	STB-25HA/A	○		25	±75	±15+5%	0	NA	160	150	1.5	0.8(1.5)		○	
	STB-30HA/A	○		30	±90	±15+5%	0	NA	133.33	150	1.5	0.8(1.5)		○	
	STB-50HA/A	○		50	±150	±15+5%	0	NA	80	150	1.5	0.8(1.5)		○	
	STB-60HA/A	○		60	±180	±15+5%	0	NA	66.67	150	1.5	0.8(1.5)		○	
STB-HA/A3	STB-10HA/A3	○		10	±30	15	0	NA	50	150	3	0.8(1.5)		○	
	STB-20HA/A3	○		20	±60	15	0	NA	50	150	3	0.8(1.5)		○	
STB-HA/Y	STB-HA/Y	○		50	±150	±15+5%	0	NA	80	150	1.5	0.8(1.5)		○	

◎STB-10~30HA/A

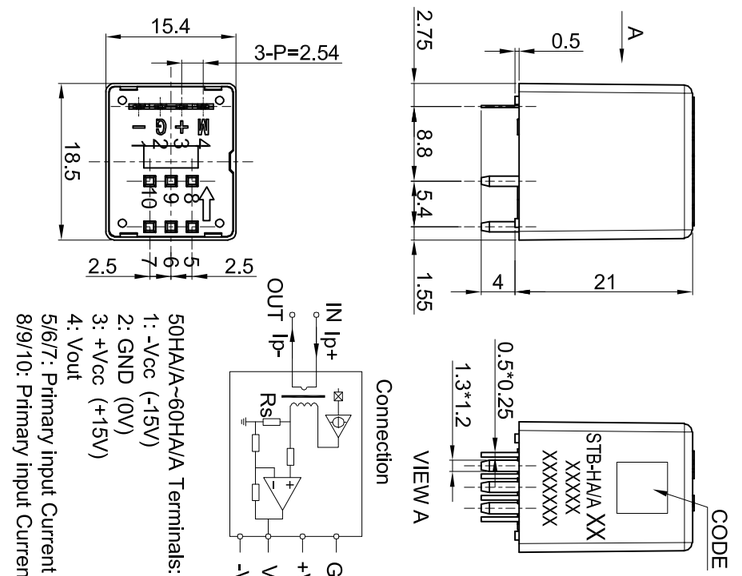


d	STB	25HA/A	30HA/A
1.6x1T	d	1.6x2T	1.6x2T
1.6x1T	STB	10HA/A	15HA/A
	d	1.6x1T	1.6x1T

Terminal:

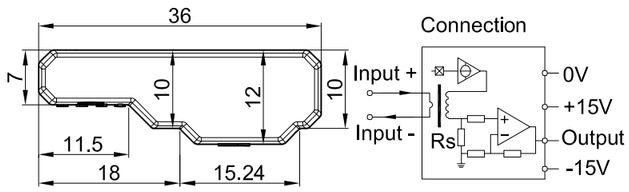
10HA/A~30HA/A Terminals:
1: -Vcc (-15V)
2: GND (0V)
3: +Vcc (+15V)
4: Vout
5: Primary input Current (+)
6: Primary input Current (-)

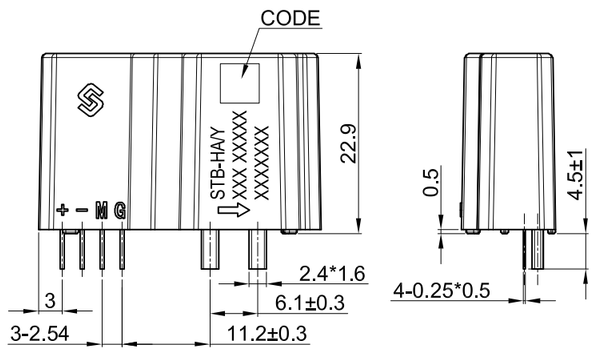
◎STB-50~60HA/A

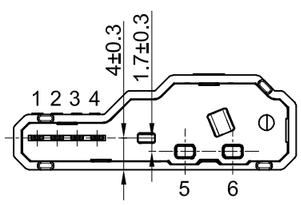


50HA/A~60HA/A Terminals:
1: -Vcc (-15V)
2: GND (0V)
3: +Vcc (+15V)
4: Vout
5/6/7: Primary input Current (+)
8/9/10: Primary input Current (-)

STB-HA/Y



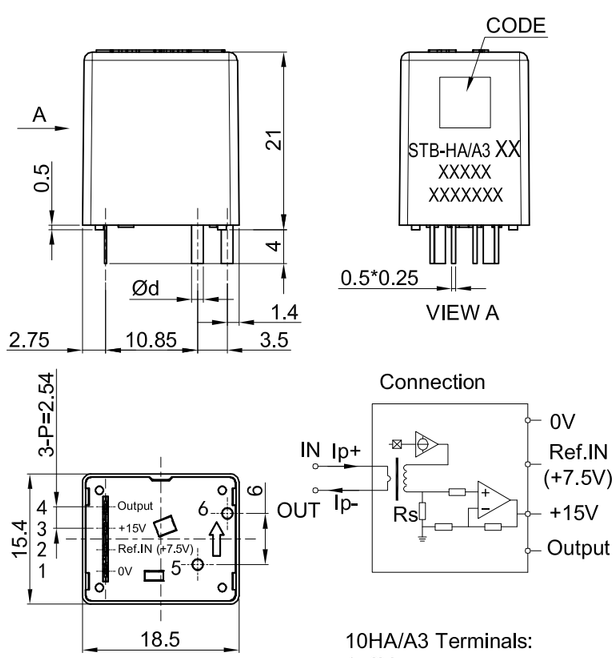




Terminals

1	+15V
2	-15V
3	Output
4	0V
5	Input current (+)
6	Input current (-)

STB-10HA/A3

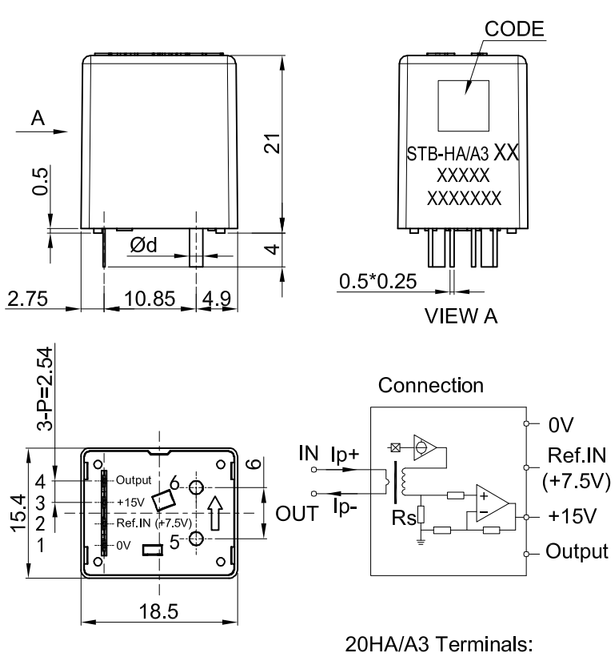


Terminal:

STB	10HA/A3
d	1.3x2T

10HA/A3 Terminals:
1: 0V
2: Ref.IN (+7.5V)
3: +15V
4: Output
5: Primary input Current (+)
6: Primary input Current (-)

STB-20HA/A3

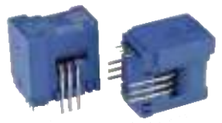


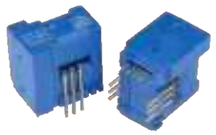
Terminal:

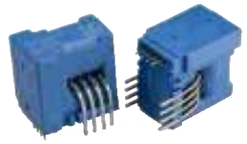
STB	20HA/A3
d	1.6x1T

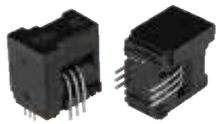
20HA/A3 Terminals:
1: 0V
2: Ref.IN (+7.5V)
3: +15V
4: Output
5: Primary input Current (+)
6: Primary input Current (-)

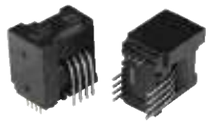
Product Series: STB-CAS

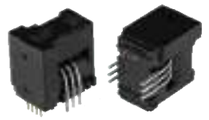

STB-CAS


STB-CAS/R


STB-CAS/K


STB-CAS/F


STB-CAS/K/F


STB-CAS/R/F

Features

- Close loop design
- Very fast response time of 0.3 μs
- Wide frequency band width of 400 kHz
- Good nonlinearity
- Very low thermal drift
- High isolation voltage

Application

- Solar energy
- Switching Mode Power Supply
- Uninterruptible power supply
- Motor driver
- EV charger

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	5
ESD rating（HBM）	U_{ESD}	kV	4

◎Isolation parameter

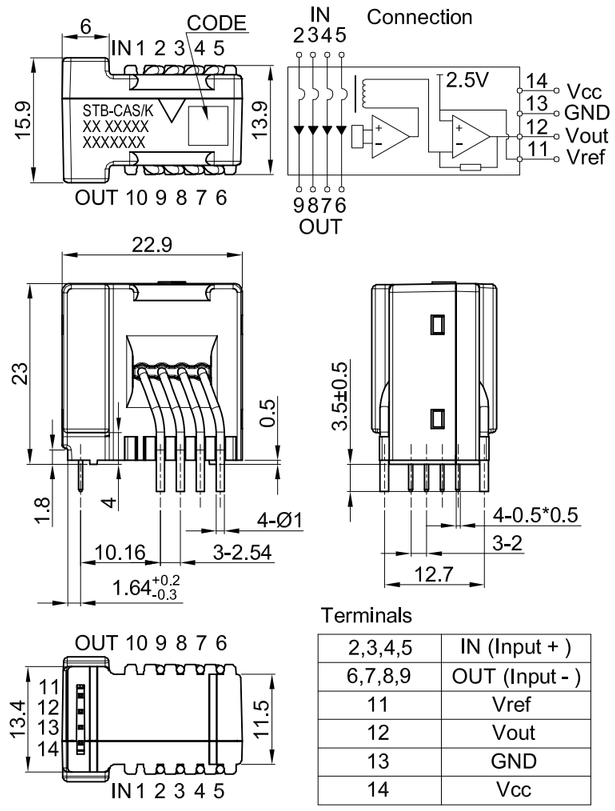
Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	5	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	4	
Clearance (pri. -sec)	Dcl	mm	9.6	See note ①
Creepage (pri. -sec)	Dcp	mm	9.6	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

SINOMAGS
Current Sensor

◎Electrical parameters

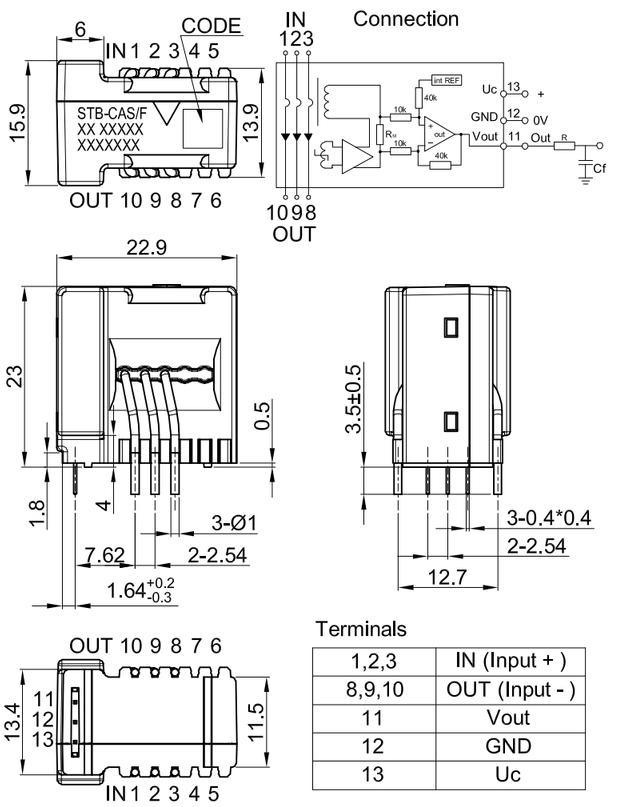
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STB-CAS/x	STB-15CAS	○		15	±51	5	2.5	NA	41.67	400	0.3	2.5(3)		○	
	STB-25CAS	○		25	±85	5	2.5	NA	25	400	0.3	2.5(3)		○	
	STB-50CAS	○		50	±150	5	2.5	NA	12.5	400	0.3	2.5(3)		○	
	STB-15CAS/R	○		15	±51	5	2.5	2.5	41.67	400	0.3	1.15(1.5)		○	
	STB-25CAS/R	○		25	±85	5	2.5	2.5	25	400	0.3	1.15(1.3)		○	
	STB-50CAS/R	○		50	±150	5	2.5	2.5	12.5	400	0.3	1.1(1.3)		○	
	STB-15CAS/K	○		15	±51	5	2.5	2.5	41.67	400	0.3	1.15(1.3)		○	
	STB-25CAS/K	○		25	±85	5	2.5	2.5	25	400	0.3	1.15(1.3)		○	
	STB-50CAS/K	○		50	±150	5	2.5	2.5	12.5	400	0.3	1.1(1.3)		○	
	STB-75CAS/K	○		75	±220	5	2.5	2.5	6.25	400	0.3	1.1(1.3)		○	
STB-CAS/F	STB-6CAS/F	○		6	±20	5	2.5	NA	104.2	400	0.3	1.4(1.6)	○		
	STB-15CAS/F	○		15	±51	5	2.5	NA	41.67	400	0.3	1.2(1.3)	○		
	STB-25CAS/F	○		25	±85	5	2.5	NA	25	400	0.3	1.15(1.25)	○		
	STB-50CAS/F	○		50	±150	5	2.5	NA	12.5	400	0.3	1.1(1.3)	○		
	STB-6CAS/R/F	○		6	±20	5	2.5	2.5	104.2	400	0.3	1.4(1.6)	○		
	STB-15CAS/R/F	○		15	±51	5	2.5	2.5	41.67	400	0.3	1.2(1.3)	○		
	STB-25CAS/R/F	○		25	±85	5	2.5	2.5	25	400	0.3	1.15(1.25)	○		
	STB-50CAS/R/F	○		50	±150	5	2.5	2.5	12.5	400	0.3	1.1(1.3)	○		
	STB-6CAS/K/F	○		6	±20	5	2.5	2.5	104.2	400	0.3	1.4(1.6)	○		
	STB-15CAS/K/F	○		15	±51	5	2.5	2.5	41.67	400	0.3	1.2(1.3)	○		
	STB-25CAS/K/F	○		25	±85	5	2.5	2.5	25	400	0.3	1.15(1.25)	○		
	STB-50CAS/K/F	○		50	±150	5	2.5	2.5	12.5	400	0.3	1.1(1.3)	○		
	STB-75CAS/K/F	○		75	±220	5	2.5	2.5	6.25	400	0.3	1.1(1.3)	○		

STB-CAS/K



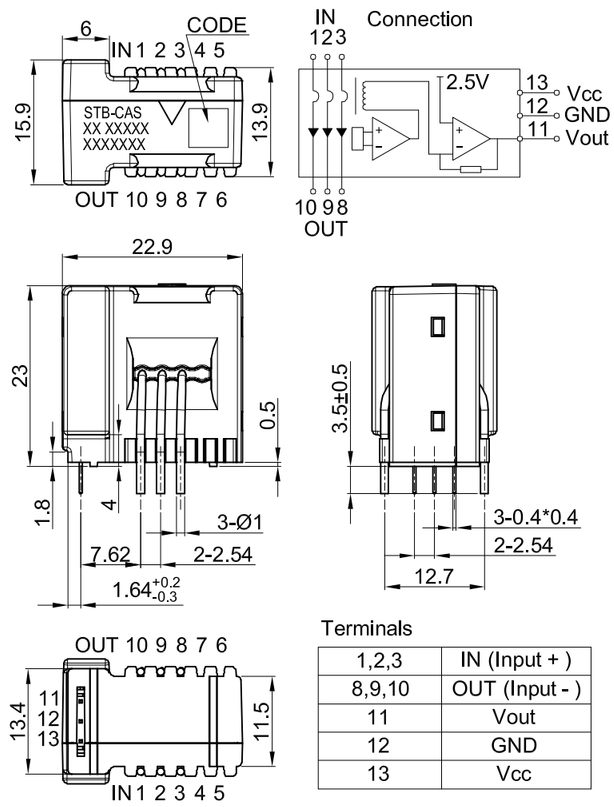
Terminals	
2,3,4,5	IN (Input +)
6,7,8,9	OUT (Input -)
11	Vref
12	Vout
13	GND
14	Vcc

STB-CAS/F



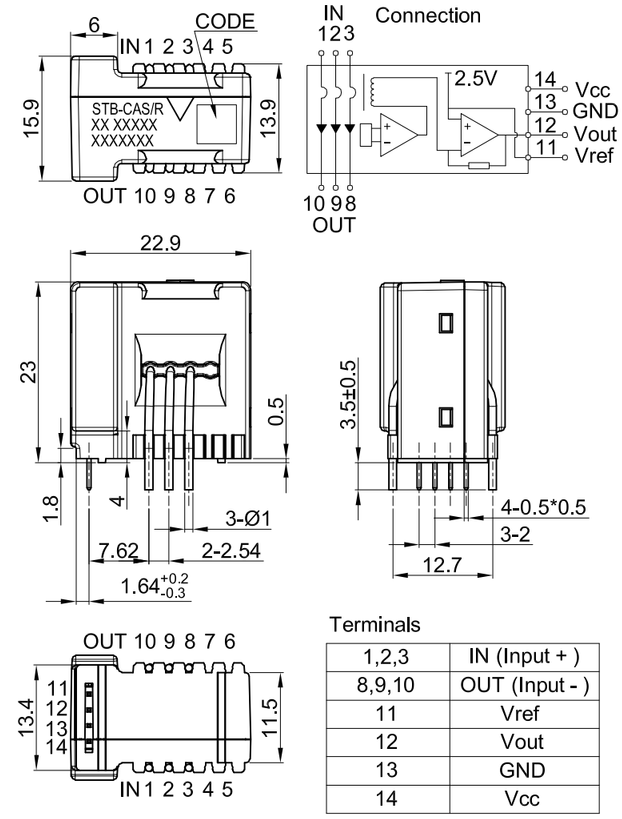
Terminals	
1,2,3	IN (Input +)
8,9,10	OUT (Input -)
11	Vout
12	GND
13	Uc

STB-CAS



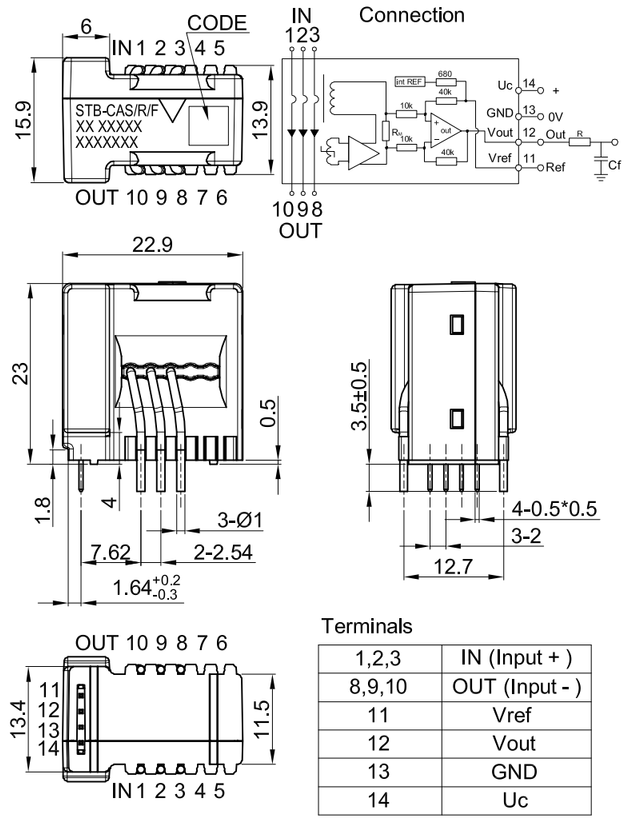
Terminals	
1,2,3	IN (Input +)
8,9,10	OUT (Input -)
11	Vout
12	GND
13	Vcc

STB-CAS/R



Terminals	
1,2,3	IN (Input +)
8,9,10	OUT (Input -)
11	Vref
12	Vout
13	GND
14	Vcc

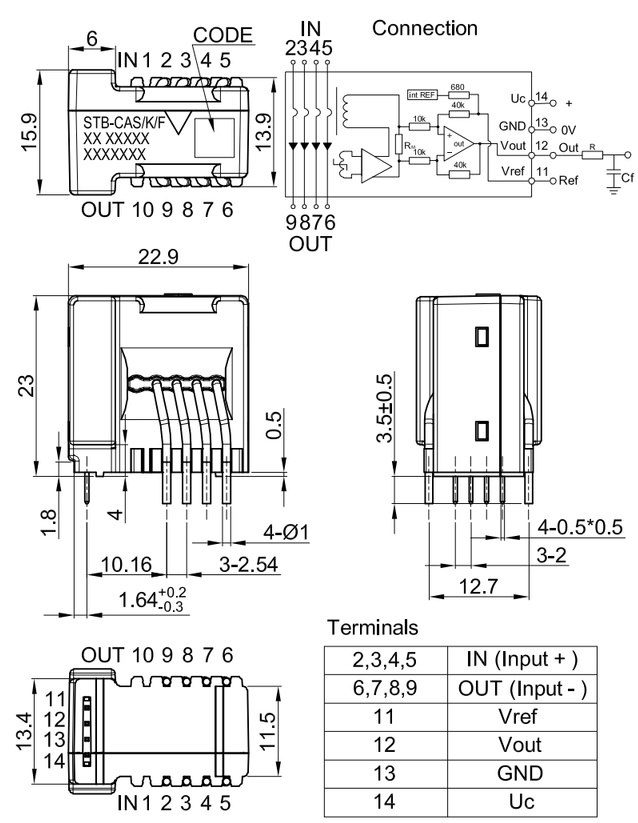
STB-CAS/R/F



Terminals

1,2,3	IN (Input +)
8,9,10	OUT (Input -)
11	Vref
12	Vout
13	GND
14	Uc

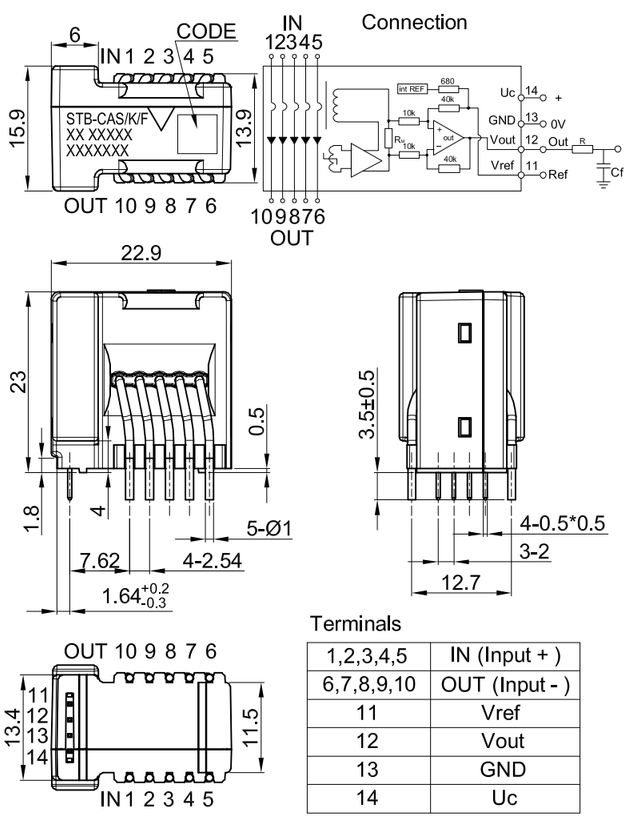
STB-6～50CAS/K/F



Terminals

2,3,4,5	IN (Input +)
6,7,8,9	OUT (Input -)
11	Vref
12	Vout
13	GND
14	Uc

STB-75CAS/K/F

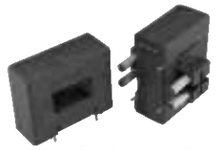


Terminals

1,2,3,4,5	IN (Input +)
6,7,8,9,10	OUT (Input -)
11	Vref
12	Vout
13	GND
14	Uc

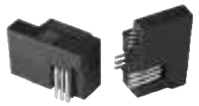
Product Series: STB-LA

STB-LA, STB-LA/N



STB-LA/Z, STB-LA/ZN

STB-LA/M



STB-LA/S

STB-LA/D

Features

- Close loop design
- Very fast response time of 0.3 μs
- Wide frequency band width of 300 kHz
- Good nonlinearity
- Very low thermal drift
- High isolation voltage
- Supply voltage of 15 V (STB-LA, STB-LA/D)

Application

- Solar energy
- Switching Mode Power Supply
- Uninterruptible power supply

◎Absolute parameters

Parameter	Symbol	Unit	Value	Remark
Working temperature	T_A	℃	-40 ~ 85	
Supply voltage	Vcc	V	±15	STB-LA、STB-LA/D
			5	STB-LA/S STB-LA/Z STB-LA/M
ESD rating(HBM)	U_{ESD}	kV	4	

◎Isolation parameter

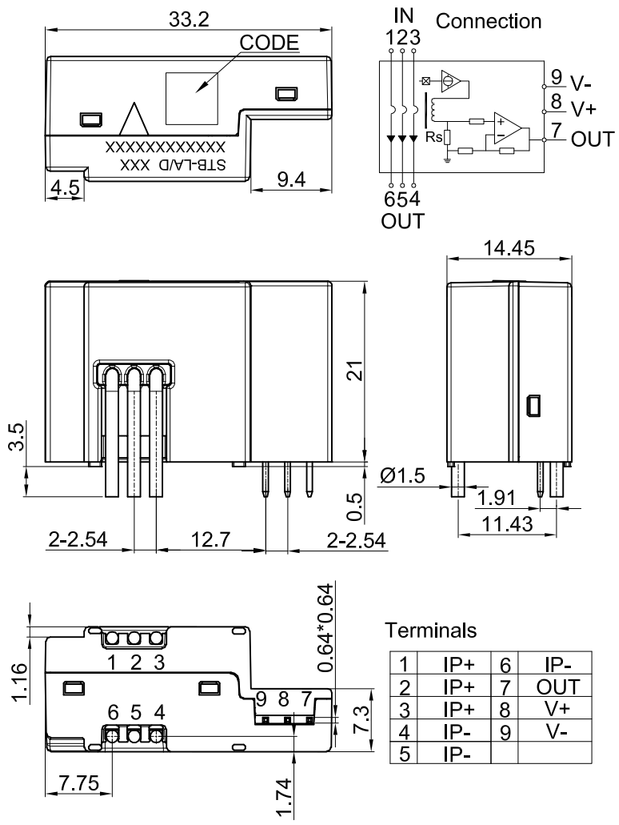
Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance (pri. -sec)	Dcl	mm	13	STB-LA
			10.2	STB-LA/S、STB-LA/D
			12.9	STB-LA/ZN、STB-LA/Z
Creepage (pri. -sec)	Dcp	mm	13	STB-LA
			10.2	STB-LA/S、STB-LA/D
			12.9	STB-LA/ZN、STB-LA/Z
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

SINOMAGS
Current Sensor

◎Electrical parameters

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STB-LA	STB-50LA(/N)		○	50	±200	±12~±15	0	NA	0.5	150	0.5	0.5		○	
	STB-100LA(/N)		○	100	±200	±12~±15	0	NA	0.5	150	0.5	0.5		○	
	STB-150LA(/N)		○	150	±240	±12~±15	0	NA	0.5	150	0.5	0.5		○	
STB-LA/S	STB-100LA/S	○		100	±220	5	2.5	2.5	6.25	300	0.5	1.1		○	
STB-LA/D	STB-25LA/D		○	25	55	±12~±15	0	NA	1	150	0.5	1.5		○	
	STB-50LA/D		○	50	128	±12~±15	0	NA	1	150	0.5	1.5		○	
	STB-100LA/D		○	100	175	±12~±15	0	NA	0.5	150	0.5	1.5		○	
STB-LA/Z	STB-100LA/Z(/ZN)	○		100	±300	5	2.5	2.5	6.25	300	0.3	0.8(1.1)		○	
	STB-150LA/Z(/ZN)	○		150	±400	5	2.5	2.5	4.17	300	0.3	0.8(1.1)		○	
	STB-200LA/Z(/ZN)	○		200	±450	5	2.5	2.5	3.13	300	0.3	0.8(1.4)		○	
	STB-250LA/ZN	○		250	±450	5	2.5	2.5	4.17	300	3	1.4		○	
STB-LA/M	STB-300LA/M	○		300	±600	5	2.5	2.5	3.13	300	0.6	1.1		○	

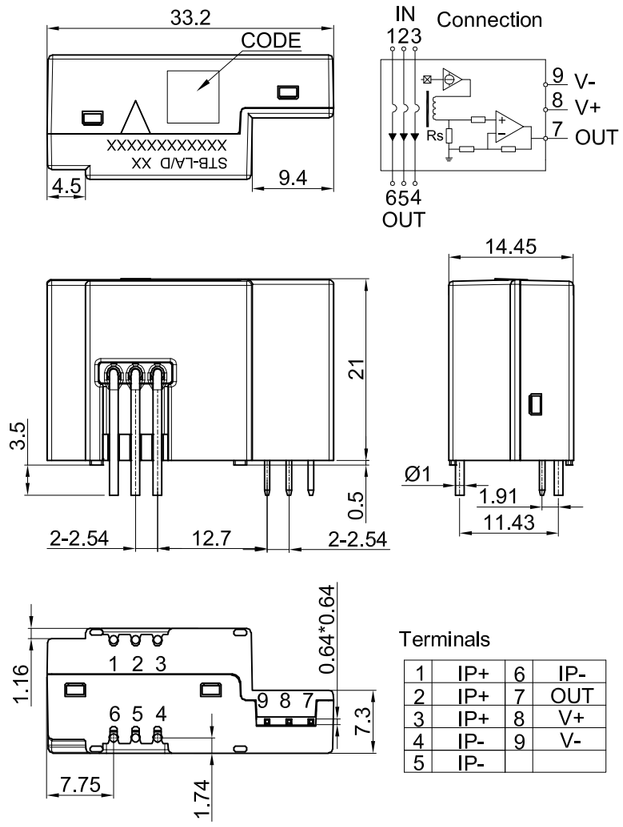
STB-50~100LA/D



Terminals

1	IP+	6	IP-
2	IP+	7	OUT
3	IP+	8	V+
4	IP-	9	V-
5	IP-		

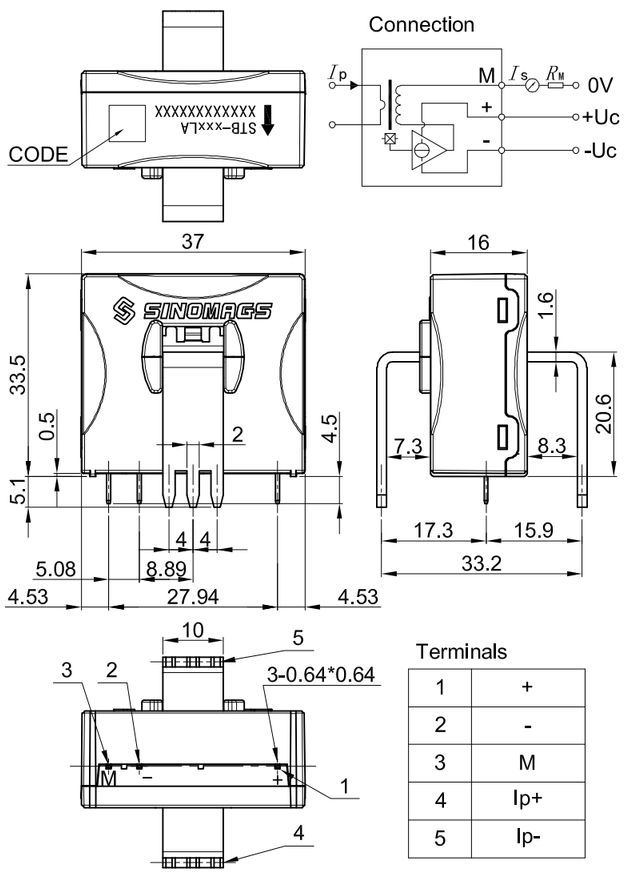
STB-25LA/D



Terminals

1	IP+	6	IP-
2	IP+	7	OUT
3	IP+	8	V+
4	IP-	9	V-
5	IP-		

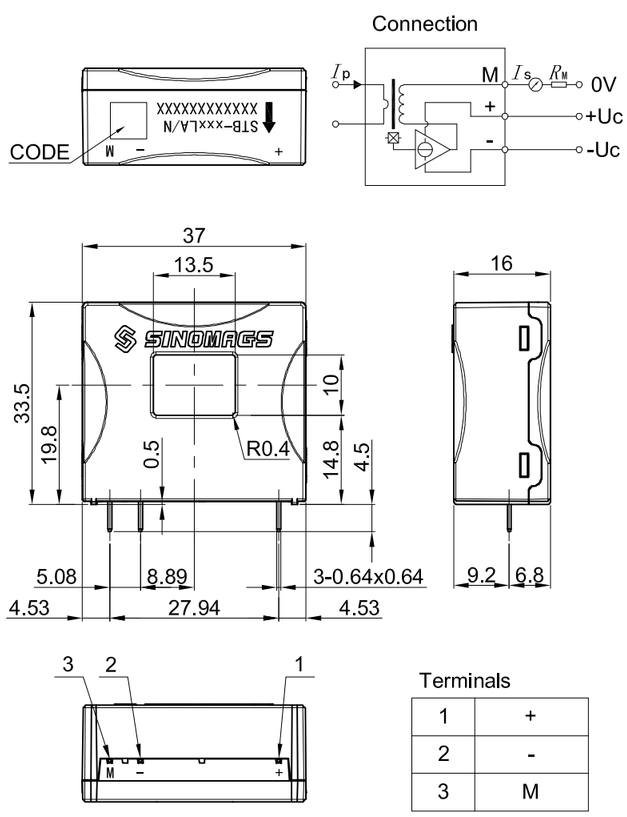
STB-LA



Terminals

1	+
2	-
3	M
4	Ip+
5	Ip-

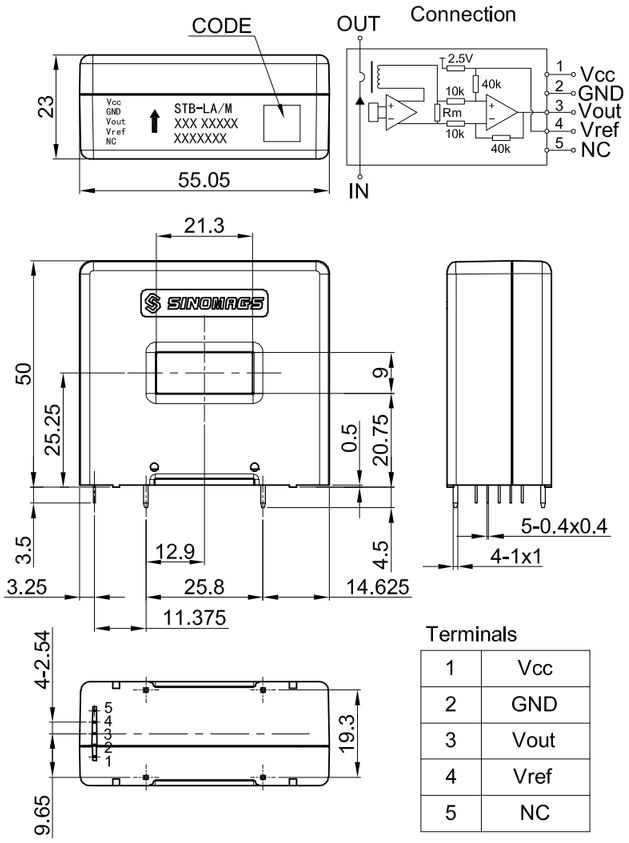
STB-LA/N



Terminals

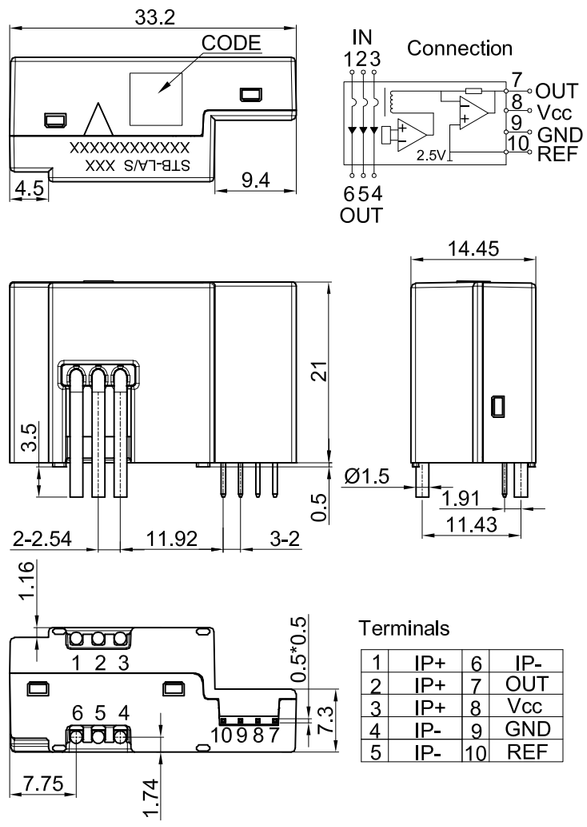
1	+
2	-
3	M

STB-LA/M



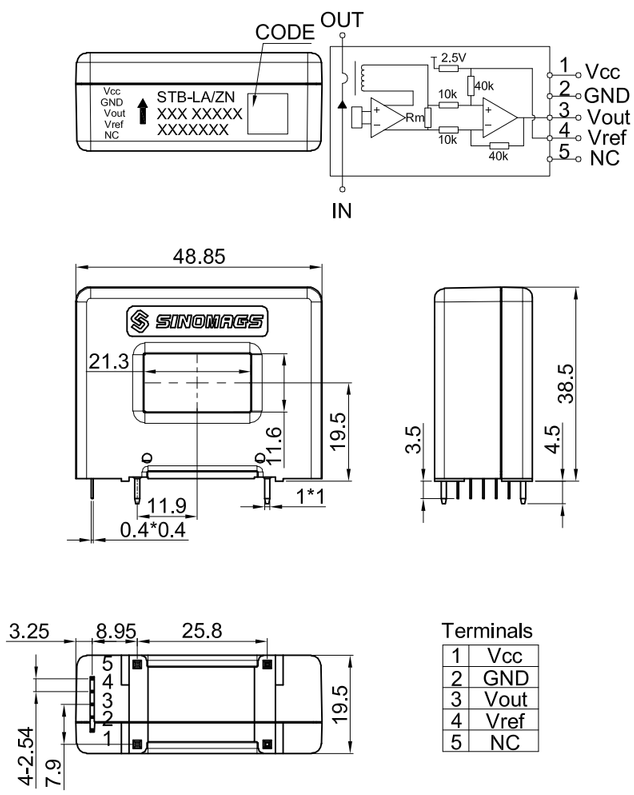
Terminals	
1	Vcc
2	GND
3	Vout
4	Vref
5	NC

STB-LA/S



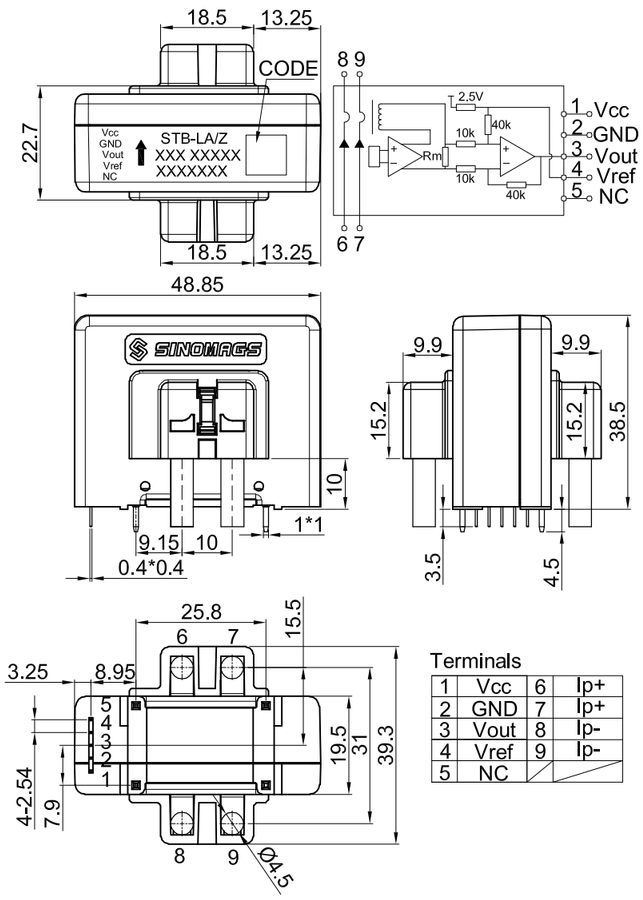
Terminals			
1	IP+	6	IP-
2	IP+	7	OUT
3	IP+	8	Vcc
4	IP-	9	GND
5	IP-	10	REF

STB-LA/ZN



Terminals	
1	Vcc
2	GND
3	Vout
4	Vref
5	NC

STB-LA/Z



Terminals			
1	Vcc	6	Ip+
2	GND	7	Ip+
3	Vout	8	Ip-
4	Vref	9	Ip-
5	NC		

Product Series: STB-LF

STB-LF

Features	Application
· Close loop design · Very fast response time of 0.5 μs · Frequency band width of 100 kHz · Good nonlinearity · Very low thermal drift · Supply voltage of ±15 V	· Solar energy · Wind energy · Uninterruptible power supply · Switching Mode Power Supply

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	−40 ~ 105
Supply voltage	Vcc	V	±15.75

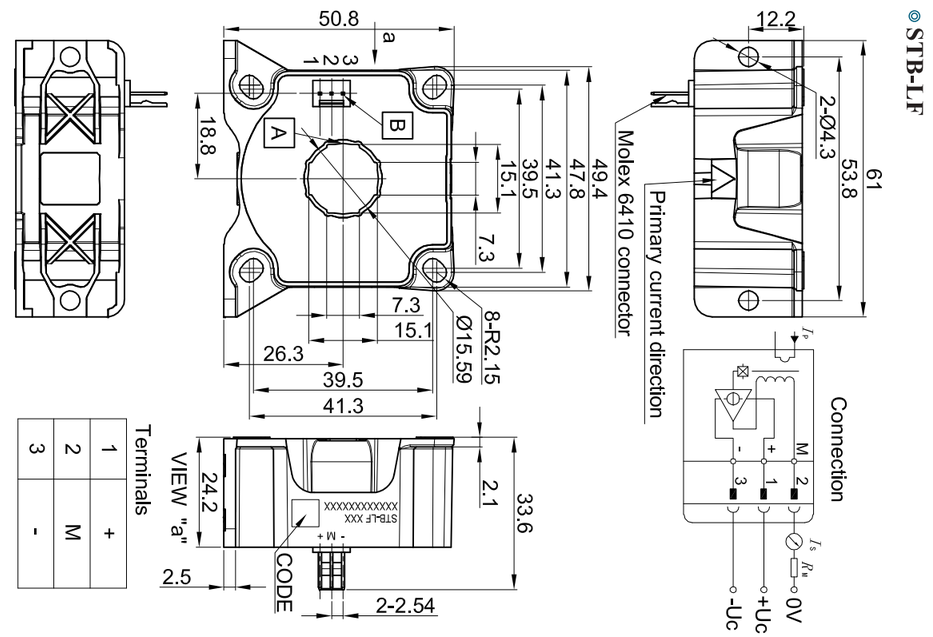
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance (pri. -sec)	Dcl	mm	10. 2	See note ①
Creepage (pri. -sec)	Dcp	mm	11	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STB-LF	STB-100LF		○	100	±200	±15	0	NA	1	100	0.5	0.2		○	

◎STB-LF



Product Series: STK-600/M

STK-600/M-MPFF

STK-600/M-MPSF

STK-600/M-PSS

STK-600/M-PSF

STK-600/M-PFF

Features

- Open loop design
- Response time of 4.6 μs
- Frequency band width of 120 kHz
- Good nonlinearity
- Wide current detection range
- Supply voltage of 3.3 V or 5.0 V are available

Application

- Uninterruptible power supply
- Motor driver
- Switching Mode Power Supply
- EV OBC
- EV DC/DC

Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	−40 ~ 125
Supply voltage	Vcc	V	5
ESD rating(HBM)	U_{ESD}	kV	4

Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Clearance (pri. -sec)	Dcl	mm	8	See note ①
Creepage (pri. -sec)	Dcp	mm	8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

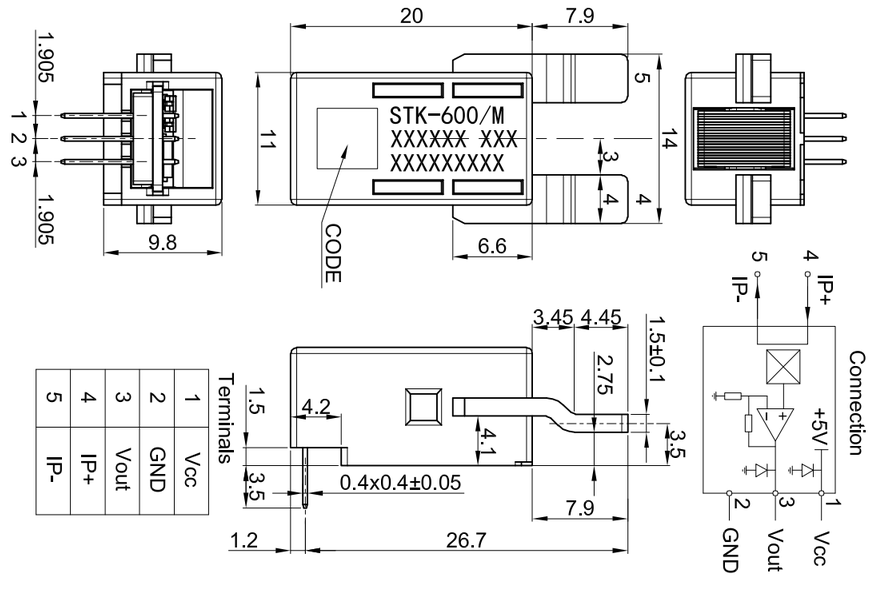
SINOMAGS
Current Sensor

Electrical parameters

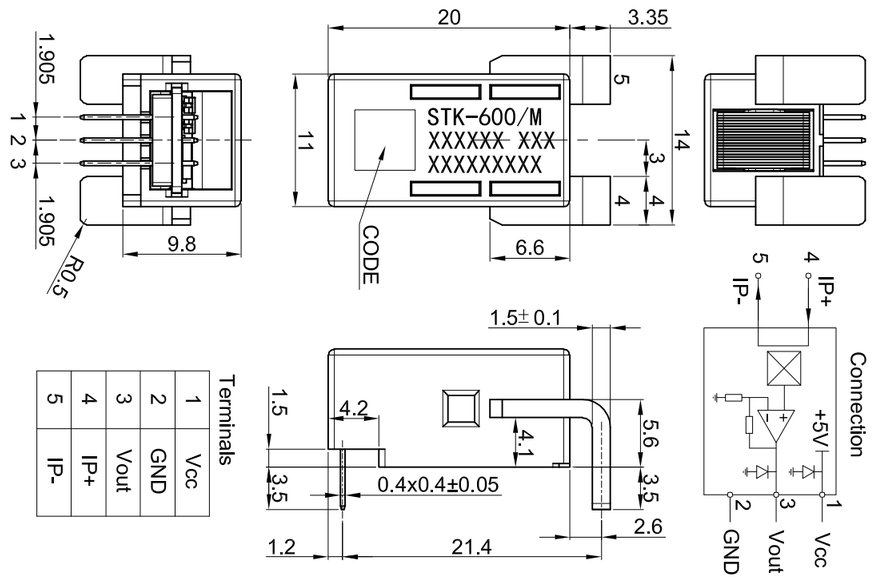
Product	Partnumber	Out: Voltage	Out: Current	Norminal Current I_pn (A)	Current detection range I_pm (A)	Supply Voltage Vcc (V)	Offset Voff, Ioff (V,mA)	Reference Voltage Vref (V)	Sensitivity Gain (mV/A, mA/A)	Frequency Bandwith f_band (kHz)	Step response time t_r (μs)	Accuracy Error Acc. (%FS)	Fluxgate	Close-loop	Open-loop
STK-600/M-M	STK-600/M-050AB5-M	○		50	±50	5	2.5	NA	40	120	4.6	3.5			○
	STK-600/M-100AB5-M	○		100	±100	5	2.5	NA	20	120	4.6	3.5			○
	STK-600/M-150AB5-M	○		100	±150	5	2.5	NA	13.33	120	4.6	3.5			○
	STK-600/M-200AB5-M	○		100	±200	5	2.5	NA	10	120	4.6	3.5			○
	STK-600/M-250AB5-M	○		100	±250	5	2.5	NA	8	120	4.6	3.5			○
	STK-600/M-050AB3-M	○		50	±50	3.3	1.65	NA	26.4	120	4.6	3.5			○
	STK-600/M-100AB3-M	○		100	±100	3.3	1.65	NA	13.2	120	4.6	3.5			○
	STK-600/M-150AB3-M	○		100	±150	3.3	1.65	NA	8.8	120	4.6	3.5			○
	STK-600/M-200AB3-M	○		100	±200	3.3	1.65	NA	6.6	120	4.6	3.5			○
	STK-600/M-250AB3-M	○		100	±250	3.3	1.65	NA	5.28	120	4.6	3.5			○
	STK-600/M-200AC3-M	○		100	±200	3.3	1.5	NA	6	120	4.6	3.5			○
	STK-600/M-250AC3-M	○		100	±250	3.3	1.5	NA	4.8	120	4.6	3.5			○
	STK-600/M-050AU5-M	○		50	50	5	0.5	NA	80	120	4.6	3.5			○
	STK-600/M-100AU5-M	○		100	100	5	0.5	NA	40	120	4.6	3.5			○
	STK-600/M-150AU5-M	○		100	150	5	0.5	NA	26.66	120	4.6	3.5			○
	STK-600/M-200AU5-M	○		100	200	5	0.5	NA	20	120	4.6	3.5			○
	STK-600/M-250AU5-M	○		100	250	5	0.5	NA	16	120	4.6	3.5			○
	STK-600/M-050AU3-M	○		50	50	3.3	0.33	NA	52.8	120	4.6	3.5			○
	STK-600/M-100AU3-M	○		100	100	3.3	0.33	NA	26.4	120	4.6	3.5			○
	STK-600/M-150AU3-M	○		100	150	3.3	0.33	NA	17.6	120	4.6	3.5			○
	STK-600/M-200AU3-M	○		100	200	3.3	0.33	NA	13.2	120	4.6	3.5			○
	STK-600/M-250AU3-M	○		100	250	3.3	0.33	NA	10.56	120	4.6	3.5			○

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-600/M	STK-600/M-050AB5	○		50	±50	5	2.5	NA	40	120	4.6	3.5			○
	STK-600/M-100AB5	○		100	±100	5	2.5	NA	20	120	4.6	3.5			○
	STK-600/M-150AB5	○		100	±150	5	2.5	NA	13.33	120	4.6	3.5			○
	STK-600/M-166AB5	○		100	±166	5	2.5	NA	12	120	4.6	3.5			○
	STK-600/M-200AB5	○		100	±200	5	2.5	NA	10	120	4.6	3.5			○
	STK-600/M-250AB5	○		100	±250	5	2.5	NA	8	120	4.6	3.5			○
	STK-600/M-300AB5	○		100	±300	5	2.5	NA	6.66	120	4.6	3.5			○
	STK-600/M-400AB5	○		100	±400	5	2.5	NA	5	120	4.6	3.5			○
	STK-600/M-050AB3	○		50	±50	3.3	1.65	NA	26.4	120	4.6	3.5			○
	STK-600/M-100AB3	○		100	±100	3.3	1.65	NA	13.2	120	4.6	3.5			○
	STK-600/M-150AB3	○		100	±150	3.3	1.65	NA	8.8	120	4.6	3.5			○
	STK-600/M-200AB3	○		100	±200	3.3	1.65	NA	6.6	120	4.6	3.5			○
	STK-600/M-250AB3	○		100	±250	3.3	1.65	NA	5.28	120	4.6	3.5			○
	STK-600/M-300AB3	○		100	±300	3.3	1.65	NA	4.4	120	4.6	3.5			○
	STK-600/M-400AB3	○		100	±400	3.3	1.65	NA	3.3	120	4.6	3.5			○
	STK-600/M-200AC3	○		100	±200	3.3	1.5	NA	6	120	4.6	3.5			○
	STK-600/M-250AC3	○		100	±250	3.3	1.5	NA	4.8	120	4.6	3.5			○
	STK-600/M-050AU5	○		50	50	5	0.5	NA	80	120	4.6	3.5			○
	STK-600/M-100AU5	○		100	100	5	0.5	NA	40	120	4.6	3.5			○
	STK-600/M-150AU5	○		100	150	5	0.5	NA	26.67	120	4.6	3.5			○
	STK-600/M-200AU5	○		100	200	5	0.5	NA	20	120	4.6	3.5			○
	STK-600/M-250AU5	○		100	250	5	0.5	NA	16	120	4.6	3.5			○
	STK-600/M-300AU5	○		100	300	5	0.5	NA	13.33	120	4.6	3.5			○
	STK-600/M-400AU5	○		100	400	5	0.5	NA	10	120	4.6	3.5			○
	STK-600/M-100AU3	○		100	100	3.3	0.33	NA	26.4	120	4.6	3.5			○
	STK-600/M-150AU3	○		100	150	3.3	0.33	NA	17.6	120	4.6	3.5			○

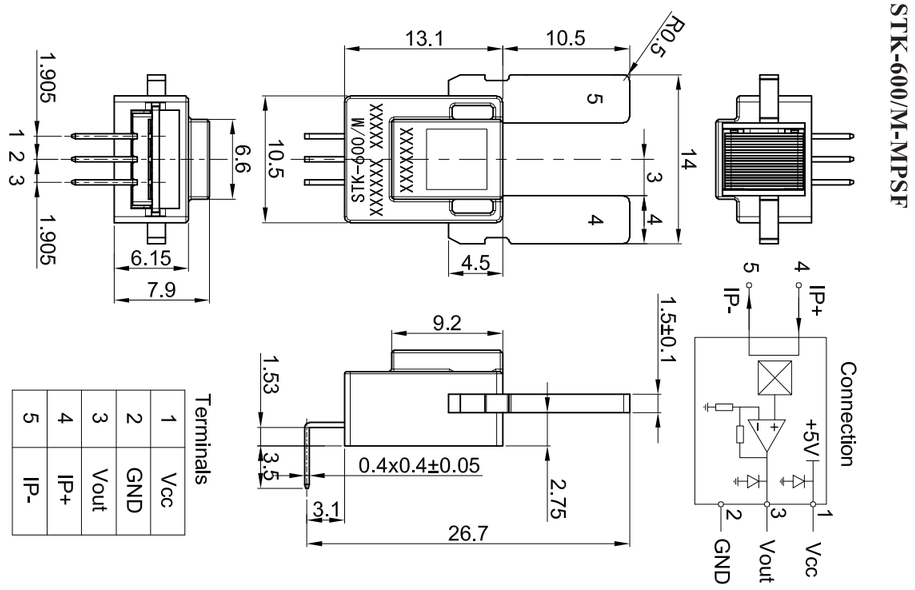
© STK-600/M-PSF



© STK-600/M-PFF

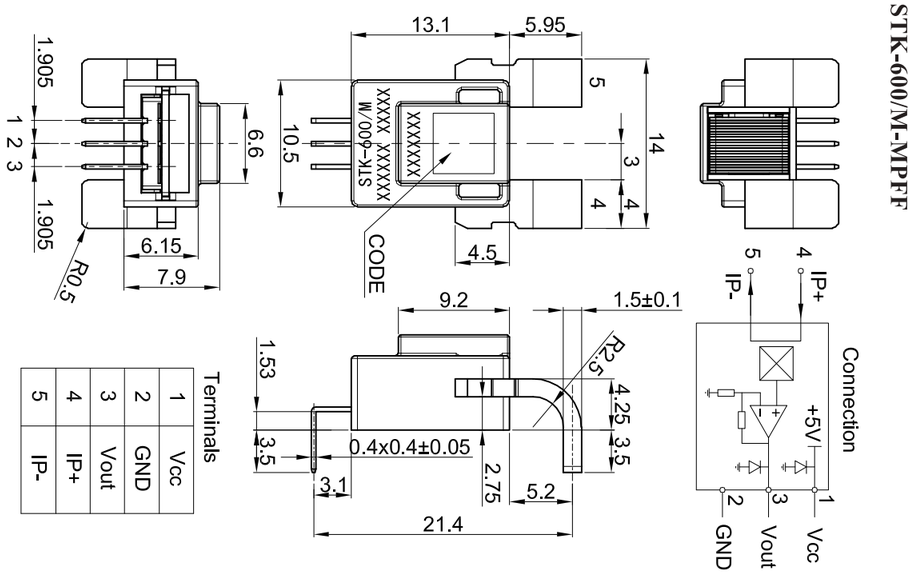


◎STK-600/M-MPSF



Terminals	
1	Vcc
2	GND
3	Vout
4	IP+
5	IP-

◎STK-600/M-MPFF



Terminals	
1	Vcc
2	GND
3	Vout
4	IP+
5	IP-

Product Series: STK-GB/M

STK-GB/M

Features	Application
· Open loop design · Response time of 3 μs · Frequency band width of 200 kHz · Good nonlinearity · Ferrite magnetic core · Supply voltage of 3.3 V or 5.0 V are available	· Switching Mode Power Supply

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	−20 ~ 85
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4

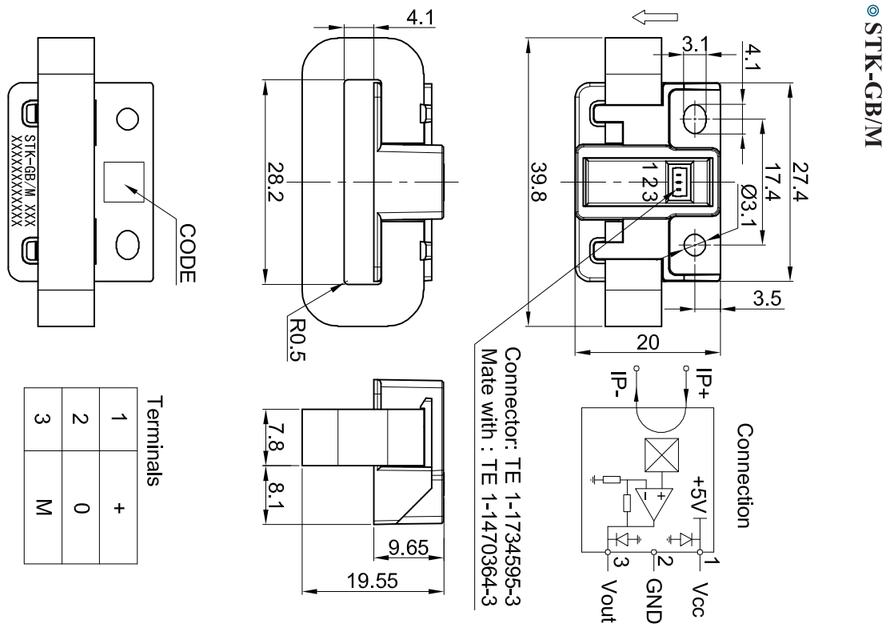
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	2	AC test 50Hz/1 min
Clearance (pri. -sec)	Dcl	mm	8	See note ①
Creepage (pri. -sec)	Dcp	mm	8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-GB/M	STK-150GB/M	○		150	±150	3.3	1.65	NA	8.00	200	3	4			○
	STK-250GB/M	○		250	±250	3.3	1.65	NA	4.80	200	3	4			○
	STK-350GB/M	○		350	±350	3.3	1.65	NA	3.42	200	3	4			○

◎STK-GB/M

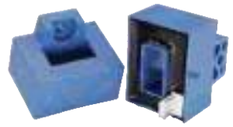


Product Series: STK-BS


STK-BS1


STK-BS/H


STK-BS/T


STK-BS/S1


STK-BS/H4


STK-BS/X


STK-BS/X4

Features	Application
· Wide current detection range · Response time of 3 μs · Frequency band width of 50 kHz · Supply voltage of ±15 V or +15 V (STK-BS/H4) or +5 V (STK-BS/S1)	· Solar energy · Wind energy · Uninterruptible power supply · Motor driver

◎Absolute parameters

Parameter	Symbol	Unit	Value	Remark
Working temperature	T_A	℃	−40 ~ 105	
Supply voltage	Vcc	V	6	STK-BS/S1
			±18	Others
ESD rating (HBM)	U_{ESD}	kV	4	

SINOMAGS
Current Sensor

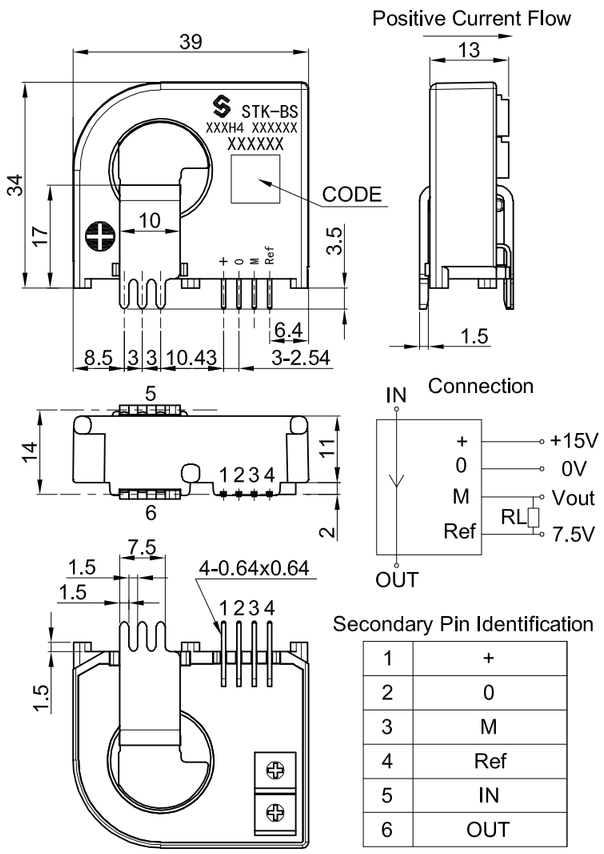
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	6	STK-BS/S1
Clearance (pri. -sec)	Dcl	mm	5.5	STK-BS/S1
			6.23	STK-BS1
			4.5	STK-BS/H
			26.1	STK-BS/X4
			11	STK-BS/T
Creepage (pri. -sec)	Dcp	mm	5.5	STK-BS/S1
			7.08	STK-BS1
			4.5	STK-BS/H
			42.8	STK-BS/X4
			11	STK-BS/T
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-BS/S1	STK-50BS/S1	○		50	±150	5	2.5	2.5	12.5	60	3.5	1			○
	STK-100BS/S1	○		100	±300	5	2.5	2.5	6.25	60	3.5	1			○
	STK-200BS/S1	○		200	±600	5	2.5	2.5	3.12	60	3.5	1			○
	STK-300BS/S1	○		300	±900	5	2.5	2.5	2.08	60	3.5	1			○
	STK-400BS/S1	○		400	±1100	5	2.5	2.5	1.56	60	3.5	1			○
	STK-500BS/S1	○		500	±1100	5	2.5	2.5	1.25	60	3.5	1			○
	STK-600BS/S1	○		600	±1100	5	2.5	2.5	1.04	60	3.5	1			○
STK-BS1	STK-50BS1	○		50	±150	±15	0	NA	80	50	5	1			○
	STK-100BS1	○		100	±300	±15	0	NA	40	50	5	1			○
	STK-200BS1	○		200	±600	±15	0	NA	20	50	5	1			○
	STK-300BS1	○		300	±900	±15	0	NA	13.33	50	5	1			○
	STK-400BS1	○		400	±900	±15	0	NA	10	50	5	1			○
	STK-500BS1	○		500	±900	±15	0	NA	8	50	5	1			○
	STK-600BS1	○		600	±900	±15	0	NA	6.66	50	5	1			○
STK-BS/H	STK-50BS/H	○		50	±150	±15	0	NA	80	50	3	1			○
	STK-100BS/H	○		100	±300	±15	0	NA	40	50	3	1			○
	STK-150BS/H	○		150	±450	±15	0	NA	26.6	50	3	1			○
	STK-200BS/H	○		200	±500	±15	0	NA	20	50	3	1			○
	STK-300BS/H	○		300	±600	±15	0	NA	13.3	50	3	1			○
	STK-400BS/H	○		400	±600	±15	0	NA	10	50	3	1			○
	STK-50BS/H1	○		50	±150	±15	0	NA	80	50	3	1			○
STK-BS/H4	STK-50BS/H4	○		50	±150	15	Vcc/2	NA	33.2	50	3	1			○
	STK-75BS/H4	○		75	±225	15	Vcc/2	NA	22.1	50	3	1			○
	STK-100BS/H4	○		100	±450	15	Vcc/2	NA	16.6	50	3	1			○
STK-BS/T	STK-200BS/T	○		200	±600	±15	0	NA	20	25	5	1			○
	STK-400BS/T	○		400	±1200	±15	0	NA	10	25	5	1			○
	STK-500BS/T	○		500	±1500	±15	0	NA	8	25	5	1			○
	STK-600BS/T	○		600	±1800	±15	0	NA	6.66	25	5	1			○
	STK-800BS/T	○		800	±2400	±15	0	NA	5	25	5	1			○
	STK-1000BS/T	○		1000	±2500	±15	0	NA	4	25	5	1			○
	STK-1200BS/T	○		1200	±2500	±15	0	NA	3.33	25	5	1			○
	STK-1500BS/T	○		1500	±2500	±15	0	NA	2.66	25	5	1			○
STK-BS/X4	STK-500BS/X4	○		500	±1500	±15	0	NA	8	25	5	1			○
	STK-600BS/X4	○		600	±1800	±15	0	NA	6.66	25	5	1			○
	STK-850BS/X4	○		850	±2550	±15	0	NA	4.7	25	5	1			○
	STK-1000BS/X4	○		1000	±3000	±15	0	NA	4	25	5	1			○
	STK-1500BS/X4	○		1500	±4500	±15	0	NA	2.66	25	5	1			○
	STK-2000BS/X4	○		2000	±5500	±15	0	NA	2	25	5	1			○
	STK-2500BS/X4	○		2500	±5500	±15	0	NA	1.6	25	5	1			○
STK-BS/X	STK-500BS/X	○		500	±1500	±15	0	NA	8	25	5	1			○
	STK-600BS/X	○		600	±1800	±15	0	NA	6.66	25	5	1			○
	STK-850BS/X	○		850	±2550	±15	0	NA	4.7	25	5	1			○
	STK-1000BS/X	○		1000	±3000	±15	0	NA	4	25	5	1			○
	STK-1500BS/X	○		1500	±4500	±15	0	NA	2.66	25	5	1			○
	STK-2000BS/X	○		2000	±5500	±15	0	NA	2	25	5	1			○
	STK-2500BS/X	○		2500	±5500	±15	0	NA	1.6	25	5	1			○

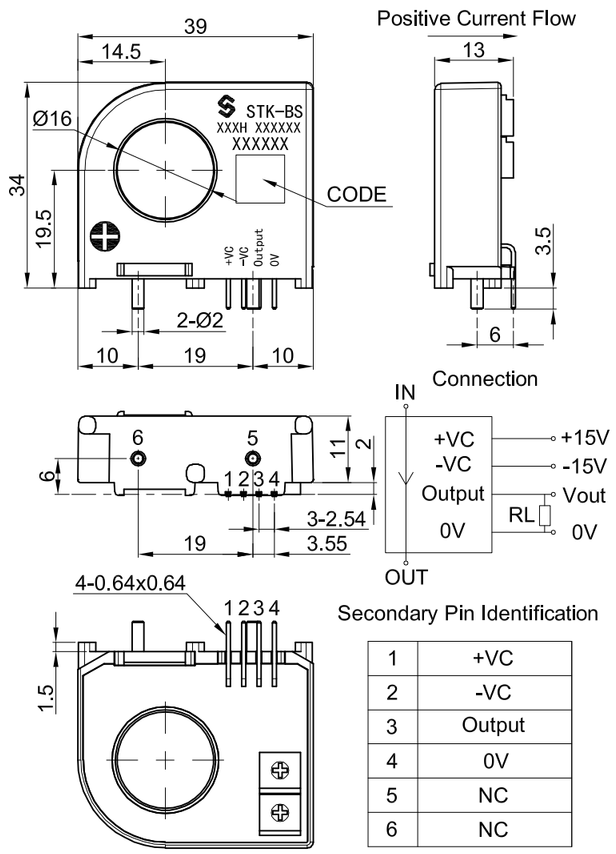
STK-BS/H4



Secondary Pin Identification

1	+
2	0
3	M
4	Ref
5	IN
6	OUT

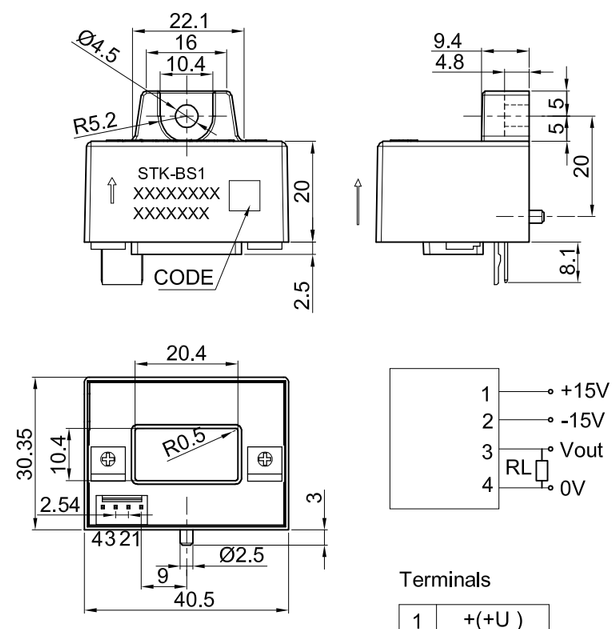
STK-BS/H



Secondary Pin Identification

1	+VC
2	-VC
3	Output
4	0V
5	NC
6	NC

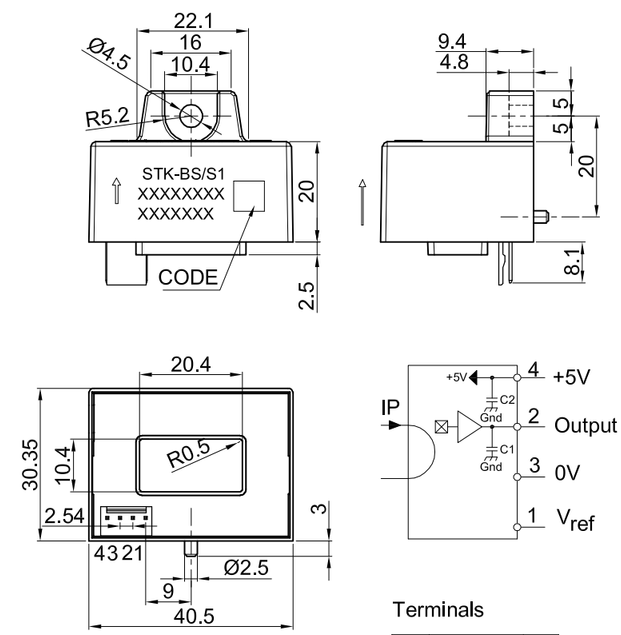
STK-BS1



Terminals

1	+(+U)
2	-(-U)
3	M(Output)
4	0(0V)

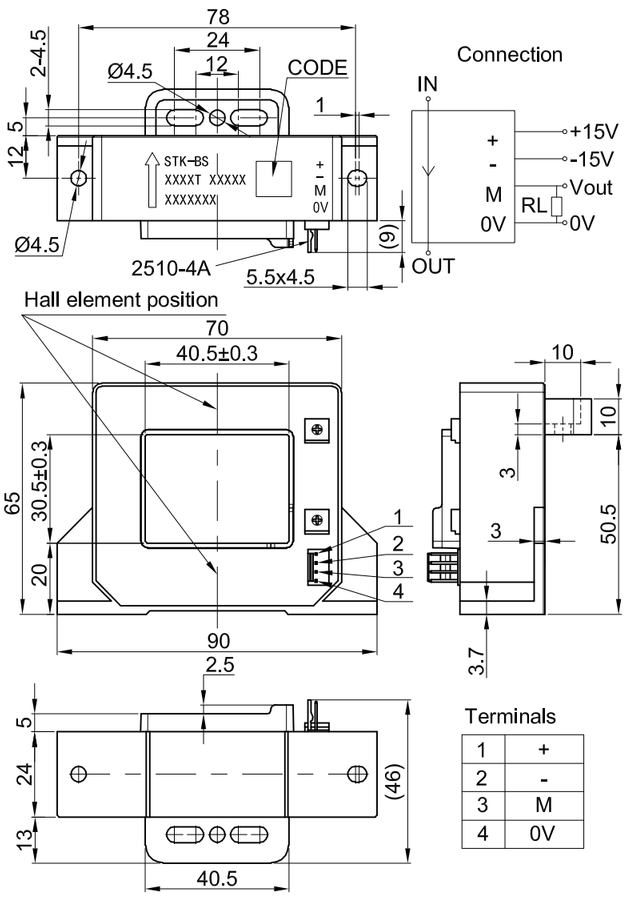
STK-BS/S1



Terminals

1	V_{ref}	R
2	Output	M
3	0V	0
4	+5V	+

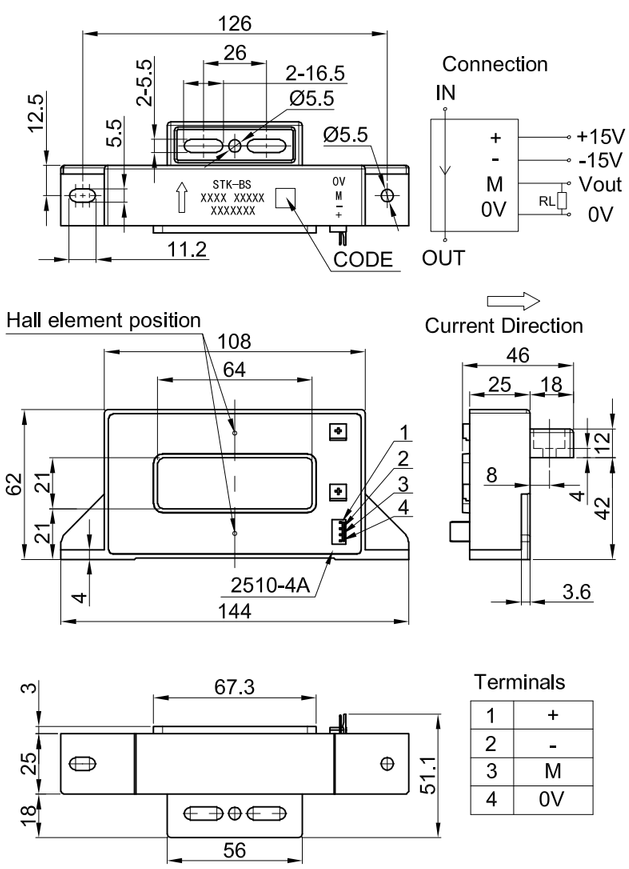
STK-BS/T



Terminals

1	+
2	-
3	M
4	0V

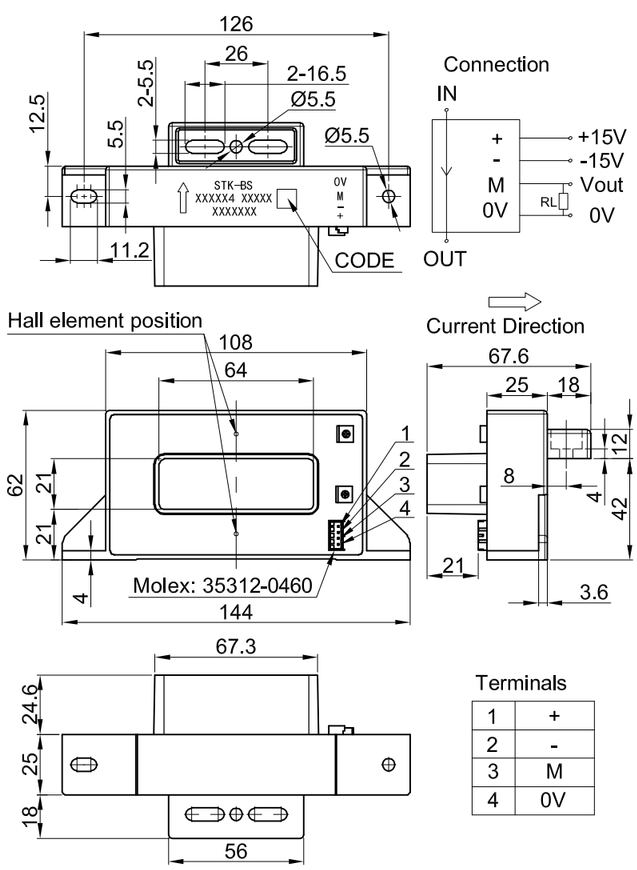
STK-BS/X



Terminals

1	+
2	-
3	M
4	0V

STK-BS/X4



Terminals

1	+
2	-
3	M
4	0V

Product Series: STB-CAB

STB-CAB500, STB-CAB540,STB-CAB600

STB-CAB1500

Features
· Close loop design for high accuracy channel · Open loop design for redundant channel (STB-CAB1500) · CANBUS digital output · Excellent EMC performance · Good nonlinearity · Very low accuracy thermal drift · High isolation voltage · Supply voltage of 12 V

Application
· EV BMS · Energy storage system

Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 85
Supply voltage	Uc	V	12
ESD rating(HBM)	U_{ESD}	kV	4

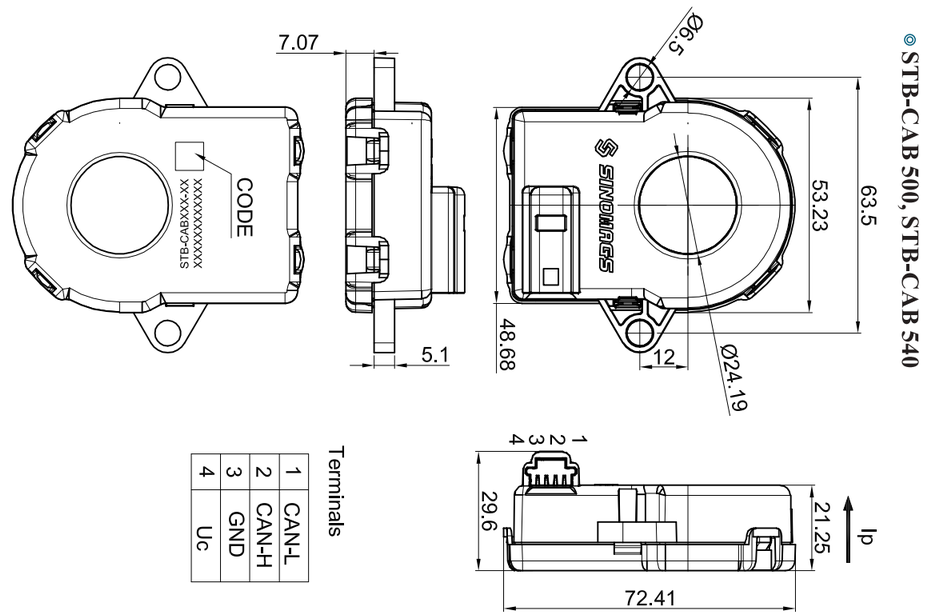
Isolation parameter

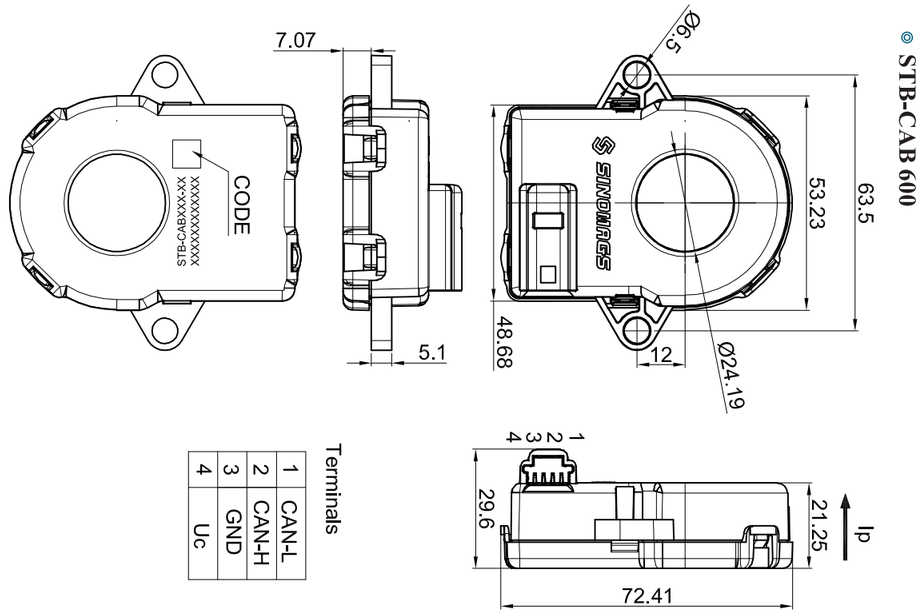
Paramete	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	Ud	kV	2.5	
Impulse withstand voltage 1.2/50μs	Ûw	kV	4	
Clearance (pri. -sec)	Dcl	mm	7	See note ①
Creepage (pri. -sec)	Dcp	mm	7	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

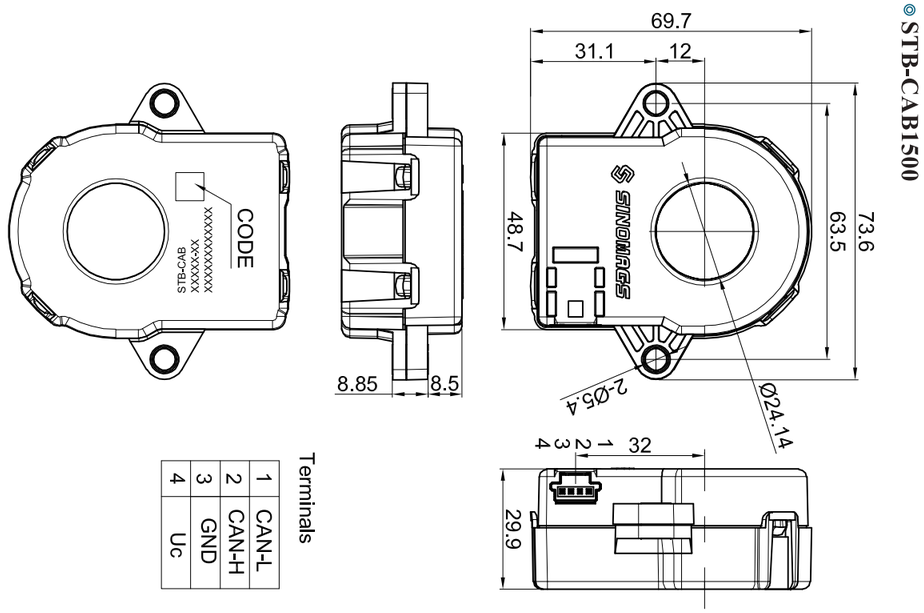
Electrical parameters

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Digita	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc (%FS)			
STB-CAB	STB-CAB500		○	±500	±500	12	0	NA	NA	NA	NA	0.5		○	
	STB-CAB540		○	±540	±540	12	0	NA	NA	NA	NA	0.5		○	
	STB-CAB600X-XXC		○	±600	±600	12	0	NA	NA	NA	NA	0.5		○	
	STB-CAB1500		○	±1500	±1500	12	0	NA	NA	NA	NA	⩽±10A，±100mA ±10A~50A，±1% ±50A~400A，±0.5% 400A~1500A，±1%		○	○

STB-CAB 500, STB-CAB 540







Product Series: SHK-VBS


SHK-VBS2/D


SHK-VBS/D


SHK-VBS3


SHK-VBS3/S4


SHK-VBS3/S5


SHK-VBS5


SHK-VBS6


SHK-VBS/TE


SHK-VBS/TH


SHK-VBS/TL


SHK-VBS/T3


SHK-VBS/T4


SHK-VBS-T5


SHK-VBS-T6


SHK-VBS-T7


SHK-VBS-T8


SHK-VBS-T9

Features

- Wide current detection range
- Single channel or multi-channel current detection
- Ratiometric output
  or Nonratiometric output (SHK-VBS2/D)
- Response time of 2 ~ 4 μs
- Frequency band width of 40 kHz
- Excellent EMC performance

Application

- EV BMS
- EV MCU

◎Absolute parameters

Parameter	Symbol	Unit	Value	Remark
Working temperature	T_A	℃	-40 ~ 125	/
Supply voltage	Vcc	V	6	/
ESD rating(HBM)	U_{ESD}	kV	4	/

◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Clearance (pri. -sec)	Dcl	mm	4.5	SHK-VBS5
			4.85	SHK-VBS6
			9	SHK-VBS/T3, T4
			10.2	SHK-VBS-T5
			4	SHK-VBS-T6
			4.2	SHK-VBS-T7
			5.08	SHK-VBS-T8
			8.4	SHK-VBS-T9
Creepage (pri. -sec)	Dcp	mm	4.5	SHK-VBS5
			4.85	SHK-VBS6
			9	SHK-VBS/T3,T4
			11.6	SHK-VBS-T5
			5.1	SHK-VBS-T6
			4.2	SHK-VBS-T7
			5.08	SHK-VBS-T8
			8.4	SHK-VBS-T9
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	PLC3	

◎Electrical parameters

Product	Partnumber	Out: Voltage	Out: Digital	Out: Current	Norminal Current I_pn (A)	Current detection range I_pm (A)	Supply Voltage Vcc (V)	Offset Voff, Ioff (V,mA)	Reference Voltage Vref (V)	Sensitivity Gain (V/A)	Frequency Bandwith f_band (kHz)	Step response time t_r (μs)	Accuracy Error Acc (%FS)	Fluxgate	Closed-loop	Open-loop
SHK-VBS2	SHK-545VBS2/D	○			545	±1090	5.0	2.5	2.5	1.83	NC	3.5	1.5%			○
SHK-VBS/D	SHK-VBS/D-A	○			±75	± 75	5	2.5	NA	26.67	10	18	2.5			○
		○			±1000	±1000			NA	2			44			○
	SHK-VBS/D-B	○			±75	± 75	5	2.5	NA	26.67	10	18	2.5			○
		○			±750	±750			NA	2.7			16			○
	SHK-VBS/D-C	○			±75	±75	5	2.5	NA	26.67	10	18	2.5			○
		○			±500	±500			NA	4			15			○
	SHK-VBS/D-D	○			±30	± 30	5	2.5	NA	66.7	10	18	1			○
		○			±350	±350				5.7			9.5			○
SHK-VBS3	SHK-100VBS3	○			100	± 100	5±5%	Vcc/2	NA	5	100	3.5	1			○
	SHK-200VBS3	○			200	± 200	5±5%	Vcc/2	NA	4	100	3.5	1			○
	SHK-300VBS3	○			300	± 300	5±5%	Vcc/2	NA	3.33	100	3.5	1			○
	SHK-400VBS3	○			400	± 400	5±5%	Vcc/2	NA	5	100	3.5	1			○
	SHK-500VBS3	○			500	± 500	5±5%	Vcc/2	NA	4	100	3.5	1			○
	SHK-600VBS3	○			600	± 600	5±5%	Vcc/2	NA	3.33	100	3.5	1			○
	SHK-700VBS3	○			700	± 700	5±5%	Vcc/2	NA	2.85	100	3.5	1			○
	SHK-800VBS3	○			800	± 800	5±5%	Vcc/2	NA	2.50	100	3.5	1			○
	SHK-900VBS3	○			900	± 900	5±5%	Vcc/2	NA	2.22	100	3.5	1			○
SHK-VBS3/S2	SHK-400VBS3/S2	○			400	± 400	5	Vcc/2	NA	5	100	3.5	3.5			○
	SHK-500VBS3/S2	○			500	± 500	5	Vcc/2	NA	4	100	3.5	3.5			○
	SHK-600VBS3/S2	○			600	± 600	5	Vcc/2	NA	3.33	100	3.5	3.5			○
	SHK-700VBS3/S2	○			700	± 700	5	Vcc/2	NA	2.83	100	3.5	3.5			○
	SHK-800VBS3/S2	○			800	± 800	5	Vcc/2	NA	2	100	3.5	3.5			○
	SHK-900VBS3/S2	○			900	± 900	5	Vcc/2	NA	2	100	3.5	3.5			○
SHK-VBS3/S4	SHK-400VBS3/S4	○			400	± 400	5	Vcc/2	NA	5	100	3.5	3.5			○
	SHK-500VBS3/S4	○			500	± 500	5	Vcc/2	NA	4	100	3.5	3.5			○
	SHK-600VBS3/S4	○			600	± 600	5	Vcc/2	NA	3.33	100	3.5	3.5			○
	SHK-700VBS3/S4	○			700	± 700	5	Vcc/2	NA	2.83	100	3.5	3.5			○
	SHK-800VBS3/S4	○			800	± 800	5	Vcc/2	NA	2.5	100	3.5	3.5			○
	SHK-900VBS3/S4	○			900	± 900	5	Vcc/2	NA	2.22	100	3.5	3.5			○

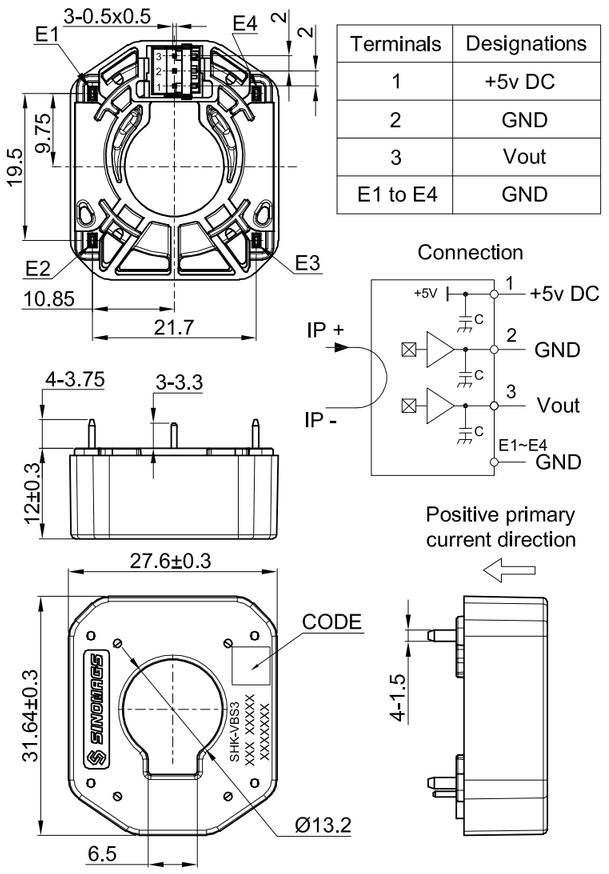
◎Electrical parameters

Product	Partnumber	Out			Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Closed-loop	Open-loop
		Voltage	Digital	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (V/A)	f_band (kHz)	t_r (μs)	Acc (%FS)			
SHK-VBS3/S5	SHK-400VBS3/S5	○			400	±400	5	Vcc/2	NA	5	100	3.5	3.5			○
	SHK-500VBS3/S5	○			500	±500	5	Vcc/2	NA	4	100	3.5	3.5			○
	SHK-600VBS3/S5	○			600	±600	5	Vcc/2	NA	3.33	100	3.5	3.5			○
	SHK-700VBS3/S5	○			700	±700	5	Vcc/2	NA	2.83	100	3.5	3.5			○
	SHK-800VBS3/S5	○			800	±800	5	Vcc/2	NA	2.5	100	3.5	3.5			○
	SHK-900VBS3/S5	○			900	±900	5	Vcc/2	NA	2.22	100	3.5	3.5			○
SHK-VBS6/S2	SHK-VBS6/100-S2	○			100	±100	5	Vcc/2	NA	20	40	2	1			○
	SHK-VBS6/200-S2	○			200	±200	5	Vcc/2	NA	10	40	2	1			○
	SHK-VBS6/300-S2	○			300	±300	5	Vcc/2	NA	6.67	40	2	1			○
	SHK-VBS6/400-S2	○			400	±400	5	Vcc/2	NA	5	40	2	1			○
	SHK-VBS6/500-S2	○			500	±500	5	Vcc/2	NA	4	40	2	1			○
	SHK-VBS6/600-S2	○			600	±600	5	Vcc/2	NA	3.33	40	2	1			○
	SHK-VBS6/700-S2	○			700	±700	5	Vcc/2	NA	2.85	40	2	1			○
	SHK-VBS6/800-S2	○			800	±800	5	Vcc/2	NA	2.50	40	2	1			○
	SHK-VBS6/900-S2	○			900	±900	5	Vcc/2	NA	2.22	40	2	1			○
	SHK-VBS6/1000-S2	○			1000	±1000	5	Vcc/2	NA	2	40	2	1			○
	SHK-VBS6/1100-S2	○			1100	±1100	5	Vcc/2	NA	1.82	40	2	1			○
	SHK-VBS6/1200-S2	○			1200	±1200	5	Vcc/2	NA	1.67	40	2	1			○
	SHK-VBS6/1500-S2	○			1500	±1500	5	Vcc/2	NA	1.33	40	2	1			○
SHK - VBS/TE	SHK-VBS-TE-200-S2	○			±200	NA	5	2.5	NA	10	40	4	2.5			○
SHK - VBS/TH	SHK-VBS-TH-660-S2	○			660	±660	5	3.03	NA	3.03	40	2	3.5			○
	SHK-VBS-TH-750-S2	○			750	±750	5	3.03	NA	2.66	40	2	3.5			○
SHK-VBS/TL	SHK-VBS-TL-800-S2	○			800	±800	5	NA	NA	2.5	40	2	NA			○
	SHK- VBS-TL-1000-S2	○			1000	±1000	5	NA	NA	2	40	2	NA			○
	SHK- VBS-TL-1200-S2	○			1200	±1200	5	NA	NA	1.07	40	2	NA			○
SHK - VBS -S1	SHK-VBS-S1-20AC	○			±20	±62.5	5	1.65	1.65	24	25	10	3			○
	SHK-VBS-S1-40AC	○			±40	±125	5	1.65	1.65	12	25	10	3			○

◎Electrical parameters

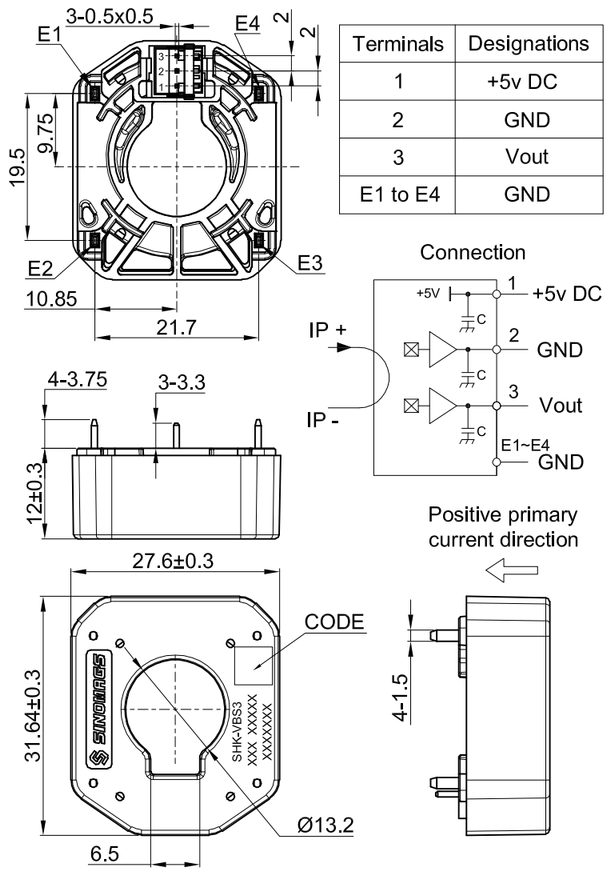
Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
SHK-VBS5	SHK-100VBS5	○		100	±100	5	Vcc/2	NA	20	100	3.5	1			○
	SHK-200VBS5	○		200	±200	5	Vcc/2	NA	10	100	3.5	1			○
	SHK-300VBS5	○		300	±300	5	Vcc/2	NA	6.66	100	3.5	1			○
	SHK-400VBS5	○		400	±400	5	Vcc/2	NA	5	100	3.5	1			○
	SHK-500VBS5	○		500	±500	5	Vcc/2	NA	4	100	3.5	1			○
	SHK-600VBS5	○		600	±600	5	Vcc/2	NA	3.33	100	3.5	1			○
	SHK-700VBS5	○		700	±700	5	Vcc/2	NA	2.85	100	3.5	1			○
	SHK-800VBS5	○		800	±800	5	Vcc/2	NA	2.5	100	3.5	1			○
	SHK-900VBS5	○		900	±900	5	Vcc/2	NA	2.22	100	3.5	1			○
SHK-VBS-T	SHK-545VBS/T3	○		545	±1090	5	Vcc/2	NA	1.83	100	3.5	2.5			○
	SHK-545VBS/T4	○		545	±1090	5	Vcc/2	NA	1.83	100	3.5	2.5			○
	SHK-VBS-T5-300-S2	○		300	±300	5	Vcc/2	NA	6.67	40	2	1			○
	SHK-VBS-T6-800-S2	○		800	±800	5	Vcc/2	NA	2.5	40	2	5.5			○
	SHK-VBS-T6-900-S2	○		900	±900	5	Vcc/2	NA	2.22	40	2	5.5			○
	SHK-VBS-T6-1000-S2	○		1000	±1000	5	Vcc/2	NA	2	40	2	5.5			○
	SHK-VBS-T6-1100-S2	○		1100	±1100	5	Vcc/2	NA	1.82	40	2	5.5			○
	SHK-VBS-T6-1200-S2	○		1200	±1200	5	Vcc/2	NA	1.67	40	2	5.5			○
	SHK-VBS-T7-600-S2	○		600	±300 ±600	5	Vcc/2	NA	6.67 3.33	40	2	1			○
	SHK-VBS-T8-300-S2	○		300	±300	5	Vcc/2	NA	6.67	40	4	1			○
	SHK-VBS-T8-600-S2	○		600	±600	5	Vcc/2	NA	3.33	40	4	1			○
	SHK-VBS-T8-700-S2	○		700	±700	5	Vcc/2	NA	2.85	40	4	1			○
	SHK-VBS-T8-800-S2	○		800	±800	5	Vcc/2	NA	2.5	40	4	1			○
	SHK-VBS-T8-900-S2	○		900	±900	5	Vcc/2	NA	2.22	40	4	1			○
	SHK-VBS-T8-1000-S2	○		1000	±1000	5	Vcc/2	NA	2	40	4	1			○
	SHK-VBS-T8-1100-S2	○		1100	±1100	5	Vcc/2	NA	1.82	40	4	1			○
	SHK-VBS-T8-1200-S2	○		1200	±1200	5	Vcc/2	NA	1.67	40	4	1			○
	SHK-VBS-T9-900-S2	○		900	±900	5	Vcc/2	NA	2.22	40	2	1			○

SHK-VBS3



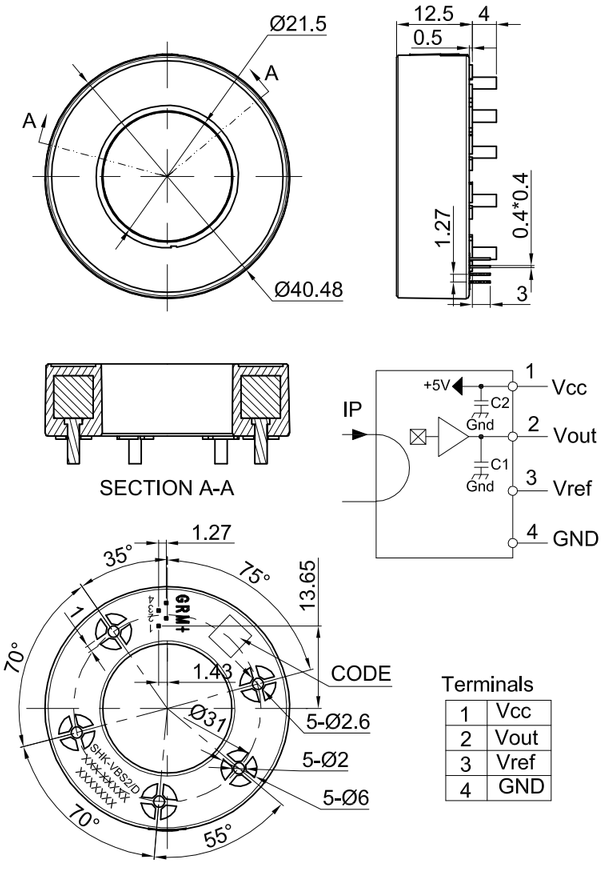
Terminals	Designations
1	+5v DC
2	GND
3	Vout
E1 to E4	GND

SHK-VBS3/S2



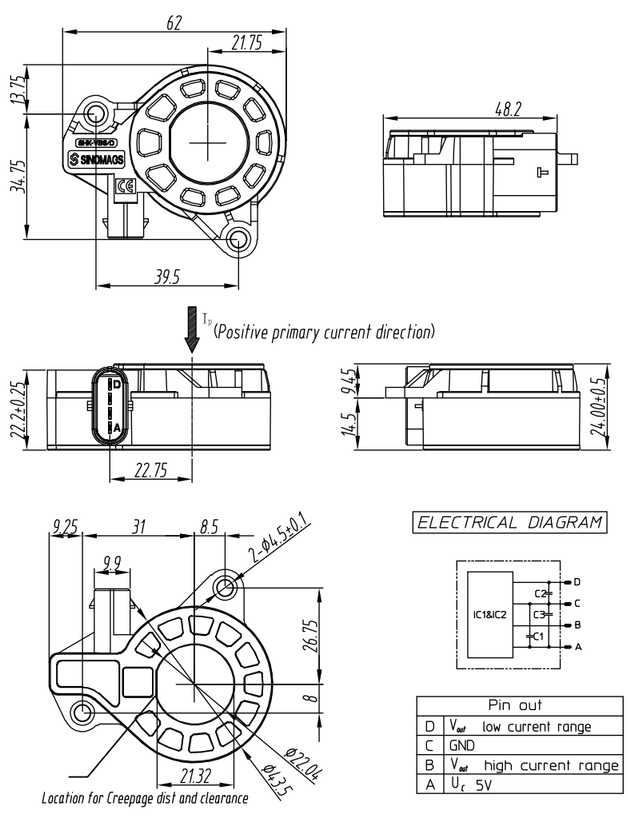
Terminals	Designations
1	+5v DC
2	GND
3	Vout
E1 to E4	GND

SHK-VBS2/D



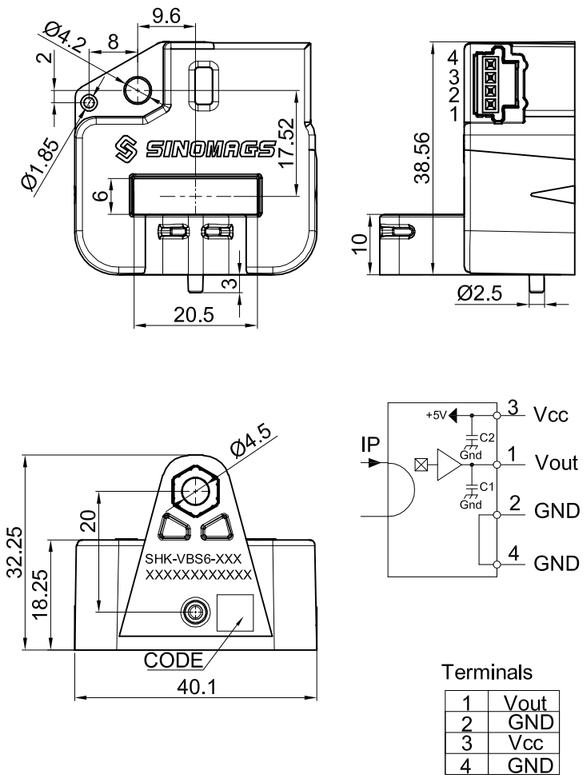
Terminals	
1	Vcc
2	Vout
3	Vref
4	GND

SHK-VBS/D



Pin out	
D	V_{out} low current range
C	GND
B	V_{out} high current range
A	U_c 5V

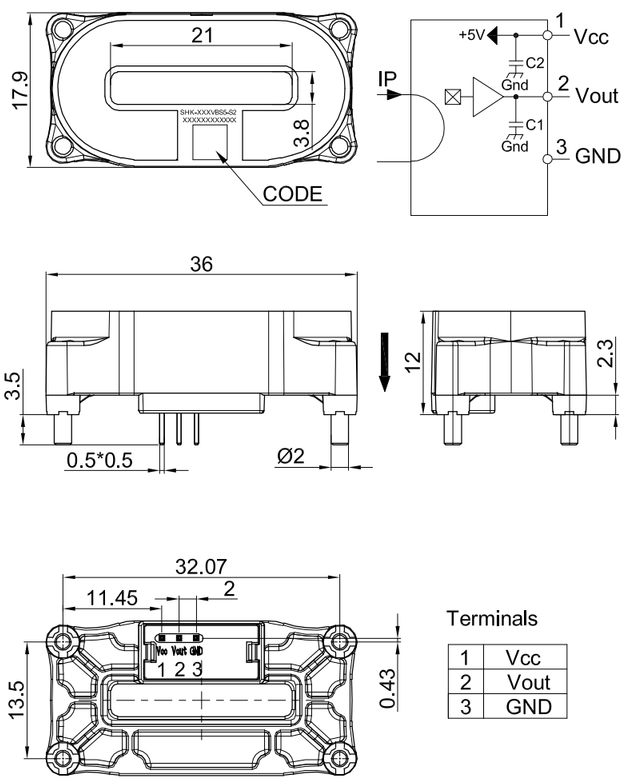
SHK-VBS6/S2



Terminals

1	Vout
2	GND
3	Vcc
4	GND

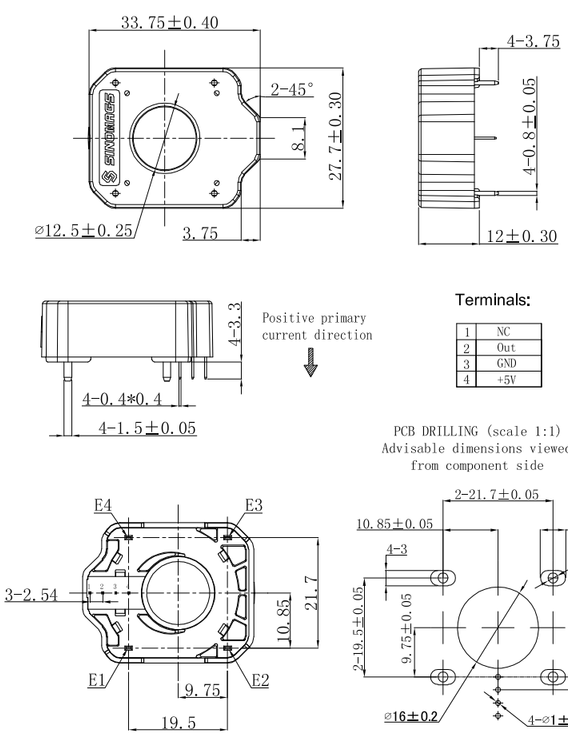
SHK-VBS5



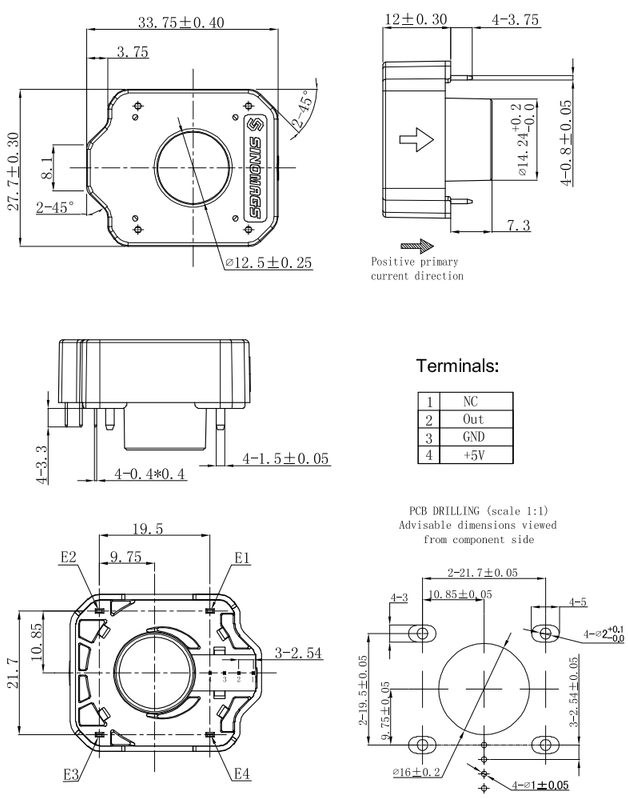
Terminals

1	Vcc
2	Vout
3	GND

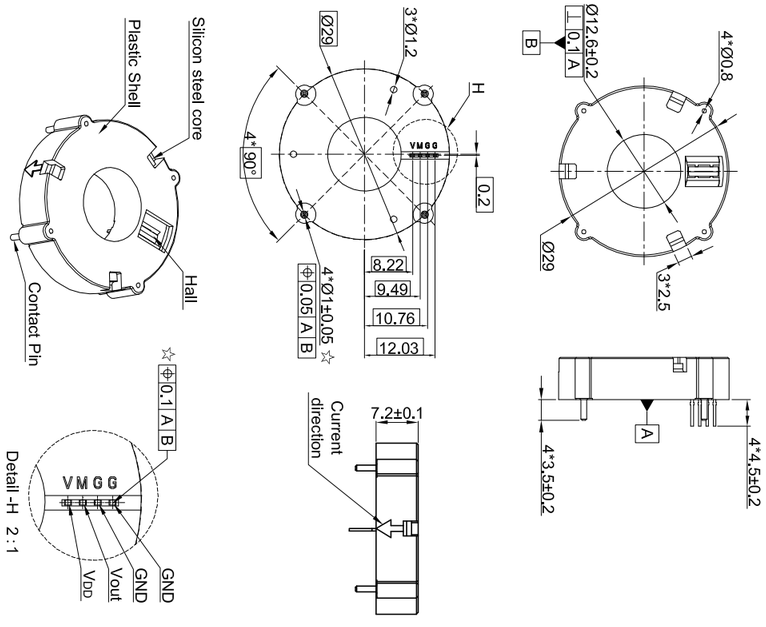
SHK-VBS3/S4



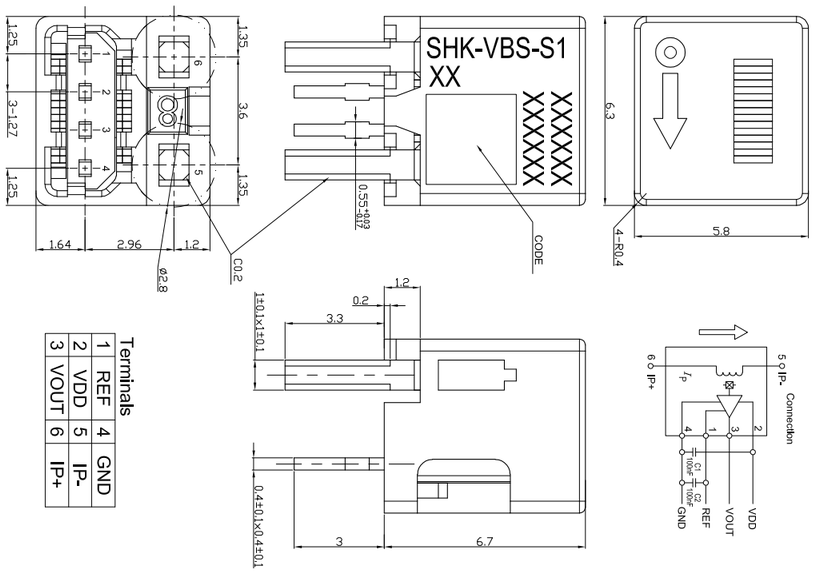
SHK-VBS3/S5



SHK-VBS/TE

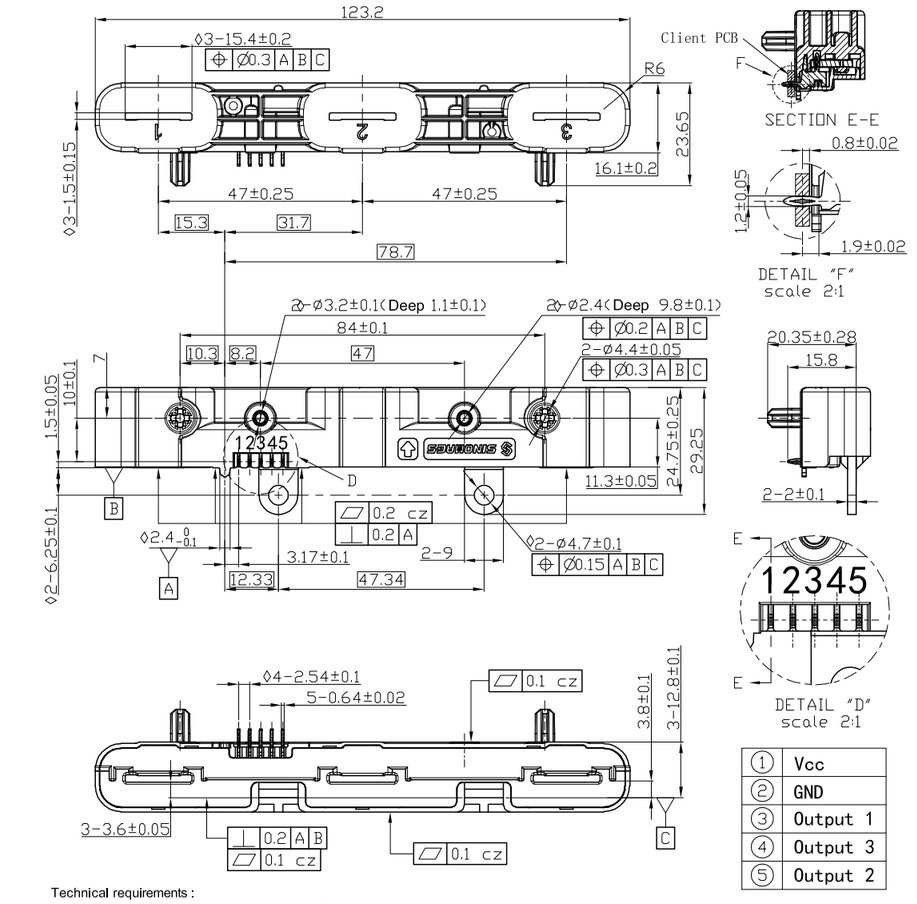


SHK-VBS/S1



Terminals			
1	REF	4	GND
2	VDD	5	IP-
3	VOUT	6	IP+

SHK-VBS-TH

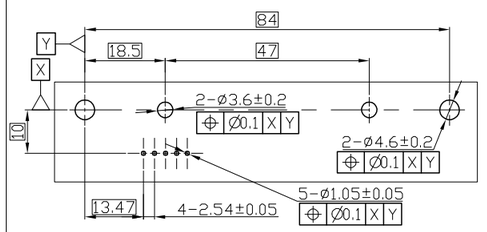


①	Vcc
②	GND
③	Output 1
④	Output 3
⑤	Output 2

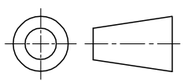
Technical requirements :

1、Focus dimensions : the dimensions marked with a rhombus as the focus control dimensions ;
2、The product shall be free of deformation , burr , crack and other defects , and the internal cleaning test of the product shall refer to the ISO16232 standard ;
3、General tolerance :
0-6 ± 0.1
6-30 ± 0.2
30-120 ± 0.3
4、The working temperature range of the product is -40 ~ 125 ℃ ;
5、The shell assembly is composed of plastic shell , metal insert and magnetic core ;
The material of metal insert is A5052 ;
The material of plastic shell is PBT+30GF , which flame retardancy meets UL94-V0 and CTI meets PLC0 , and it's color is black ;
6、Install self-tapping screws at two step holes (DELTA PT© Φ3 wn5451) ; Torque : 0.8 N·m ± 5% ;
Install M4 bolts on two fixing plates ; Torque : 2 N·m ± 10% ;
7、Product weight : 72 ± 3g ;
8、PCB pressing force : Min ≥ 100 N·m ， Max ≤ 500 N·m .

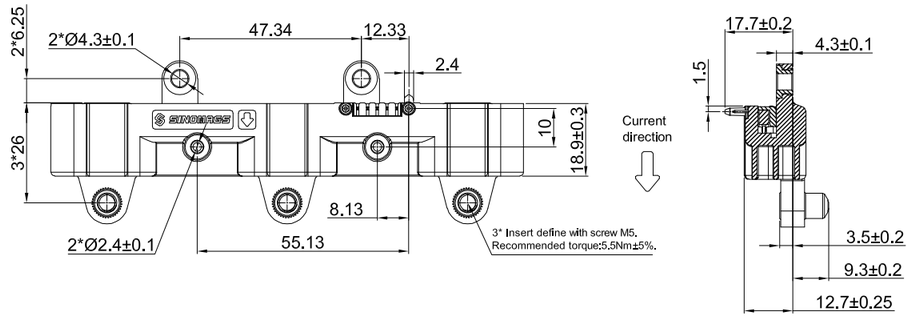
PCB installation size recommendations

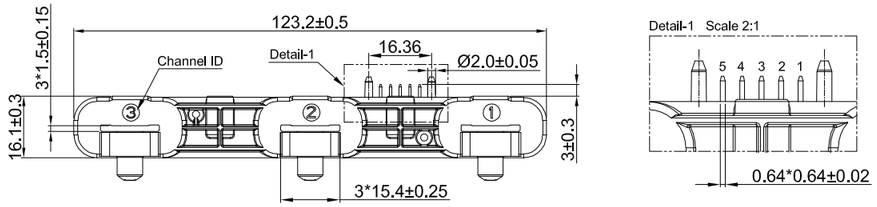


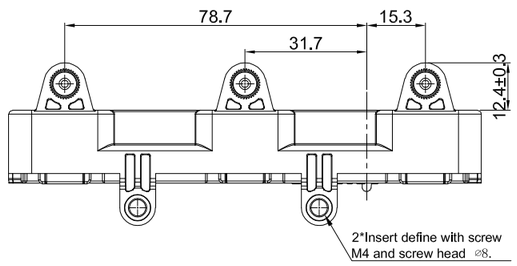
1、PCB thickness : 1.6 ± 0.15mm ;
2、Minimum hole wall copper thickness : 20μm ;
3、The coating material is Au , 1-3μm .



SHK-VBS-TL



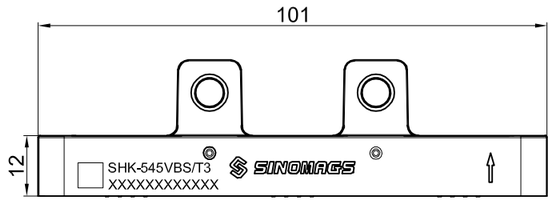


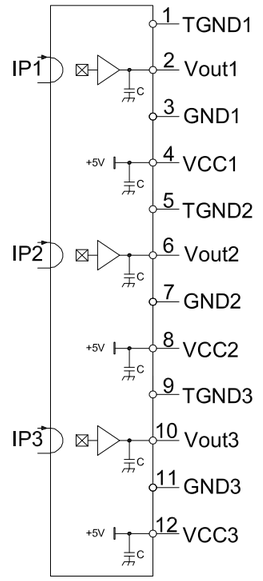


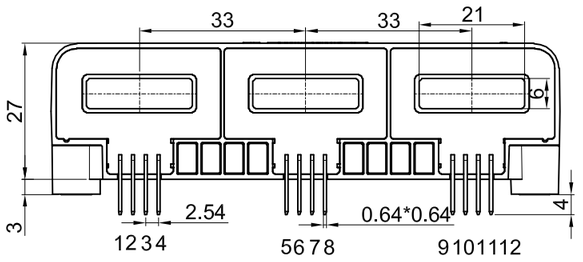
Terminals

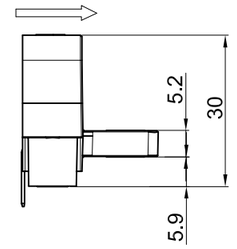
1	Vcc
2	GND
3	Output 1
4	Output 3
5	Output 2

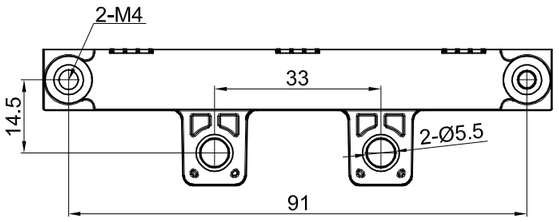
SHK-VBS/T3







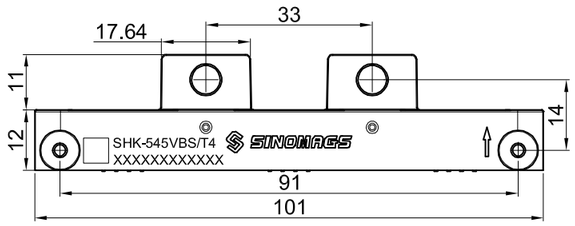


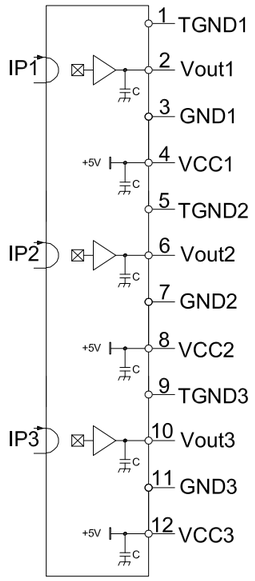


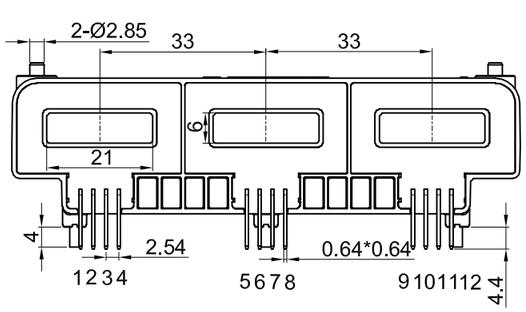
Terminals

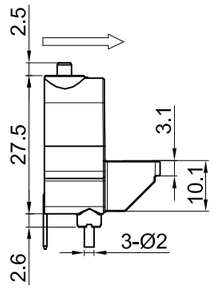
1	TGND1	5	TGND2	9	TGND3
2	Vout1	6	Vout2	10	Vout3
3	GND1	7	GND2	11	GND3
4	VCC1	8	VCC2	12	VCC3

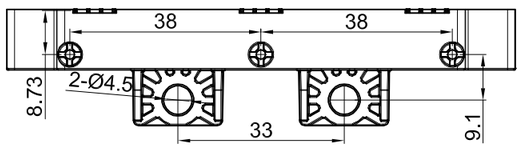
SHK-VBS/T4







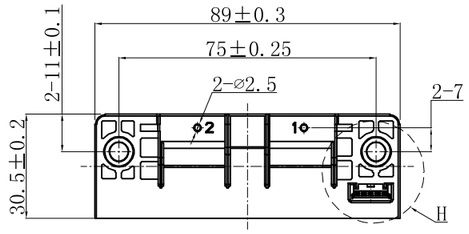


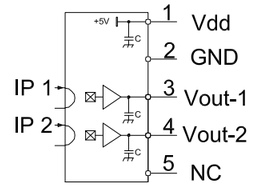


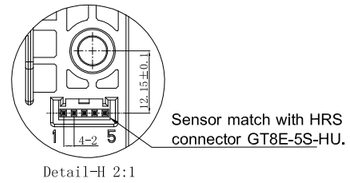
Terminals

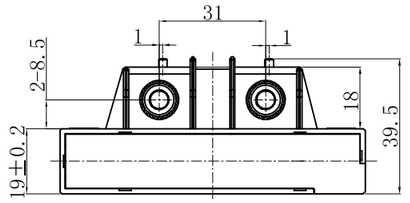
1	TGND1	5	TGND2	9	TGND3
2	Vout1	6	Vout2	10	Vout3
3	GND1	7	GND2	11	GND3
4	VCC1	8	VCC2	12	VCC3

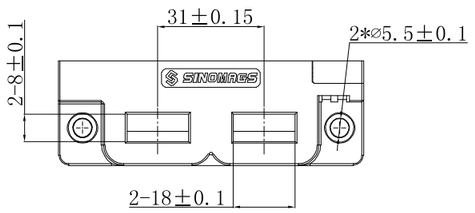
SHK-VBS-T5

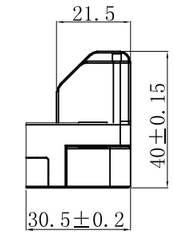


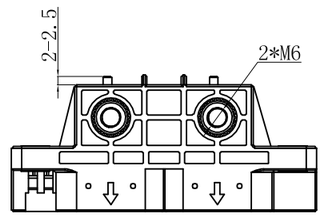








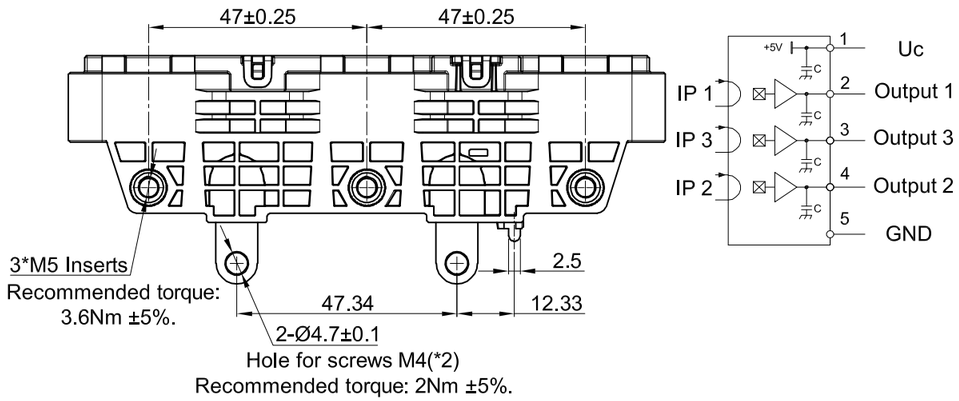


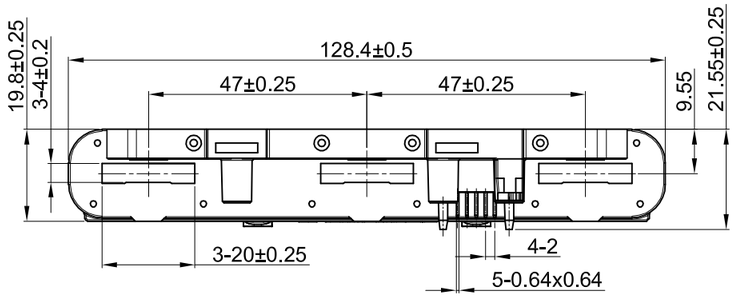


Terminals:

Pin 1	Vdd
Pin 2	GND
Pin 3	Vout-1
Pin 4	Vout-2
Pin 5	NC

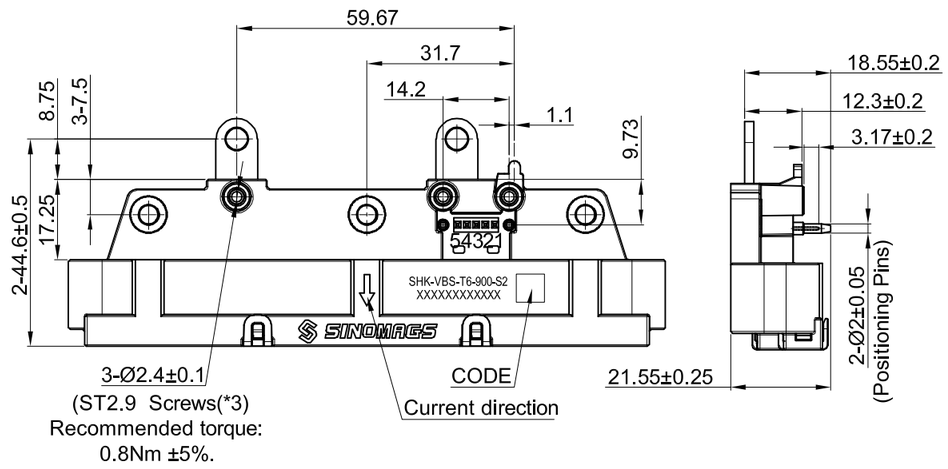
SHK-VBS-T6



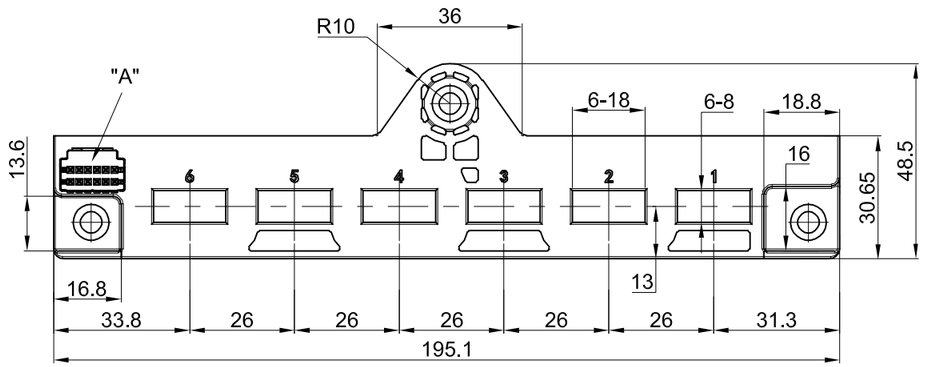


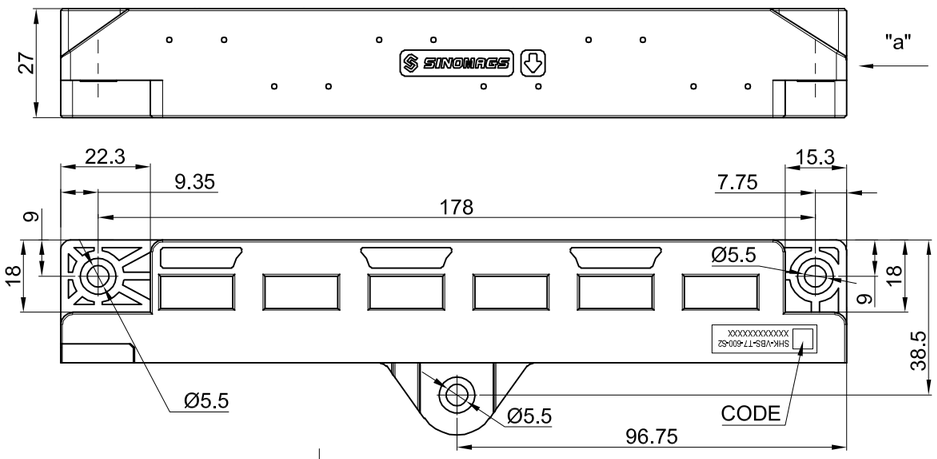
Terminals

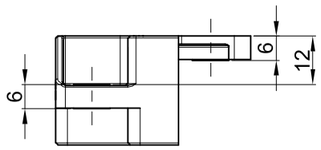
1	Uc
2	GND
3	Output 1
4	Output 3
5	Output 2



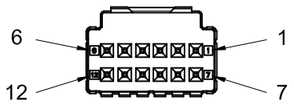
SHK-VBS-T7







VIEW "a"



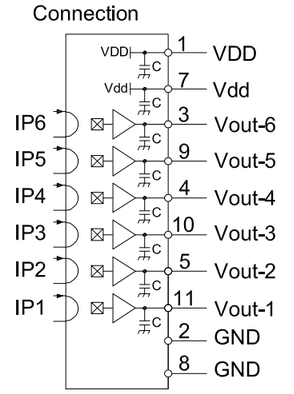
DETAIL "A"
SCALE 2:1

Terminals

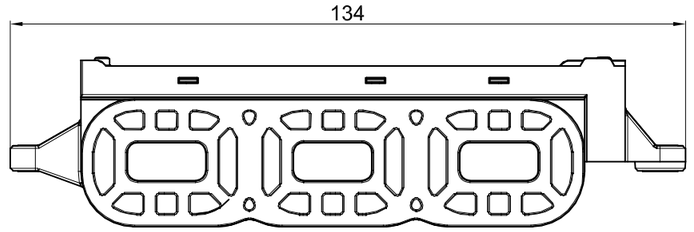
1	VDD	7	Vdd
2	GND	8	GND
3	Vout-6	9	Vout-5
4	Vout-4	10	Vout-3
5	Vout-2	11	Vout-1
6	NC	12	NC

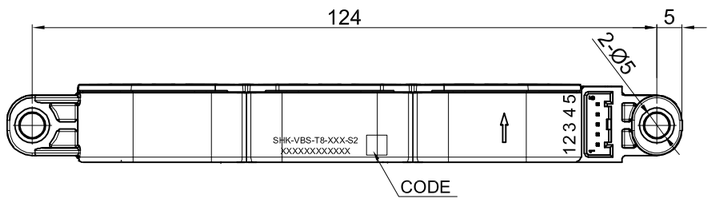
Connector:
TE 1318774-2 and TE 1123343-1

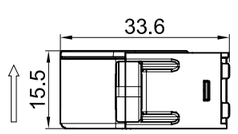
Connection

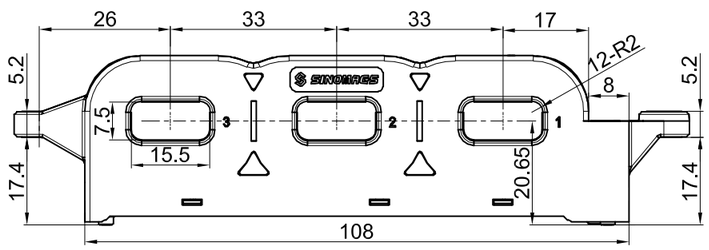


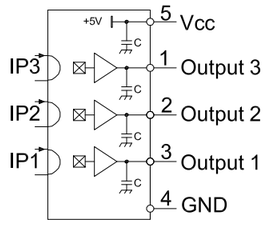
SHK-VBS-T8







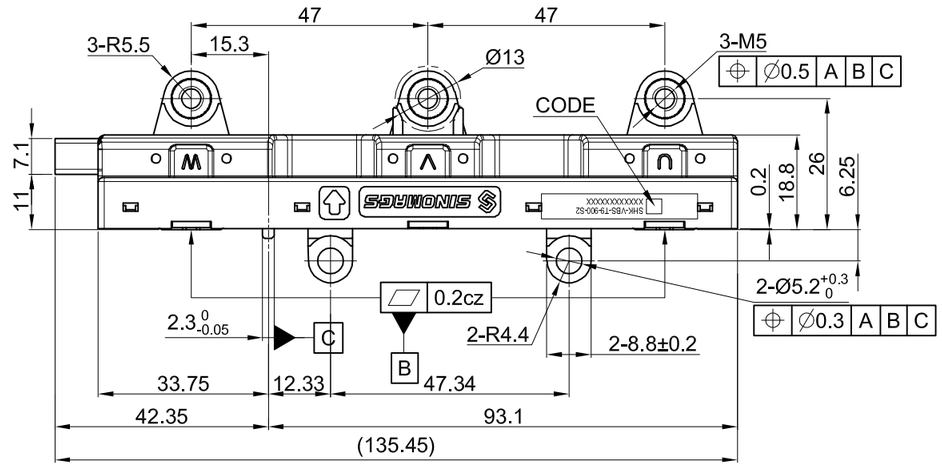


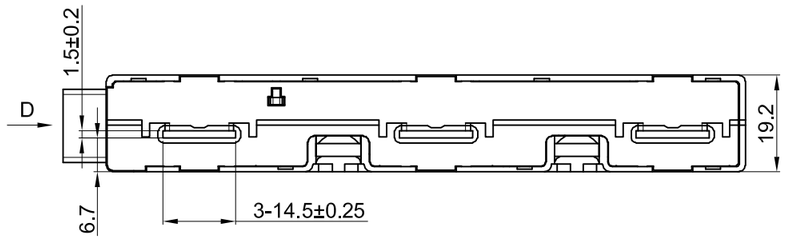


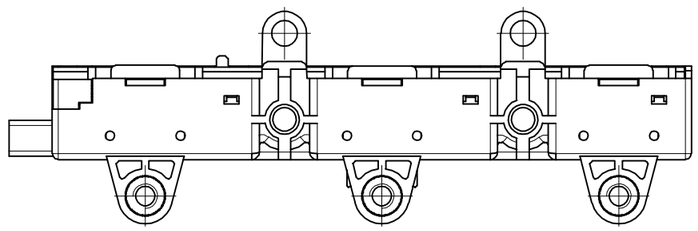
Terminals

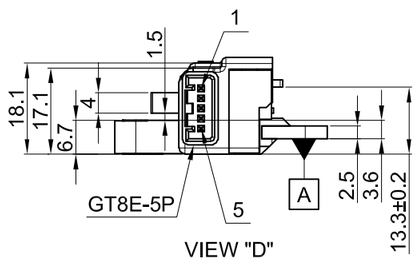
1	Output 3
2	Output 2
3	Output 1
4	GND
5	Vcc(+5V)

SHK-VBS-T9

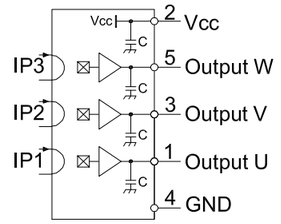








Connection



Terminals

1	Output U
2	Vcc
3	Output V
4	GND
5	Output W

Current Sensors

Module Level

Residual Current Detection (RCD)

Why does the photovoltaic system generate residual current?

Leakage current of the photovoltaic system, which is also known as the square matrix residual current, is essentially a kind of common mode current. The cause is that there is parasitic capacitance between the photovoltaic system and the earth. When the parasitic capacitance-photovoltaic systemgrid forms a loop, the common mode equipped with a industrial frequency transformer, because of the relatively high parasitic capacitance between the transformer windings in the loop, the common mode current generated by the common mode voltage in the loop can be suppressed to a certain extent. However, in a photovoltaic system with no transformer, the loop impedance is relatively low, and the common mode voltage will form a large common mode current, ie. leakage current, on the parasitic capacitance between the photovoltaic system and the earth.

Hazard of leakage current

If the leakage current in the photovoltaic system, including the DC part and the AC part, is connected to the grid, it can cause problems such as grid-connected current distortion and electromagnetic interference, so as to affect the operation of the equipment in the grid. In addition, leak current can also electrify the solar inverter casing, thus threatening physical safety.

Standard and detection of leakage current

According to the 7.10.2 regulation of NB32004-2013 / IEC 62109-1:2010 standard, in any case where the solar inverter is connected to the AC grid and the AC breaker is turned off, the inverter should provide leak current detection. Leak current detection should be able to detect the total (including the DC and AC parts) effective value current, continuous residual current.

Sinomag's residual current detection sensors not only meet the requirements of the solar industry, but wherever a leakage current has to be detected in order to avoid damage to a system or even danger to people, these products are a precise and cost-effective solution.

Product Series: SFG-P


SFG-P/P1


SFG-P/P2


SFG-P/P2F


SFG-P/P3


SFG-P/P4


SFG-P/N


SFG-P/S1


SFG-P/S2


SFG-P/S3

Features
· Close loop design · Frequency band width of 10 kHz supports the detection on high-frequency residual current · Fluxgate technology · Low thermal drift · Different primary conductors support wide range of primary current · Self-check function

Application
· Solar energy · Residual current detection

◎Absolute parameters

Parameter	Symbol	Unit	Value	Remark
Working temperature	T_A	℃	-40 ~ 105	
Supply voltage	Vcc	V	7	

◎Isolation parameter

Paramete	Symbol	Unit	Value	Comment
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	10	
Clearance (pri. -pri.)	Dcl(p-p)	mm	6.7	SFG-P/P2F
			9	SFG-P/P3
			11	SFG-P/P4
			8	SFG-P/PF
Creepage (pri. -pri.)	Dcp(p-p)	mm	7.7	SFG-P/P2F
			10.3	SFG-P/P3
			16	SFG-P/P4
			13	SFG-P/PF
Clearance (pri. -sec)	Dcl	mm	5.6	SFG-P/P2F
			12.1	SFG-P/P3
			12.1	SFG-P/P4
			14.5	SFG-P/PF
Creepage (pri. -sec)	Dcp	mm	5.6	SFG-P/P2F
			12.1	SFG-P/P3
			12.1	SFG-P/P4
			14.5	SFG-P/PF
Comparative tracking index	CTI	V	⩾600	

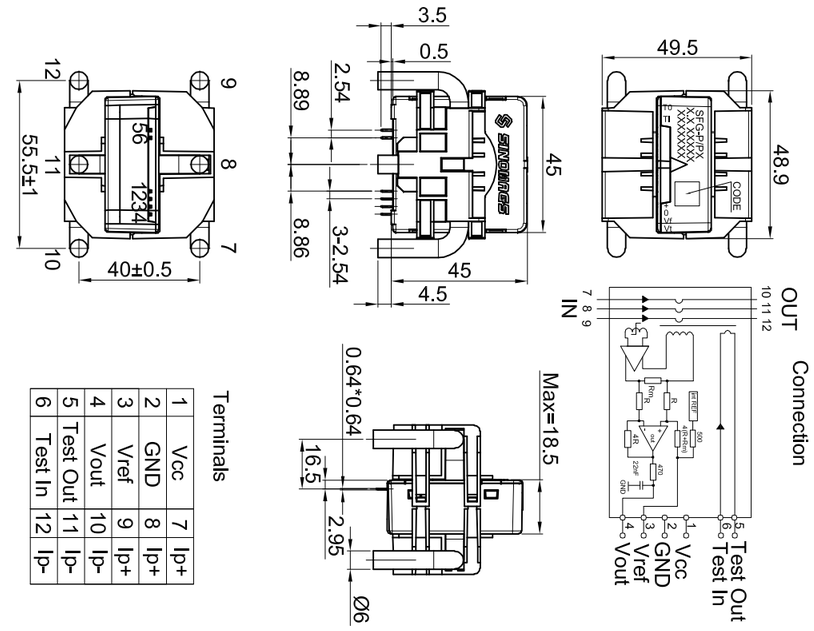
◎Electrical parameters

Product	Partnumber	Out		Nominal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (V/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
SFG-P	SFG-0.3P/N	○		0.3	±0.5	5	0	2.5	4	15	50	3.2	○		
	SFG-0.6P/N	○		0.6	±0.85	5	0	2.5	2.48	15	30	3.2	○		
	SFG-1.0P/N	○		1	±1.7	5	0	2.5	1.2	15	50	3.2	○		
	SFG-1.5P/N	○		1.5	±2	5	0	2.5	0.8	15	50	3.2	○		
	SFG-2.0P/N	○		2	±3	5	0	2.5	0.66	15	50	3.2	○		
	SFG-3.0P/N	○		3	±5	5	0	2.5	0.4	15	50	3.2	○		
	SFG-5.0P/N	○		5	±10	5	0	2.5	0.2	15	50	3.2	○		
	SFG-0.3P/P1	○		0.3	±0.5	5	0	2.5	4	15	50	3.2	○		

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (V/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
SFG-P	SFG-0.6P/P1	○		0.6	±0.85	5	0	2.5	2.48	15	40	3.2	○		
	SFG-1.0P/P1	○		1	±1.7	5	0	2.5	1.2	15	50	3.2	○		
	SFG-1.5P/P1	○		1.5	±2	5	0	2.5	0.8	15	50	3.2	○		
	SFG-2.0P/P1	○		2	±3	5	0	2.5	0.66	15	40	3.2	○		
	SFG-3.0P/P1	○		3	±5	5	0	2.5	0.4	15	40	3.2	○		
	SFG-5.0P/P1	○		5	±10	5	0	2.5	0.2	15	40	3.2	○		
	SFG-0.3P/P2	○		0.3	±0.5	5	0	2.5	4	15	50	3.2	○		
	SFG-0.6P/P2	○		0.6	±0.85	5	0	2.5	2.48	15	40	3.2	○		
	SFG-1.0P/P2	○		1.02	±1.7	5	0	2.5	1.2	15	50	3.2	○		
	SFG-1.5P/P2	○		1.5	±2	5	0	2.5	0.8	15	50	3.2	○		
	SFG-2.0P/P2	○		2	±3	5	0	2.5	0.67	15	40	3.2	○		
	SFG-3.0P/P2	○		3	±5	5	0	2.5	0.4	15	40	3.2	○		
	SFG-5.0P/P2	○		5	±10	5	0	2.5	0.2	15	40	3.2	○		
SFG-P/N1	SFG-0.3P/N1	○		0.3	±0.5	5	0	2.5	4	15	50	3.2	○		
	SFG-0.6P/N1	○		0.6	±0.85	5	0	2.5	2.48	15	30	3.2	○		
	SFG-1.0P/N1	○		1	±1.7	5	0	2.5	1.2	15	50	3.2	○		
	SFG-1.5P/N1	○		1.5	±2	5	0	2.5	0.8	15	50	3.2	○		
	SFG-2.0P/N1	○		2	±3	5	0	2.5	0.67	15	50	3.2	○		
	SFG-3.0P/N1	○		3	±5	5	0	2.5	0.4	15	50	3.2	○		
	SFG-5.0P/N1	○		5	±10	5	0	2.5	0.2	15	50	3.2	○		
SFG-P/P2F	SFG-0.3P/P2F	○		0.3	±0.5	5	0	2.5	4	15	50	3.2	○		
	SFG-0.6P/P2F	○		0.6	±0.85	5	0	2.5	2.48	15	40	3.2	○		
	SFG-1.0P/P2F	○		1	±1.7	5	0	2.5	1.17	15	50	3.2	○		
	SFG-1.5P/P2F	○		1.5	±2	5	0	2.5	0.8	15	50	3.2	○		
	SFG-2.0P/P2F	○		2	±3	5	0	2.5	0.66	15	40	3.2	○		
	SFG-3.0P/P2F	○		3	±5	5	0	2.5	0.4	15	40	3.2	○		
SFG-P/P3	SFG-3.0P/P3	○		3	±5	5	0	2.5	0.4	15	40	3.2	○		
	SFG-5.0P/P3	○		5	±8	5	0	2.5	0.2	15	40	3.2	○		

Product	Partnumber	Out		Norminal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (V/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
SFG-P/P4	SFG-3.0P/P4	○		3	±5	5	0	2.5	0.4	15	40	3.2	○		
	SFG-5.0P/P4	○		5	±8	5	0	2.5	0.2	15	40	3.2	○		
SFG-P/S1	SFG-0.3P-S1-1	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	SFG-1.0P-S1-2	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
SFG-P/S2	SFG-0.3P-S2-1	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	SFG-1.0P-S2-2	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
SFG-P/S3	SFG-0.3P-S3-1	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	SFG-1.0P-S3-2	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		

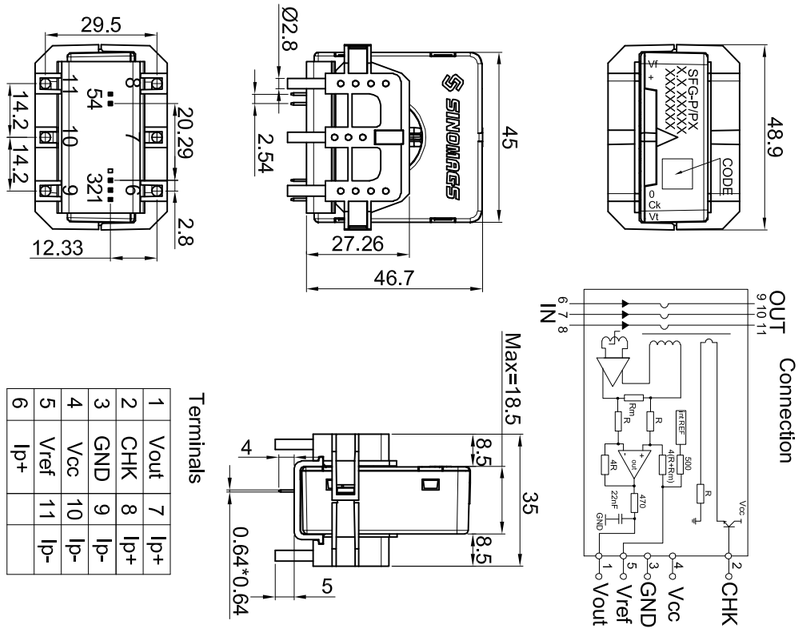
◎SFG-P/P1



Terminals

1	Vcc	7 Ip+
2	GND	8 Ip+
3	Vref	9 Ip+
4	Vout	10 Ip-
5	Test Out	11 Ip-
6	Test In	12 Ip-

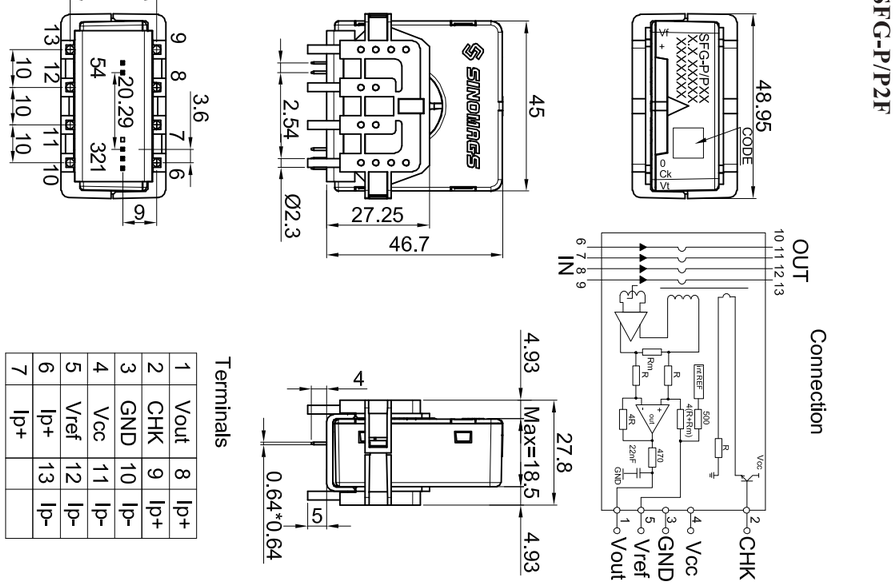
SFG-P/P2



1	Vout	7	Ip+				
2	CHK	8	Ip+				
3	GND	9	Ip-				
4	Vcc	10	Ip-				
5	Vref	11	Ip-				
6	Ip+						

Terminals

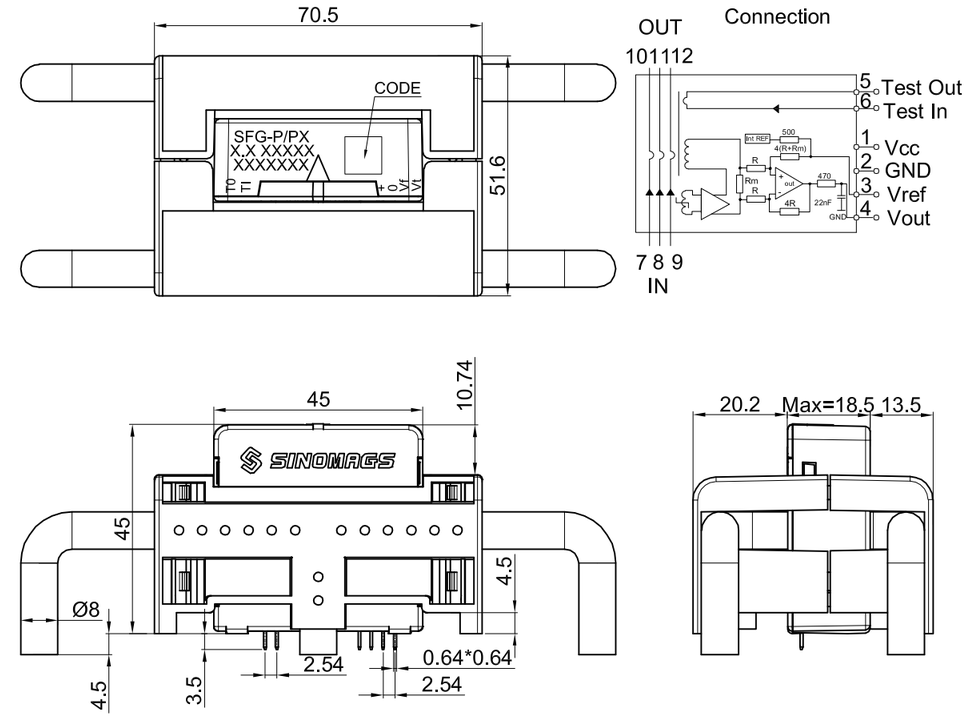
SFG-P/P2F

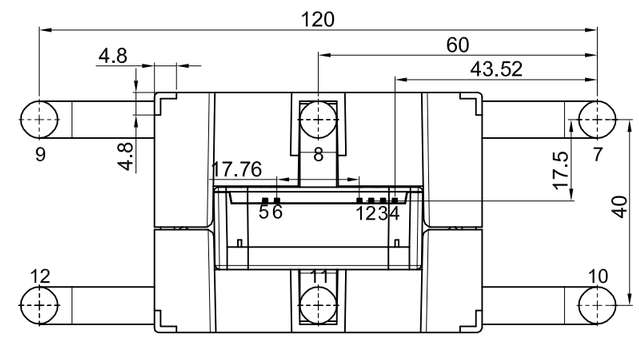


1	Vout	8	Ip+				
2	CHK	9	Ip+				
3	GND	10	Ip-				
4	Vcc	11	Ip-				
5	Vref	12	Ip-				
6	Ip+	13	Ip-				
7	Ip+						

Terminals

SFG-P/P3

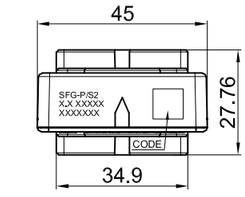


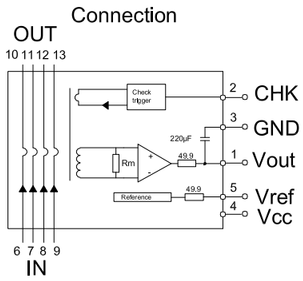


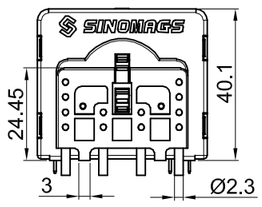
Terminals

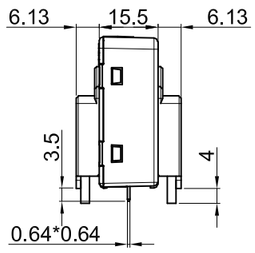
1	Vcc	7	Ip+
2	GND	8	Ip+
3	Vref	9	Ip+
4	Vout	10	Ip-
5	Test Out	11	Ip-
6	Test In	12	Ip-

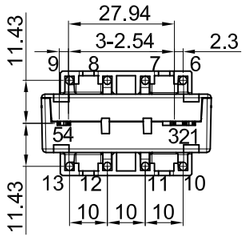
SFG-P/S2







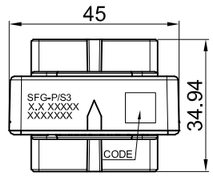


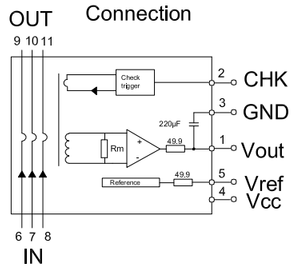


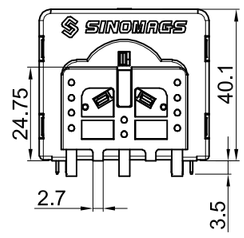
Terminals

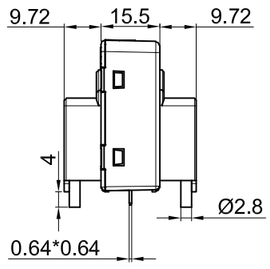
1	Vout	8	Ip+
2	CHK	9	Ip+
3	GND	10	Ip-
4	Vcc	11	Ip-
5	Vref	12	Ip-
6	Ip+	13	Ip-
7	Ip+		

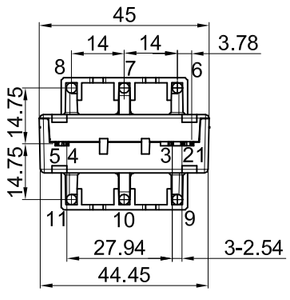
SFG-P/S3







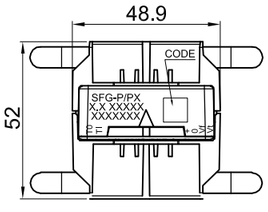


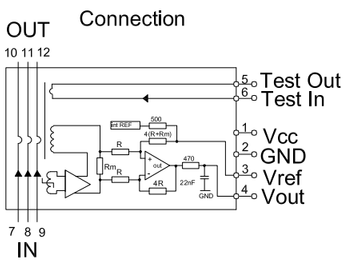


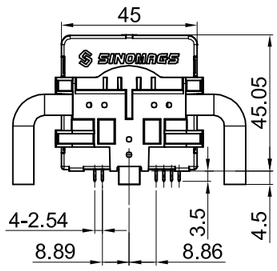
Terminals

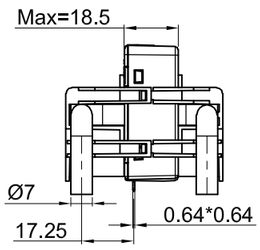
1	Vout	7	Ip+
2	CHK	8	Ip+
3	GND	9	Ip-
4	Vcc	10	Ip-
5	Vref	11	Ip-
6	Ip+		

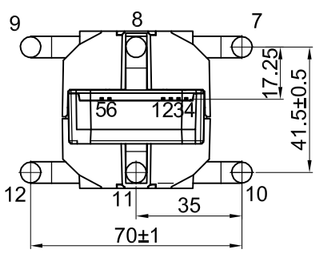
SFG-P/P4







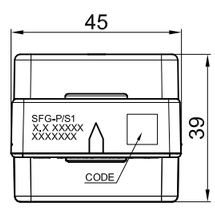


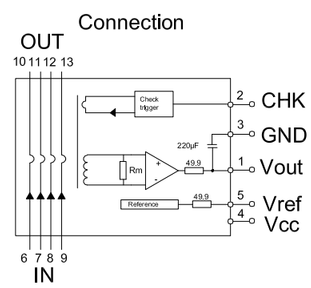


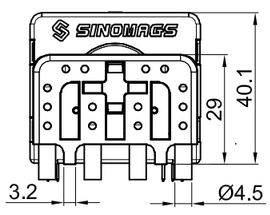
Terminals

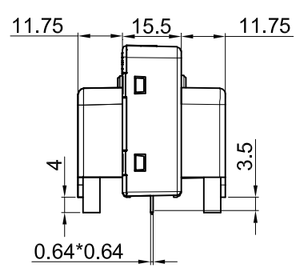
1	Vcc	7	Ip+
2	GND	8	Ip+
3	Vref	9	Ip+
4	Vout	10	Ip-
5	Test Out	11	Ip-
6	Test In	12	Ip-

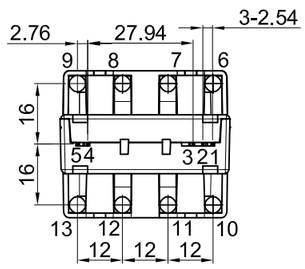
SFG-P/S1











Terminals

1	Vout	8	Ip+
2	CHK	9	Ip+
3	GND	10	Ip-
4	Vcc	11	Ip-
5	Vref	12	Ip-
6	Ip+	13	Ip-
7	Ip+		

SINOMAGS
Current Sensor

Product Series: SFG-CPL

SFG-CPL/A

SFG-CPL/B

Features	Application
· UL 2231、IEC 62752、IEC 62955、 IEC 61851 · With self-check function · Frequency DC ~ 1 kHz · Optional analog output · RCMU type b, 30 mA AC & 6 mA DC detection threshold · Primary side load current 40 A (expandable to 100 A)	· EV-Chargers · IC-CPD · Wallbox ·AC- and DC- Charging pile

◎Absolute parameters

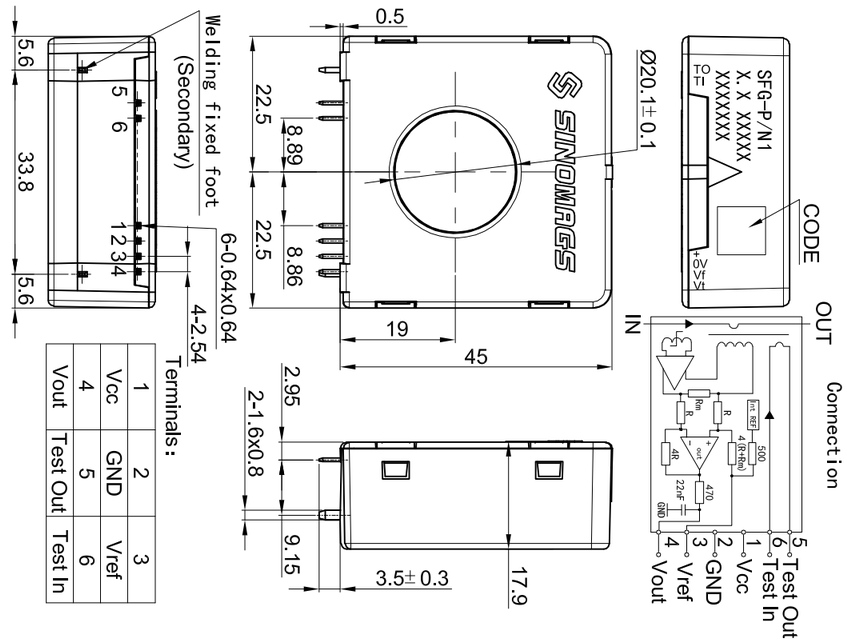
Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	5. 5

◎Isolation parameter

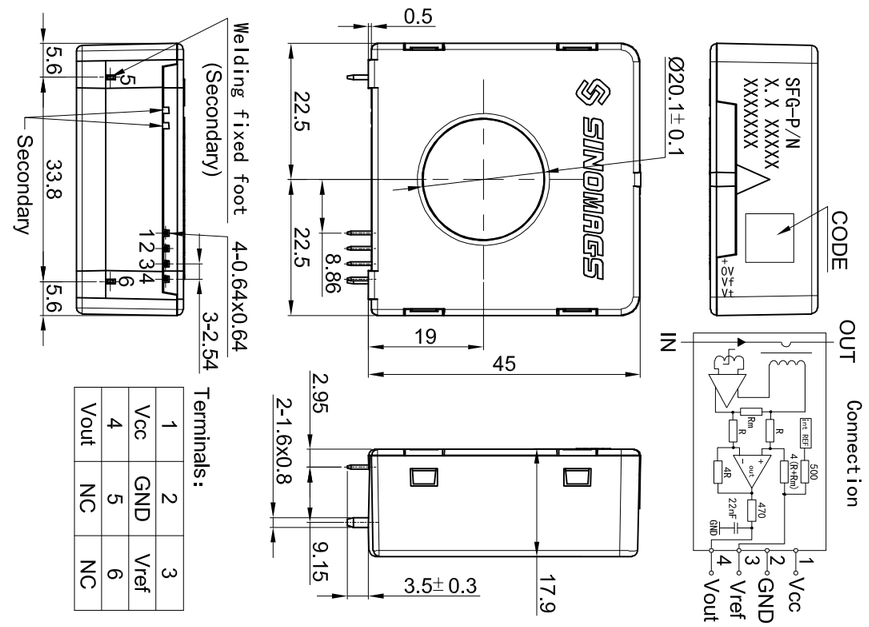
Parameter	Symbol	Unit	Value	Remark
RMS voltage for isolation test	V_d	kV	3	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	V_w	kV	7	
Comparative tracking index	CTI	V	⩾600	

Product	Partnumber	Out			Nominal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Closed - loop	Open -loop
		Voltage	Digital	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc (%FS)			
SFG-CPL/A	SFG-0.3CPL/A		○		6 30	300	5	NA	NA	NA	2	Follow IEC62752	NA	○		○
SFG-CPL/B	SFG-0.3CPL/B		○		6 30	300	5	NA	NA	NA	2	Follow IEC62752	NA	○		○

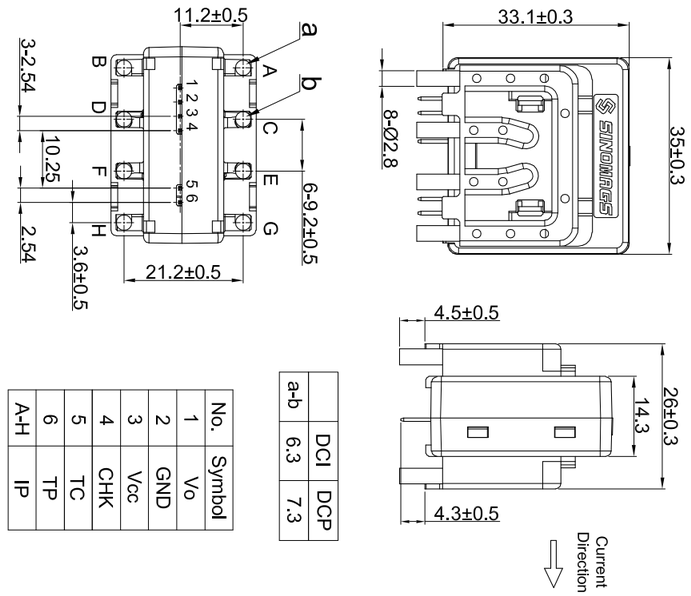
◎SFG-P/N1



◎SFG-P/N



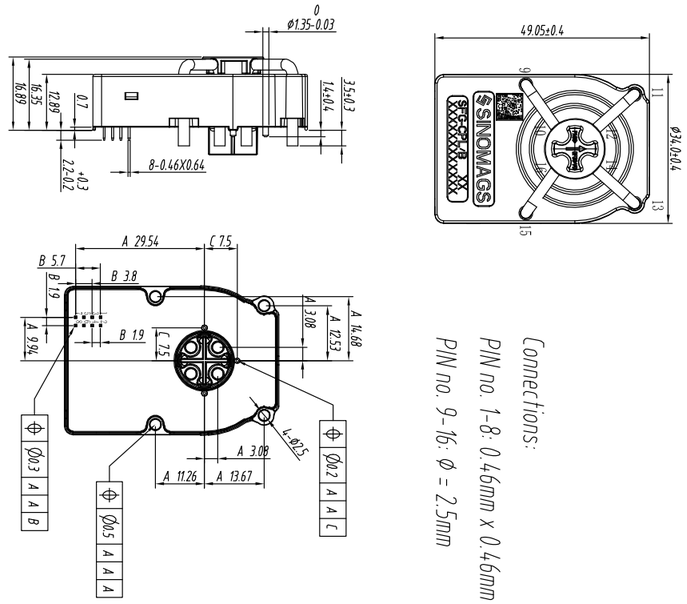
◎SFG-CPL/A



No.	Symbol
1	Vo
2	GND
3	Vcc
4	CHK
5	TC
6	TP
A-H	IP

	DCI	DCP
a-b	6.3	7.3

◎SFG-CPL/B



Connections:
PIN no. 1-8: 0.46mm x 0.46mm
PIN no. 9-16: Ø = 2.5mm

Product Series: STK-P/M


STK-P/M1


STK-P/M1A


STK-P/M1T


STK-P/M1F


STK-P/M1S


STK-P/MN

Features	Application
· Open loop design · Frequency band width of 700 Hz · Fluxgate technology · Low accuracy thermal drift · Self-check function	· Solar energy · Residual current detection

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	5. 5

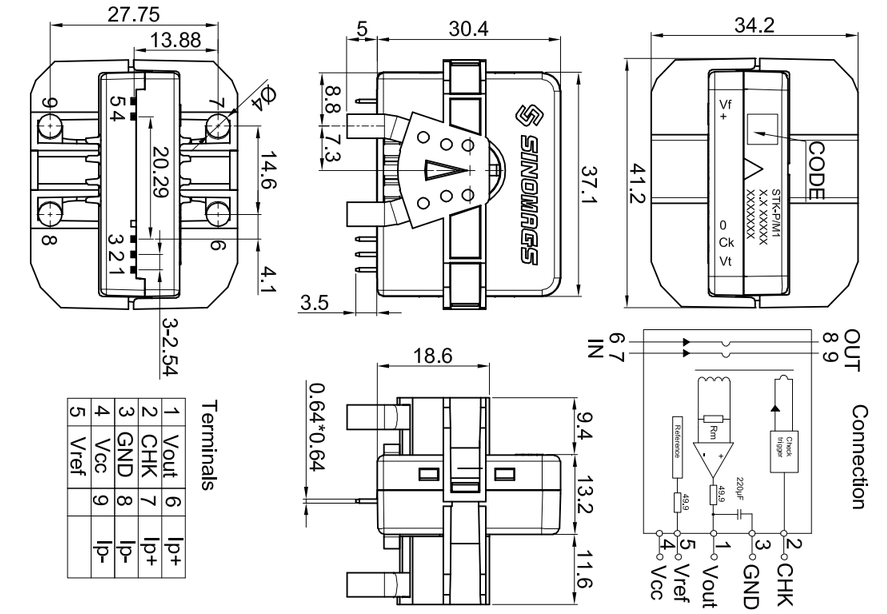
◎Isolation parameter

Parameter	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	5	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	10.1	
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Out		Normal Current	Current detection range	Supply Voltage	Offset	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Fluxgate	Close-loop	Open-loop
		Voltage	Current	I_pn (A)	I_pm (A)	Vcc (V)	Voff, Ioff (V,mA)	Vref (V)	Gain (V/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)			
STK-P/M	STK-0.3P/M1	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/M1	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/M1-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
	STK-0.3P/M1S	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/M1S	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/M1S-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
	STK-0.3P/M1A	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/M1A	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/M1A-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
	STK-0.3P/M1T	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/M1T	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/M1T-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
	STK-0.3P/M1F	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/M1F	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/M1F-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		
	STK-0.3P/MN	○		0.3	±0.5	5	0	2.5	4	0.7	700	4	○		
	STK-1.0P/MN	○		1.02	±1.7	5	0	2.5	1.17	0.7	700	4	○		
	STK-1.0P/MN-1	○		1	±1.7	5	0	2.5	1.2	0.7	700	4	○		

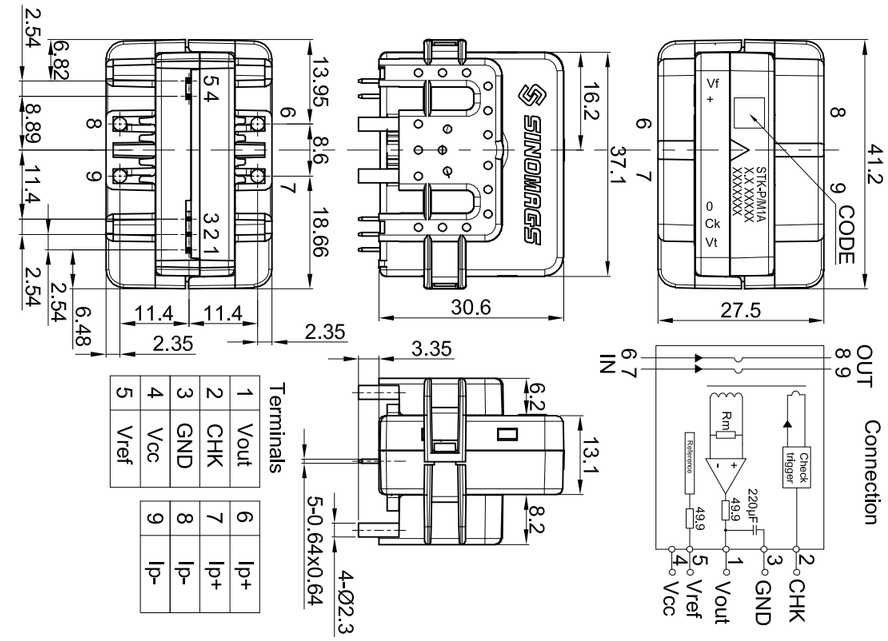
◎STK-P/M1



Terminals

1	Vout	6	Ip+
2	CHK	7	Ip+
3	GND	8	Ip-
4	Vcc	9	Ip-
5	Vref		

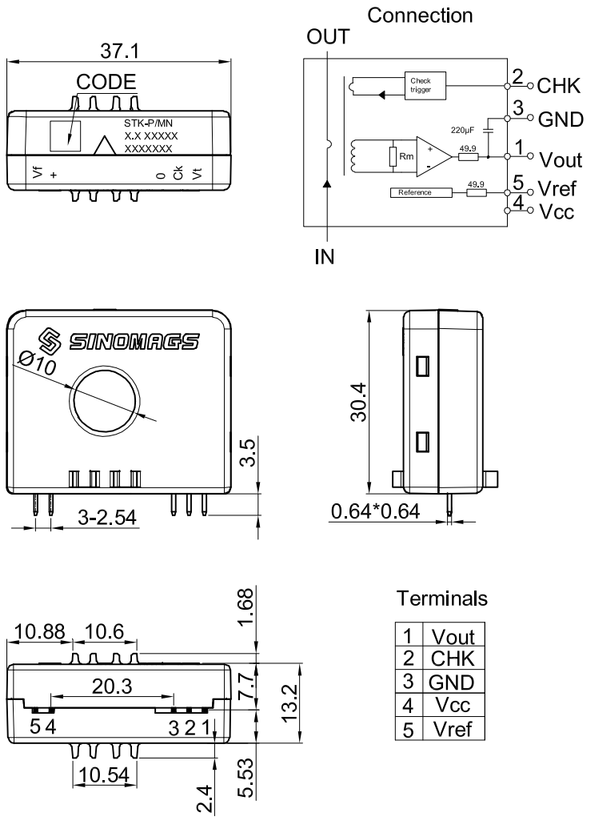
◎STK-P/M1A



Terminals

1	Vout	6	Ip+
2	CHK	7	Ip+
3	GND	8	Ip-
4	Vcc	9	Ip-
5	Vref		

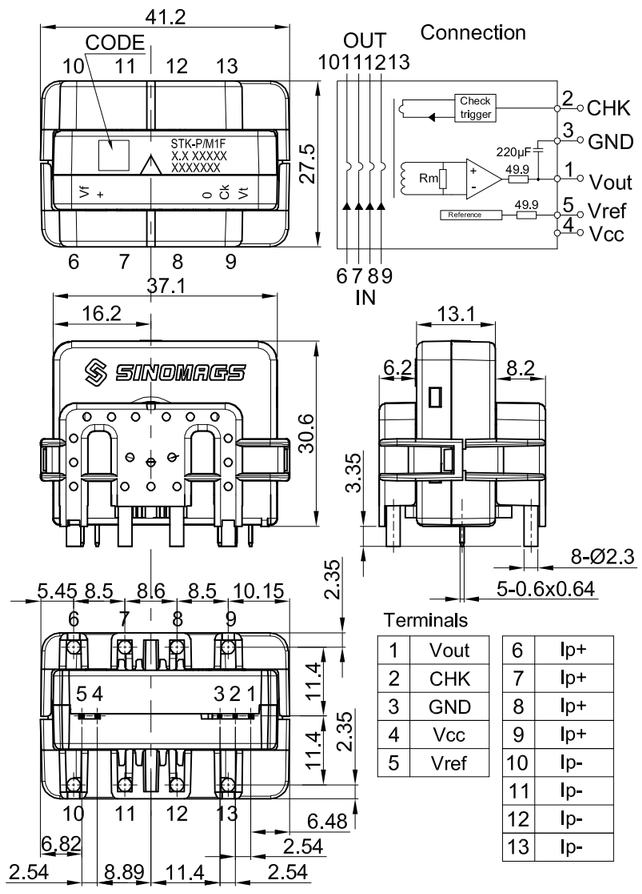
STK-P/MN



Terminals

1	Vout
2	CHK
3	GND
4	Vcc
5	Vref

STK-P/M1F

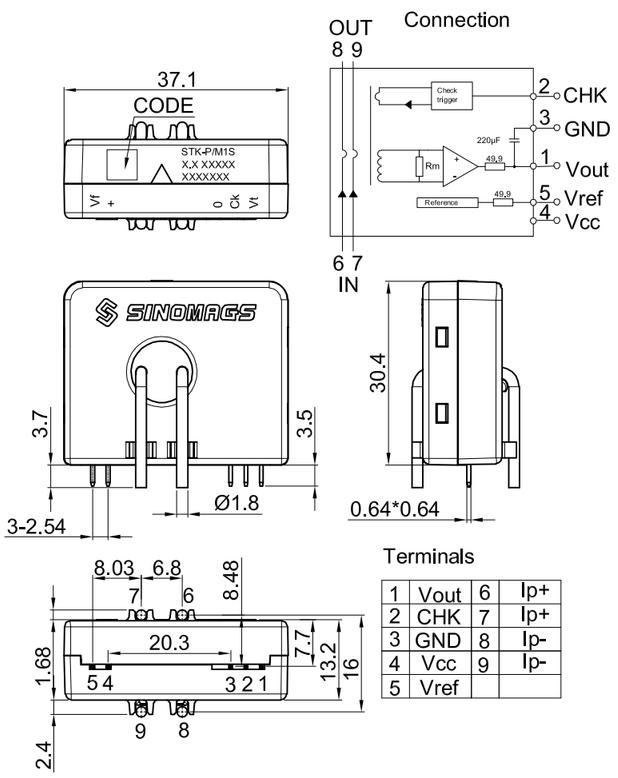


Terminals

1	Vout
2	CHK
3	GND
4	Vcc
5	Vref

6	Ip+
7	Ip+
8	Ip+
9	Ip+
10	Ip-
11	Ip-
12	Ip-
13	Ip-

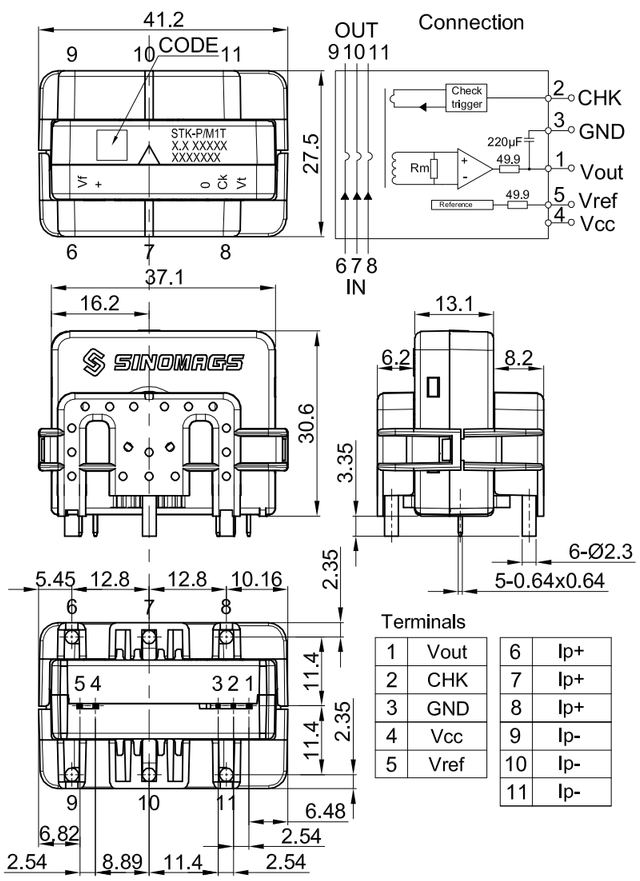
STK-P/MIS



Terminals

1	Vout	6	Ip+
2	CHK	7	Ip+
3	GND	8	Ip-
4	Vcc	9	Ip-
5	Vref		

STK-P/M1T



Terminals

1	Vout
2	CHK
3	GND
4	Vcc
5	Vref

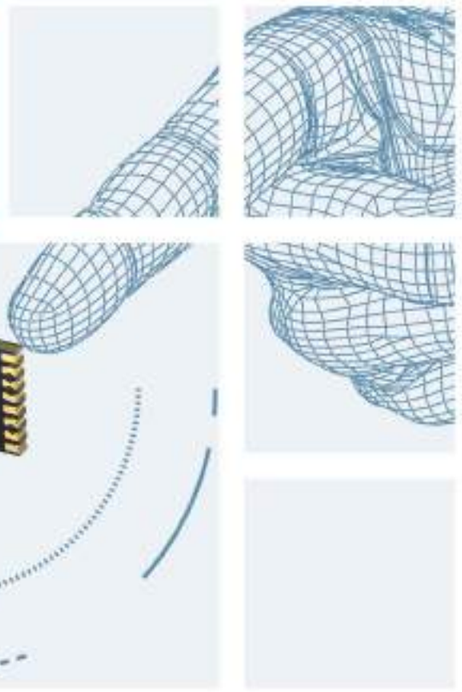
6	Ip+
7	Ip+
8	Ip+
9	Ip-
10	Ip-
11	Ip-

Current Sensors

Chip Level

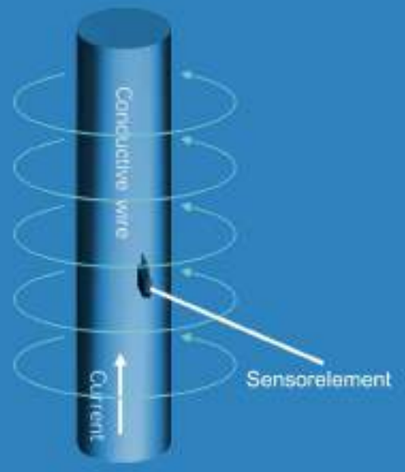
PCB Level Solution

Small Integrated Solution



Cost Effective

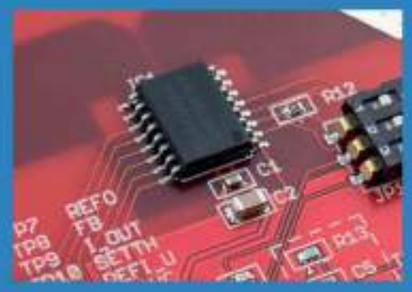
The Sinomags and Sensitec chip level sensor types offers developers from the fields of power electronics the possibility of integrating a measuring point in a very small space.



Due to the compact design, these sensors can be easily integrated into existing constructions. New developments, on the other hand, can be significantly reduced in their overall size. The trend in power electronics is no different than in other areas of electronics, the smaller the parts, the more compact the overall design can be at the end.The Sinomags and Sensitec chip level sensors were developed to meet this trend towards higher integration. In contrast to the modul level products, in which the current conductor is integrated, the concept of the chip level types is different.

Working principle:
The sensor brought close to an existing conductor, which can be a cable, a current bar or a conductor track within a circuit board.The sensing element (AMR or TMR) detects the magnetic field of the conductor and converts it into an output voltage.
This is the basic principle of open loop technology.

Important is the galvanic isolation of the sensor to the conductor. In the 616 product series, this is performed by the printed circuit board on which the TMR sensor is bonded. At the CFS1000 the SO16w package has an integrated galvanic isolation and over the pins a correct distance is ensured. The sensed current can be either positive or negative. This polarity of the magnetic field is sensed to produce either a positive or negative voltage output around a voltage reference. Both, the distance from the sensor to the conductor and the design of the conductor track itself affect the sensitivity. A narrow track has a higher sensitivity, but also increase in temperature easier. There are different ways around to achieve a balanced configuration between sensitivity and temperature. The engineers at Sinomags and Sensitec support you with their experience and know-how with this challenges. Therefore, it is important that you involve them early in your design phase, so you avoid mistakes that are difficult to correct afterwards.



The chip-level sensors from Sinomags and Sensitec are used wherever a cost attractive and integrated solution is required.

Product Series: STK-616


STK-616K


STK-616T


STK-616KF


STK-616TF


STK-616E


STK-616H


STK-616V


STK-616Y


STK-616Y-250B3


STK-616KM


STK-616TM


STK-616TMM


STK-616TMW


STK-616TMWD


STK-616DM,BM


STK-616EM,HM


STK-616ZM


STK-616YM


STK-616VM


STK-616VM2

Features

- Frequency band width of up to 2 MHz
- Response time of down to 0.5 μs
- Open loop design
- Coreless design enbles 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

◎Electrical parameters

Product	Partnumber	Nominal Current I_pn (A)	Current detection range I_pm (A)	Supply Voltage Vcc (V)	Sensitivity Gain (mV/A, mA/A)	Frequency Bandwith f_band (kHz)	Step response time t_r (μs)	Clearance d_Cl (mm)	OCD Function OCD	Trigger Delay t_mask (μs)	Trigger Holding t_hold (ms)	Accuracy Error Acc (%FS)	COMPANY PRODUCT	PRODUCT PACKAGE
STK-616K	STK-616K-30GB	±30	±34.5	5	66.7	150	1.5	6	YES	0~3	0~4.5	3	ALLEGRO ACS-732/3	SOIC16W Like 10.3 × 10.3 mm
	STK-616K-40GB	±40	±46	5	50	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616K-65GB	±65	±74.7	5	30	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616K-65GC	±65	±74.7	3.3	20	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616K-40GC	±40	±46	3.3	33	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616K-75GB	±75	±86.2	5	20	150	1.5	6	YES	0~3	0~4.5	3		
STK-616KF	STK-616K-40FC	±40	±46	3.3	33	1000	0.5	6	YES	0~3	0~4.5	3	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616K-65FC	±65	±74.7	3.3	20	1000	0.5	6	YES	0~3	0~4.5	3		
STK-616T	STK-616T-40GB	±40	±46	5	50	150	1.5	6	YES	0~3	0~4.5	3	ALLEGRO ACS-37002	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-65GB	±65	±74.7	5	30	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616T-66GC	±66	±75.9	3.3	19.8	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616T-100GB	±100	±115	5	20	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616T-133GU	133	152	3.3	19.8	150	1.5	6	YES	0~3	0~4.5	3.5		
	STK-616T-30GB	±30	±34.5	5	66.67	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616T-30GC	±30	±34.5	3.3	44	150	1.5	6	YES	0~3	0~4.5	3		
	STK-616T-133GB	±133	±152.9	5	15	150	1.5	6	YES	0~3	0~4.5	3		
STK-616TF	STK-616T-40FB	±40	±46	5	50	1000	0.5	6	YES	0~3	0~4.5	3	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-65FB	±65	±74.7	5	30	1000	0.5	6	YES	0~3	0~4.5	3		
	STK-616T-66FC	±66	±75.9	3.3	19.8	1000	0.5	6	YES	0~3	0~4.5	3		
	STK-616T-100FB	±100	±115	5	20	1000	0.5	6	YES	0~3	0~4.5	3		
	STK-616T-133FU	±133	±152.9	3.3	19.8	1000	0.5	6	YES	0~3	0~4.5	3		
	STK-616T-30FB	±30	±34.5	5	66.67	1000	0.5	6	YES	0~3	0~4.5	3		
	STK-616T-30FC	±30	±34.5	3.3	44	1000	0.5	6	YES	0~3	0~4.5	3		
STK-616E	STK-616E/20AB	±20	±23	5	100	150	1.5	6	N/A	N/A	N/A	3.5	ALLEGRO ACS-724	SOIC16W Like 10.3 × 10.3 mm
	STK-616E/30AB	±30	±34.5	5	66	150	1.5	6	N/A	N/A	N/A	3.5		
	STK-616E/50AB	±50	±57.5	5	40	150	1.5	6	N/A	N/A	N/A	3.5		
	STK-616E/65AB	±65	±74.7	5	30.75	150	1.5	6	N/A	N/A	N/A	3.5		
STK-616H	STK-616H-20GB	±20	±23	5	40	300	2	7	YES	0~3	0~4.5	3	LEM HMSR	SOIC16W Like 11.2 × 11.7 mm
	STK-616H-30GB	±30	±34.5	5	26.67	300	2	7	YES	0~3	0~4.5	3		
	STK-616H-65GB	±65	±74.7	5	30	300	2	7	YES	0~3	0~4.5	3		
STK-616V	STK-616V-50AB	±50	±57.5	5	40	150	1.5	1.2	N/A	N/A	N/A	3.5	ALLEGRO ACS-780	SOIC8 Like 5.5 × 6.2 mm
	STK-616V-100AB	±100	±115	5	20	150	1.5	1.2	N/A	N/A	N/A	3.5		
	STK-616V-150AB	±150	±172	5	13.33	150	1.5	1.2	N/A	N/A	N/A	3.5		
	STK-616V-50AC	±50	±55	3.3	26.4	150	1.5	1.2	N/A	N/A	N/A	3.5		
	STK-616V-100AC	±100	±110	3.3	13.2	150	1.5	1.2	N/A	N/A	N/A	3.5		
	STK-616V-150AC	±150	±165	3.3	8.8	150	1.5	1.2	N/A	N/A	N/A	3.5		
	STK-616V-150AW	±150	±172.5	5	26.6	150	3.5	1.2	N/A	N/A	N/A	3.5		
STK-616VG	STK-616V-50GB	±50	±57.5	5	40	150	2.5	3.5	N/A	N/A	N/A	3.5	ALLEGRO ACS-780	SOIC8 Like 5.5 × 6.2 mm
	STK-616V-100GB	±100	±115	5	20	150	2.5	3.5	N/A	N/A	N/A	3.5		
	STK-616V-150GB	±150	±172.5	5	13.33	150	2.5	3.5	N/A	N/A	N/A	3.5		
	STK-616V-50GC	±50	±57.5	3.3	26.4	150	2.5	3.5	N/A	N/A	N/A	3.5		
	STK-616V-100GC	±100	±115	3.3	13.2	150	2.5	3.5	N/A	N/A	N/A	3.5		

◎Electrical parameters

Product	Partnumber	Nominal Current	Current detection range	Supply Voltage	Sensitivity	Frequency Bandwith	Step response time	Clearance	OCD Function	Trigger Delay	Trigger Holding	Accuracy Error	COMPANY PRODUCT	PRODUCT PACKAGE
		I_pn (A)	I_pm (A)	Vcc (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	d_Cl (mm)	OCD	t_mask (μs)	t_hold (ms)	Acc (%FS)		
STK-616VG	STK-616V-150GC	±150	±172.5	3.3	8.8	150	2.5	3.5	N/A	N/A	N/A	3.5	ALLEGRO ACS-780	SOIC8 Like 5.5 × 6.2 mm
	STK-616V-100GW	±100	±115	5	40	150	2.5	3.5	N/A	N/A	N/A	3.5		
STK-616Y	STK-616Y-20B3	±20	±22	3.3	66	150	1.5	2.5	N/A	N/A	N/A	3.5	ALLEGRO ACS-712 ALLEGRO ACS-725 ALLEGRO ACS-730	SOIC8 Like 5.5 × 6.2 mm
	STK-616Y-20B5	±20	±23	5	100	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-30B3	±30	±33	3.3	44	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-30B5	±30	±34.8	5	66	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-40B3	±40	±44	3.3	33	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-50B3	±50	±55	3.3	26.4	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-50B5	±50	±57.5	5	40	150	1.5	2.5	N/A	N/A	N/A	3.5		
	STK-616Y-30U3	30	33	3.3	88	150	1.5	2.5	N/A	N/A	N/A	3.5		
STK-616Y250B3	STK-616Y-250B3	250	-50~300	3.3	6.24	150	1.5	1.5	N/A	N/A	N/A	3.5		SOIC8 Like 5.5 × 7.35 mm
STK-616HML	STK-616H-20MLB5	±20	±23	5	40	600	0.9	8	YES	0~3	0~4.5	3.5	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616H-30MLB5	±30	±34.5	5	26.67	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616H-65MLB5	±65	±74.7	5	30	600	0.9	8	YES	0~3	0~4.5	3.5		
STK-616KML	STK-616K-40MLB3	±40	±46	3.3	33	600	0.9	7.5	YES	0~3	0~4.5	3	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616K-65MLB3	±65	±74.7	3.3	20.3	600	0.9	7.5	YES	0~3	0~4.5	3		
STK-616KMF	STK-616K-40MFB3	±40	±46	3.3	33	1500	0.2	7.5	YES	0~3	0~4.5	3	ALLEGRO ACS732/3	SOIC16W Like 10.3 × 10.3 mm
	STK-616K-65MFB3	±65	±74.7	3.3	20.3	1500	0.2	7.5	YES	0~3	0~4.5	3		
	STK-616K-30MFB5	±30	±34.5	5	66.6	1500	0.2	7.5	YES	0~3	0~4.5	3		
	STK-616K-40MFB5	±40	±46	5	50	1500	0.2	7.5	YES	0~3	0~4.5	3		
STK-616TML	STK-616T-20MLB5	±20	±23	5	100	600	0.9	8	YES	0~3	0~4.5	3.5	ALLEGRO ACS37002	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-40MLB5	±40	±46	5	50	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-50MLB5	±50	±57.5	5	40	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MLB5	±65	±74.7	5	30.8	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-20MLB3	±20	±23	3.3	66	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-30MLB3	±30	±34.5	3.3	44	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-33MLB3	±33	±37.9	3.3	39.6	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-40MLB3	±40	±46	3.3	33	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MLB3	±65	±74.7	3.3	20.3	600	0.9	8	YES	0~3	0~4.5	3.5		
STK-616TMF	STK-616T-40MFB5	±40	±46	5	50	1500	0.2	8	YES	0~3	0~4.5	3.5	ALLEGRO ACS37002	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-65MFB5	±65	±74.7	5	30.8	1500	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-40MFB3	±40	±46	3.3	33	1500	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MFB3	±65	±74.7	3.3	20.3	1500	0.2	8	YES	0~3	0~4.5	3.5		
STK-616TMM	STK-616T-40MMB5	±40	±46	5	50	500	0.2	8	YES	0~3	0~4.5	3.5	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-65MMB5	±65	±74.7	5	30.8	500	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-20MMB3	±20	±23	3.3	66	500	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-40MMB3	±40	±46	3.3	33	500	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MMB3	±65	±74.7	3.3	20.3	500	0.2	8	YES	0~3	0~4.5	3.5		
STK-616TMW	STK-616T-20MWB5	±20	±23	5	100	600	0.2	8	YES	0~3	0~4.5	3.5	NA	SOIC16W Like 10.3 × 10.3 mm
		±2A	NA	5	1000	600	0.2	8	YES	0~3	0~4.5	3.5		

SINOMAGS
Current Sensor

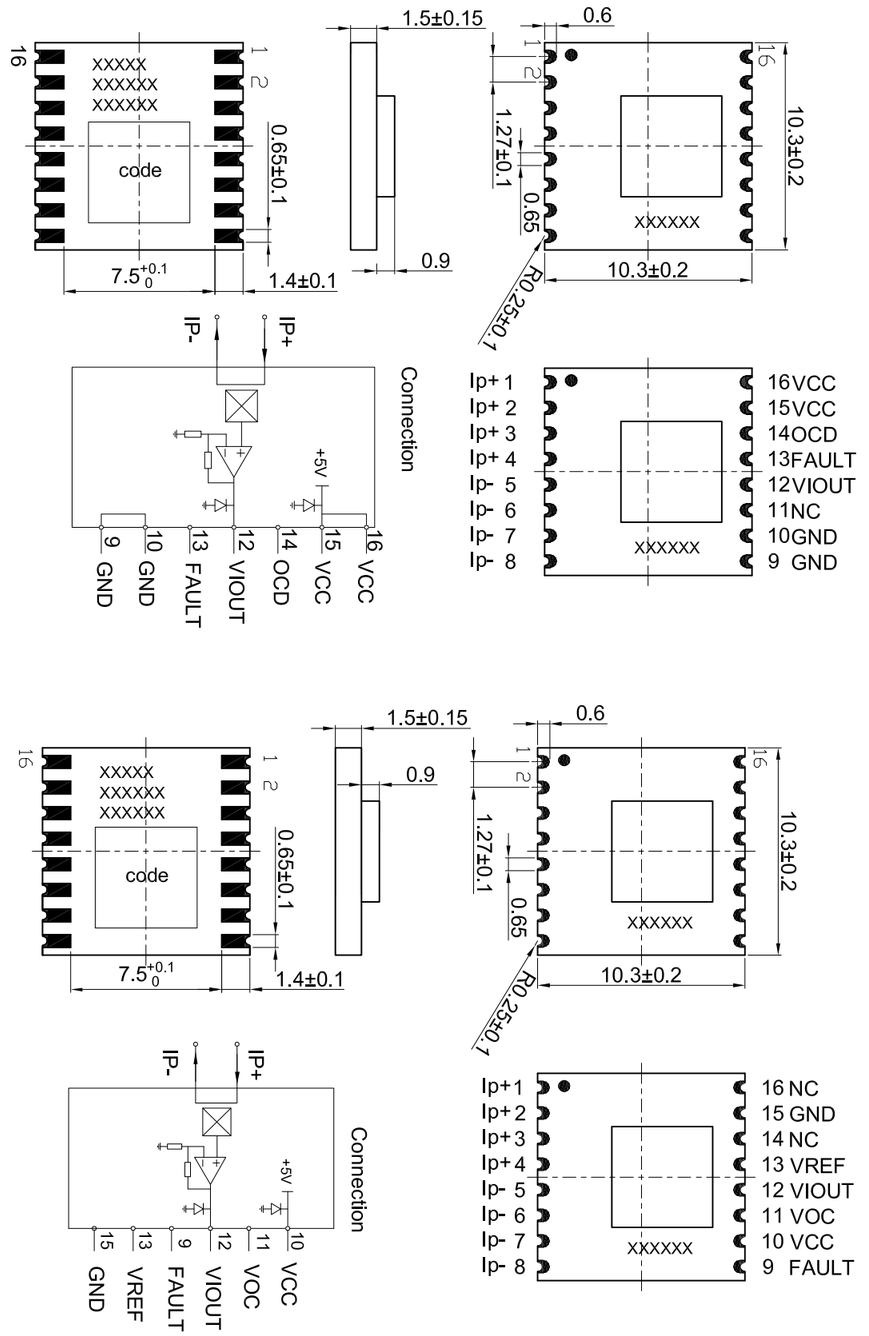
◎Electrical parameters

Product	Partnumber	Nominal Current	Current detection range	Supply Voltage	Sensitivity	Frequency Bandwith	Step response time	Clearance	OCD Function	Trigger Delay	Trigger Holding	Accuracy Error	COMPANY PRODUCT	PRODUCT PACKAGE
		I_pn (A)	I_pm (A)	Vcc (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	d_Cl (mm)	OCD	t_mask (μs)	t_hold (ms)	Acc (%FS)		
STK-616TMW	STK-616T-40MWB5	±40	± 46	5	50	600	0.2	8	YES	0~3	0~4.5	3.5	NA	SOIC16W Like 10.3 × 10.3 mm
		±4	NA	5	500	600	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MWB5	±65	± 74.7	5	30.8	600	0.2	8	YES	0~3	0~4.5	3.5		
		±6.5	± 7.4	5	308	600	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-20MWB3	±20	± 23	3.3	66	600	0.2	8	YES	0~3	0~4.5	3.5		
		±2	± 2.3	3.3	660	600	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-33MWB3	±33	± 37.9	3.3	39.6	600	0.2	8	YES	0~3	0~4.5	3.5		
		±3.33A	± 3.7	3.3	396	600	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-40MWB3	±40	± 46	3.3	33	600	0.2	8	YES	0~3	0~4.5	3.5		
		±4	± 4.6	3.3	330	600	0.2	8	YES	0~3	0~4.5	3.5		
	STK-616T-65MWB3	±65	± 74.7	3.3	20.3	600	0.2	8	YES	0~3	0~4.5	3.5		
		±6.5	± 7.4	3.3	203	600	0.2	8	YES	0~3	0~4.5	3.5		
STK-616EML	STK-616E-30MLB3	±30	± 34.5	3.3	44	600	0.9	8	NO	N/A	N/A	3.5	ALLEGRO ACS723KMA	SOIC16W Like 10.3 × 10.3 mm
	STK-616E-20MLB5	±20	± 23	5	100	600	0.9	8	NO	N/A	N/A	3.5		
	STK-616E-30MLB5	±30	± 34.5	5	66	600	0.9	8	NO	N/A	N/A	3.5		
	STK-616E-50MLB5	±50	± 57.5	5	40	600	0.9	8	NO	N/A	N/A	3.5		
	STK-616E-65MLB5	±65	± 74.7	5	30.75	600	0.9	8	NO	N/A	N/A	3.5		
STK-616BML	STK-616B-6.5MLB5	±6.5	± 7.4	5	200	600	0.9	8	YES	0~3	0~4.5	3.5	ALLEGRO ACS720	SOIC16W Like 10.3 × 10.3 mm
	STK-616B-13MLB5	±13	± 14.9	5	100	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616B-15MLB5	±15	± 17.2	5	90	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616B-28MLB5	±28	± 32.2	5	48	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616B-35MLB5	±35	± 40.2	5	38.5	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616B-56MLB5	±56	± 64.4	5	24	600	0.9	8	YES	0~3	0~4.5	3.5		
	STK-616B-65MLB5	±65	± 74.7	5	20.5	600	0.9	8	YES	0~3	0~4.5	3.5		
STK-616DML	STK-616D-12MLB3	±12.5	± 37.5	3.3	37	600	0.9	7.5	YES	0~3	0~4.5	3.5	ALLEGRO ACS716	SOIC16W Like 10.3 × 10.3 mm
	STK-616D-25MLB3	±25	± 75	3.3	18.5	600	0.9	7.5	YES	0~3	0~4.5	3.5		
	STK-616D-6MLB5	±6	± 14	5	151	600	0.9	7.5	YES	0~3	0~4.5	3.5		
	STK-616D-12MLB5	±12.5	± 37.5	5	56	600	0.9	7.5	YES	0~3	0~4.5	3.5		
	STK-616D-25MLB5	±25	± 75	5	28	600	0.9	7.5	YES	0~3	0~4.5	3.5		
STK-616ZMF	STK-616Z-10MFU5	10	± 0	5	400	2000	0.05	4.2	NO	N/A	N/A	3.5	ALLEGRO ACS724	SOIC8 Like 4.9 × 6.0 mm
	STK-616Z-10MFB5	±10	± 11.5	5	200	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-20MFB5	±20	± 23	5	100	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-30MFB5	±30	± 34.5	5	66.7	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-30MFU5	30	± 0	5	133.3	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-40MFB5	±40	± 46	5	50	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-50MFB5	±50	± 57.5	5	40	2000	0.05	4.2	NO	N/A	N/A	3.5		
	STK-616Z-65MFB5	±65	± 74.7	5	30	2000	0.05	4.2	NO	N/A	N/A	3.5		
STK-616YML	STK-616Y-20MLB5	±20	± 23	5	100	400	1	2.1	NO	N/A	N/A	3.5	ALLEGRO ACS722LLC ACS723LLC ACS724LLC	SOIC8 Like 4.9 × 6.0 mm
	STK-616Y-25MLB5	±25	± 28.7	5	80	400	1	2.1	NO	N/A	N/A	3.5		
	STK-616Y-30MLB5	±30	± 34.5	5	66.7	400	1	2.1	NO	N/A	N/A	3.5		
	STK-616Y-40MLB5	±40	± 46	5	50	400	1	2.1	NO	N/A	N/A	3.5		
	STK-616Y-50MLB5	±50	± 57.5	5	40	400	1	2.1	NO	N/A	N/A	3.5		
	STK-616Y-50MLB3	±50	± 57.5	3.3	26.4	400	1	2.1	NO	N/A	N/A	3.5		

◎Electrical parameters

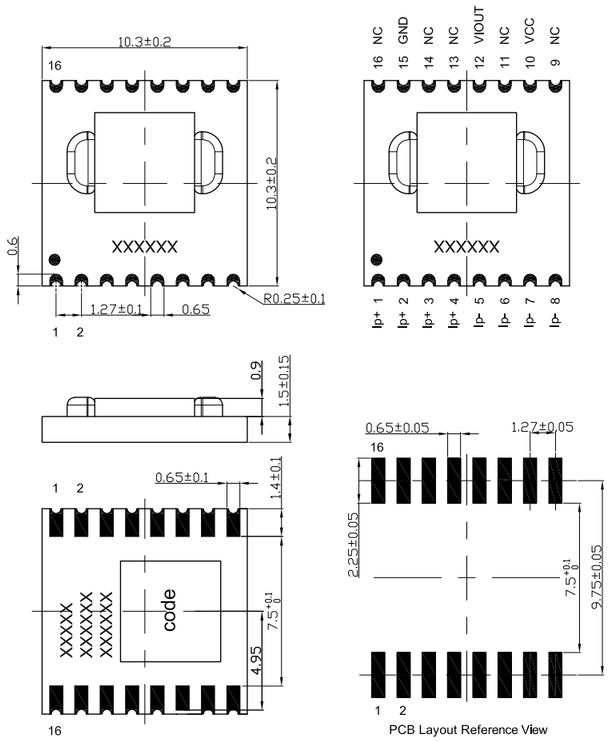
Product	Partnumber	Nominal Current	Current detection range	Supply Voltage	Sensitivity	Frequency Bandwith	Step response time	Clearance	OCD Function	Trigger Delay	Trigger Holding	Accuracy Error	COMPANY PRODUCT	PRODUCT PACKAGE
		I_pn (A)	I_pm (A)	Vcc (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	d_Cl (mm)	OCD	t_mask (μs)	t_hold (ms)	Acc (%FS)		
STK-616TMWD	STK-616T-20MWDB5	±20	±23	5	40	600	0.2	8	NO	N/A	N/A	3.5	NA	SOIC16W Like 10.3 × 10.3 mm
	STK-616T-40MWDB5	±40	±46	5	20	600	0.2	8	NO	N/A	N/A	3.5		
	STK-616T-65MWDB5	±65	±74.7	5	13.3	600	0.2	8	NO	N/A	N/A	3.5		
	STK-616T-33MWDB3	±33	±37.9	3.3	39.6	600	0.2	8	NO	N/A	N/A	3.5		
	STK-616T-20MWDB3	±20	±23	3.3	66	600	0.2	8	NO	N/A	N/A	3.5		
	STK-616T-40MWDB3	±40	±46	3.3	33	600	0.2	8	NO	N/A	N/A	3.5		
	STK-616T-65MWDB3	±65	±74.7	3.3	20.3	600	0.2	8	NO	N/A	N/A	3.5		
SHK-616VM	SHK-616VM-50MLB5	±50	±50	5	40	120	3	0.5	N/A	N/A	N/A	3	NA	NA
	SHK-616VM-100MLB5	±100	±100	5	20	120	3	0.5	N/A	N/A	N/A	3		
	SHK-616VM-150MLB5	±150	±150	5	13.3	120	3	0.5	N/A	N/A	N/A	3		
SHK-616VM2	SHK-616VM-50MLB5-S2	±50	±50	5	40	120	3	0.5	N/A	N/A	N/A	3	NA	NA
	SHK-616VM-100MLB5-S2	±100	±100	5	20	120	3	0.5	N/A	N/A	N/A	3		
	SHK-616VM-150MLB5-S2	±150	±150	5	13.3	120	3	0.5	N/A	N/A	N/A	3		

◎STK-616K

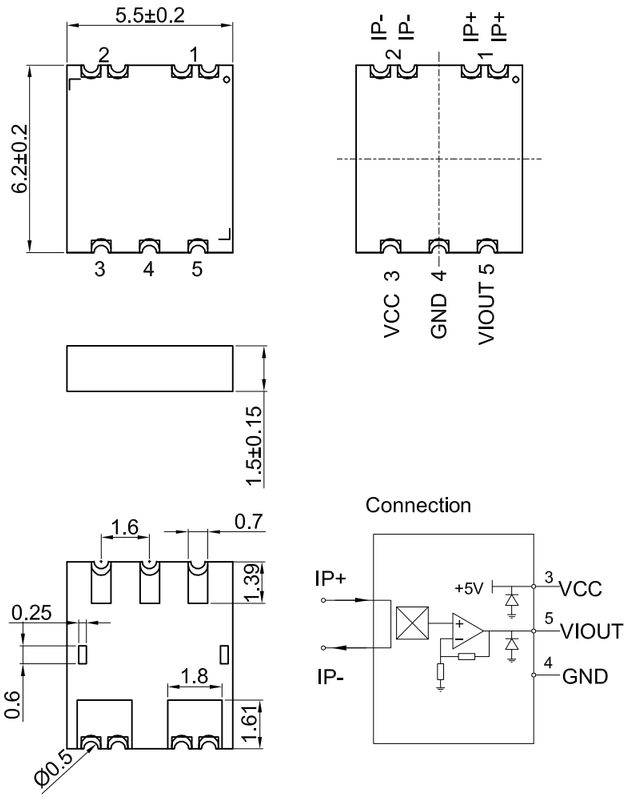


◎STK-616T

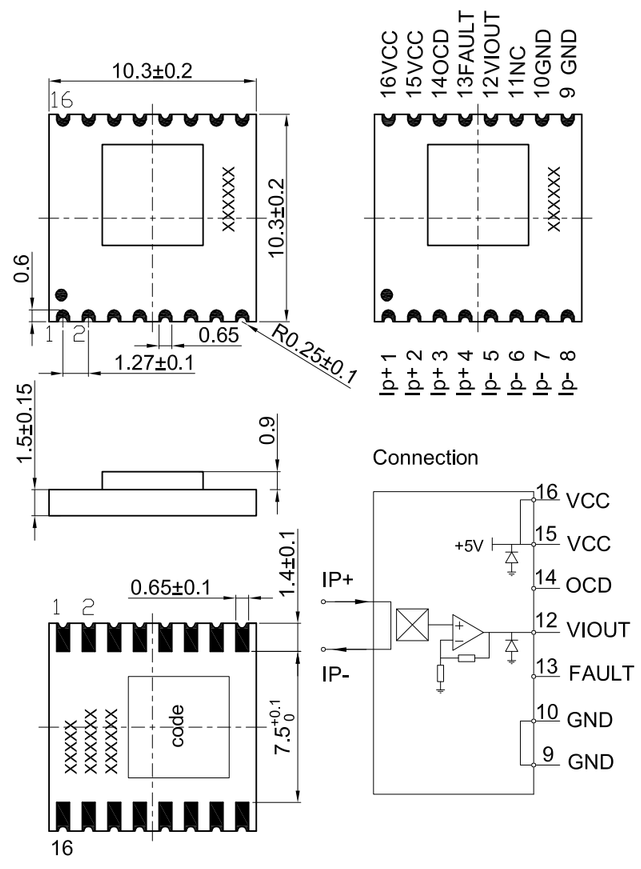
STK-616E



STK-616V



STK-616KF



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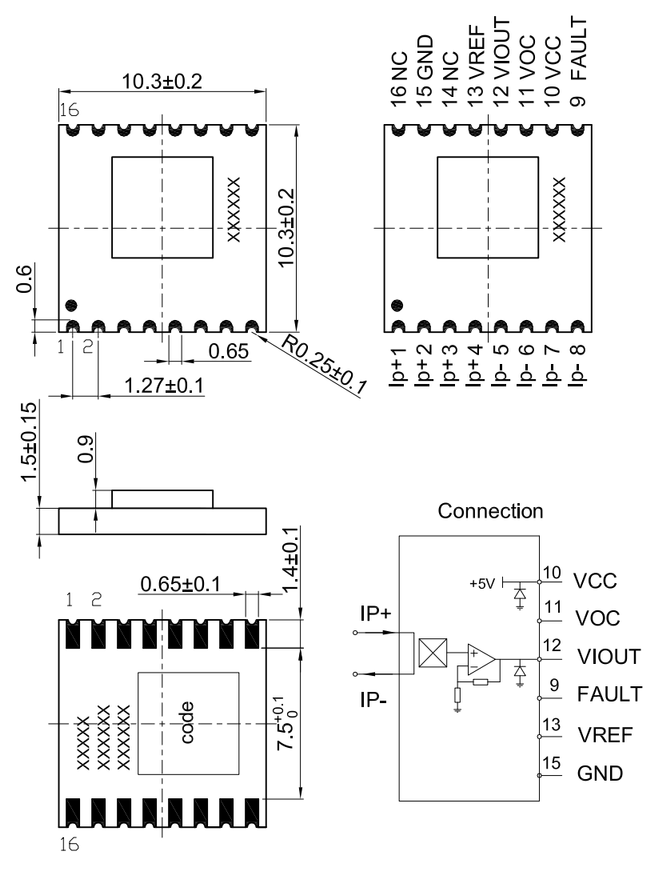

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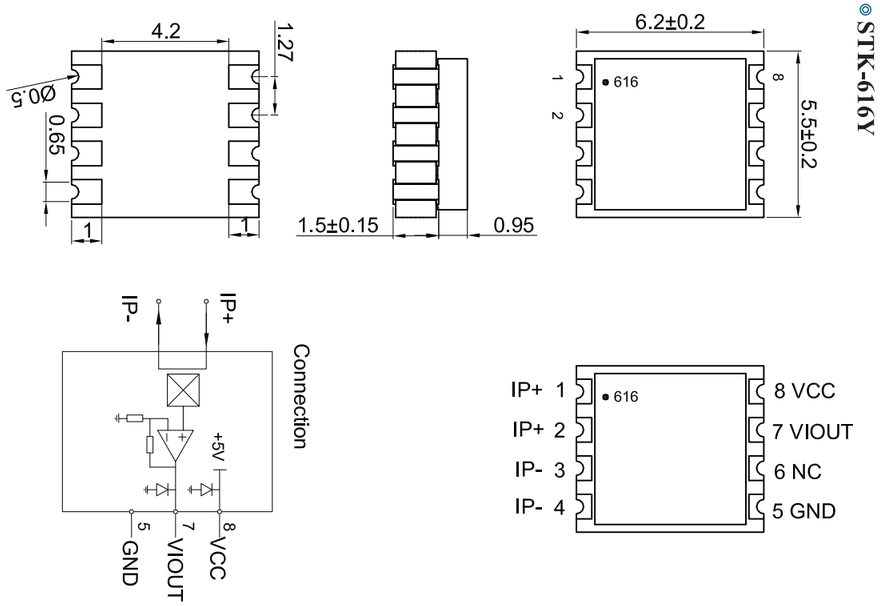

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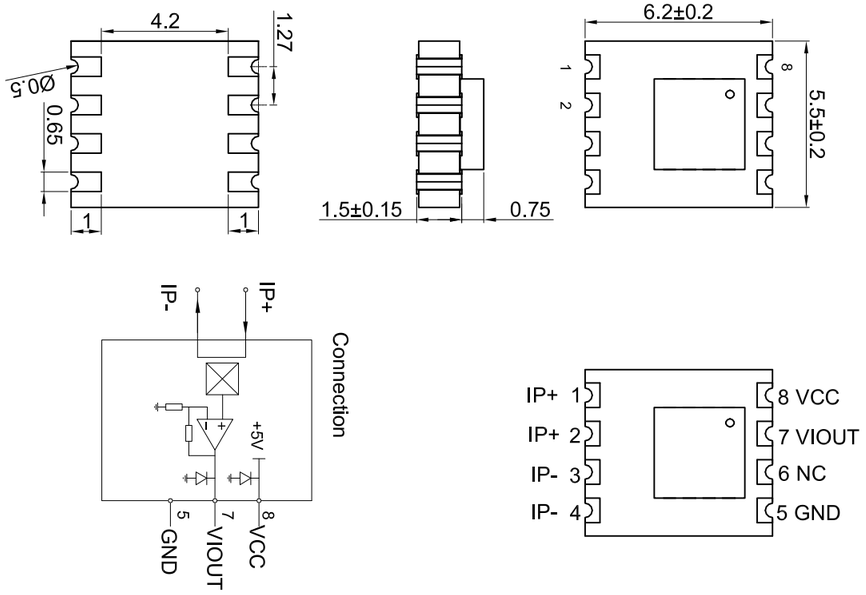

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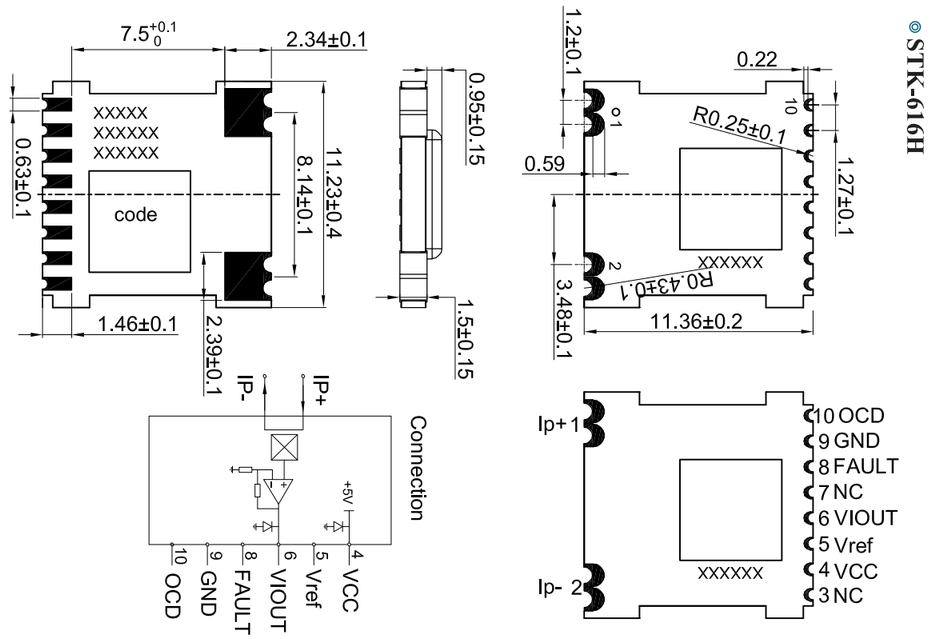

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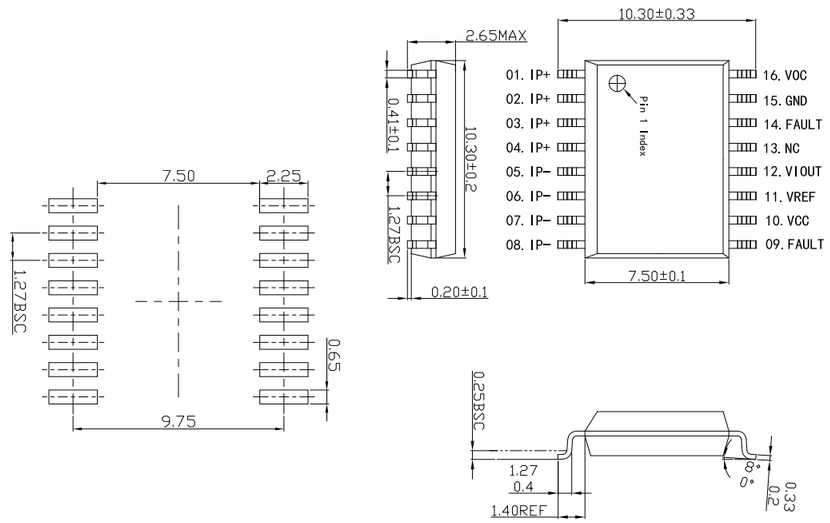
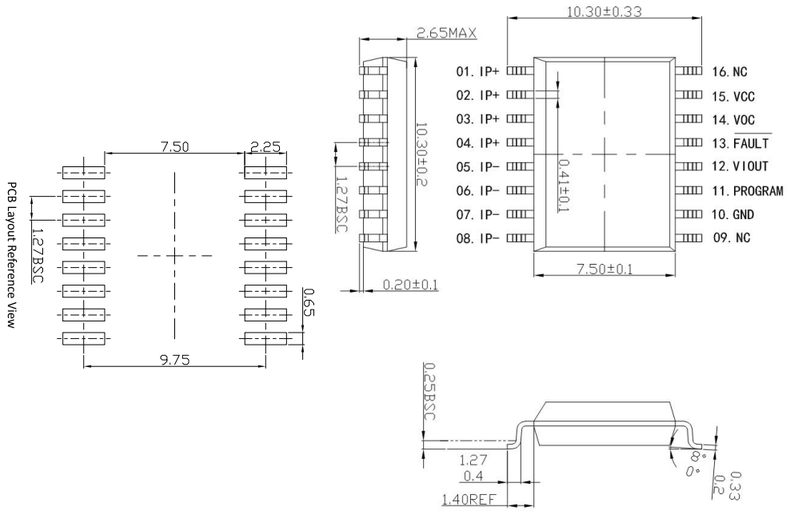
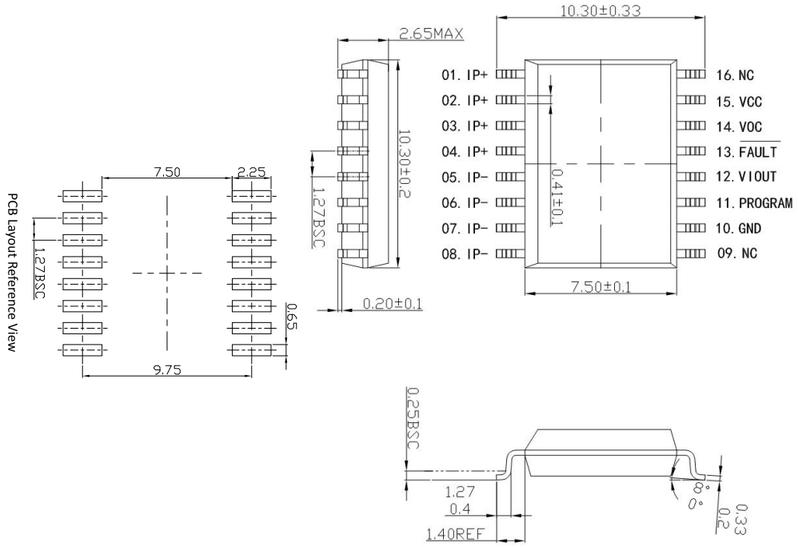


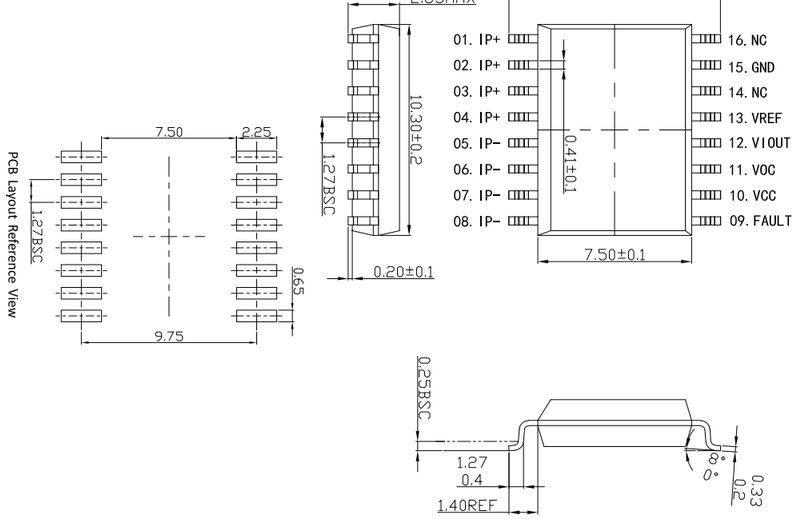
STK-616KML



STK-616KMF



STK-616TML



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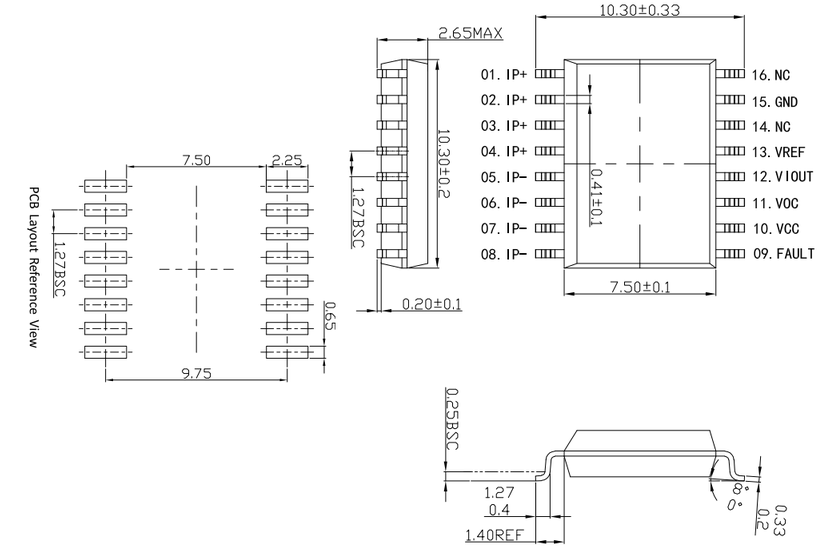
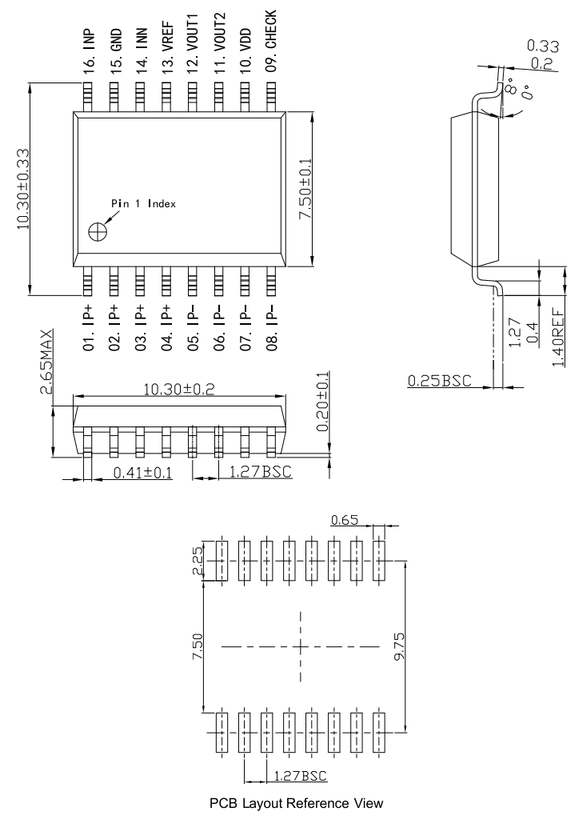
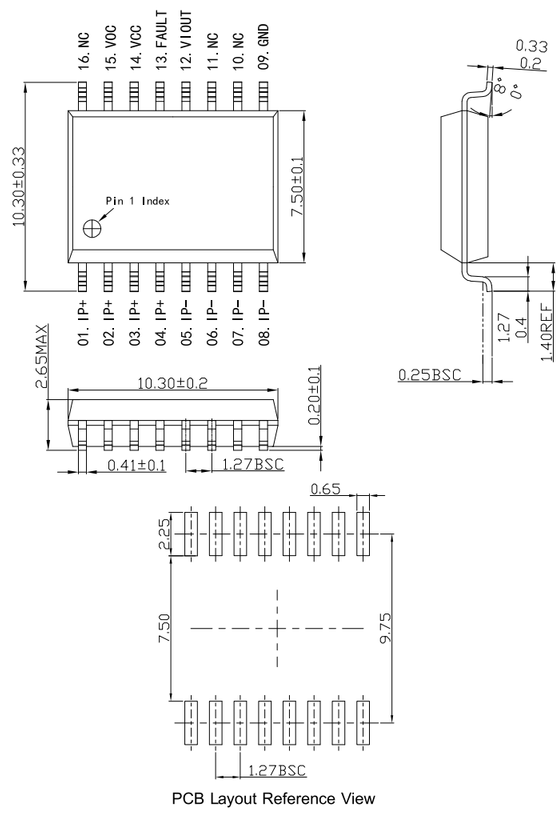


STK-616TMWD



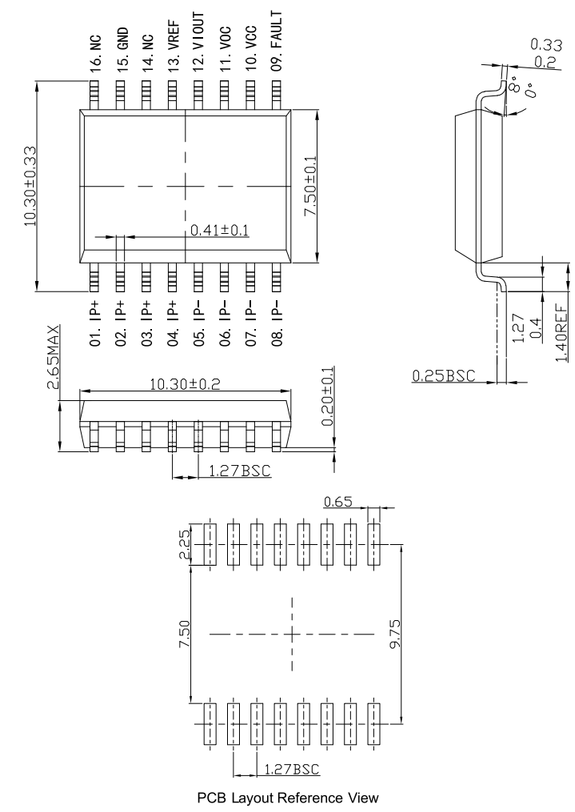
PCB Layout Reference View

STK-616BML



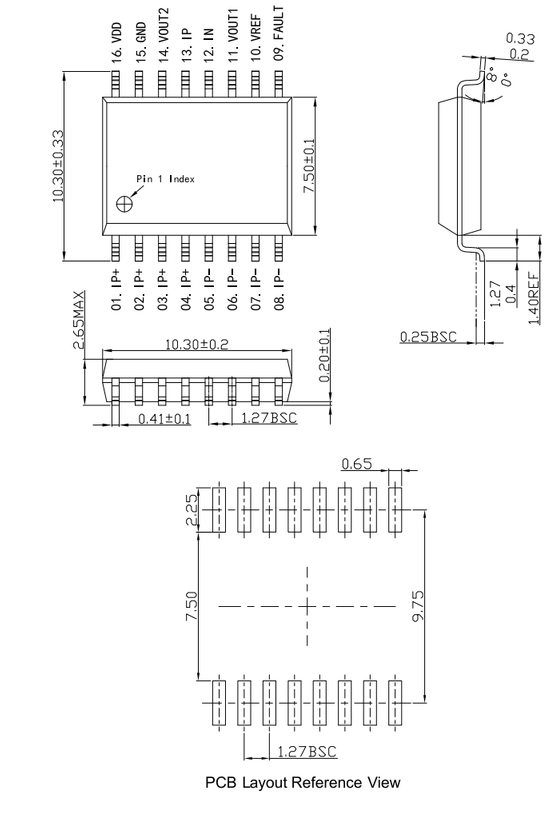
PCB Layout Reference View

STK-616TMM



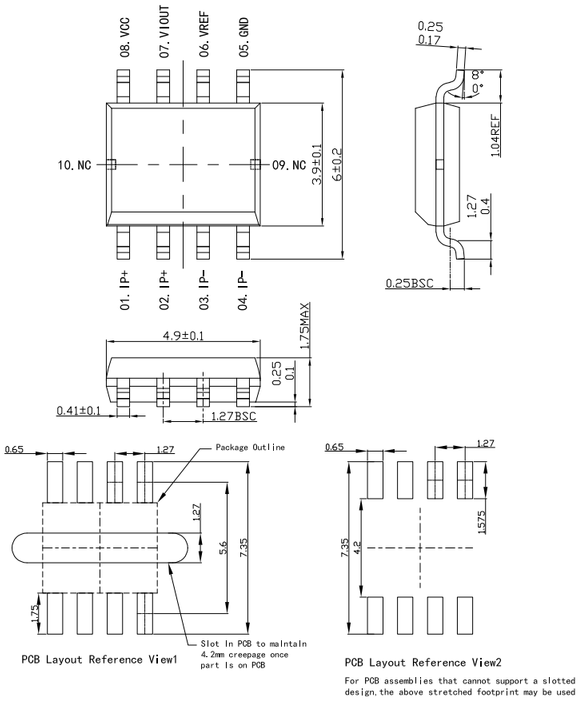
PCB Layout Reference View

STK-616TMW

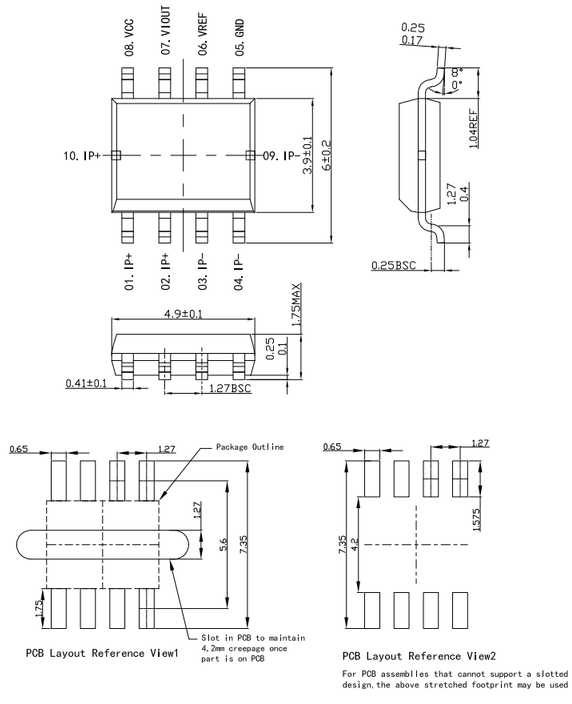


PCB Layout Reference View

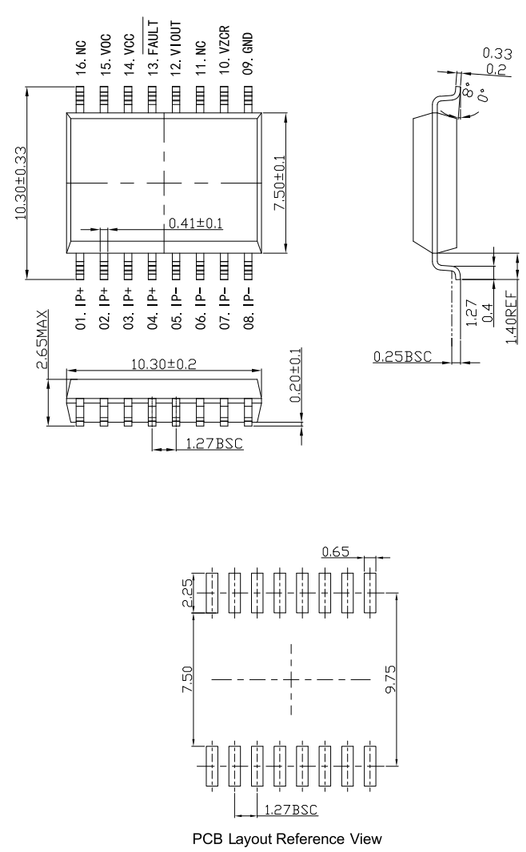
STK-616ZMF



STK-616YML



STK-616DML



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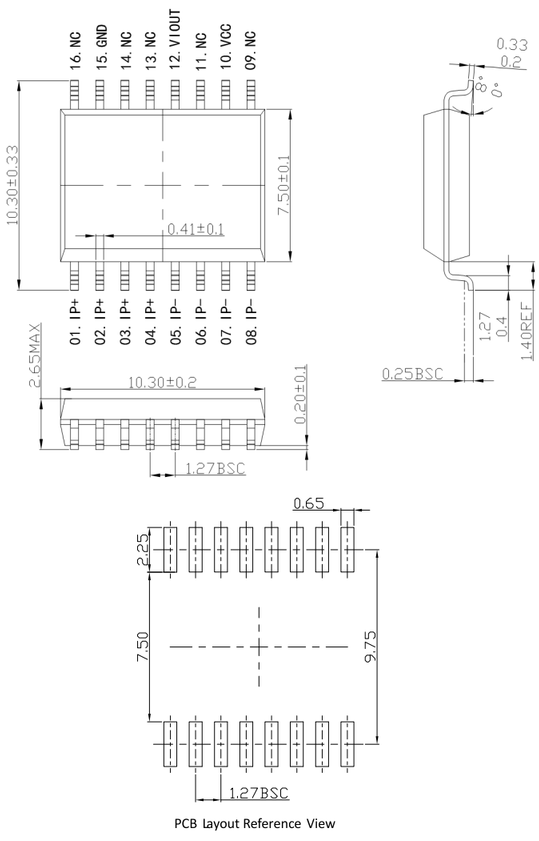
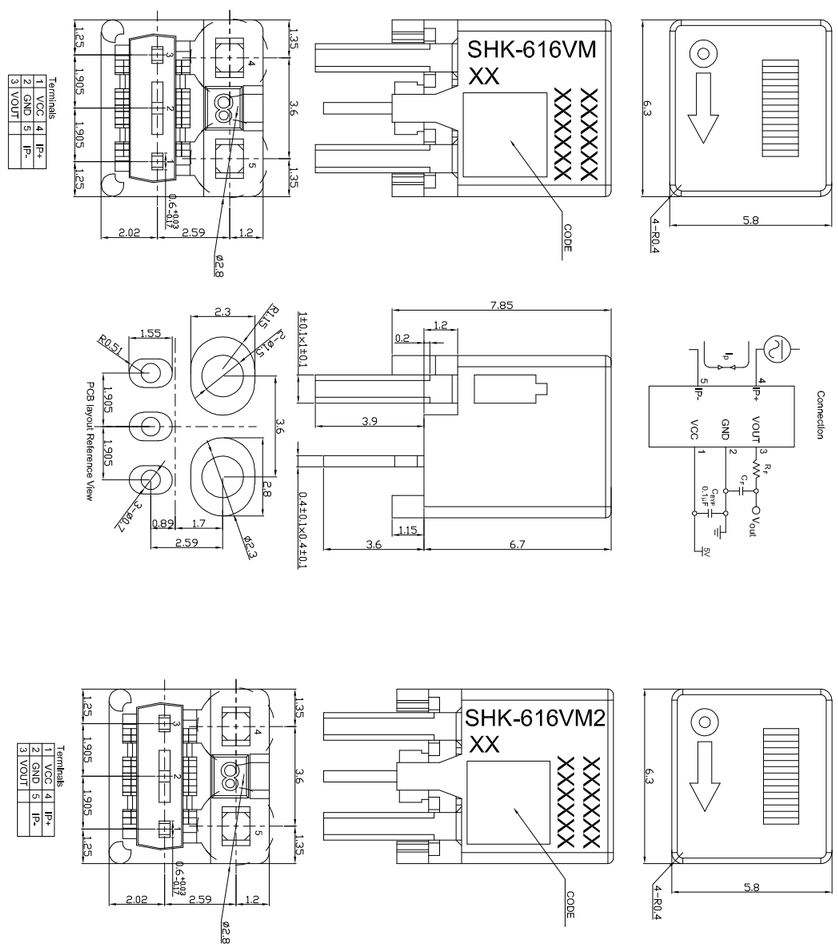
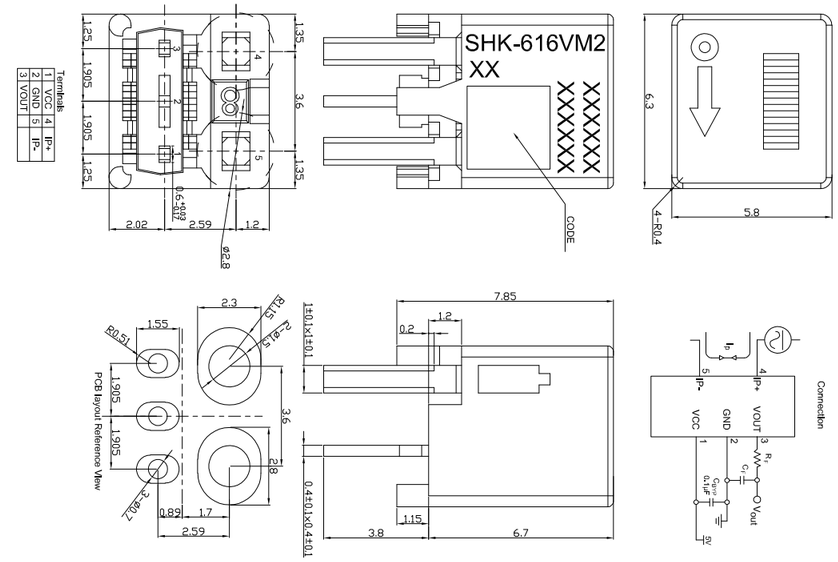


◎STK-616VM



◎STK-616VM2



Product Series: STK-LBS

STK-LBS/6G

STK-LBS/S

STK-LBS/S2

Features

- · High frequency band width of 250 kHz
- · Response time of down to 3 μs
- · Open loop design
- · Coreless design enbles the small dimensions
- · Ampere circuital theorem design supports the common-mode field rejection.
- · Support supply voltage of 3.3 V or 5.0 V

Application

- · Motor driver

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6.5
ESD rating(HBM)	U_{ESD}	kV	4

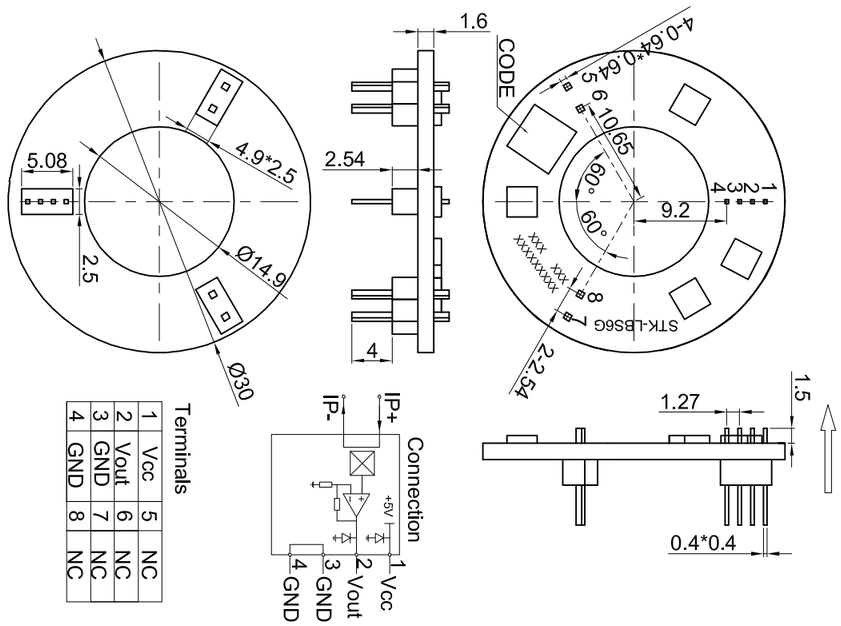
◎Isolation parameter

Parameter	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	1.0	AC test 50Hz/1 min
Clearance (pri. -sec)	Dcl	mm	1.0	See note ①
Creepage (pri. -sec)	Dcp	mm	1.0	See note ②
Comparative tracking index	CTI	V	PLC3	

◎Electrical parameters

Product	Partnumber	Primary Current range	Supply Voltagr	Sensitivity	Frequency Bandwith	Step response time	Clearance	OCD Function	Trigger Delay	Trigger Holding	Fluxgate	Close-loop	Open-loop
		I_pm (A)	Vcc (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	mm	OCD	t_mask (μs)	t_hold (ms)			
STK-LBS/S	STK-200LBS/S	±200	3.3	6	250	3	1	N/A	N/A	N/A			○
	STK-800LBS/S2	±800	5	2.5	250	3	1	N/A	N/A	N/A			○
STK-LBS/6G	STK-100LBS/6G	±100	5	20	250	3	0.5	N/A	N/A	N/A			○
	STK-200LBS/6G	±200	5	10	250	3	0.5	N/A	N/A	N/A			○
	STK-300LBS/6G	±300	5	6.66	250	3	0.5	N/A	N/A	N/A			○
	STK-400LBS/6G	±400	5	5	250	3	0.5	N/A	N/A	N/A			○
	STK-500LBS/6G	±500	5	4	250	3	0.5	N/A	N/A	N/A			○
	STK-600LBS/6G	±600	5	3.33	250	3	0.5	N/A	N/A	N/A			○
	STK-700LBS/6G	±700	5	2.85	250	3	0.5	N/A	N/A	N/A			○
	STK-800LBS/6G	±800	5	2.5	250	3	0.5	N/A	N/A	N/A			○
	STK-900LBS/6G	±900	5	2.22	250	3	0.5	N/A	N/A	N/A			○
	STK-1000LBS/6G	±1000	5	2	250	3	0.5	N/A	N/A	N/A			○

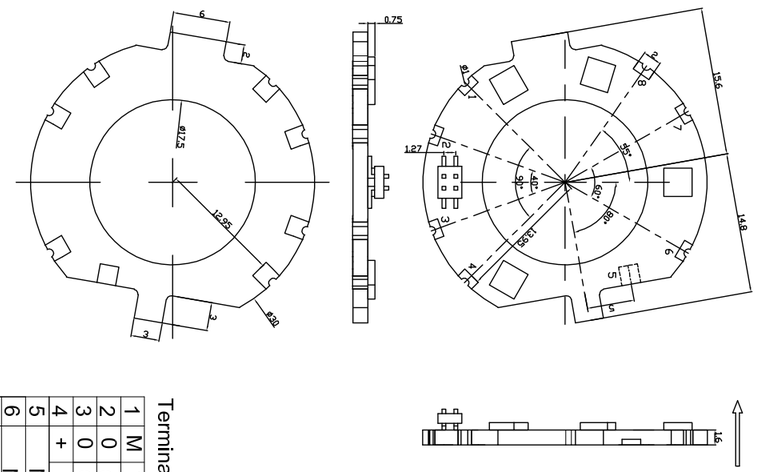
◎STK-LBS/6G



Terminals

1	Vcc	5	NC
2	Vout	6	NC
3	GND	7	NC
4	GND	8	NC

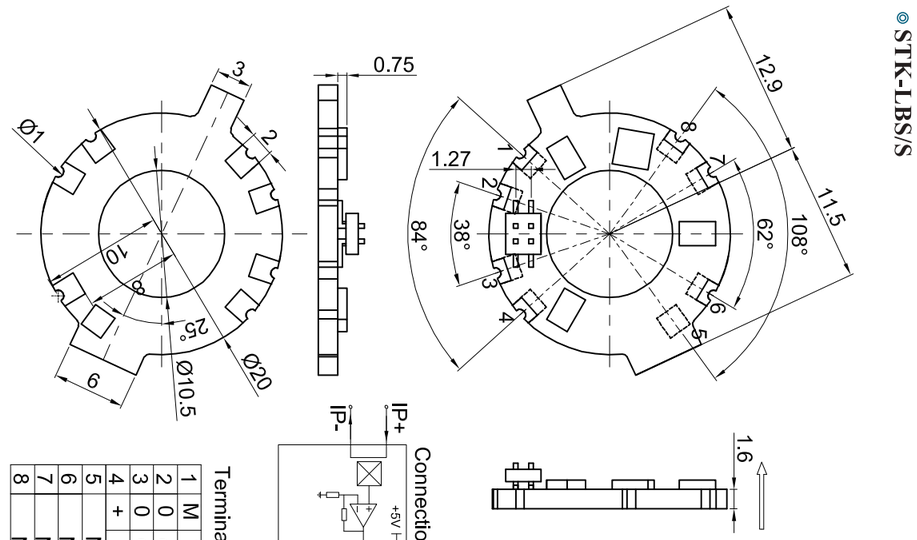
◎SHK-VBS/S2



Terminals

1	M	5	Vout
2	0	6	GND
3	0	7	GND
4	+	8	Vcc
5	NC		
6	NC		
7	NC		
8	NC		

◎STK-LBS/S



Terminals

1	M	5	Vout
2	0	6	GND
3	0	7	GND
4	+	8	Vcc
5	NC		
6	NC		
7	NC		
8	NC		

Current Sensors

Chip Level - CFS1000

Overall accuracy ±1%

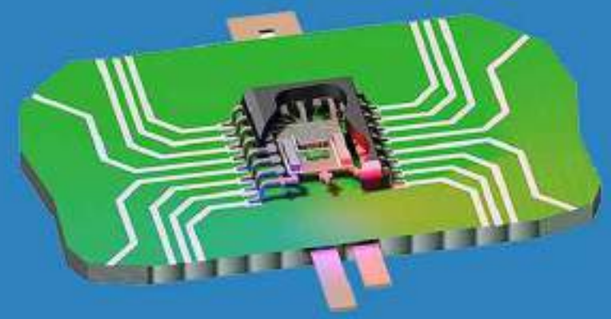
AEC Q-100 qualified

nominal current 10-1000 A

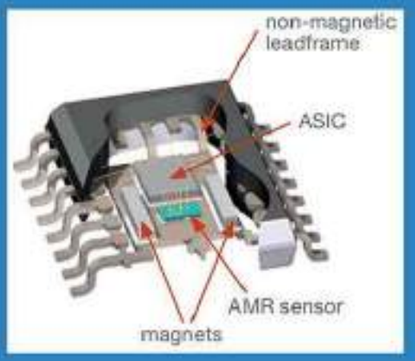
SENSITEC
MAGNETORESISTIVE SENSORS

Highly dynamic MagnetoResistive Sensor for precise and flexible Current Measurement Made in Germany

The programmable CFS1000 current sensor is designed for highly dynamic electronic measurement of DC, AC or pulsed currents. The used AnisotropicMagnetoResistive effect (AMR) enables excellent dynamic response without hysteresis or saturation effects, as present in current measurement systems using iron-cores.
The CFS1000 current sensor consists of an AMR sensor chip, two bias magnets and a signal conditioning ASIC that are all packaged in a standard SMD SO16w package. By variation of the geometry of an external current conductor, the system can be adapted to different current ranges and applications.



The primary current to be measuured is fed below the sensor through a U-shaped current conductor, as for example a busbar. In this way, a magnetic differential field (gradient) is generated between both sides of the conductor, which is measured by the sensor element. By measuring the field gradient at two measurement points being in close proximity, an excellent stray field immunity is achieved. The modulation of the sensor element is compensated by a magnetic counter field on the AMR-sensor chip. The value for this required compensating current is the proportional measure for the primary current and represents the output signal of the sensor. Based on the compensation of the primary field (closed-loop-principle), a high linearity is realized.
CFS1000 current sensors are intended for high-volume applications.



The CFS 1000 is an automotive sensor, qualified according to AEC-Q100

CFS1000

SENSITEC
MAGNETORESISTIVE SENSORS

Integrated MagnetoResistive Current Sensor

The sensor device includes a high-precision sensor signal conditioner IC providing internal feedback of a compensation current for optimum linearity. The IC output is an offset calibrated and pre-scaled current which is proportional to the primary current measured. This output is easily converted to a voltage with an external resistor at the post-processing device (usually ADC or amplifier). A preciseon-chip voltage reference is generated. Alternatively, an external reference can be used. Total accuracy of a multi-sensor system is improved by sharing one voltage reference for all sensors. Additionally, a fast overcurrent alarm output allows immediate reaction to overload events independent of controller and software

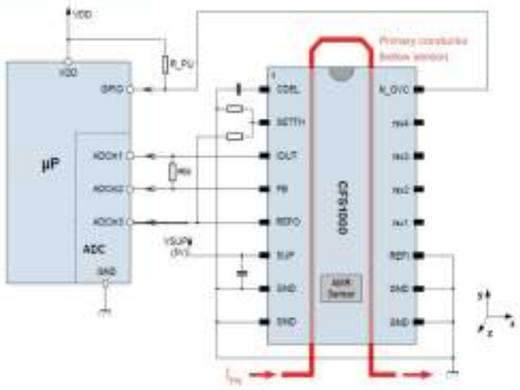
Product Overview

Article Description	Package	Delivery Type
CFS1000AAA-AE	SOIC16w (300 mil)	Tape on reel

Quick Reference Guide

Parameter	Description	Min.	Typ.	Max.	Unit
V_{SUP}	Supply voltage	4.75	5.0	5.25	V
I_{PN}	Primary nominal current (RMS) [1]	10		1000	A
I_{PR}	Output current at I_{PN}		2		mA
f_{-3}	Upper cut-off frequency (-3 dB)		500		kHz
E_T	Overall accuracy [2] (T = 25 °C; calibrated)			±1.3	%
T_{CE}	Overall accuracy [2] (T = -40 °C to +125 °C; calibrated)			±2	%
T_{amb}	Ambient temperature	-40		+125	°C

Application Circuitry



Features and Benefits

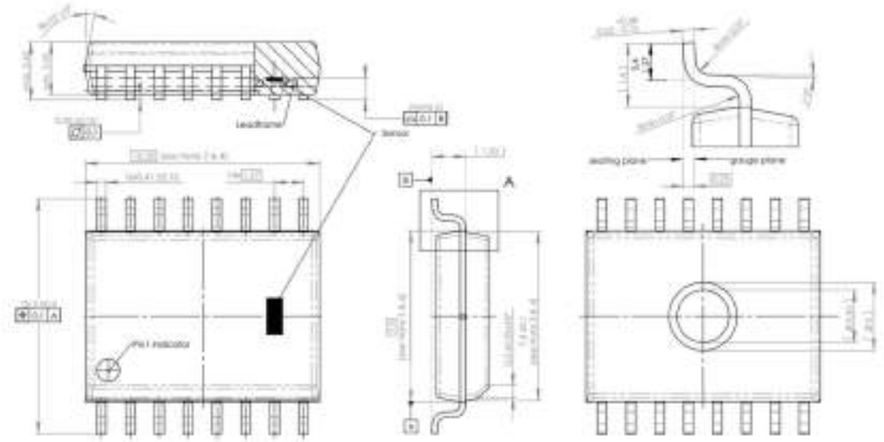
- AEC-Q100 Rev-H, Grade 1 qualified
- Based on Anisotropic Magneto - Resistive (AMR) effect
- Galvanic isolation: Contactless current sensing
- Differential field measurement: High immunity to magnetic stray fields
- High bandwidth current measurement: DC to 500 kHz
- Very fast response time: < 1 µs
- Coreless measurement: Negligible output hysteresis
- Excellent accuracy
- Factory programmed zero-offset temp-coefficient
- Internal precision reference or external reference input
- Fast overcurrent detection with tunable threshold

Main Application Fields

- E-Mobility
- EV traction
- Electrical motor controls, AC variable speed drives
- Power inverters
- Photovoltaics (micro-inverters)
- Switch mode power supplies (SMPS)
- Current measurement for safety switch control
- Battery management

Package Information

The CFS1000 is available in a Pb free, RoHs compliant, SO16w plastic package according to JEDEC MS-013-F, variant AA.
The package is classified to Moisture Sensitivity Level 3 (MSL 3) according to JEDEC J-STD-020 with a soldering peak temperature of (260 + 5) °C.



Product Code Calibration Module

Product code	Number of connectors	Illustration
CFP1000AAA	1x	
CFP1000ABA	4x	

Product Code Sensor

Product code	Package	Packaging	Illustration
CFS1000AAA	SOIC16w	Tape & Reel	

Product Codes Evaluation Boards

Product code	I_{PN} (A)	I_{PM} (A)	Illustration
CFK1015AAA	15	45	
CFK1025AAA	25	75	
CFK1050AAA	50	150	
CFK1100ABA	100	300	
CFK1250ABA	250	700	
CFK1400ABA	400	1200	
CFK1200ACA	3 x 200	3 x 600	

Analytical simulation sofware

Analytical simulation of CFS1000 sensor for standard current bar designs

Current Sensors

High Frequency

Frequency Bandwith up to **3 MHz**

Step Response Time **< 50 nsec**

Fast current sensors for advanced applications

Today, the steadily increasing need of electric power is a global concern that must be faced through an improvement of the energy efficiency (reduction of power consumption) in high-power and high-frequency electronics devices. The development of new technologies for energy efficient high-power and high-frequency devices is driven by strategic interests in different fields, e.g. energy conversion systems (photovoltaic, automotive, energy distribution,…), telecommunication, transportation, consumer electronics, etc. Until now, most of powerelectronics devices have been based on silicon (Si). However, Si electronics has almost reached its physical limits and the introduction of new materials and technologies "beyond Si" has become mandatory.In addition, another important driving force for high-frequency components is the market of the microwave and millimeter wave signal processing, for civilian, military and space applications (satellites, radars, etc.). In this context, wide band gap (WBG) semiconductors like Silicon Carbide (SiC), Gallium Nitride (GaN) and Diamond, and other materials like GaAs, graphene and related 2D-materials, etc., are considered the materials of choice for the next generation of high efficient devices operating at high power, high frequency and under harsh environment (temperature, radiation, …).

The high switching speeds of modern power electronics call for sensors able to keep up with the megahertzlevel frequencies involved.

Sinomags and Sensitec Sensors based on the magnetoresistive effect fits the bill.

Product Series: STK-616/xF


STK-616KMF


STK-616TMF


STK-616ZMF


STK-616KF


STK-616TF

Features

- Very high frequency band width of up to 2 MHz
- Very fast response time of down to 50 ns
- Open loop design
- Coreless design enbles 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

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

◦ Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40~125
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4

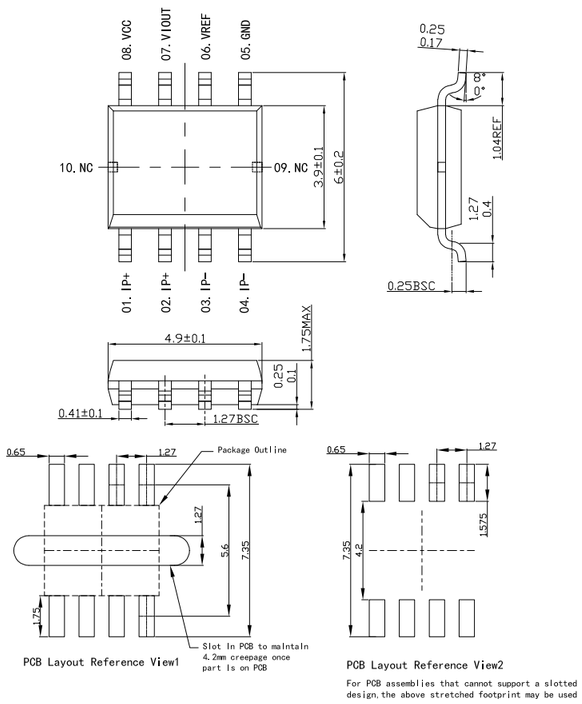
◎ Isolation parameter

Parameter	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	3.6	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	$\hat{U}_W$	kV	6	1.2/50μs
Clearance (pri. -sec)	Dcl	mm	4.2~8	See note ①
Creepage (pri. -sec)	Dcp	mm	6	See note ②

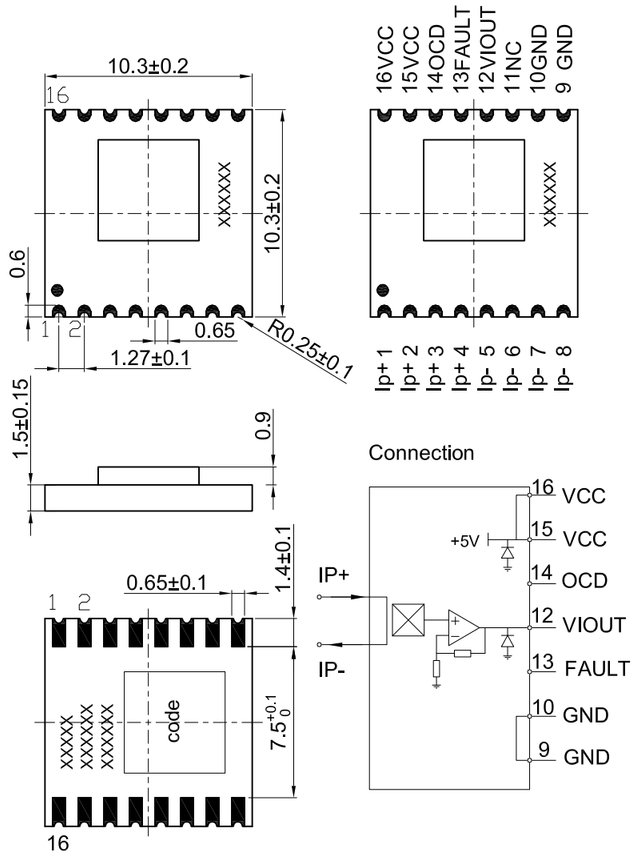
◎ Electrical parameters

Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)	mm	OCD			
STK-616TMF	STK-616T-40MFB5	±40	±46	5	50	1500	0.2	3.5	7.5	YES			○
	STK-616T-65MFB5	±65	±74.7	5	30.8	1500	0.2	3.5	7.5	YES			○
	STK-616T-40MFB3	±40	±46	3.3	33	1500	0.2	3.5	7.5	YES			○
	STK-616T-65MFB3	±65	±74.7	3.3	20.3	1500	0.2	3.5	7.5	YES			○
STK-616KMF	STK-616K-40MFB3	±40	±46	3.3	33	1500	0.2	3	8	YES			○
	STK-616K-65MFB3	±65	±74.7	3.3	20.3	1500	0.2	3	8	YES			○
	STK-616K-30MFB5	±30	±34.5	5	66.6	1500	0.2	3	8	YES			○
	STK-616K-40MFB5	±40	±46	5	50	1500	0.2	3	8	YES			○
STK-616ZMF	STK-616Z-10MFU5	10	± 0	5	400	2000	0.05	3.5	4.2	NO			○
	STK-616Z-10MFB5	±10	± 11.5	5	200	2000	0.05	3.5	4.2	NO			○
	STK-616Z-20MFB5	±20	± 23	5	100	2000	0.05	3.5	4.2	NO			○
	STK-616Z-30MFB5	±30	± 34.5	5	66.7	2000	0.05	3.5	4.2	NO			○
	STK-616Z-30MFU5	30	± 0	5	133.3	2000	0.05	3.5	4.2	NO			○
	STK-616Z-40MFB5	±40	± 46	5	50	2000	0.05	3.5	4.2	NO			○
	STK-616Z-50MFB5	±50	± 57.5	5	40	2000	0.05	3.5	4.2	NO			○
	STK-616Z-65MFB5	±65	± 74.7	5	30	2000	0.05	3.5	4.2	NO			○
STK-616K-F	STK-616K-40FC	±40	±46	3.3	33	1000	0.2	2	6	YES			○
	STK-616K-65FC	±65	±74.7	3.3	20	1000	0.2	2	6	YES			○
STK-616T-F	STK-616T-40FB	±40	±46	5	50	1000	0.2	2	7	YES			○
	STK-616T-65FB	±65	±74.7	5	30.7	1000	0.2	2	7	YES			○
	STK-616T-66FC	±66	±75.9	3.3	19.8	1000	0.2	2	7	YES			○
	STK-616T-100FB	±100	±115	5	20	1000	0.2	2	7	YES			○
	STK-616T-133FU	133	152	3.3	19.8	1000	0.2	2	7	YES			○
	STK-616T-30FB	±30	±34.5	5	66.67	1000	0.2	2	7	YES			○

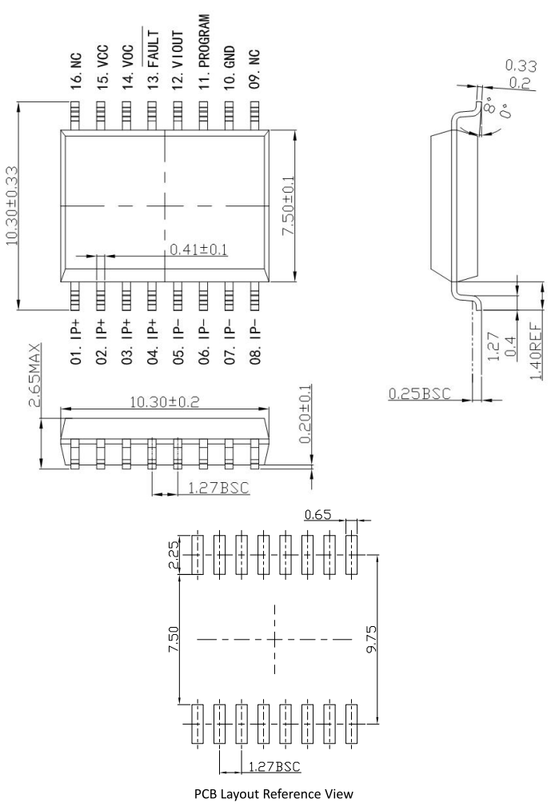
STK-616ZMF



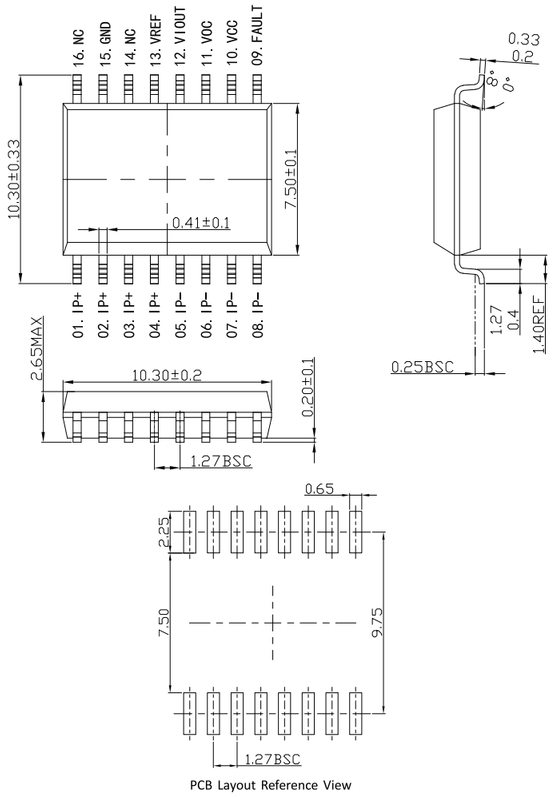
STK-616K-F

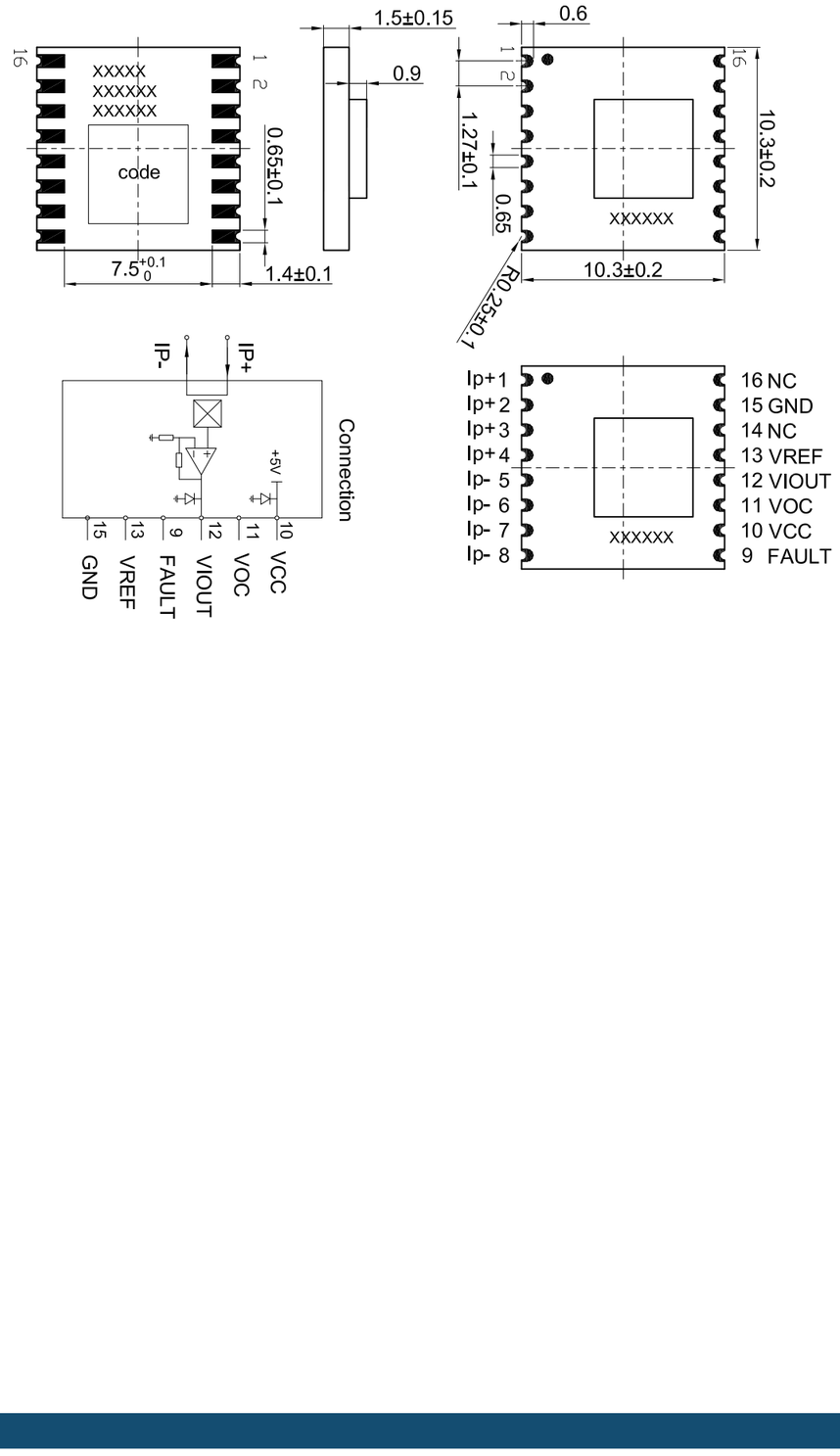


STK-616KMF



STK-616TMF





© STK-616T-F

Product Series: STK-600/F

STK-600/F

Features

- Very high frequency band width of up to 1 MHz
- Very fast response time of 0.4 μs
- Open loop design
- Differential magnetic field detection design supports the common-mode field rejection.
- Support supply voltage of 3.3 V or 5.0 V

Application

- Uninterruptible power supply
- Motor driver
- Switching Mode Power Supply
- EV OBC
- EV DC/DC

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 125
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4

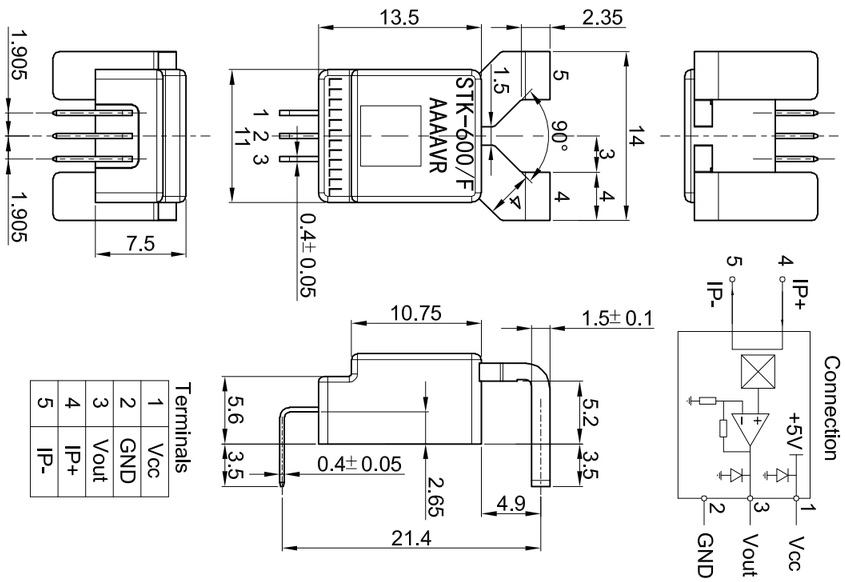
◎Isolation parameter

Parameter	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Clearance (pri. -sec)	Dcl	mm	8	See note ①
Creepage (pri. -sec)	Dcp	mm	8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	≥600	

Electrical parameters

Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Vref (V)	Gain (mV/A, mA/A)	f_band (MHz)	t_r (μs)	Acc. (%FS)	mm	OCD			
STK-600/F	STK-600/F-200AB5	50	±200	5	N/A	10	1	0.4	3.5	8	N/A			○
	STK-600/F-250AB5	50	±250	5	N/A	8	1	0.4	3.5	8	N/A			○
	STK-600/F-300AB5	50	±300	5	N/A	6.67	1	0.4	3.5	8	N/A			○
	STK-600/F-400AB5	50	±400	5	N/A	5	1	0.4	3.5	8	N/A			○

STK-600/F



Product Series: STK-PL/G

STK-PL/G

Features	Application
· Open loop design · Fast response time of 0.4 μs · Wide frequency band width of 800 kHz · Ferrite magnetic core · TMR sensing technology	· Solar energy · Switching Mode Power Supply · Uninterruptible power supply · Motor driver

Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating（HBM）	U_{ESD}	kV	4
ESD rating（CDM）	U_{CDM}	kV	1.5

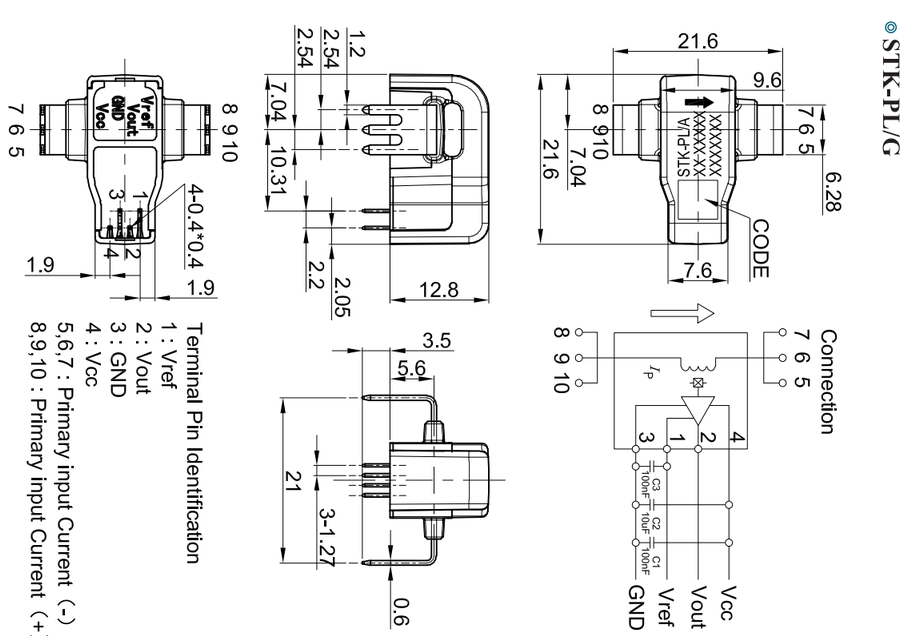
Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	5	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance distance (pri. -sec)	Dcl	mm	8	See note ①
Creepage distance (pri. -sec)	Dcp	mm	8	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)	mm	OCD			
STK-PL/G	STK-10PL/G	±10	±25	5	2.5	80	800	0.4	2	8.5	N/A			○
	STK-20PL/G	±20	±50	5	2.5	40	800	0.4	2	8.5	N/A			○
	STK-32PL/G	±32	±80	5	2.5	25	800	0.4	2	8.5	N/A			○
	STK-50PL/G	±50	±125	5	2.5	16	800	0.4	2	8.5	N/A			○
	STK-40PL/G	±40	±100	5	2.5	20	800	0.4	2	8.5	N/A			○

◎STK-PL/G



Product Series: STK-HD/G


STK-HD/K/G


STK-HD/S/G


STK-HD/P/G

Features

- Open loop design
- Fast response time of 0.4 μs
- Wide frequency band width of 800 kHz
- Ferrite magnetic core
- TMR sensing technology

Application

- Solar energy
- Uninterruptible power supply
- Switching Mode Power Supply
- Motor driver
- EV charger

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	6
ESD rating(HBM)	U_{ESD}	kV	4

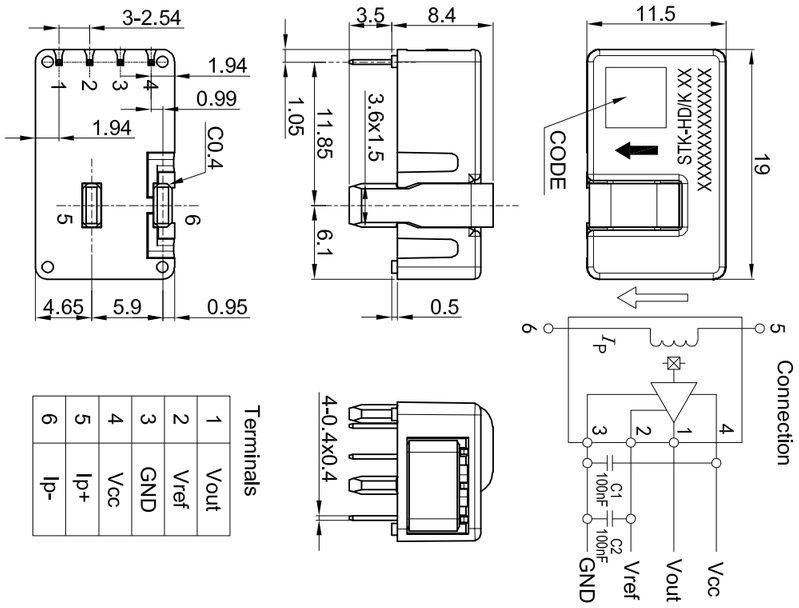
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	$\hat{U}w$	kV	6	
Clearance (pri. -sec)	Dcl	mm	9.6	See note ①
Creepage (pri. -sec)	Dcp	mm	9.6	See note ①
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

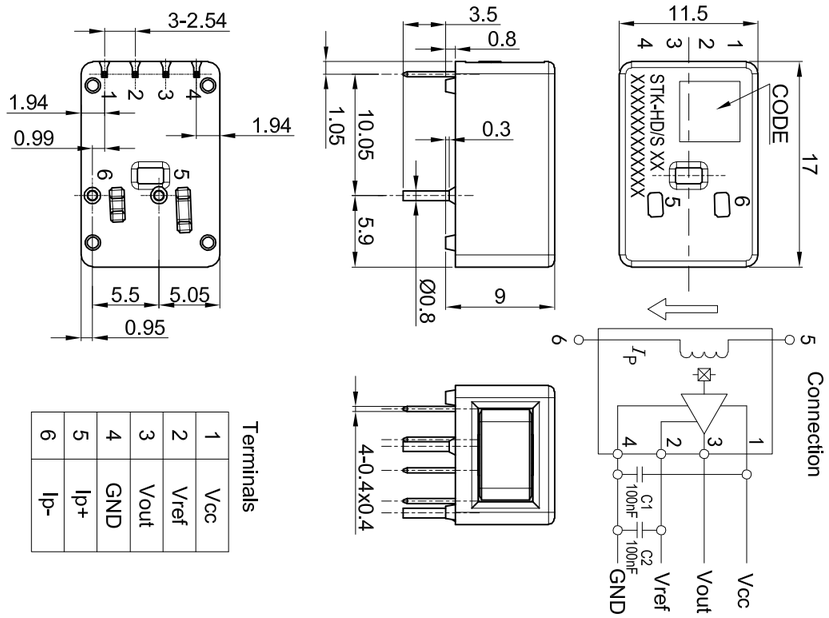
Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Vref (V)	Gain (mV/A, mA/A)	f_band (kHz)	t_r (μs)	Acc. (%FS)	mm	OCD			
STK-HD/S/G	STK-03HD/S/G	3	±7.5	5	2.5	266.7	800	0.4	1.5	9.45	N/A			○
	STK-05HD/S/G	5	±12.5	5	2.5	160	800	0.4	1.5	9.45	N/A			○
	STK-10HD/S/G	10	±25	5	2.5	80	800	0.4	1.5	9.45	N/A			○
STK-HD/K/G	STK-20HD/K/G	20	±50	5	2.5	40	800	0.4	1.5	9.85	N/A			○
	STK-32HD/K/G	32	±80	5	2.5	25	800	0.4	1.5	9.85	N/A			○
	STK-40HD/K/G	40	±100	5	2.5	20	800	0.4	1.5	9.85	N/A			○
	STK-50HD/K/G	50	±125	5	2.5	16	800	0.4	1.5	9.85	N/A			○
STK-HD/P/G	STK-15HD/P2/G	15	±45	5	2.5	53	800	0.4	3.0	9	N/A			○
	STK-10HD/P2/G	10	±25	5	2.5	80	800	0.4	3.0	9	N/A			○
	STK-20HD/P2/G	20	±50	5	2.5	40	800	0.4	3.0	9	N/A			○
	STK-25HD/P2/G	25	±62.5	5	2.5	32	800	0.4	3.0	9	N/A			○
	STK-30HD/P2/G	30	±75	5	2.5	26.7	800	0.4	3.0	9	N/A			○
	STK-20HD/P1S/G	20	±20	5	2.5	62.5	800	0.4	3.0	9	N/A			○
	STK-10HD/P2S/G	10	±30	3.3	2.5	50	800	0.4	3.0	9	N/A			○
	STK-20HD/P2S/G	20	±50	3.3	2.5	25	800	0.4	3.0	9	N/A			○
	STK-30HD/P2S/G	30	±75	3.3	2.5	16.7	800	0.4	3.0	9	N/A			○

◎STK-HD/K/G

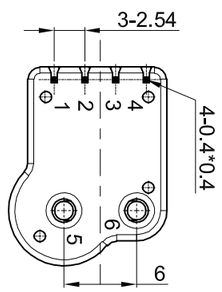


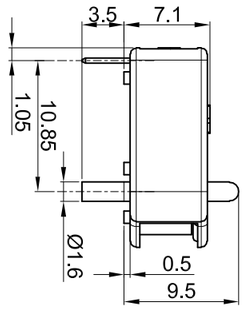
Terminals	
1	Vout
2	Vref
3	GND
4	Vcc
5	Ip+
6	Ip-

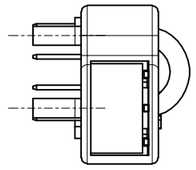
◎STK-HD/S/G

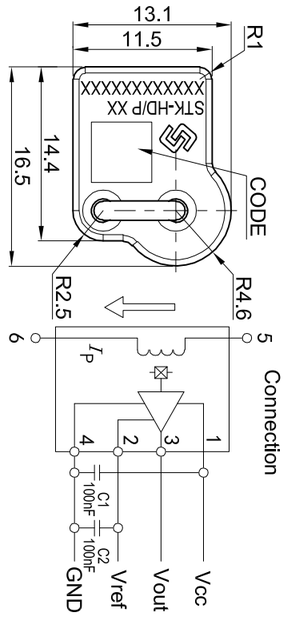


Terminals	
1	Vcc
2	Vref
3	Vout
4	GND
5	Ip+
6	Ip-









◎STK-HD/P/G

Terminals

1	Vcc
2	Vref
3	Vout
4	GND
5	Ip+
6	Ip-

Connection

Product Series: STB-LF/G

STB-LF/G

Features

- Close loop design
- Very fast response time of 200 ns
- Frequency band width of 1MHz
- Good nonlinearity
- Very low accuracy thermal drift
- Supply voltage of ±15 V

Application

- Solar energy
- Wind energy
- Uninterruptible power supply
- Residual current detection

◎Absolute parameters

Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	−40～105
Supply voltage	Vcc	V	±15.75

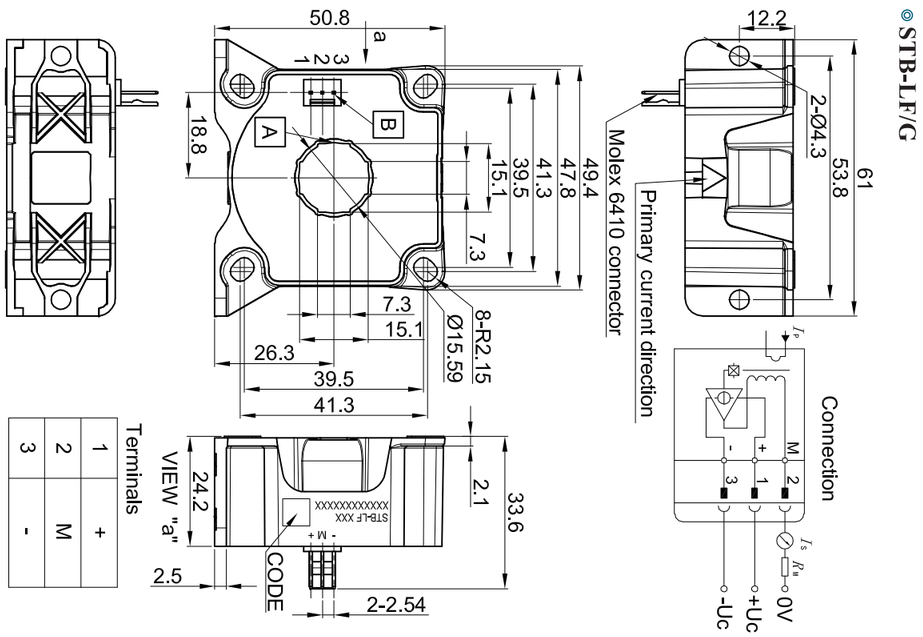
◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance (pri. -sec)	Dcl	mm	10. 2	See note ①
Creepage (pri. -sec)	Dcp	mm	11	See note ②
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Reference Voltage	Frequency Bandwith	response time	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Vref (V)	f_band (MHz)	t_r (μs)	mm	OCD			
STB-LF/G	STB-100LF/G	100	±200	±15	N/A	1	0.2	10.2	N/A	○		

◎STB-LF/G



Product Series: STK-HO/B

STK-HO/B

Features

- Open loop design
- Very fast response time of 200 ns
- Wide frequency band width of 1 MHz
- Ferrite magnetic core

Application

- Uninterruptible power supply
- Motor driver
- Switching Mode Power Supply

◎Absolute parameters

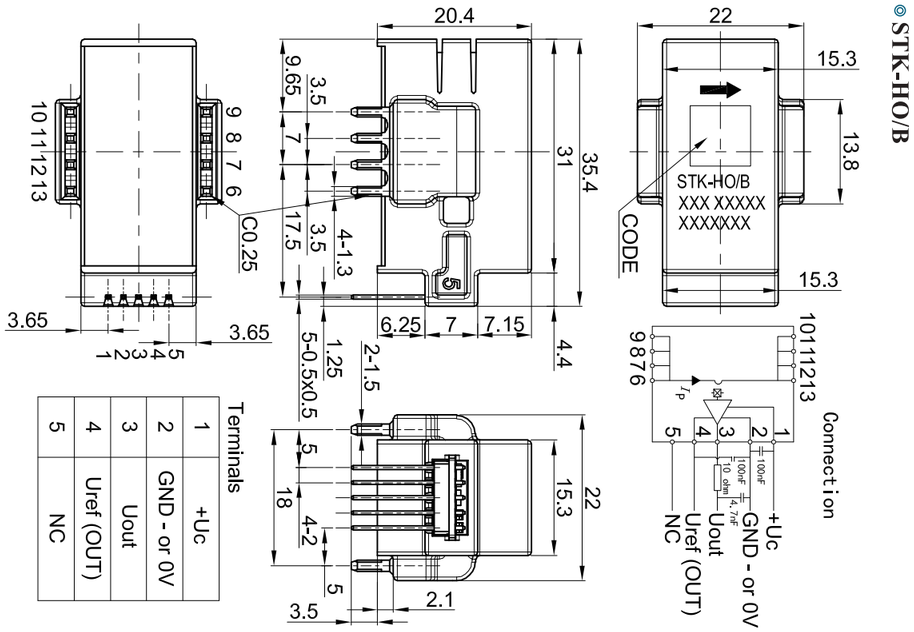
Parameter	Symbol	Unit	Value
Working temperature	T_A	℃	-40 ~ 105
Supply voltage	Vcc	V	5
ESD rating(HBM)	U_{ESD}	kV	4

◎Isolation parameter

Paramete	Symbol	Unit	Value	Remark
RMS voltage for isolation test	Ud	kV	4	AC test 50Hz/1 min
Impulse withstand voltage 1.2/50μs	Ûw	kV	8	
Clearance (pri. -sec)	Dcl	mm	11.6	See note ①
Creepage (pri. -sec)	Dcp	mm	11.6	See note ①
Case material			V0	According to UL 94
Comparative tracking index	CTI	V	⩾600	

◎Electrical parameters

Product	Partnumber	Norminal Current	Current detection range	Supply Voltage	Reference Voltage	Sensitivity	Frequency Bandwith	Step response time	Accuracy Error	Clearance	OCD Function	Close-loop	Fluxgate	Open-loop
		I_pn (A)	I_pm (A)	Vcc (V)	Vref (V)	Gain (mV/A, mA/A)	f_band (MHz)	t_r (μs)	Acc. (%FS)	mm	OCD			
STK-HO/B	STK-50HO/B	±50	±125	5	2.5	16	1	0.2	3	11.6	N/A			○
	STK-100HO/B	±100	±250	5	2.5	8	1	0.2	3	11.6	N/A			○



Terminals	
1	+Uc
2	GND - or 0V
3	Uout
4	Uref (OUT)
5	NC

◎STK-HO/B

◎ COMPARE LIST

SinoMags Product Series	BRAND / COMPANY
STB-HA/A	LEM HX, HXN Tamura L18PXXXD15
STB-HA/Y	LEM HY
STB-CAS STB-CAS/F	LEM CAS, LEM LES, LEM LXS VAC T60404-N4646-X65X
STB-CAS/R STB-CAS/R/F	LEM CASR, LEM LESR, LEM LXSR VAC T60404-N4646-X66X
STB-CAS/K STB-CAS/K/F	LEM CASK, LEM LKSR VAC T60404-N4646-X76X
STB-LA	LEM LA VAC T60404-N4646-X10X VAC T60404-N4646-X11X
STB-LA/Z (/ZN)	LEM LZSR VAC T60404-N4647-X262
STB-LA/S	LEM LAS VAC T60404-N4646-X46X Tamura F23P100S05R
STB-LA/D	LEM LH/LAH VAC T60404-N4646 -X41X Tamura S23PXXXD15
STB-LF	LEM LF
STB-CAB500	LEM CAB
SHK-VBS/D	LEM DHAB-S

SinoMags Product Series	BRAND / COMPANY
SHK-VBS3	LEM HC5FW
SHK-VBS6	LEM HAH1BVW S HAH1DRW
SHK-VBS/T3,T4 T5,T6,T7,T8,T9	LEM HAH3DR
STK-600/M	Allegro ACS
STK-BS/S1	LEM HASS
STK-BS1	LEM HAS
STK-BS/H	LEM HTB
STK-BS/X	LEM HAX
STK-BS/T	LEM HAT
STK-HO	LEM HO
STK-PL	LEM HLSR
SFG-P	LEM CTSR Magtron RCMU VAC T60404-N4646 -X980
SFG-CPL/B	LEM CDT

COMPARE LIST

SinoMags Product Series	BRAND /COMPANY	PACKAGE
STK-616A	AKM CZ-3AGx	SOIC16W Like 10.9 × 12.7 mm
STK-616K	ALLEGRO ACS-732/3	SFGSOIC16W Like 10.3 × 10.3 mm-2.0P/P1
STK-616K-F	ALLEGRO ACS-732/3	SOIC16W Like 10.3 × 10.3 mm
STK-616T	ALLEGRO ACS-37002	SOIC16W Like 10.3 × 10.3 mm
STK-616H	LEM HMSR	SOIC16W Like 11.2 × 11.7 mm
STK-616V	ALLEGRO ACS-780 ALLEGRO ACS-72981	SOIC8 Like 5.5 × 6.2 mm
STK-616Y	ALLEGRO ACS722LLC ACS723LLC ACS724LLC ACS725LLC	SOIC8 Like 5.5 × 6.2 mm
STK-600	fast ACS770 or ACS758	PFF PSF
STK-616TMF	ALLEGRO ACS37002	SOIC16W Like 10.3 × 10.3 mm
STK-616ZMF	ALLEGRO ACS724	SOIC8 Like 4.9 × 6.0 mm

COMPARE LIST

SinoMags Product Series	BRAND /COMPANY	PACKAGE
STK-616KMF	ALLEGRO ACS732/3	SOIC16W Like 10.3 × 10.3 mm
STK-616TML	ALLEGRO ACS37002	SOIC16W Like 10.3 × 10.3 mm
STK-616EML	ALLEGRO ACS723KMA ACS724KMA ACS725KMA	SOIC16W Like 10.3 × 10.3 mm
STK-616BML	ALLEGRO ACS720	SOIC16W Like 10.3 × 10.3 mm
STK-616DML	ALLEGRO ACS716	SOIC16W Like 10.3 × 10.3 mm
STK-616YML	ALLEGRO ACS722LLC ACS723LLC ACS724LLC ACS725LLC	SOIC8 Like 4.9 × 6.0 mm

Special statement

· Note 1
Definition of clearance : The shortest spatial distance measured between two conductive parts or between conductive parts and the equipment interface.

· Note 2
Definition of creepage : The shortest distance between two conductive parts or between the interface of conductive parts and equipment measured along the insulating surface.

· Note 3
All drawings use the Third−angle projection.