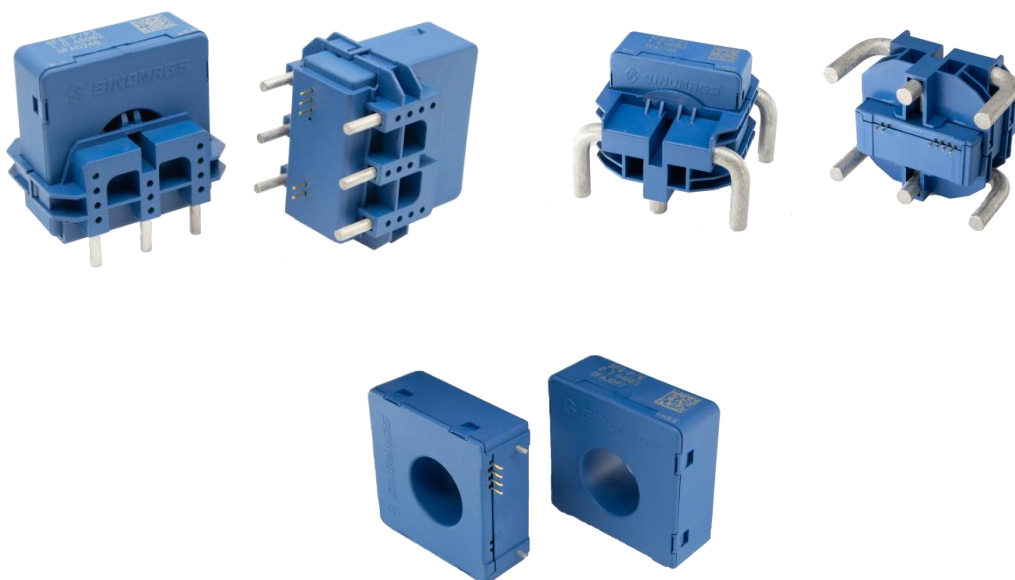![SINOMAGS 希磁科技 logo]

CURRENT SENSOR

PRODUCT SERIES： SFG-P

PRODUCT PART NUMBER：

SFG-0.3P/N, SFG-0.6P/N, SFG-1.0P/N
SFG-1.5P/N, SFG-2.0P/N, SFG-3.0P/N,
SFG-5.0P/N
SFG-0.3P/P1, SFG-0.6P/P1, SFG-1.0P/P1
SFG-1.5P/P1, SFG-2.0P/P1, SFG-3.0P/P1
SFG-5.0P/P1
SFG-0.3P/P2, SFG-0.6P/P2, SFG-1.0P/P2
SFG-1.5P/P2, SFG-2.0P/P2, SFG-3.0P/P2
SFG-5.0P/P2

Version： Ver 6.1

Sinomags Technology Co., Ltd

Web site: www.sinomags.com

CONTENT

1. Description

Features

- Closed loop (compensated) current transducer
- Voltage output
- Insulation voltage for 5 kVAC
- Single supply voltage
- PCB mounting.

Advantages

- High accuracy
- High overload capability
- High insulation capability
- High separation ability
- Low temperature drift
- Degauss and test functions

Applications

- Residual current measurement
- Leakage current measurement in PV inverters
- First human contact protection of PV arrays
- Failure detection in power sources
- Leakage current detection in stacked DC or AC sources
- Communication power.
- Single phase or three phase nominal current (DC or AC)

TÜVRheinland® CERTIFIED

Type Approved
Safety
Regular Production
Surveillance

www.tuv.com
ID 1419065811

2. Absolute parameter: SFG-P/N

Absolute maximum ratings

Parameter	Symbol	Unit	Value
Maximum Supply voltage	Vc_{max}	V	7
Maximum Primary conductor temperature	$T_{B\ max}$	℃	110
Maximum overload capability (100 µs, 500 A/µs)	$Î_{P\ max}$	A	3300

Ratings

Parameter	Symbol	Unit	Value
Primary involved potential		V AC/DC	600
Max surrounding air temperature	T_A	℃	105
Secondary supply voltage	U_C	V DC	5
Output voltage	V_{out}	V	0 to 5

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50 Hz/1 min	V_d	kV	5	
Impulse withstand voltage 1.2/50 µs	V_w	kV	10.1	
Clearance distance (pri. –sec.)	d_{Cl}	mm	11	Shortest distance through air
Creepage distance (pri. –sec.)	d_{Cp}	mm	11	Shortest path along device body
Comparative tracking index	CTI	V	600	
Application example	-	V	600	Reinforced insulation, CAT III, PD2 non uniform field
Application example	-	V	1000	Basic insulation, CAT III, PD2 non uniform field

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	℃	-40		105	
Ambient storage temperature	T_S	℃	-40		105	
Mass	m	g		50		
standard		EN 50178, IEC 61010, UL 508				

3.   Absolute parameter: SFG-P/P1

Absolute maximum ratings

Parameter	Symbol	Unit	Value
Maximum Supply voltage	Vc_{max}	V	7
Maximum Primary conductor temperature	$T_{B\,max}$	℃	110
Maximum overload capability (100 µs, 500 A/µs)	$Î_{P\,max}$	A	3300
Maximum Voltage between test winding and secondary pins	$V_{d\,max}$	V	35
Maximum Current of test winding	$I_{T\,max}$	mA	300

Ratings

Parameter	Symbol	Unit	Value
Primary involved potential		V AC/DC	1000
Primary current @ T_{Amax}=105℃	I_P	A	150
Primary current @ T_{Amax}=85℃	I_P	A	185
Secondary supply voltage	U_C	V DC	5
Output voltage	V_{out}	V	0 to 5

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC	V_d	kV	4	test 50 Hz/1 min
Impulse withstand voltage	V_w	kV	10.1	1.2/50µs
Clearance distance (pri. –pri.)	d_{Cl}	mm	9.4	Shortest distance through air
Creepage distance (pri. – pri.)	d_{Cp}	mm	12.9	Shortest path along device body
Clearance distance (pri. –sec.)	d_{Cl}	mm	9.4	When mounted on PCB with recommended layout
Creepage distance (pri. –sec.)	d_{Cp}	mm	12.4	When mounted on PCB with recommended layout
Comparative tracking index	CTI	V	600	
Application example		V	600 CAT III, PD2	Reinforced insulation, non uniform field
Application example		V	1500 CAT III, PD2	Basic insulation, non uniform field

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	℃	-40		105	
Ambient storage temperature	T_S	℃	-40		105	
Mass	m	g		150		
standard		EN 50178, IEC 61010, UL 508				

4. Absolute parameter: SFG-P/P2

Absolute maximum ratings

Parameter	Symbol	Unit	Value
Maximum Supply voltage	Vc_{max}	V	7
Maximum Primary conductor temperature	$T_{B\,max}$	℃	110
Maximum overload capability (100 μs, 500 A/μs)	$\hat{I}_{P\,max}$	A	3300

Ratings

Parameter	Symbol	Unit	Value
Primary involved potential		V AC/DC	1000
Max surrounding air temperature	T_A	℃	105
Secondary supply voltage	U_C	V DC	5
Output voltage	V_{out}	V	0 to 5

Isolation parameters

Parameter	Symbol	Unit	Value	Remark
RMS voltage for AC test 50Hz/1 min	V_d	kV	4	
Impulse withstand voltage 1.2/50μs	V_w	kV	10.1	
Clearance distance (pri. –pri.)	d_{Cl}	mm	11.4	Shortest distance through air
Creepage distance (pri. – pri.)	d_{Cp}	mm	15.8	Shortest path along device body
Clearance distance (pri. –sec.)	d_{Cl}	mm	10.6	Shortest distance through air
Creepage distance (pri. –sec.)	d_{Cp}	mm	13.3	Shortest path along device body
Comparative tracking index	CTI	V	600	
Application example	-	V	600 CAT III, PD2	Reinforced insulation, non uniform field
Application example	-	V	1000 CAT III, PD2	Basic insulation, non uniform field

Environmental and mechanical characteristics

Parameter	Symbol	Unit	Min	Typ	Max	Comment
Ambient operating temperature	T_A	℃	-40		105	
Ambient storage temperature	T_S	℃	-40		105	
Mass	m	g		80		
standard	EN 50178, IEC 61010, UL 508					

5. Electrical data: SFG-0.3P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.3		
Primary residual current, measuring range	I_{PM}	A	-0.5		0.5	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na Na = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.7	1.2	1.7	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		4		
Sensitivity error	$ε_G$	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	$ε_L$	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		7		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

6.　Electrical data: SFG-0.6P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.6		
Primary residual current, measuring range	I_{PM}	A	-0.85		0.85	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.4	0.75	1.1	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	4.2	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±520	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		2.476		
Sensitivity error	$ε_G$	%	-0.7	0.5	0.7	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±100	- 40°C …105°C
Linearity error	$ε_L$	%		0.4	1.3	
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		30		R_L > 500 kΩ, di/dt > 5 A/µs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

7. Electrical data: SFG-1.0P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		1		
Primary residual current, measuring range	I_{PM}	A	-1.7		1.7	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na, N_a = 1000 turns, - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.2	0.35	0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K		±50	±500	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		1.2		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		7		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

8. Electrical data: SFG-1.5P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		1.5		
Primary residual current, measuring range	I_{PM}	A	-2		2	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.12		0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-30	4.2	30	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.8		
Sensitivity error	$ε_G$	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	$ε_L$	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

9. Electrical data: SFG-2.0P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		2.0		
Primary residual current, measuring range	I_{PM}	A	-3.0		3.0	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.66		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		5		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

10.　Electrical data: SFG-3.0P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		3.0		
Primary residual current, measuring range	I_{PM}	A	-5		5	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.4		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

11.　Electrical data: SFG-5.0P/N

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		5		
Primary residual current, measuring range	I_{PM}	A	-10		10	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.2		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

12.   Electrical data: SFG-0.3P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.3		
Primary residual current, measuring range	I_{PM}	A	-0.5		0.5	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.7	1.2	1.7	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		4		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/μs
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		7		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

13.　Electrical data: SFG-0.6P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.6		
Primary residual current, measuring range	I_{PM}	A	-0.85		0.85	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.4	0.75	1.1	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	4.2	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±520	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		2.476		
Sensitivity error	ε_G	%	-0.7	0.5	0.7	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±100	- 40°C …105°C
Linearity error	ε_L	%		0.4	1.3	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/µs
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

14. Electrical data: SFG-1.0P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		1		
Primary residual current, measuring range	I_{PM}	A	-1.7		1.7	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.2	0.35	0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K		±50	±500	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		1.2		
Sensitivity error	$ε_G$	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	$ε_L$	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/μs
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		7		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

15.　Electrical data: SFG-1.5P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		1.5		
Primary residual current, measuring range	I_{PM}	A	-2		2	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	$I_P(mA)$ / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.12		0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-30	4.2	30	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.8		
Sensitivity error	$ε_G$	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	$ε_L$	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/µs
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		50		R_L > 500 kΩ, di/dt > 5 A/µs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

16.   Electrical data: SFG-2.0P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		2		
Primary residual current, measuring range	I_{PM}	A	-3		3	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.66		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/μs
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

17.   Electrical data: SFG-3.0P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		3		
Primary residual current, measuring range	I_{PM}	A	-5		5	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.4		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/µs
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

18.   Electrical data: SFG-5.0P/P1

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		5		
Primary residual current, measuring range	I_{PM}	A	-10		10	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.2		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Number of turns (test winding)	N_T			20		R_L > 500 kΩ, di/dt > 5 A/µs
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

19.　　Electrical data: SFG-0.3P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.3		
Primary residual current, measuring range	I_{PM}	A	-0.5		0.5	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.7	1.2	1.7	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		4		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.4		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		7		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		50		R_L > 500 kΩ, di/dt > 5 A/µs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

20. Electrical data: SFG-0.6P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		0.6		
Primary residual current, measuring range	I_{PM}	A	-0.85		0.85	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na Na = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.4	0.75	1.1	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	4.2	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±520	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		2.476		
Sensitivity error	ε_G	%	-0.7	0.5	0.7	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±100	- 40°C …105°C
Linearity error	ε_L	%		0.4	1.3	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.25		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

21.   Electrical data: SFG-1.0P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A	-1.02		1.02	
Primary residual current, measuring range	I_{PM}	A	-1.7		1.7	
Supply voltage	V_C	V	4.75	5	5.25	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.2	0.35	0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K		±50	±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		1.17		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Check current	I_{CK}	mA		170		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.2		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		7		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

22.　　Electrical data: SFG-1.5P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		1.5		
Primary residual current, measuring range	I_{PM}	A	-2		2	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na Na = 1000 turns - 40°C …105°C
Output voltage referred to V_{ref} (Test current)	V_{out}	V	0.12		0.5	
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-30	4.2	30	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			±570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.8		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K			±400	- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.08		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	μs		5		R_L > 500 kΩ, di/dt > 5 A/μs
Step response time to 90 % of I_{PN}	t_r	μs		50		R_L > 500 kΩ, di/dt > 5 A/μs
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		R_L > 500 kΩ
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

23. Electrical data: SFG-2.0P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		2		
Primary residual current, measuring range	I_{PM}	A	-3		3	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.66		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.066		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

24.   Electrical data: SFG-3.0P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		3		
Primary residual current, measuring range	I_{PM}	A	-5		5	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na Na = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.4		
Sensitivity error	ε_G	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	ε_L	%		0.5	1	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.04		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

25.　Electrical data: SFG-3.0P/P2

At T_A = 25 ℃, V_C = 5 V.

Parameters	Symbol	Unit	Min	Typ	Max	Remark
Primary nominal residual rms current	I_{PN}	A		5		
Primary residual current, measuring range	I_{PM}	A	-10		10	
Supply voltage	V_C	V	4.75	5	5.5	
Current consumption	I_C	mA		17.5	21.6	I_P(mA) / Na N_a = 1000 turns - 40°C …105°C
Reference voltage @ I_P = 0	V_{ref}	V	2.495	2.5	2.505	Internal reference
External reference voltage	V_{REF}	V	2.3		4	Internal reference of V_{ref} input = 499 Ω
Electrical offset current referred to primary	I_{OE}	mA	-24	7	24	
Temperature coefficient of VOE @ I_P = 0	TCV_{OE}	ppm/K			570	ppm/K of 2.5 V −40 … 105 °C
Theoretical sensitivity	Gth	V/A		0.2		
Sensitivity error	$ε_G$	%	-1.6	0.5	1.6	R_L > 500 kΩ
Temperature coefficient of G	TCG	ppm/K		±400		- 40°C …105°C
Linearity error	$ε_L$	%		0.5	1	
Check current	I_{CK}	mA		100		10%
Output voltage(Check function)	V_{CK}	V		VOS+0.02		
Check enable voltage	V_{CE}	V	3.3		V_C	
Check disabled voltage	V_{CD}	V		< 0.2		
Reaction time @ 10 % of I_{PRN}	t_{ra}	µs		5		R_L > 500 kΩ, di/dt > 5 A/µs
Step response time to 90 % of I_{PN}	t_r	µs		40		R_L > 500 kΩ
Frequency bandwidth (−3dB)	BW	kHz		15		R_L > 500 kΩ
Noise(1 Hz ~ 10 kHz)	V_{no}	mV rms		10		
Accuracy@ I_{PN} @TA = 25℃	$X_{25℃}$	% of I_{PN}		±1.9		
Accuracy@ I_{PN} @TA = 105℃	$X_{105℃}$	% of I_{PN}		±3.2		

26. SFG- P/N Application information
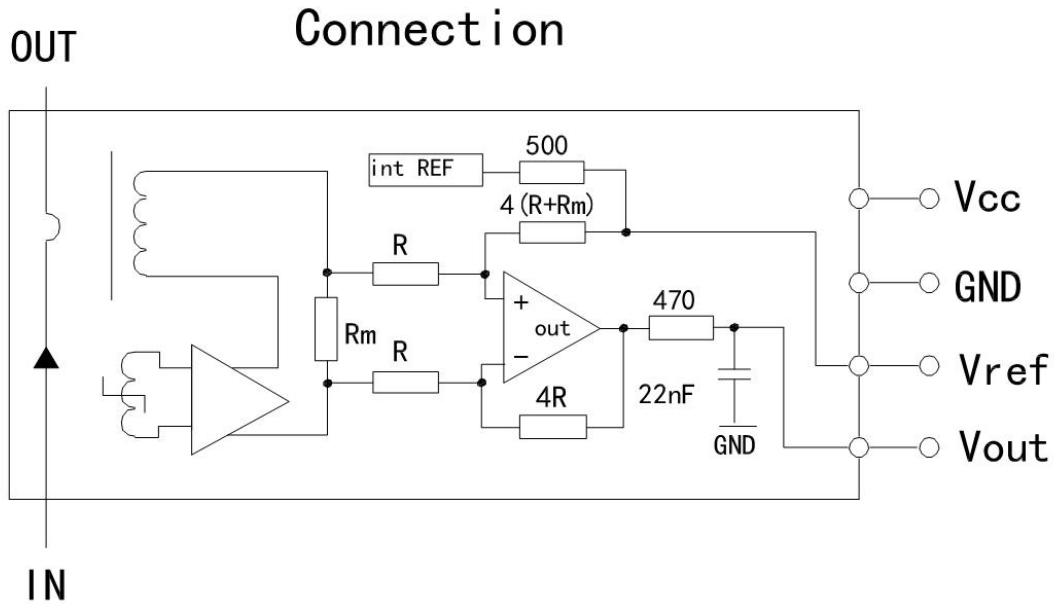
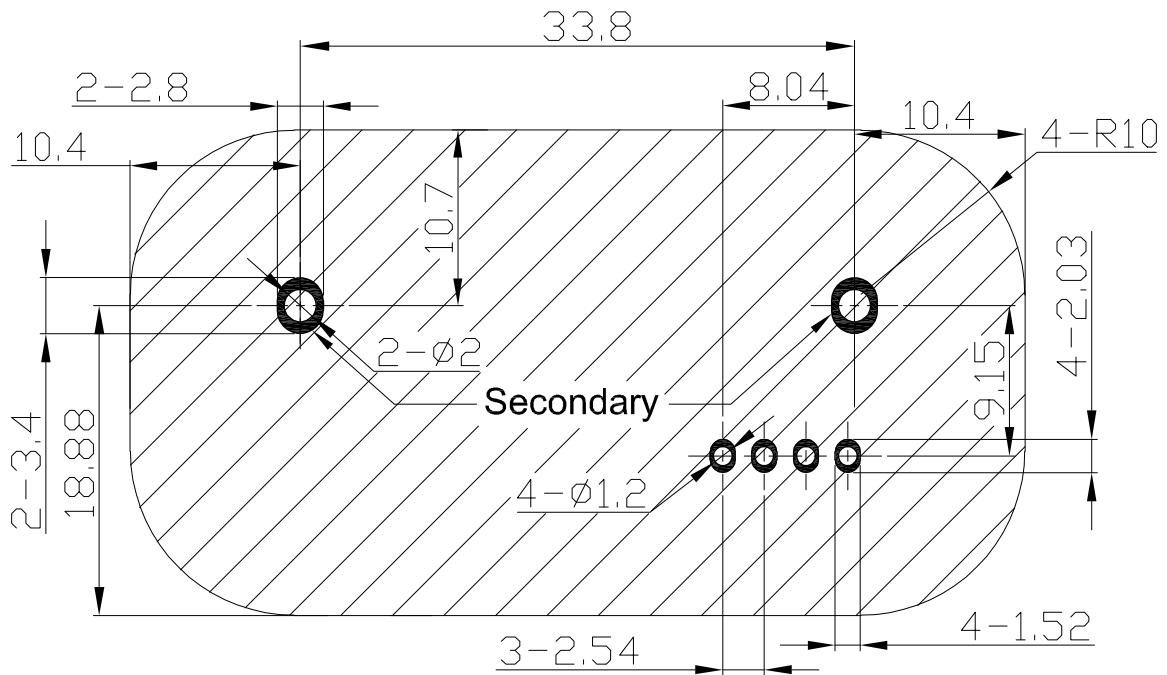## 27. SFG- P/P1 Application information
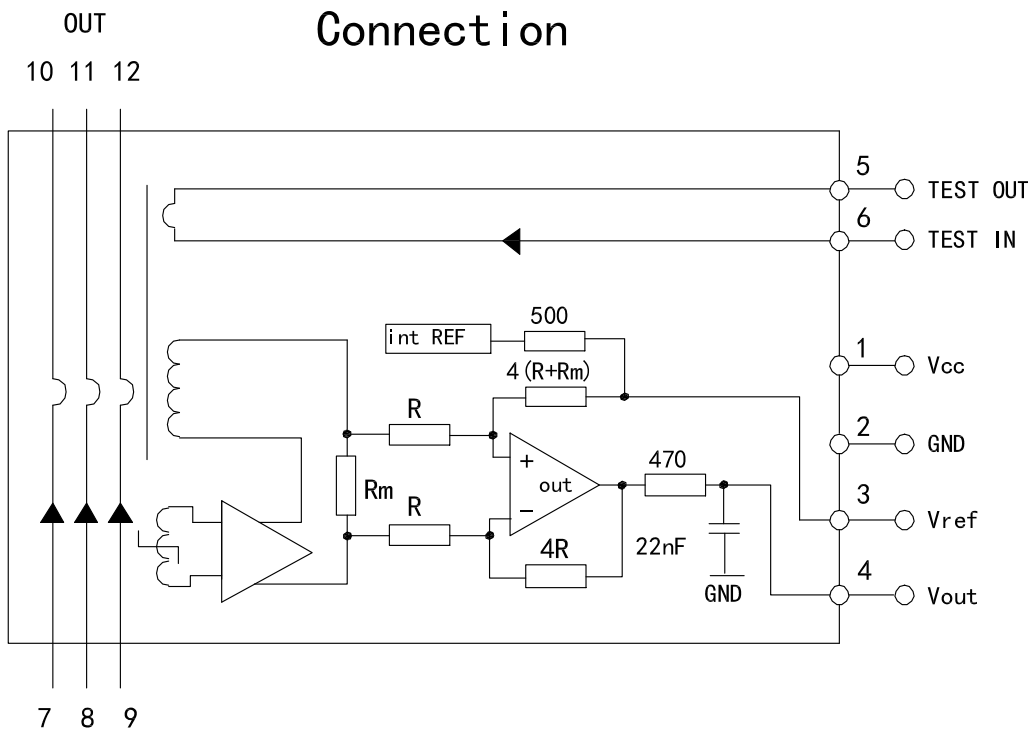
Test winding

A test winding is wound around the compensation winding. It allows simulating a primary residual current to test the function of the transducer. The output voltage V_{out} referred to V_{ref} for a test current IT is below.

$V_{out} - V_{ref} = G_{th} * I_T$ (test current) $* 20$

28.   SFG- P/N PCB footprint

Assembly on PCB
- No Primary in shadow area
- Maximum PCB thickness 2.4 mm
- Wave-soldering：260°C @ 10 s
- Recommended PCB hole diameter 1.2 mm for secondary pin.

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2024-01-23

29.   SFG- P/P1 PCB footprint

Assembly on PCB
● Maximum PCB thickness 2.4 mm
● Wave-soldering：260°C @ 10 s
● Recommended PCB hole diameter 1.2 mm for secondary pin.

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2024-01-23

30. SFG- P/P2 PCB footprint
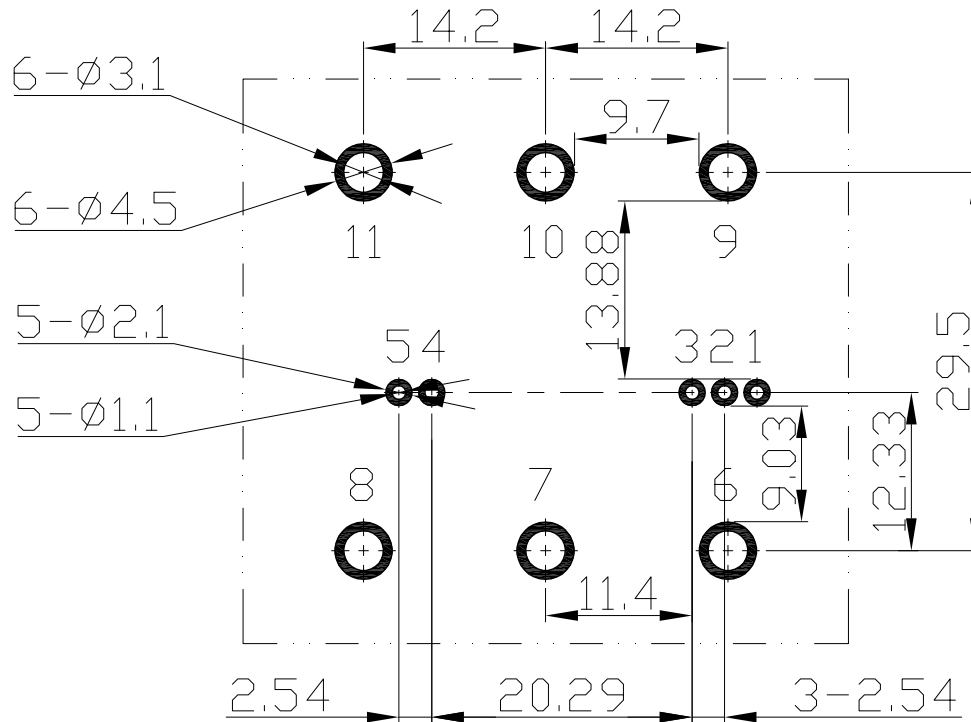
Assembly on PCB

- Maximum PCB thickness 2.4 mm
- Wave-soldering：260°C @ 10 s
- Recommended PCB hole diameter 1.2 mm for secondary pin.

31. SFG- P/N Dimensions
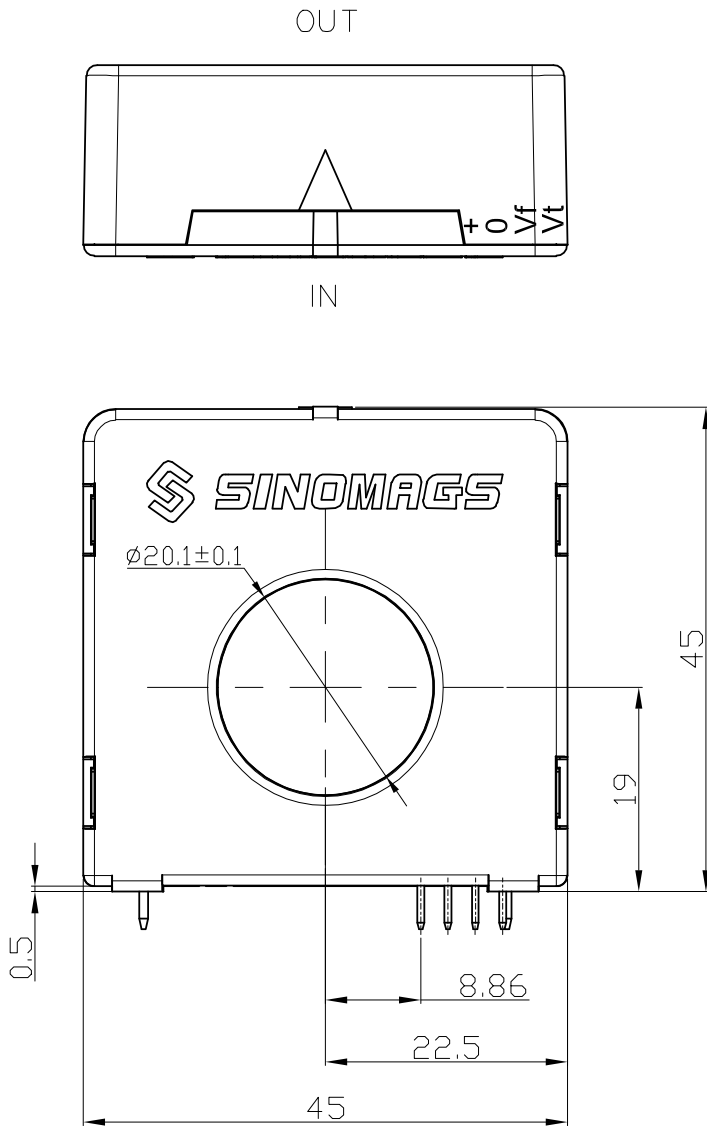
OUT

IN

Terminals:

1	2	3
Vcc	GND	Vref
4	5	6
Vout	NC	NC

17.9

3.5±0.3

2.95   9.15

Ø20.1±0.1

45

19

0.5

8.86

22.5

45

2-0.8X1.6

Welding fixed foot
(Secondary)

4-0.64X0.64

3-2.54

Secondary

1 2 3 4

5

6

33.8
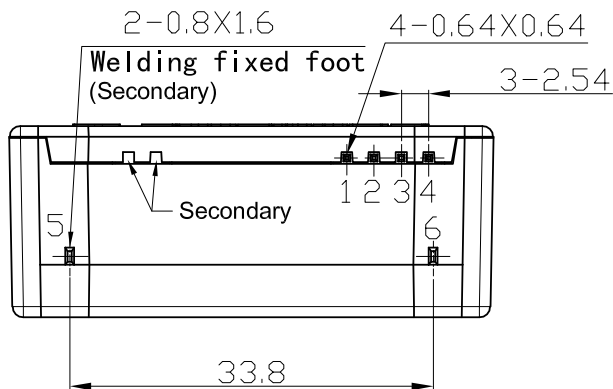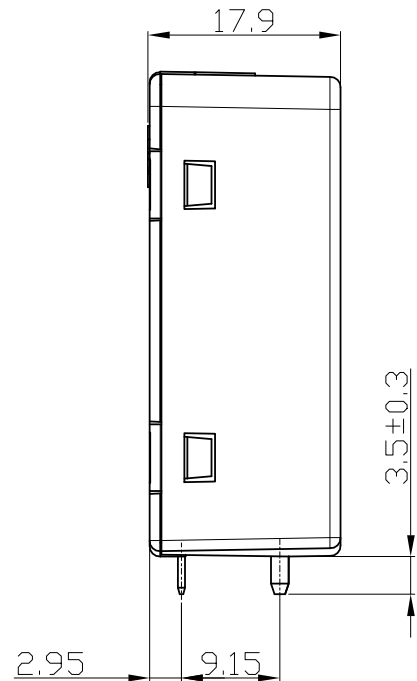
Material : Fit UL94V-0 & RoHS
requirements ;
General tolerance : ±0.5
Unit :mm
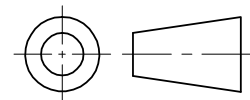
Assembly on PCB:
1、Maximum PCB thickness：2.4mm;
2、Wave soldering profile No Pd process only: maximum 260℃,10S;

32. SFG- P/P1 Dimensions
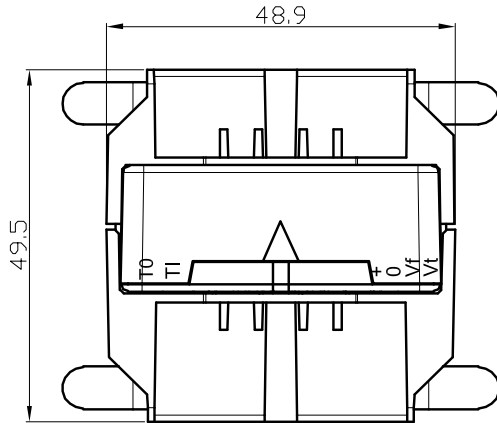
Terminals:

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

	d_{CI}	d_{Cp}
A-B	15.3mm	---
A-C	9.4mm	12.9mm
C-D	16.0mm	16.0mm
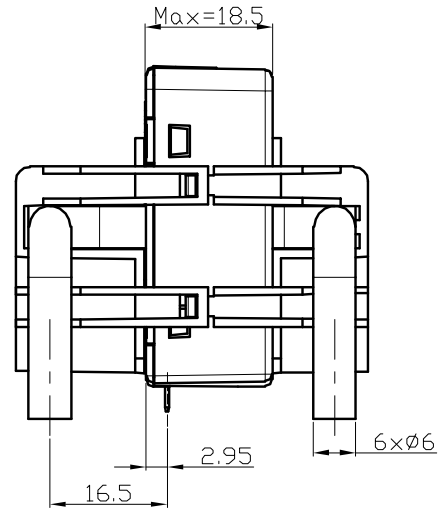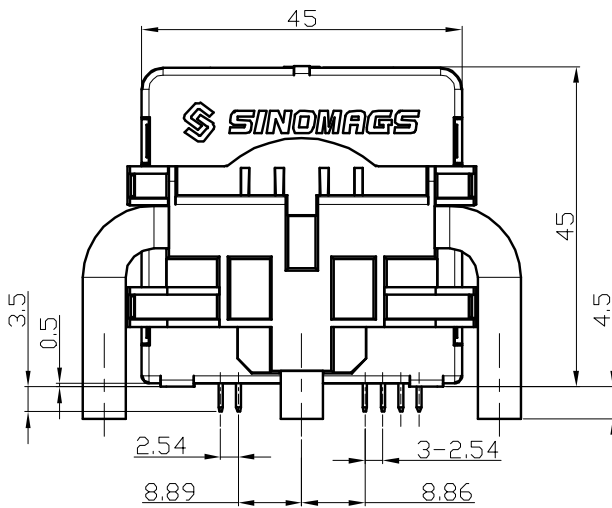
D is secondary inside the transducer
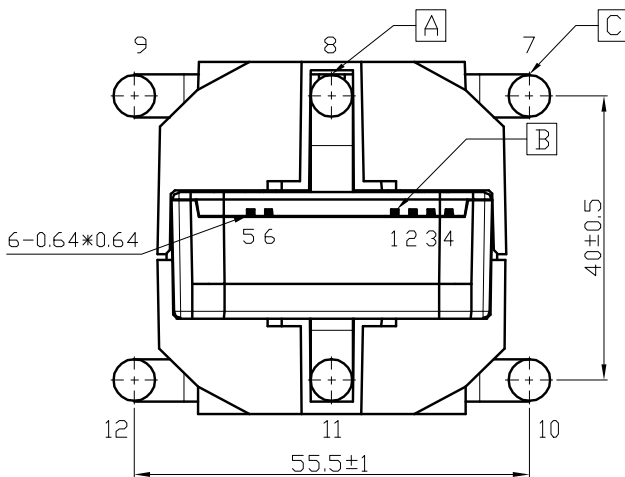
On the customer's PCBA		
	d_{CI}	d_{Cp}
A-B	12.4mm	12.4mm
A-C	9.4mm	17.05mm

Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.5
Unit :mm

SINOMAGS
希 磁 科 技

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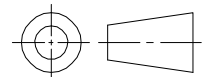
33. SFG- P/P2 Dimensions

48.9
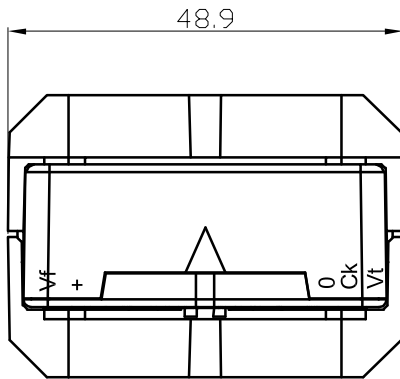
	D_{CI}	D_{CP}
B-C	10.6	13.3
A-C	11.4	15.8
C-D	--	15

D is secondary inside the transducer

On the customer's PCBA		
	D_{CI}	D_{CP}
B-C	9	9
A-C	9.7	9.7

Vf + 0 Ck Vt

45
46.7
27.26
Ø2.8
2.54

35
Max=18.5
8.5 8.5
5
4

5-0.64*0.64
20.29 2.8
29.5
12.33
8 7 6
5 4 3 2 1 B
11 10 9 C
A
14.2 14.2
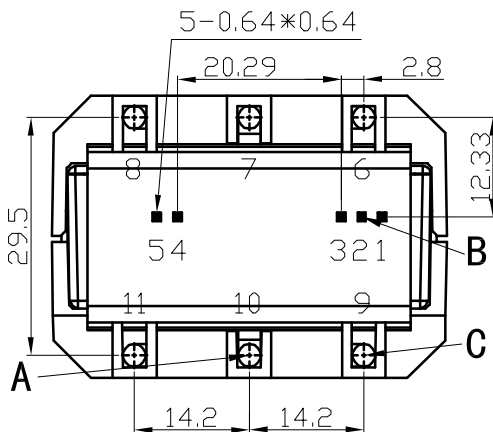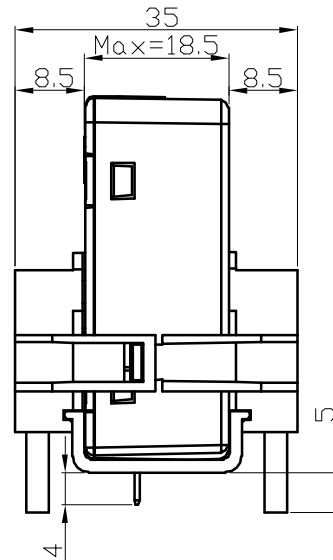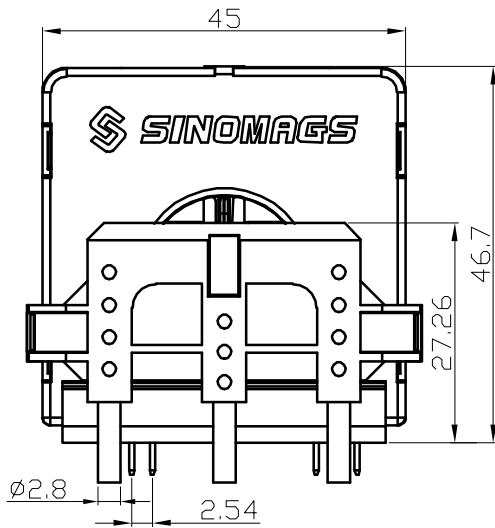
Terminals:

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

Material : Fit UL94V-0 & RoHS requirements ;
General tolerance : ±0.5
Unit :mm