

CURRENT SENSOR

PRODUCT SERIES: SFG-X.XCPL/A
PRODUCT PART NUMBER: SFG-0.3CPL/A
REVISION: Ver 1.5.1



Sinomags Technology Co., Ltd.

Website: www.sinomags.com

CONTENT

| | | |
|----|---------------------------------|---|
| 1. | Description | 2 |
| 2. | Absolute parameter | 3 |
| 3. | Electrical data | 4 |
| 4. | Application information | 5 |
| 5. | Dimensions (in mm)..... | 6 |
| 6. | SFG-CPL/A Assembly on PCB | 7 |

1. Description

Features

- High and low level output
- Single supply voltage
- Self-check function
- Cobalt base magnetic ring.

Advantages

- Stable accuracy
- Low hysteresis
- Short response time
- Compact design

Applications

- Ground fault detection
- Converter leakage current detection
- Electric vehicle charge station
- IC-CPD
- Wallbox

Standards

- EN 50178
- UL508 UL94-V0
- IEC62752 IEC62955
- IEC 61851

2. Absolute parameter

Absolute maximum ratings

| Parameter | Symbol | Unit | Min | Typ | Max |
|-------------------------------|----------------|------|-----|-----|-----|
| Supply voltage | V _c | V | | | 5.5 |
| Ambient operating temperature | T _A | °C | -40 | | 105 |
| Ambient storage temperature | T _A | °C | -40 | | 105 |

Stresses above these ratings may cause permanent damage. Exposure to absolute maximum ratings for extended periods may degrade reliability.

Isolation parameters

| Parameter | Symbol | Unit | Value |
|------------------------------------|-----------------|------|-----------------|
| RMS voltage for AC test 50Hz/1min | V _d | kV | 3 |
| Impulse withstand voltage 1.2/50μs | V _w | kV | 7 |
| Lightning surge current 8/20μs | I _{LS} | kA | 5 |
| Comparative tracking index | CTI | V | 600 |
| Application example | - | V | 600,CAT III,PD2 |

3. Electrical data

at $T_A = 25^\circ\text{C}$, $V_C = 5\text{ V}$.

| Parameters | Symbol | Unit | Min | Typ | Max | Remark |
|---------------------------------|----------|------|-----|-------|-------|--------|
| Supply voltage | V_C | V | 4.9 | 5 | 5.1 | |
| Current consumption | I_C | mA | | 25 | 30 | |
| Output voltage (Check function) | V_{CK} | V | | V_C | | |
| Check current | I_{CK} | mA | | 30 | | |
| Check enable voltage | V_{CE} | V | 3.3 | | V_C | |
| Check disabled voltage | V_{CD} | V | | < 0.2 | | |
| Power on initialization | t_{on} | ms | | | 60 | |
| DC trigger level | \ | mA | 3 | | 6 | |
| AC trigger level | \ | mA | | | 30 | |
| Break time 30 mA AC | \ | ms | 40 | | 60 | |
| Break time 60 mA AC | \ | ms | 15 | | 25 | |
| Break time 150 mA AC | \ | ms | 6 | | 10 | |
| Break time 6 mA DC | \ | ms | 100 | | 300 | |
| Primary nominal RMS current | I_M | A | | 42 | | |

4. Application information

Self-check Function

When the main circuit is not working, the system leakage current is 0, the V_{out} = Low level (0v).

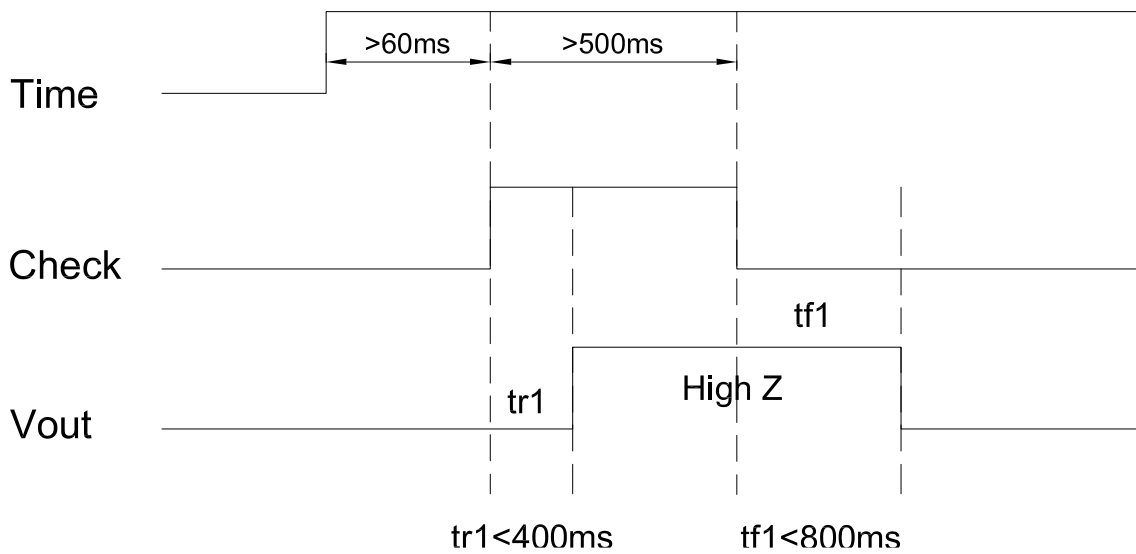
(a) .when the CHK PIN is placed at high level (3.3~5V), V_{out} rises from Low level to high level(V_{cc});

(b) .when the CHK PIN is placed at low level (< 0.2V), the self-generated the V_{out} drops to Low level (0v).

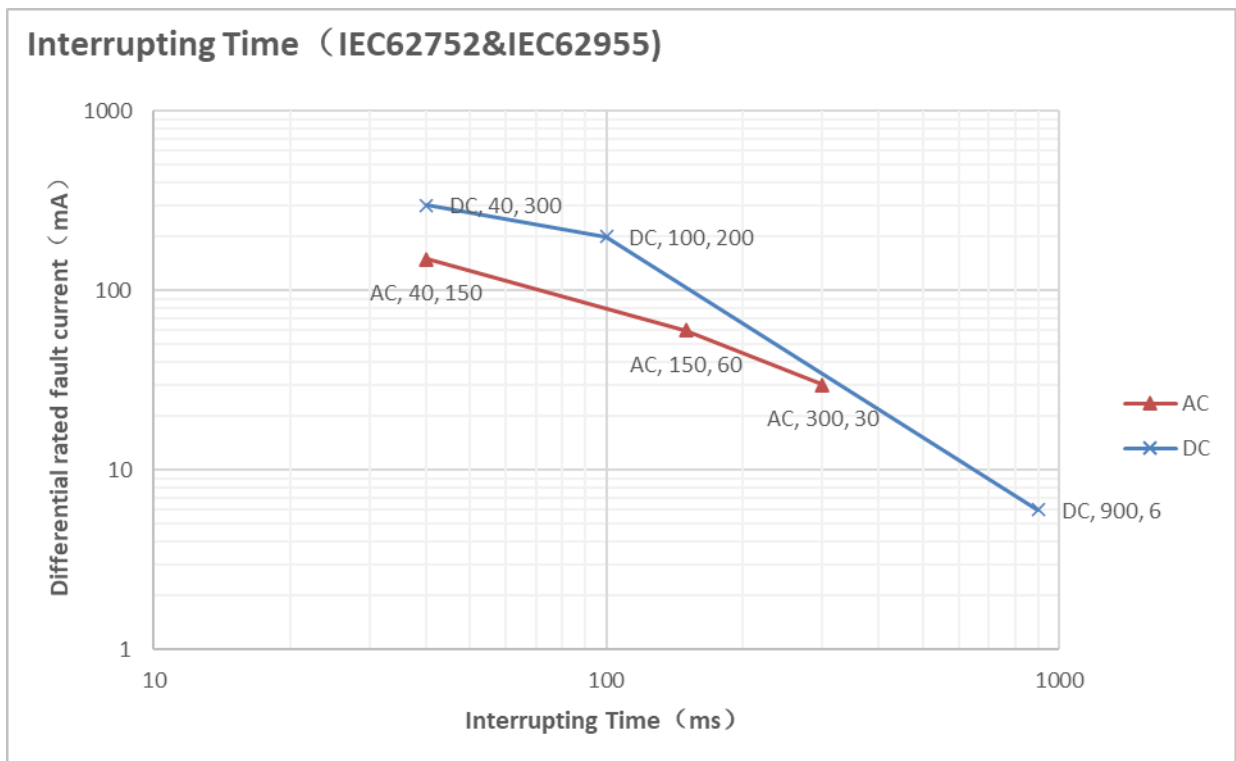
When the above (a) and (b) are completed, the leakage current sensor is judged to have normal function.

When the self-check function is not used, add a 0Ω resistance to the CHK PIIN and ground it.

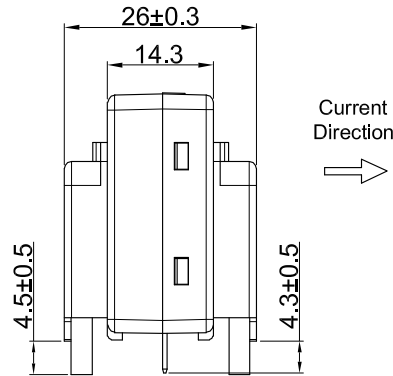
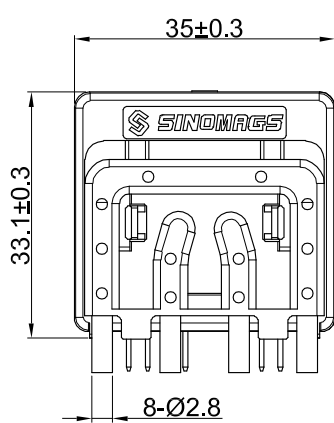
Self-check Timing Diagram



Interrupting Time (IEC62752 & IEC62955)

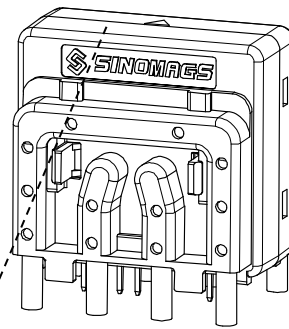
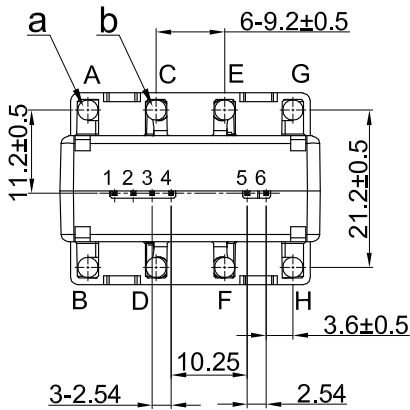


5. Dimensions (in mm)

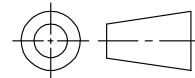


| | | |
|-----|-----|-----|
| | DCI | DCP |
| a-b | 6.3 | 7.3 |

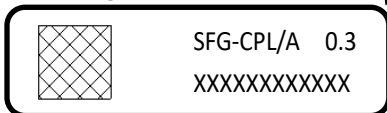
| No. | Symbol |
|-----|--------|
| 1 | Vo |
| 2 | GND |
| 3 | Vcc |
| 4 | CHK |
| 5 | TC |
| 6 | TP |
| A-H | IP |



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



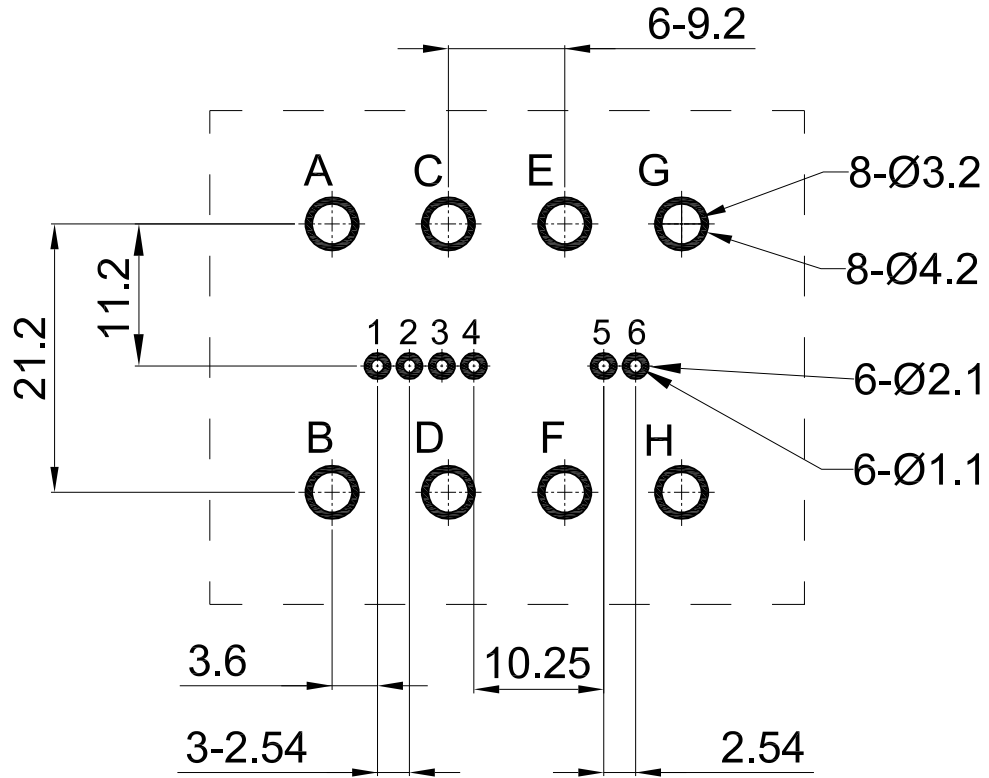
Marking



Pin Definition

| No. | Symbol | Description |
|-----|--------|---------------------------|
| 1 | Vo | High and low level output |
| 2 | GND | Power GND |
| 3 | VCC | Power supply |
| 4 | CHK | Product Self-Check input |
| 5 | TP | NC-Float |
| 6 | TC | NC-Float |
| A-H | IP | Primary current |

6. SFG-CPL/A Assembly on PCB



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