

SUNON

SPECIFICATION FOR APPROVAL

MODEL NO : SA000-12024
DESCRIPTION : Thermal Module
DIMENSIONS : 37.3X19X10 HF
SUNON SPEC. NO. : C01001170F-01
CUSTOMER APPROVAL NO. :
APPROVED BY CUSTOMER :
(AUTHORIZED)

| | | | | |
|--------------------------|---------------------------|-----------------------------|----------------------|---------------|
| DRAWN JING | CHECKED Amy | APPROVED Eric | SPEC. NO | C01001170F-01 |
| | | | ISSUED DATE | 11. 13. 2012 |
| | | | EDITION | 0 |
| | | | REVISION DATE | |

建準電機工業股份有限公司

SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO., LTD.

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SPECIFICATION FOR APPROVAL

CHECK LIST

- 1. SPECIFICATIONS** ----- Page 2
- 2. DIMENSION** ----- Page 3~4
- 3. FAI & CPK TEST** ----- Page 5~6
- 4. NOTES** ----- Page 7
- 5. Declaration of RoHS** ----- Page 8

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| | |
|---------------|---------------|
| PAGE | 1 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
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2012.11.15

發行章

MODEL : SA000-12024**1.SPECIFICATIONS**

| | |
|---|------------------|
| 1. Application | N/A |
| 2. Heat Sink Dimension | 37.3X19X10 HF |
| 3. Heat Sink Material | AL6063-T5 (洗白) |
| 4. Cooling Method | N/A |
| 5. Thermal Grease / PAD | BP410 |
| 6. Fan Dimension | N/A |
| 7. Fan Speed (with Heat Sink) | N/A |
| 8. Fan Airflow (with Heat Sink) | N/A |
| 9. Fan Rating Voltage | N/A |
| 10. Fan Rating Current (with Heat Sink) | N/A |
| 11. Fan Power Consumption (with Heat Sink) | N/A |
| 12. Fan Bearing Type | N/A |
| 13. Fan Connector | N/A |
| 14. Cooling Module Noise | N/A |
| 15. Fan Operating Voltage Range | N/A |
| 16. Operating Temperature | -10 to+70 deg .C |
| 17. Storage Temperature | -40 to+70 deg .C |
| 18. Weight | 7.3 g |
| 19. Life Expectance | N/A |

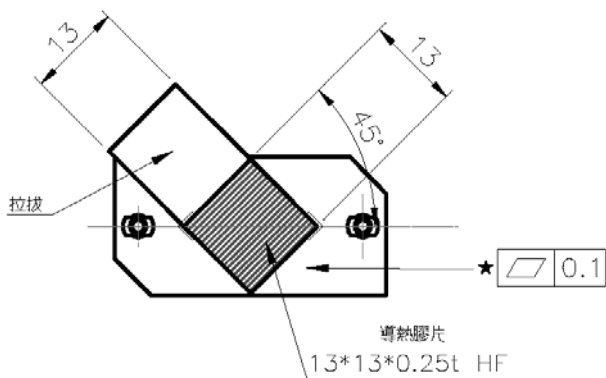
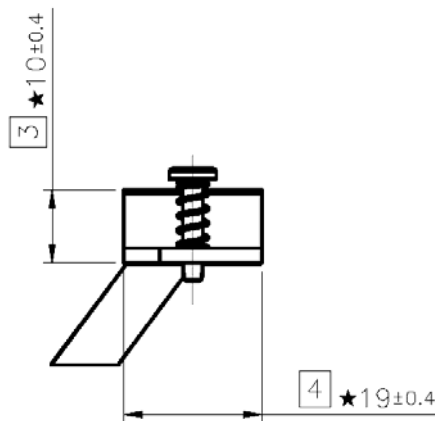
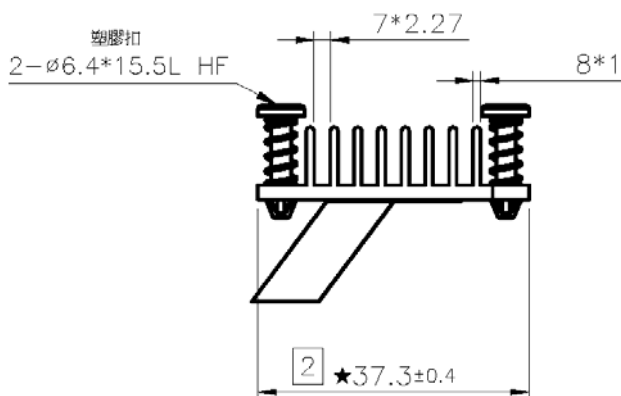
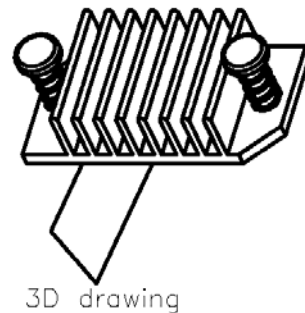
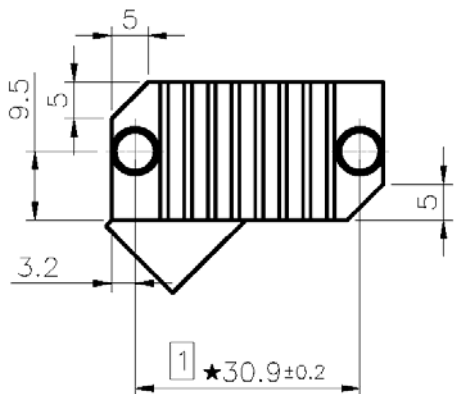
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| | |
|---------------|---------------|
| PAGE | 2 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |



2.DIMENSION

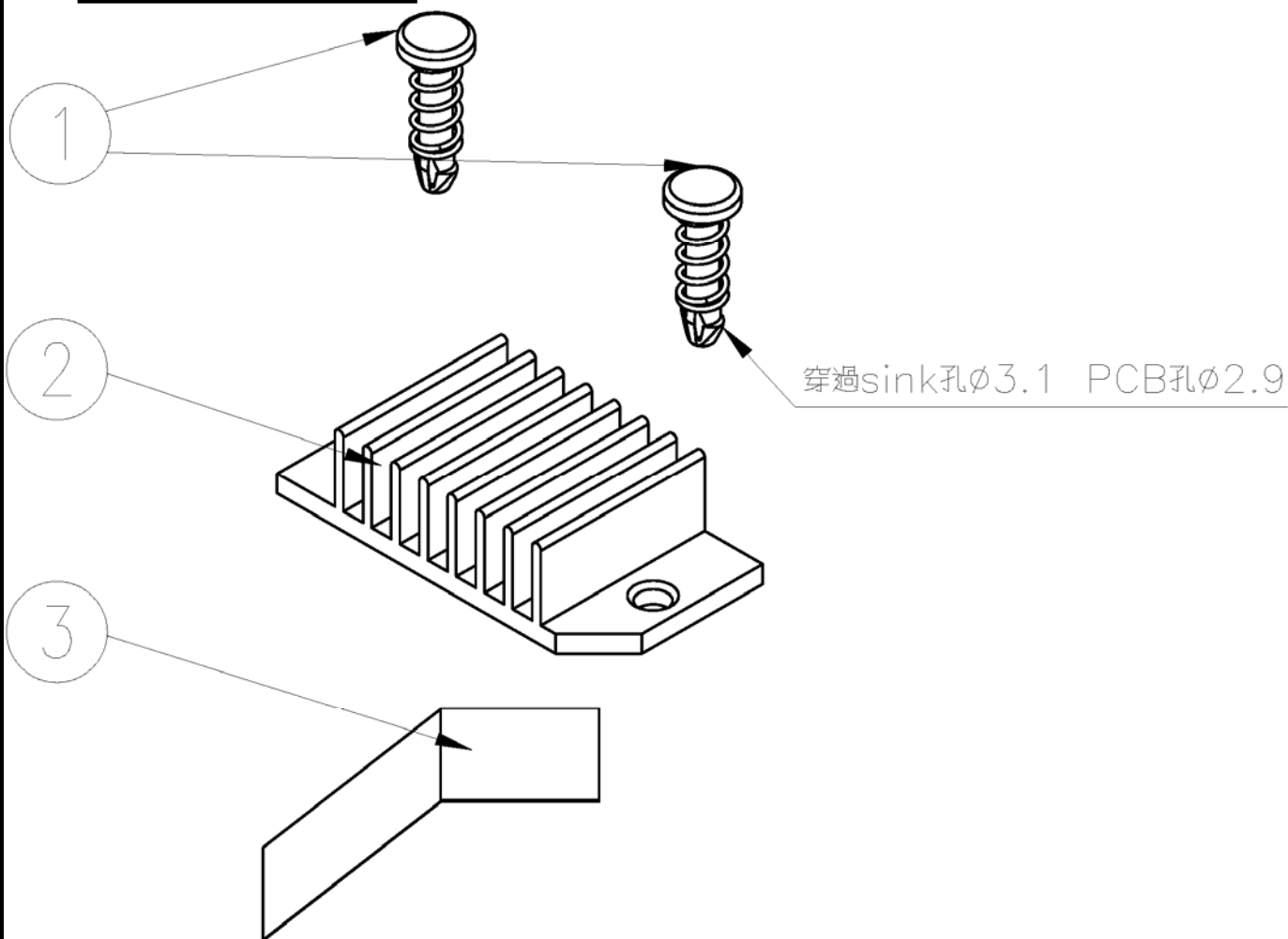


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| | |
|---------------|---------------|
| PAGE | 3 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |



2.DIMENSION



| 3 | 導熱膠片 | A507006460F | 13*13*0.25t HF | 1 |
|------------|------------|----------------|---------------------|-----------|
| 2 | 散熱片 | A212019760F | 37.3*19*10 HF | 1 |
| 1 | 塑膠扣 | A504003410F | ϕ 6.4*15.5L HF | 2 |
| 項次 ITEM | 名稱 NAME | 料號 PART No. | 規格 SPECIFICATION | 數量 QTY |

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| | |
|---------------|---------------|
| PAGE | 4 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |



3.FAI & CPK TEST

1.FAI TEST

FAI DATA SHEET

| | | | | | |
|-------------------------------|-------------|-----------------|------------|--------------|--|
| Supplier | SUNON | Date | 2012/11/13 | New | |
| Obv Pro V3.19x37x10 新產品試辦push | SFR No. | Cavity / Tool # | | Revised | |
| Material Spec | See Drawing | Inspector | 何國強 | Resubmission | |

| DRAWING LOCATION | NOMINAL | +TOL | -TOL | Sample Number | | | Deviation from Nominal | | | Mean | % Tolerance | | Accept/Reject | | Inspection Method | Supplier Remarks | Defl Engineering Disposition |
|------------------|---------|-------|-------|---------------|--------|--------|------------------------|-------|--------|--------|-------------|-------|---------------|--------|-------------------|------------------|------------------------------|
| | | | | 1 | 2 | 3 | 1 | 2 | 3 | | UPPER | LOWER | HIGH | LOW | | | |
| 1 | 30.900 | 0.200 | 0.200 | 30.950 | 31.010 | 30.810 | 0.050 | 0.110 | -0.090 | 30.923 | 55% | 45% | Accept | Accept | CMM | | |
| 2 | 37.300 | 0.400 | 0.400 | 37.150 | 37.320 | 37.410 | -0.150 | 0.020 | 0.110 | 37.293 | 27% | 37% | Accept | Accept | CMM | | |
| 3 | 10.000 | 0.400 | 0.400 | 9.950 | 10.050 | 10.060 | -0.050 | 0.050 | 0.060 | 10.020 | 15% | 13% | Accept | Accept | CMM | | |
| 4 | 19.000 | 0.400 | 0.400 | 19.150 | 19.050 | 18.950 | 0.150 | 0.050 | -0.050 | 19.050 | 37% | 13% | Accept | Accept | CMM | | |

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| | |
|---------------|---------------|
| PAGE | 5 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |



3.FAI & CPK TEST

2.CPK TEST

品質總合確認書DATA SHEET

機種名：SA000-12024(Gtw Pro V3-19x37x 10新蓋蓋膠膠push pins) 試產日期：2012/11/5

| No | 1 | 2 |
|-----------|--------|--------|
| (項目) | 長度 | 寬度 |
| 規格中心值 | 37.300 | 19.000 |
| 規格上限 | 37.700 | 19.400 |
| 規格下限 | 36.900 | 18.600 |
| UNIT (單位) | mm | mm |
| ave | 37.375 | 19.064 |
| max | 37.606 | 19.256 |
| min | 37.325 | 19.001 |
| 1 | 37.526 | 19.038 |
| 2 | 37.348 | 19.048 |
| 3 | 37.353 | 19.153 |
| 4 | 37.336 | 19.036 |
| 5 | 37.406 | 19.054 |
| 6 | 37.405 | 19.056 |
| 7 | 37.335 | 19.035 |
| 8 | 37.355 | 19.065 |
| 9 | 37.347 | 19.047 |
| 10 | 37.403 | 19.057 |
| 11 | 37.326 | 19.036 |
| 12 | 37.346 | 19.026 |
| 13 | 37.358 | 19.146 |
| 14 | 37.404 | 19.056 |
| 15 | 37.406 | 19.026 |
| 16 | 37.401 | 19.001 |
| 17 | 37.403 | 19.053 |
| 18 | 37.335 | 19.035 |
| 19 | 37.335 | 19.025 |
| 20 | 37.408 | 19.058 |
| 21 | 37.338 | 19.038 |
| 22 | 37.325 | 19.059 |
| 23 | 37.402 | 19.035 |
| 24 | 37.326 | 19.026 |
| 25 | 37.325 | 19.045 |
| 26 | 37.336 | 19.046 |
| 27 | 37.329 | 19.229 |
| 28 | 37.339 | 19.029 |
| 29 | 37.359 | 19.239 |
| 30 | 37.402 | 19.052 |
| 31 | 37.409 | 19.009 |
| 32 | 37.606 | 19.256 |
| 33 | 37.409 | 19.045 |
| 34 | 37.358 | 19.028 |
| 35 | 37.329 | 19.038 |

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| | |
|---------------|---------------|
| PAGE | 6 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |



Notes

I. SPECIFICATION MODIFICATION

1. SUNON offers engineering assistance on module installation and cooling system design.
2. All changes, modifications and/or revisions to the specifications, if any, are incorporated in the attached specifications.
3. No changes, modifications and/or revisions to these specifications are effective absent agreement, by both Sunon and the customer, in writing.
4. This module will be shipped in accordance with the attached specification unless SUNON and the customer have agreed otherwise, in writing, as specified in Paragraph 3, above.

II. OTHER

1. DO NOT operate this module in proximity to hazardous materials such as organic silicon, cyanogens, formalin, phenol, or corrosive gas environments including, but not limited to, H₂S, SO₂, NO₂, or Cl₂.
2. Unless otherwise noted, all testing of this module is conducted at 25°C ambient temperature and sixty-five percent (65%) relative humidity.
3. DO NOT store this module in an environment with high humidity. This module must be stored in accordance with the attached specifications regarding storage temperature. If this module is stored for more than 6 months, SUNON recommends functional testing before using.
4. SUNON reserves the right to use components from multiple sources at its discretion. The use of components from other sources will not affect the specifications as described herein.

III. WARRANTY

This module is warranted against all defects which are proved to be fault in our workmanship and material for one year from the date of our delivery. The sole responsibility under the warranty shall be limited to the repair of the module or the replacement thereof, at SUNON's sole discretion. SUNON will not be responsible for the failures of its module due to improper handing, misuse or the failure to follow specifications or instructions for use. In the event of warranty claim, the customer shall immediately notify SUNON for verification. SUNON will not be responsible for any consequential damage to the customer's equipment as a result of any module proven to be defective.

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| | |
|---------------|---------------|
| PAGE | 7 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |

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Declaration of Restricted Materials

Control declaration of environment- related substances/ materials

1. In accordance with the Restriction of Hazardous Substances (RoHS) Directive and specific market requirements, Sunon Halogen-Free Product have complied with law and discipline not to employ the forbidden substances, and restrict the allowable concentration of some limited substances deliberately in our components.

| No | Substance | Criteria | |
|----|---|---|----------|
| 1 | CFCs & HCFCs (ozone depleting substances) | Forbidden | |
| 2 | Chlorinated Organic Solvent | Forbidden | |
| 3 | Lead and its compounds | Plastic (Frame, Impeller, wire harness, etc.) | <100ppm |
| | | Solder | <1000ppm |
| | | Steel alloy | <3500ppm |
| | | Aluminium alloy | <4000ppm |
| | | Copper alloy | <4wt% |
| 4 | Cadmium and its compounds | Solder | <20ppm |
| | | Parts composed of metals containing zinc (e.g. brass, zinc for die casting) | <100ppm |
| | | Plastic | <5ppm |
| 5 | PBBs and PBDEs | Forbidden | |
| 6 | PCB and PCT | Forbidden | |
| 7 | CP, Short-chain Chlorinated paraffins C10-13, Cl ≥48 wt% | Forbidden | |
| 8 | Mirex | Forbidden | |
| 9 | PCN | Forbidden | |
| 10 | Hexavalent Chromium compounds | <100ppm | |
| 11 | Mercury and its compounds | Forbidden | |
| 12 | Asbestos | Forbidden | |
| 13 | Organic Tin compounds | Forbidden | |
| 14 | Azo compounds | Forbidden | |
| 15 | TBBP-A in external case plastic parts of products (PCB is exempted) | <1000ppm | |
| 16 | Nickel in external case parts, which are likely to result in prolonged skin exposure | <1000ppm | |
| 17 | Halogen-Free Product: Brominated/chlorinated flame retardants (other than PBBs or PBDEs), applicable item: frame, bobbin, impeller, lear wire, connector, mylar insulator. | Br<900ppm Cl<900ppm Br+Cl<1500ppm | |
| 18 | PAHs and its 16 compounds in unusual contact material | BaP < 20ppm 16 compounds total content < 200ppm | |
| 19 | PCB and electroplating material, PFOS content complianced with 2006/122/EC | PFOS <1000ppm; coating material PFOS < 1µg/m ² | |

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| | |
|---------------|---------------|
| PAGE | 8 OF 8 |
| SPEC. NO. | C01001170F-01 |
| ISSUED DATE | 11. 13. 2012 |
| EDITION | 0 |
| REVISION DATE | |

