

SUNON

SPECIFICATION FOR APPROVAL

MODEL NO : SA000-12003
DESCRIPTION : Thermal Module
DIMENSIONS : ϕ 56X56 mm
SUNON SPEC. NO. : C01000720F-01
CUSTOMER :
APPROVAL NO. :
APPROVED BY :
CUSTOMER :
(AUTHORIZED)

DRAWN Fang	CHECKED Amy	APPROVED Eric	SPEC. NO	C01000720F-01
			ISSUED DATE	02. 18. 2012
			EDITION	3
			REVISION DATE	06. 18. 2012

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

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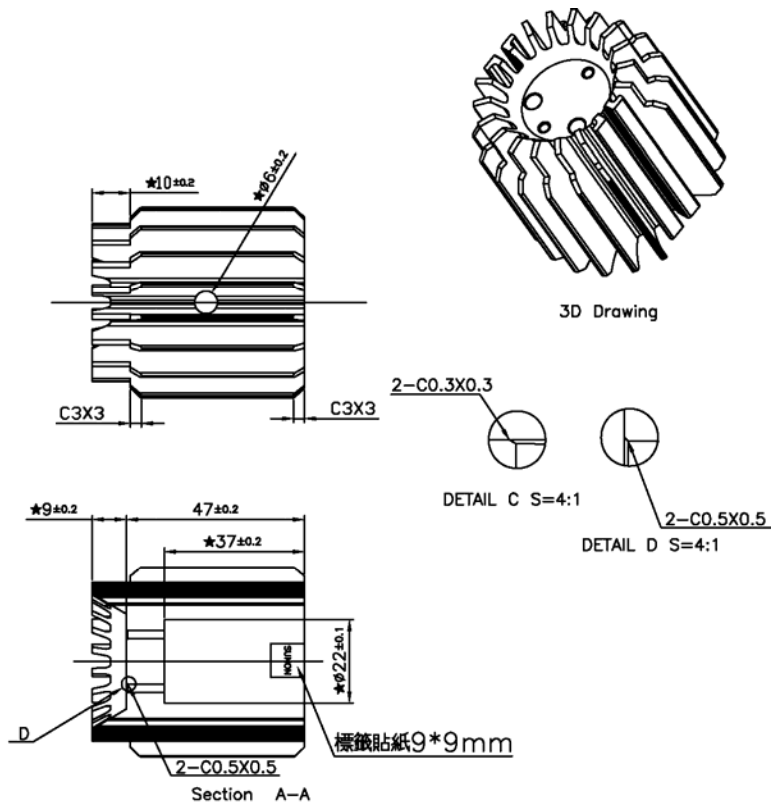
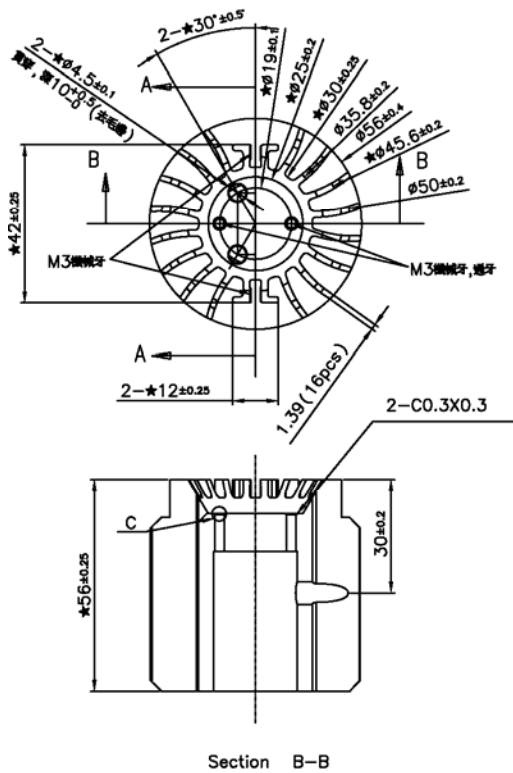


MODEL : SA000-12003**1.SPECIFICATIONS**

1. Application	Cpu Chipset 10W	
2. Heat Sink Dimension	§ 56X56 HF	
3. Heat Sink Material	AL6063	
4. Cooling Method	N/A	
5. Thermal Grease / PAD	N/A	
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	104 g	
19. Life Expectance	N/A	
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2.DIMENSION



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3. CPK TEST

1. CPK TEST

Project Name : SA000-12003(Seeger KK56H56)

試產日期 : 2012/2/16

No	1	2	3
(Item)	dimension of hole location	outer diameter	diameter
Spec.	19.000	50.000	6.000
upper limit	19.100	50.200	6.200
lower limit	18.900	49.800	5.800
UNIT	mm	mm	mm
1	19.038	50.053	6.053
2	18.943	50.068	6.068
3	18.973	50.048	6.048
4	18.990	50.047	6.047
5	18.950	50.053	6.053
6	18.959	50.050	6.050
7	18.990	50.016	6.016
8	18.989	50.049	6.049
9	18.989	50.086	6.086
10	18.980	50.043	6.043
11	18.938	50.037	6.037
12	18.959	49.899	5.865
13	18.989	50.081	6.081
14	18.990	50.039	6.039
15	18.981	50.015	6.015
16	18.986	50.087	6.087
17	18.968	50.093	6.093
18	18.948	50.051	6.051
19	18.990	50.033	6.033
20	18.992	50.026	6.026
21	18.995	50.093	6.093
22	18.981	50.046	6.046
23	18.991	50.057	6.057
24	18.973	50.045	6.045
25	18.971	50.093	6.093
26	18.981	50.038	6.038
27	18.988	50.034	6.034
28	18.980	50.093	6.093
29	18.977	50.051	6.051
30	18.994	50.053	6.053
31	18.968	50.043	6.043
32	18.970	50.031	6.031
33	18.978	50.051	6.051
34	18.990	50.058	6.058
35	18.998	50.043	6.043

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3. CPK TEST

Quality & function control data sheet

Project Name : SA000-12003(Seeger KK56H56)

NO	Item	Spec.	average	standard of deviation σ	max	min	quantity of trial run	process capability		remark
								cp	cpk	
1	dimension of hole location	124.99~124.19	18.979	0.019	19.038	18.938	35	1.795	1.424	
2	outer diameter	6.3~6.5	50.049	0.034	50.093	49.899	35	1.975	1.495	
3	diameter	48.22~48.42	6.048	0.038	6.093	5.865	35	1.738	1.324	

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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 handling, 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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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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