

Product Data Sheets

Customer : _____

Part No. : _____

CoolerMaster Model No. : PC-07682-01-GP2

Edition: A1

Issued Date: 2022/04/21

Revision History :			
Date of Release	Revision No.	Description	
2022/04/21	A1	初版	
Customer		Cooler Master	
Approved by		Sales	Checked by Drafted by
		Sylvia_Tai	Zhouhh White_zhou
Date:		Date: 2022/04/21	Date: 2022/04/21 Date: 2022/04/21

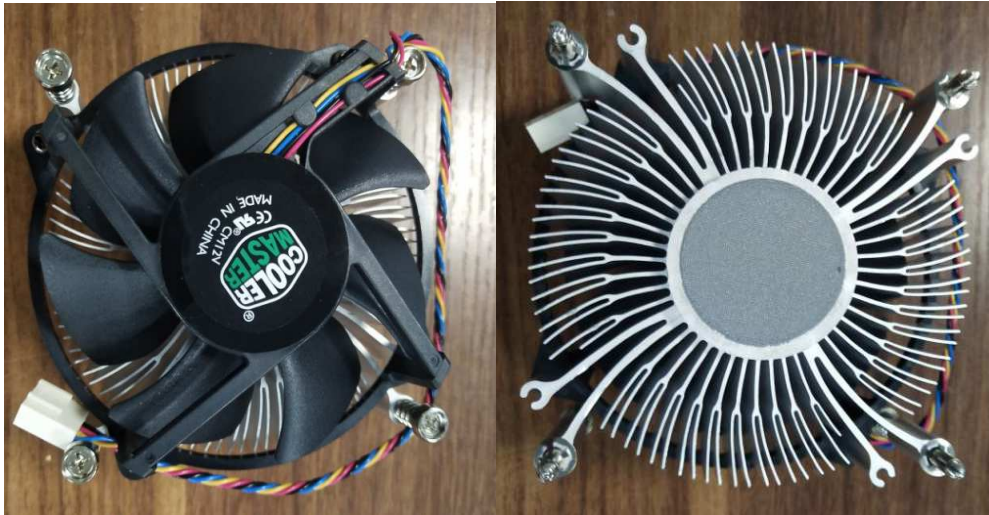


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2. Product photo



產品重量:0.368kg





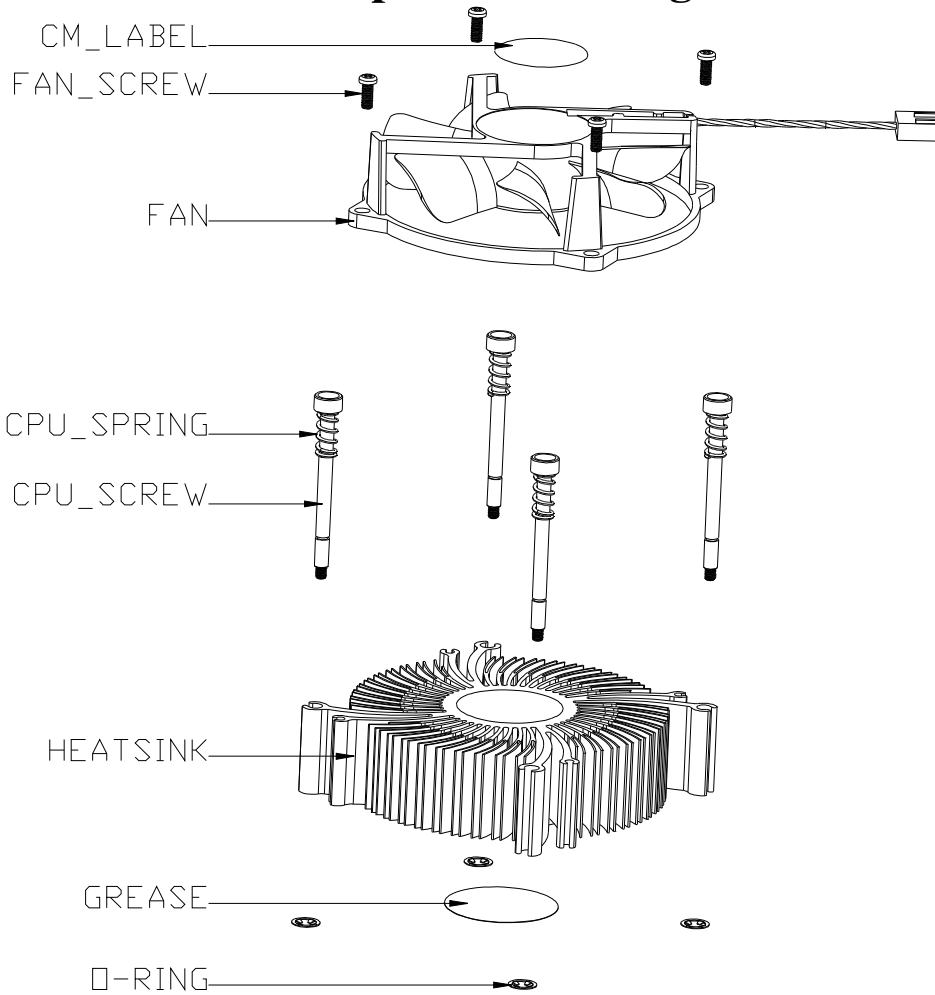
3. Component List

ITEM	PART NAME	DESCRIPTION	Q'TY	MATERIAL
1	HEATSINK	HS-EX-Φ90*30-ASM	1	AL6063-T5+C1100
2	GREASE	X-23-7762	0.25g	GREASE
3	FAN	AFB0912VH-4500RPM	1	PBT
4	CPU SCREW	M3*牙長 3.5mm,L=54.1MM,NI PLATING	4	AISI1018
5	CPU SPRING	Φ6.1*13.5MM,NI PLATING	4	SWPB
6	O-RING	Φ8*0.25MM,CLEAN	4	SUS304
7	FAN SCREW	M3 自攻牙*牙長 8MM,BLACK NI PLATING	4	AISI1018
8	CM_LABEL	φ 29mm	1	25#消银龙



4. Whole Set dimension

4.1 Exploded drawing



REV	DESCRIPTION	Section	Engineer	Checked	Date

NOTE :

- 扣合壓力42±8磅;CPU高度7.03mm , 鉚柱凸出PCB=1.45mm
- 外觀按一般QA檢驗規範
- 風扇成品轉速:4500±15%RPM
- 標示 X 的為重點檢驗尺寸
- 料件需符合RoHS2.0 2015/863/EU 10項要求

序號	名稱	材質	數量	備注
8	CM_LABEL	25#消銀膠	1	O29mm
7	O-RING	SUS304	4	去油
6	SPRING	SWPB	4	鍍鎳
5	CPU SCREW	AISI1018	4	鍍鎳
4	FAN SCREW	AISI1018	4	鍍黑鎳
3	GREASE	X-23-7762	0.25g	N.A
2	HEATSINK	AL6063-T5*CU100	1	抗氧化
1	FAN	PBT	1	731000120-GP2·臺灣

DRAWN	TOL±	General tolerance:
周興兵	Range	Don't use the crossed items
DATE 2022.03.03	0 ~ 10	0.1 0.1 0.15 0.2 0.3
ENGINEER	10 ~ 30	0.15 0.2 0.25 0.3 0.4
周興兵	30 ~ 50	0.2 0.3 0.35 0.4 0.6
DATE 2022.03.03	50 ~ 100	0.25 0.4 0.4 0.6 0.8
CHECKED	100 ~	0.3 0.5 0.6 0.8 1.0
周慧華	Angles	1° 2° 3° 5°
DATE 2022.03.03	Scale	Sheet-unit Size
周慧華	1/4	mm A4
DATE 2022.03.03		

	COOLER MASTER CO., LTD.
Part Name PC-07682-01-GP2	
File Name 21R2166-2-COOLER-01-A1	

4.2 Cooler Assembly



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5. Component Drawing

5.1 HEAT SINK

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REV	DESCRIPTION	Section	Engineer	Checked	Date

熱塞圖

銅柱

技術要求:

一、鋁擠:

- 1.材質: AL 6063-T5,導電率53%以上
- 2.後處理: 洗白
- 3.硬度:68~75HV
- 4.尺寸標示處X為重點檢驗尺寸
- 5.理論單重:167g
- 6.外觀按一般QA檢驗規範
- 7.料件需符合RoHS2.0 2015/863/EU 10項要求

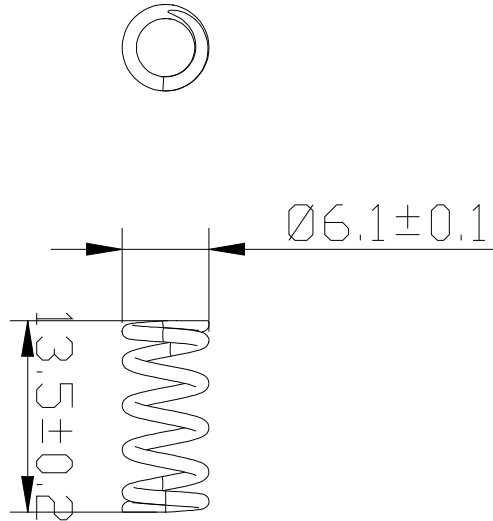
二、銅柱:

- 1.材質: CU1100
- 2.導電率需達95%以上
- 3.後處理: 抗氧化處理
- 4.尺寸標示X處為重點檢驗尺寸
- 5.理論單重:127g
- 6.外觀按一般QA檢驗規範
- 7.料件需符合RoHS2.0 2015/863/EU 10項要求
- 8.包裝方式依《物料包裝技術要求》,若不能達到請正式提報給採購&工程師,未收到回復視同供方認同此规范要求包裝方式依《物料包裝技術要求》,若不能達到請正式提報給採購&工程師,未收到回復視同供方認同此规范要求

DRAWN	TOL ± Range	General tolerance: Don't use the crossed items		COOLER MASTER CO., LTD.
周興兵	0 - 10	0.1 0.1 0.15 0.2 0.3		COOLER MASTER CO., LTD.
DATE 2021.11.03	10 - 30	0.15 0.2 0.25 0.3 0.4		
ENGINEER 周興兵	30 - 50	0.2 0.3 0.35 0.4 0.6	Part Name	HEATSINK
DATE 2021.11.03	50 - 100	0.25 0.4 0.4 0.6 0.8		
CHECKED 周慧華	100 -	0.3 0.5 0.6 0.8 1.0	File Name	21R2166-1-H.S-01-A1
DATE 2021.11.03	Angles	1° 2° 3° 3° 5°		
APPROVAL 周慧華	Scale	Sheet 2/8	mm	Size A4
DATE 2021.11.03				

REV	DESCRIPTION	Section	Engineer	Checked	Date

A
B
C
D



- NOTES :
- 1.材質:SWP-B
 - 2.線徑:1.0mm,
 - 3.旋向:左旋
 - 4.表處理:鍍鎳,膜厚1.0um以上
 - 5.有效圈數:4 ; 總圈數: 6
 - 6.兩端需磨平
 - 7.鹽霧測試需達8H以上
 - 8.K值 : 1.88±10%kgf/mm
 - 9.標示 X 的為重點檢驗尺寸
 - 10.理論單重 : 0.35g
 - 11.料件需符合RoHS2.0 2015/863/EU 10項要求
 - 12.外觀按一般QA檢驗規範
 - 13.包裝方式依《物料包裝技術要求》,若不能達到請正式提報給採購 & 工程師,未收到回復視同供方認同此规范要求

DRAWN 周興兵	TOL ±	General tolerance: Don't use the crossed items						COOLER MASTER CO., LTD.
DATE 2021.11.03	Range	0 ~ 10	0.1	0.1	0.15	0.2		
ENGINEER 周興兵		10 ~ 30	0.15	0.2	0.25	0.3	0.4	
DATE 2021.11.03		30 ~ 50	0.2	0.3	0.35	0.4	0.6	
CHECKED 周慧華		50 ~ 100	0.25	0.4	0.4	0.6	0.8	
DATE 2021.11.03		100 ~	0.3	0.5	0.6	0.8	1.0	
APPROVAL 周慧華	Angles	1°	2°	3°	3°	5°		
DATE 2021.11.03	Scale			Sheet	Unit	Size	Part Name SPRING	
		5/8	mm	A4	File Name 10203R019-SPRING-01-A1			

2 1

5.3 SPRING



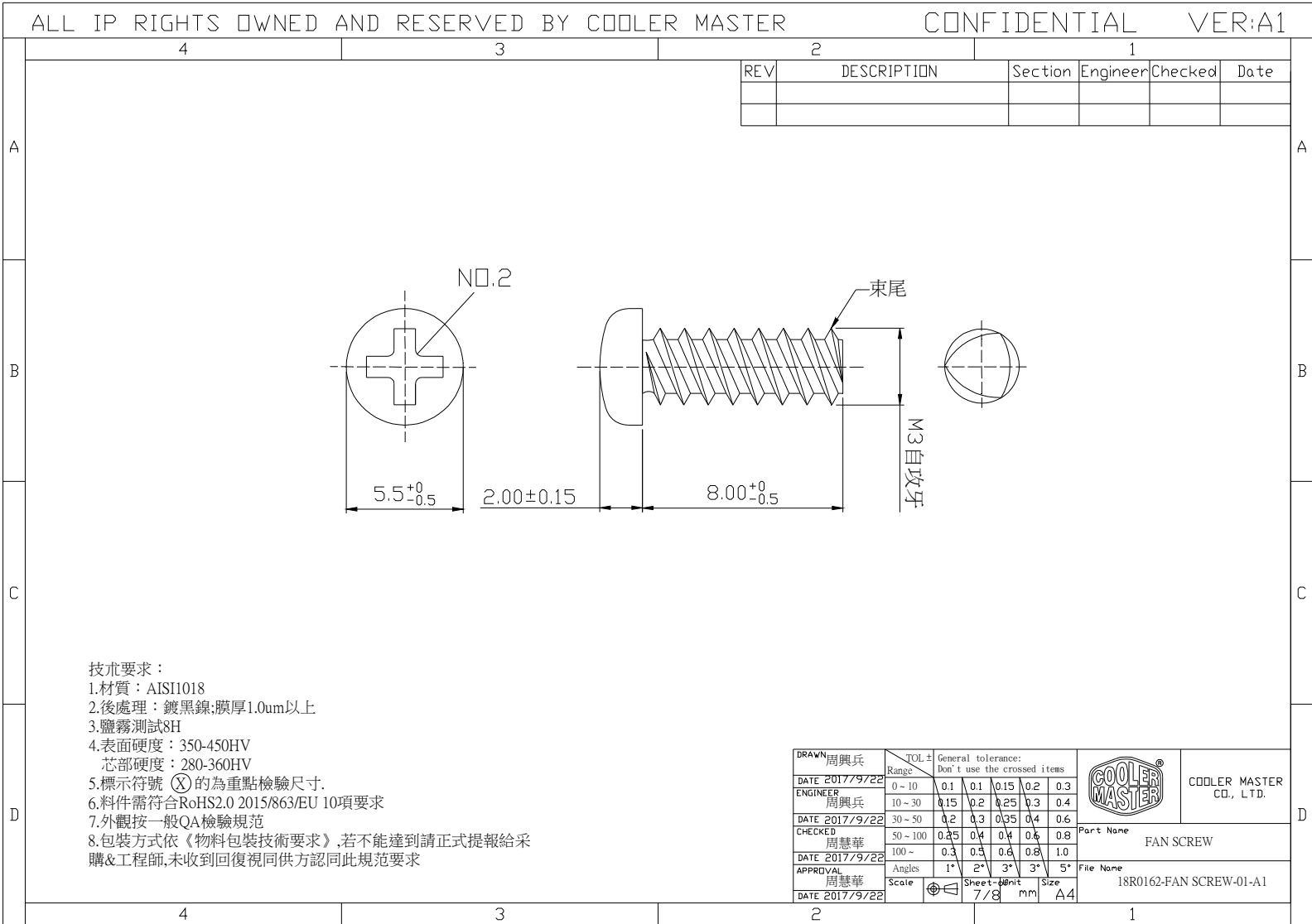
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5.4 FAN SCREW





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5.5 O-RING

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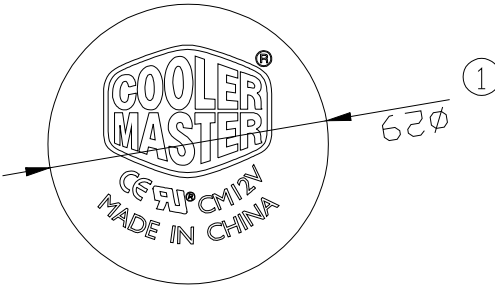
4	3	2	1
		REV	DESCRIPTION
		Section	Engineer
		Checked	Date



Technical drawing showing a cross-section and top view of a 5.5 O-ring. Dimensions include: Outer Diameter: $\phi 8.00 \pm 0.2$, Inner Diameter: $\phi 5.4$, Width: 0.25 ± 0.05 , and Groove Diameter: $\phi 2.80^{+0}_{-0.2}$.

技術要求

- 1.材質：SUS304
- 2.表面處理：脫脂
- 3.硬度：360-400HV
- 4.鹽霧測試8H
- 5.標有 X 的為重點檢驗尺寸
- 6.料件需符合RoHS2.0 2015/863/EU 10項要求
- 7.外觀按一般QA檢驗規範
- 8.包裝方式依《物料包裝技術要求》，若不能達到請正式提報給採購&工程師，未收到回復視同供方認同此规范要求

DRAWN	周興兵	TOL ±		General tolerance:						COOLER MASTER	COOLER MASTER CO., LTD.
		Range	Don't use the crossed items								
DATE	2017/9/22	0 - 10	0.1	0.1	0.15	0.2	0.3				
ENGINEER	周興兵	10 - 30	0.15	0.2	0.25	0.3	0.4				
DATE	2017/9/22	30 - 50	0.2	0.3	0.35	0.4	0.6				
CHECKED	周慧華	50 - 100	0.25	0.4	0.4	0.6	0.8			Part Name	O_RING
DATE	2017/9/22	100 -	0.3	0.5	0.6	0.8	1.0			File Name	18R0162-O_RING-01-A1
APPROVAL	周慧華	Angles	1°	2°	3°	3°	5°				
DATE	2017/9/22	Scale	①	Sheet	6/8	Unit	mm	Size	A4		

4		3		2		1			
REV	DESCRIPTION			Section	Engineer	Checked	Date		
<p>NOTE:</p> <p>1.材質:25#消銀龍,表面需加護膜,耐高溫(-40~80℃)</p> <p>2.顏色:Pantone320C,表面加護膜.</p> <p>3.標示符號 1 ~ X 的為重點檢驗尺寸</p>									
									
4		3		2		1			

DRAWN	郭威	TOL ±	General tolerance: Don't use the crossed items					COOLER MASTER CO., LTD.	
DATE	2010.12.13	Range	0 - 10	0.1	0.1	0.15			0.2
ENGINEER	郭威		10 - 30	0.15	0.2	0.25	0.3	0.4	
DATE	2010.12.13		30 - 50	0.2	0.3	0.35	0.4	0.6	
CHECKED	周慧華		50 - 100	0.25	0.4	0.4	0.6	0.8	
DATE	2010.12.13		100 -	0.3	0.5	0.6	0.8	1.0	
APPROVAL	周慧華	Angles	1°	2°	3°	3°	5°		
DATE	2010.12.13	Scale		Sheet	1/1	Unit	mm	Size	A4
							Part Name	359001560-GP	
							File Name	HM051004-CM_Label-01-A1	

5.6 CM LABEL



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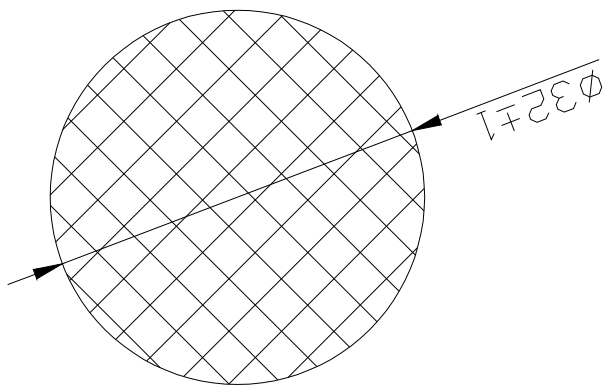
2		1			
REV	DESCRIPTION	Section	Engineer	Checked	Date

A

B

C

D



技术要求：

1.材質：X-23-7762

2.厚度:0.15~0.25mm

DRAWN 周興兵	TOL ± Range	General tolerance: Don't use the crossed items				
		0 - 10	0.1	0.15	0.2	0.3
DATE 2021.11.03	10 - 30	0.15	0.2	0.25	0.3	0.4
ENGINEER 周興兵	30 - 50	0.2	0.3	0.35	0.4	0.5
DATE 2021.11.03	50 - 100	0.25	0.4	0.4	0.6	0.8
CHECKED 周慧華	100 ~	0.3	0.5	0.6	0.8	1.0
DATE 2021.11.03	Angles	1°	2°	3°	3°	5°
APPROVAL 周慧華	Scale	Sheet 4/8		Unit mm	Size A4	
DATE 2021.11.03						



COOLER MASTER CO., LTD.

Part Name GREASE

File Name 102211R075-GREASE-01-A1

5.7 Interface



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6. Certification of material

6.1 AL6063 T5+C1100(HEAT SINK)

Program:AL-6000
 Comment:Al-alloys global
 Single spark(s)
 Sample No:6063--BG04208(153mm)
 Sample Id:MADE IN BAHRAIN

Elements Concentration
 Quality:6063-T5

NO	Si %	Fe %	Cu %	Mn %	Mg %
1	0.4063	0.1663	0.0153	0.0080	0.541
2	0.4128	0.1632	0.0153	0.0078	0.569
3	0.4107	0.1649	0.0155	0.0078	0.570
4	0.4106	0.1613	0.0156	0.0079	0.568
5	0.4117	0.1620	0.0153	0.0078	0.572
NO	Zn %	Ni %	Cr %	Pb %	Sn %
1	<0.0100	0.0051	0.0032	0.0018	<0.0010
2	<0.0100	0.0051	0.0031	0.0017	<0.00100
3	<0.0100	0.0052	0.0031	0.0016	<0.0100
4	<0.0100	0.0050	0.0031	0.0015	<0.0010
5	<0.0100	0.0050	0.0031	0.0016	<0.0010
NO	Ti %	Bi %	Zr %	Al %	
1	0.0164	<0.0010	0.0010	98.8	
2	0.0154	<0.0010	0.0010	98.8	
3	0.0150	<0.0010	0.0010	98.8	
4	0.0155	<0.0010	0.0010	98.8	
5	0.0150	0.0010	0.0010	98.8	

Program:AL-6000
 Comment:Al-alloys global
 Average (n=5)
 Sample No:6063--BG04208(153mm)
 Sample No:MADE IN BAHRAIN

Si %	Fe %	Cu %	Mn %	Mg %
0.2000				0.4500
0.410	0.1635	0.0154	0.0079	0.569
0.600	0.3500	0.1000	0.1000	0.900
Zn %	Ni %	Cr %	Pb %	Sn %
<0.0100	0.0051	0.0031	0.0016	<0.0010
0.1000		0.1000		
Ti %	Bi %	Zr %	Al %	
0.0155	<0.0010	<0.0010	98.8	
0.1000				



收: 19号
发: 中建
0769-8566987
智利板金属贸易



Corporación Nacional del Cobre de Chile
Casa Matriz
Huérfanos 1270
Casilla 150-D
Santiago, Chile
www.codelco.com

CERTIFICATE OF ANALYSIS

CONTRACT : CHIC328
 QUOTA : AUGUST 2011
 INVOICE : 423786PL
 MATERIAL : LME registered Electrolytic refined copper
 : cathodes grade "A" subject to ASTM standard
 : specification B-115/00A, brand ecc-p
 WEIGHT GROSS MT : 500,357
 WEIGHT NET MT : 499,997
 No. BUNDLES : 180
 No. PIECES : 2.800
 S/L NUMBER : SUDOM13010117039
 VARES : NJ
 VESSEL : STADT SEVILLA
 LOADING PORT : PUERTO ANGMOS, CHILE
 DESTINATION PORT : HUANGFU, CHINA
 SHIPMENT DATE : AUGUST 31ST, 2011



WE HEREBY CERTIFY THAT THE ABOVE MATERIAL
HAS THE FOLLOWING CONTENTS :

Average Composition (ppm)												
Cu(%)MIN	S	As	Sb	Fe	Ni	Pb	Bi	Tc	Sn	Cd	Ag	
99,9995	5,5	0,5	0,3	0,1	0,2	0,1	1,1	0,3	0,5	0,1	13,1	

AUGUST 31ST, 2011

CODELCO Chile
Vicepresidency Sales Operations





6.2 AISI1018(SCREW)



中國鋼鐵

品質證明書
TEST CERTIFICATE

CHINA STEEL CORPORATION
1 Chung Kang Road, Hsiao Kang, Kaohsiung 8123
Taiwan
Tel: 886 (7) 802 1111 Fax: 886 (7) 802 2511

客戶名稱 CUST. NO.	友聯金屬工業 (昆山) 有限公司		江蘇省昆山市青蓮街鎮大通路 168 號 TEL: 0512-57811688 FAX: 0512-57619788				
規格名稱 SPEC.	SAE 1018, AL-KILLED (HOMO2)		產品名稱 PRODUCT	ROD-CARBON STEEL			
檢驗 INSPECTION	CSC MILL INSPECTION		檢驗日期 INSPECTION DATE	NOV. 20, 2010			
項目 ITEM	產品序號 SEQ. NO.	MATERIAL DESCRIPTION 規格/厚 寬度 DIMENSION	尺寸 長度 重量 LGT. WT.	檢驗 HEAT NO.			
	001 DY986201	6.38 TOTAL: COIL 86129, 86890237 86129, 858					
化學成分 CHEMICAL ANALYSIS %	C	Mn	P	S	Si	Al	REMARKS
	20	77	19	8	6	58	
註釋 NOTES	<p>茲證明本廠所製產品，均按材料標準製造及檢驗，並符合標準之要求。 WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN MANUFACTURED AND TESTED WITH SATISFACTORY RESULTS IN ACCORDANCE WITH THE REQUIREMENT OF THE ABOVE MATERIAL SPECIFICATION</p> <p>冷金技師 盧慶志 GENERAL MANAGER METALLURGICAL DEPARTMENT</p>						



6.3 O-RING

印: 王

材质证明书 (1015/A) MATERIAL CERTIFICATE

FROM : FAX NO. : Sep 06 2003 18:19 P1

制造编号	3300011			生产编号	B3300	开立日期	2008-6-6	证明书编号	2008-6-6-01
钢种名称	SUS 304 2B			订单编号		依据规范	JIS		
项目	钢卷编号 Coil No	厚度(mm) Thickness	宽度(mm) Width	长度 Length	数量(卷) Quantity	重量(Kg) Weight	成品表面加工		
1		2.0	1000	COIL	1	32			
2									
3									
4									
5									
6									
化学成份 Chemical Composition (%)									
	C	Si	Mn	P	S	Cr	Ni	Mo	N
标准	0.080	1.000	2.000	0.045	0.030	18.00	8.00		
Spec max	max	max	max	max	max	20.00	10.50		
1	0.060	0.500	1.200	0.033	0.003	19.250	9.300		
	标准 Spec				硬度 Hardness	降伏强度 Yield stress	引张强度 Tensile Stress	伸长率(%) Elongation	弯曲试验 Bend Test
	试片编号 Specimen				HV±20	205 min	520 min	40 min	OK
	2008-6-6-01				170	321	533		

以上列出的数据仅供参考并不代表技术数据的最大值或最小值,但用于最终设计。具体材料的数据可能与表中所列出的数据有所不同。
Data shown are typical. For reference only and should not be construed as maximum or minimum values for specification or for final design data. On any particular piece of material may vary from those shown herein.

如有异常, 请于三天内回复
Only discrepancy, pls contact us within 3 days

技术部经理
Manager

QA PASS



6.4 Shin Etsu X-23-7762 (INTERFACE)

6.4.1 Thermal Interface Material



X-23-7762

Thermal Interface Material

Description of Use

Thermal grease (X-23-7762) is a thermal interface material developed by Shin-Etsu Chemical Co., Ltd. to meet the current and future thermal management requirements of high performance microprocessors. It is used to increase heat sink effectiveness by closing the air gap existing between the top of the processor and the fan heat sink. Air is a thermal insulator with a thermal conductivity of 0.027W/mK. The grease is applied to the raised area on top of the processor after the processor is in the socket. The fan heat sink is centered on the processor top, with the raised areas on the bottom of the heat sink and the processor top aligned. The fan heat sink is firmly pressed to evenly distribute the thermal grease until the metal of the heat sink is felt against the metal of the processor top. The excess grease can be removed by wiping with a soft cloth.

Typical Physical Properties

Appearance	Gray
Viscosity (25C)	1700 Poise
Bulk Thermal Conductivity	More than 4 W/mK (with solvent) More than 6 W/mK (w/o solvent, as X-23-7732)
Volatile Content (150C x 24hrs)	2.5%

Handling instruction

1. Suggest to store the material under 10 deg C. Once open the lid, please use it up as soon as possible.
2. Require stirring the material up before using.
3. X-23-7762 contains 2wt% of solvent as a diluted component for application of screen-printing. Therefore, require removing solvent after putting 7762 on substrate. Recommendable curing condition: 60 deg C x 30min



Shin-Etsu

MSDS NO: EU-06-GR902889

2/6

PRODUCT NAME: X-23-7762

INGESTION ; No information is available.

SECTION 4. FIRST AID MEASURES

SKIN contact ; Remove product from skin with dry cloth or towel, and wash exposed area with detergent.

EYES contact ; Immediately flush with water for at least 15 minutes.

INGESTION ; Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Call a physician immediately.

SECTION 5. FIRE FIGHTING MEASURES

FLASH POINT(method used):

200 degrees C Min.(Open cup)

FLAMMABLE LIMITS:

[Synthetic paraffin] LOWER: Not measured

UPPER: Not measured

EXTINGUISHING MEDIA:

Foam, dry chemical, carbon dioxide or fine water spray

SPECIAL FIRE FIGHTING PROCEDURE:

None

UNUSUAL FIRE AND EXPLOSION HAZARD:

Emits toxic fumes under fire conditions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

STEP TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Contain the spill or leak.

Scrape up with cardboard or rag and place in container.

SECTION 7. HANDLING AND STORAGE

PRECAUTION TO BE TAKEN IN HANDLING AND STORING:

Keep container closed when not in use.

Store in a cool place(Qualitatively under 25 degrees C).

Keep away from heat and flame.

Do not lay the container on its side.

Avoid contact with eyes and prolonged or repeated skin contact.

Keep out of reach of children.

* * * * * Information about the emptied container * * * * *

Do not re-use this container.

Keep away from heat, sparks and flame.

Do not puncture or cut this container, and do not weld on or near this container.



ShinEtsu

MSDS NO: EU-06-GR902889

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PRODUCT NAME: X-23-7762

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

ACGIH TLV-TWA : ca.100ppm,

OSHA PEL : 8H TWA ca.500ppm [Synthetic paraffin]

RESPIRATORY PROTECTION(specify type):

Not required

VENTILATION:

LOCAL EXHAUST: Not required

MECHANICAL(general): Not required

SPECIAL: Not required

OTHER: Not required

PROTECTIVE GLOVES:

Plastic film or rubber gloves

EYE PROTECTION:

Safety glasses

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Eyewash equipment

WORK/HYGIENIC PRACTICES:

Wash hands after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT:

Not applicable

VAPOR PRESSURE:

Negligible (25 degrees C) [Synthetic paraffin]

VAPOR DENSITY(air=1):

>1 [Synthetic paraffin]

SPECIFIC GRAVITY:

2.4 (25 degrees C)

MELTING POINT:

Not applicable

EVAPORATION RATE:

<1 (Butyl Acetate=1) [Synthetic paraffin]

SOLUBILITY IN WATER:

Not soluble

APPEARANCE(color):

Gray

APPEARANCE(form):

Paste

ODOR:

Odorless

SECTION 10. STABILITY AND REACTIVITY



ShinEtsu

MSDS NO: EU-06-GR902889

4/6

PRODUCT NAME: X-23-7762

STABILITY:

Stable

CONDITION TO AVOID:

None

INCOMPATIBILITY(material to avoid):

None

HAZARDOUS DECOMPOSITION OR BY-PRODUCT:

None

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITION TO AVOID:

None

SECTION 11. TOXICOLOGICAL INFORMATION

SKIN IRRITATION:

No information is available.

EYE IRRITATION:

No information is available.

ACUTE TOXICITY(LD50):

No information is available.

ACUTE TOXICITY(LC50):

Not applicable

CHRONIC TOXICITY:

No information is available.

CARCINOGENICITY:

NTP:Not listed, IARC:Not listed, OSHA REGULATED:Not listed

OTHER INFORMATION:

None

SECTION 12. ECOLOGICAL INFORMATION

BIODEGRADATION:

Not applicable

BIOACCUMULATION:

No information is available.

AQUATIC TOXICITY:

No information is available.

OTHER INFORMATION:

None

SECTION 13. DISPOSAL CONSIDERATIONS

Can be burned in a chemical incinerator equipped with an afterburner and scrubber.

Do not dispose the emptied container unlawfully.

Observe all federal, state, and local laws.



Shin-Etsu

MSDS NO: EU-06-GR902889

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PRODUCT NAME: X-23-7762

SECTION 14. TRANSPORT INFORMATION

UN No.:

None

IMO CLASSIFICATION AND CLASS:

None

PACKAGING GROUP:

None

PROPER SHIPPING NAME:

None

TECHNICAL SHIPPING NAME:

None

MARINE POLLUTANT:

None

DOT REPORTABLE QUANTITY(49CFR 172.101, APP.) :

HAZARD SUBSTANCE(S) NAME / (CAS No.), CONTENTS AND RQ

Not applicable

SECTION 15. REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT(TSCA) STATUS:

Not listed on the TSCA Inventory.

**This product should be used in compliance with Low Volume Exemption under TSCA.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES

(EINECS) STATUS:

Not listed on the EINECS.

LABELING ACCORDING TO EC-REGULATIONS REQUIRED:

SYMBOL : Not required

R-PHRASE : Not required

S-PHRASE : Not required

CONTAINS : None

WGK CLASSIFICATION (Water Resources Act in Germany):

WGK=1

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986(SARA)

TITLE III-SECTION 313 SUPPLIER NOTIFICATION:

This regulation requires submission of annual reports of toxic chemical(s) that appear in section 313 of the emergency planning and community Right-To-Know Act of 1986 and 40 CFR 372.

This information must be included in all MSDS's that are copied and distributed for the material.

The toxic chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS



Shin-Etsu

MSDS NO: EU-06-GR902889

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PRODUCT NAME: X-23-7762

Zinc oxide/(1314-13-2) : ca.20 %

CALIFORNIA PROPOSITION 65:

This regulation requires a warning for California Proposition 65 Chemical(s) under the statute. The California Proposition 65 Chemical(s) contained in this product are:

CHEMICAL NAME/(CAS No.) AND CONTENTS

** None **

SECTION 16. OTHER INFORMATION

For Industrial Use Only

This materials safety data sheet is offered solely for your information, consideration and investigation.

The data described in this MSDS consist of data on literature, our acquisitional data and analogical inference by data of similar chemical substance or product.

Shin-Etsu Chemical Co., Ltd. provides no warranties, either express or implied, and assumes no responsibility for the accuracy or completeness of the data contained herein.



6.4.2 Information on ingredients

Shin-Etsu

QA , TAKEFU

Date : Oct. 13, 2006

No. SI-MC-1034

To : SHIN-ETSU SILICONE TAIWAN CO., LTD.

Information on ingredients of X-23-7762

Shin-Etsu product X-23-7762 is a mixture consisting of following ingredients.

Formulation of X-23-7762:

Ingredients	Contents
Silicone Oil	} ca. 10%
Additive (Minor constituents)	
Metal Oxide Powder	ca. 20%
Metal Powder	ca. 70%

Your kind consideration and arrangements will be greatly appreciated.

Mikio Kobayashi
 Manager
 Quality Assurance Department
 Takefu Plant
 Shin-Etsu Chemical Co., Ltd.



6.4.3 Safety

物質安全資料表

物品與廠商資料

物品名稱：矽導熱膏
物品編號：7762 / 7783D / G-751 / G-750 / 7868-2D / X-23-7921-5
製造商或供應商名稱、地址及電話：捷美美實業有限公司 臺北縣中和市景安路42號6樓 886-2-8242-2211
緊急聯絡電話/傳真電話：886-2-8242-2211 FAX:886-2-8242-2233

成分辨識資料

純物質：

中英文名稱：Thermal Silicone Grease
同義名稱：矽導熱膏
化學文摘社登記號碼 (CAS No.)：
危害物質成分 (成分百分比)：不含危害物質

混合物：

化學性質：矽鋁混合物		
危害物質成分之中英文名稱	濃度或濃度範圍 (成分百分比)	危害物質分類及圖式
無		

危害辨識資料

最重	健康危害效應：對健康無害
要危	環境影響：無特殊危害
害與	物理性及化學性危害：無特殊危害
效應	特殊危害：無特殊危害
主要症狀：口服及皮膚低毒性，稍刺激眼睛	
物品危害分類：	

急救措施

不同暴露途徑之急救方法：常溫並無任何危害，底下皆指在加熱使用中之狀況。
吸入：揮發物可以吸入人體無害。
皮膚接觸：用布或紙擦拭或水洗即可。
眼睛接觸：冷水沖洗
食入：小量食入會隨食物排出。
最重要症狀及危害效應：同上述所述
對急救人員之防護：
對醫師之提示：

滅火措施

適用滅火劑：沙、水、二氧化碳、化學泡沫。



物質安全資料表

滅火時可能遭遇之特殊危害：無特殊危害
特殊滅火程序：無特殊危害
消防人員之特殊防護裝備：無特殊危害

洩漏處理方法

個人應注意事項：無
環境注意事項：無
清理方法：擦拭乾淨即可廢棄物燒毀，燃燒生成物無害。

安全處置與儲存方法

處置：與一般包裝材料類似方式處理。
儲存：
1. 保存環境：恆溫冷藏，溫度範圍+5°C~+10°C。
2. 遠離高溫火源及易燃物。
3. 避免置放於塵埃密佈之空氣環境中。
4. 沒使用時，保持容器於密閉情況下。
5. 搬運時應注意勿破壞、打破容器。

暴露預防措施

工程控制：無
控制參數：
八小時日時量平均容許濃度/短時間時量平均容許濃度/最高容許濃度：無
生物指標：無
個人防護設備：
呼吸防護：無特殊要求
手部防護：無特殊要求
眼睛防護：無特殊要求
皮膚及身體防護：無特殊要求
衛生措施：保持工作場所通風良好

物理及化學性質

物質狀態：膏狀物	形狀：
顏色：灰色	氣味：無
pH值：7	沸點/沸點範圍：不適用
分解溫度：不適用	閃火點： °F °C 以上
	測試方法： 聞杯 聞杯
自然溫度：不適用	爆炸界限：不會爆炸
蒸氣壓：不適用	蒸氣密度：不適用
比重：2.4~2.5	溶解度：不溶於水



物質安全資料表

安定性及反應性

安定性：非常安定
特殊狀況下可能之危害反應：無
應避免之狀況：無
應避免之物質：無
危害分解物：無。

毒性資料

急性毒性：無
局部效應：無
致敏感性：無。
慢性或長期毒性：無
特殊效應：無

生態資料

可能之環境影響/環境流佈： 燃燒生成物為二氧化碳，無害 流入土壤之中不易分解
--

廢棄處置方法

廢棄處置方法：燒毀

運送資料

國際運送規定：無相關規定
聯合國編號：未納編
國內運輸規定：未規定
特殊運送方法及注意事項：無

法規資料

適用法規：無



6.4.4 Specification



Date ; Nov.30,2000
No. ; Q0001383-00

Specification for X-23-7762

The following specification is applied for X-23-7762,
produced by Shin-Etsu Chemical Co., Ltd.


1.Specification and Test Methods.

<u>Quality Characteristics</u>	<u>Unit</u>	<u>Specification</u>	<u>Test Method</u>
1. * Appearance (Color)	—	Gray	Visual
2. * Viscosity : 25℃	Pa·s	120~220	Viscometer
3. * Thermal conductivity	W/m·℃	4.00 Minimum	Thermal Conductance tester
4. * Volatile content : 150℃×24h	%	2.0~3.0	Weight loss

* Data are inspected for every lot.



6.5 PAINO WIRE (SPRING)



TEST CERTIFICATE
시험성적서

Factory: #1531, SOTTO-RI, SANGBUK-AYUR, YANGSAN-CITY, KYOUNGNAM, (625-850), KOREA

Date of shipment: 2005-08-17
Date of issue: 2005-08-18

Customer: MSW ROUTE	Wire Dimension: 0.5mm SWP/B	Commonly: Piano Wire	Specification: JIS G 3532
Customer's P.O. No: KISQ000001-01	Customer's Lot No: HS-214601	Lot No (GTI No./DA No): T/T	Total Coil: 10
Customer's Name: JINWON	Reduction: RSC	Item No: SK12035	Total Net weight: 489 kg

Chemical Composition(%)

Specification	Min	C	Si	Mn	P	S	Ca	Cr	V	Al	O2	Ti	Ni
Min	0.880	0.120	0.550	0.025	0.015	0.260							
Max	0.850	0.220	0.680	0.014	0.003	0.068							
Actual	0.834	0.197	0.469	0.014	0.003	0.068							

B. Mechanical Properties

Item	Diameter	0.5mm		Torsion Value	Torsion State	Wrap (400)	Bend (90°)	Coilng	Reduction of Area (%)	Decapn. of Leadn	Dipn. (mm)	Appearance	Standards	Code weight	Remark
		Tensile	Quality												
1	0.415	0.11910	0.002	1.510	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		
2	0.415	0.11910	0.002	2.610	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		
3	0.415	0.11910	0.002	2.610	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		
4	0.415	0.11910	0.002	2.610	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		
5	0.415	0.11910	0.002	2.610	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		
6	0.415	0.11910	0.002	2.617	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	50		

Park, Jaegwan
Quality Control Team Manager



6.6 25#消银龙 (FAN_LABEL)

高冠胶粘制品(中山)有限公司 产品说明书

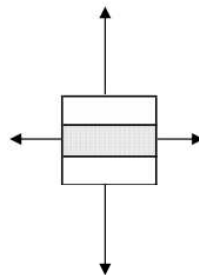
KK ENTERPRISE (ZHONGSHAN) CO.,LTD.SPECIFICATIONS

编号: A026

代号 Code	TLSM11	品名 Article Name	消银特多龙标签纸 METALIZED POLYESTER LABEL(I) (SILVER MATTE)
------------	--------	--------------------	---

面材 SURFACE MATERIAL			
材料名称 Article Name	聚酯膜 POLYESTER FILM	伸长率 % Elongation	——
厚度 mm Thickness	0.025 ± 0.003	颜色 Color	消银色 SILVER MATTE
基重 g/m ² Basic Weight	35 ± 4	平滑度 Smoothness	GOOD
抗张力 kg/15mm Tensile Strength	——	印刷性 Printability	GOOD

胶系 Adhesive Base	压克力系(#9) ACRYLIC
胶厚 mm Coating Thickness	0.023 ± 0.003
上胶量 g/m ² Dry Coating Weight	23 ± 3
初期力 No/Boll Initial Tack	2 ↑
粘着力 Kg/25mm 180° Peel Adhesion	0.6 ↑



剥离力 g/25.4mm Release Force	10 ± 5
保持力 hr/kg/20mm ² Holding Power	8 ↑
耐候性 Weathering Resistance	GOOD
适用温度 °C Temp. Range	- 20 ~ 125
耐溶剂 Solvent Resistance	GOOD

底纸 LINER			
材料名称 Article Name	PE 淋膜离型纸 PE LAMI. RELEASE PAPER	破裂强度 kg/cm ² Breaking Strength	6.5 ↑
厚度 mm Thickness	0.140 ± 0.006	颜色 Color	黄色 YELLOW
基重 g/m ² Basic Weight	116 ± 4	平滑度 Smoothness	GOOD
抗张力 kg/15mm Tensile Strength	8.0 ↑	斩性 Die Cutting	GOOD

物性测试条件: 23±2°C、65±5%RH 保存方式: 阴凉通风避免阳光直射 保存时间: 一年

REMARKS

以上诸项技术资料乃本公司采用公认可靠检验方法, 经多次检验所得之平均数据。但为确保正确选择与使用本公司之产品, 仍请你基于欲使用对象, 先行对使用目的与条件作详尽了解与试用, 或者通知本公司, 以便为你提供更进一步的说明与服务。

THE TECHNICAL DATA ARE BASED ON THE RELIABLE EXPERIMENTS CARRIED BY THE COMPANY, WHICH HOWEVER ARE NOT TO GUARANTEE THOSE PROPERTIES AND CHARACTERISTICS COMPLETELY AS SPECIFIED THEREIN. KINDLY STUDY YOUR PURPOSE AND CONDITIONS TO USE THIS PRODUCT PREVIOUSLY IN DETAIL UPON YOUR OWN RESPONSIBILITY.

修订日期: 2005.07.01 (4.0版)



DELTA ELECTRONICS, INC.
252, SHANG YING ROAD, KUEI SAN
TAOYUAN HSIEN 333, TAIWAN, R. O. C.

TEL : 886-(0)3-3591968
FAX : 886-(0)3-3591991

STATEMENT OF DEVIATION

<input checked="" type="checkbox"/> NONE
<input type="checkbox"/> DESCRIPTION :



DELTA ELECTRONICS, INC.
 252, SHANG YING ROAD, KUEI SAN
 TAOYUAN HSIEN 333, TAIWAN, R. O. C.

TEL : 886-(0)3-3591968
 FAX : 886-(0)3-3591991

SPECIFICATION FOR APPROVAL

 Customer: COOLER MASTER

 Description: DC FAN

 Customer P/N: 200007180-GP REV:

 Delta Model NO.: AFB0912VH-4E91 Delta Safety Model NO.:AFB0912VH

 Sample Rev: 07 Issue NO:

 Sample Issue Date: JUN-17-2022 Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH SINGLE PHASE AND FOUR POLES.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	7.0 - 12.5 VDC
INPUT CURRENT	0.40 (MAX. 0.60) A (SAFETY CURRENT 0.60A)
INPUT POWER	4.80 (MAX. 7.20) W
SPEED	4500±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.634 (MIN. 1.471) M ³ /MIN. 57.70 (MIN. 51.93) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	8.60 (MIN. 6.97) mmH ₂ O 0.338 (MIN. 0.274) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	47.5 (MAX. 51.5) dB-A
INSULATION TYPE	UL: CLASS A

(continued)

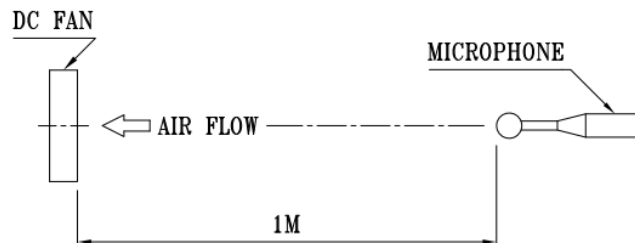


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN FRAME AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
EXTERNAL COVER	OPEN TYPE
LIFE EXPECTANCE	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR
LEAD WIRE	UL 1061 -F- AWG #26 BLACK WIRE:NEGATIVE(-) RED WIRE:POSITIVE(+) YELLOW WIRE:TACHOMETER OUTPUT (FOO) BLUE WIRE:SPEED CONTROL (PWM)

- NOTES:
1. ALL READINGS ARE MEASURED AFTER STABLY WARMING UP THROUGH 10 MINUTES.
 2. STANDARD AIR PROPERTY IS AIR AT (Td) 25°C TEMPERATURE, (RH) 65% RELATIVE HUMIDITY, AND (Pb) 760 mmHg BAROMETRIC PRESSURE.
 3. THE VALUES WRITTEN IN PARENS , (), ARE LIMITED SPEC.
 4. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ANECHOIC CHAMBER WITH B & K SOUND LEVEL METER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.



PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. FRAME ----- PLASTIC UL: 94V-0
- 3-3. IMPELLER ----- PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM ----- TWO BALL BEARINGS
- 3-5. WEIGHT ----- 90 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +70 DEGREE C
- 4-3. OPERATING HUMIDITY ----- 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY ----- 5 TO 95 % RH

5. PROTECTION:

5-1. LOCKED ROTOR PROTECTION

IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FIRE IN 96 HOURS OF LOCKED ROTOR CONDITION AT THE RATED VOLTAGE.

5-2. POLARITY PROTECTION

BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR POSITIVE AND NEGATIVE LEADS.

6. RE OZONE DEPLETING SUBSTANCES:

- 6-1. NO CONTAINING PBBs, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

7. PRODUCTION LOCATION

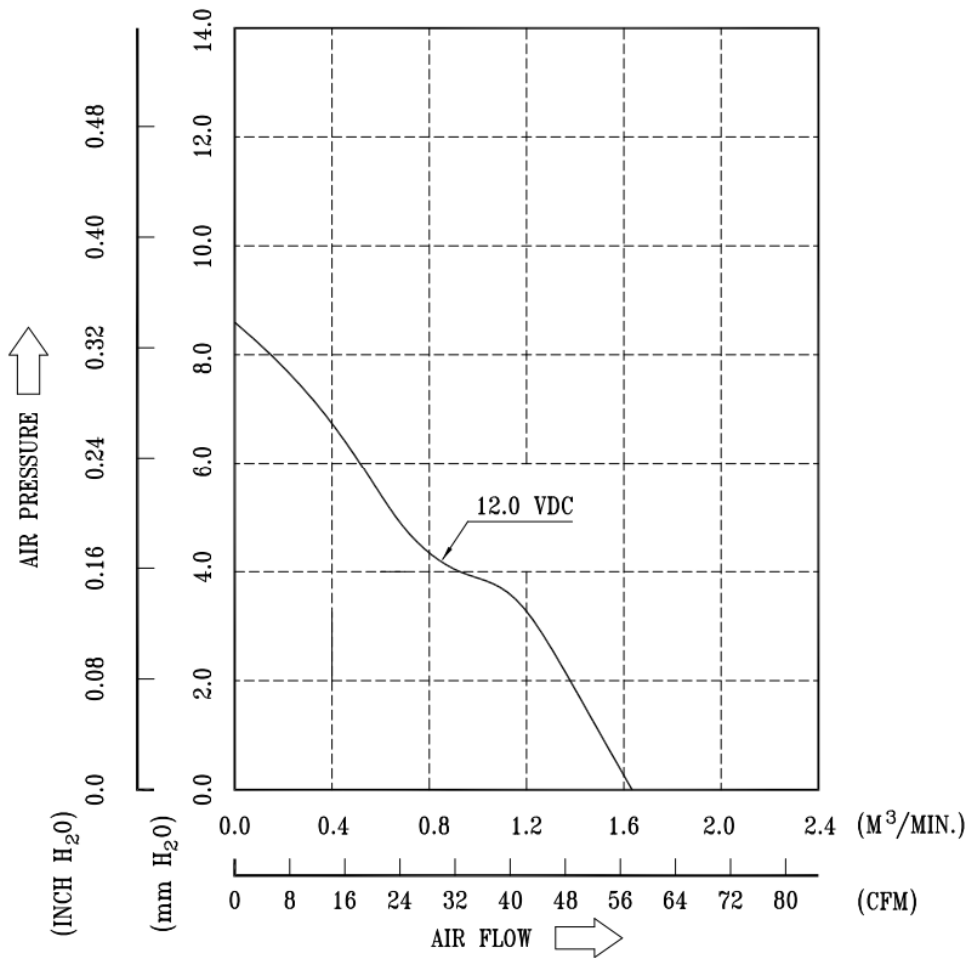
- 7-1. PRODUCTS WILL BE PRODUCED IN CHINA OR THAILAND.



 PART NO: 200007180-GP

 DELTA MODEL: AFB0912VH-4E91

8. P & Q CURVE:



* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE
 TEMPERATURE ----- ROOM TEMPERATURE
 HUMIDITY ----- 65%RH

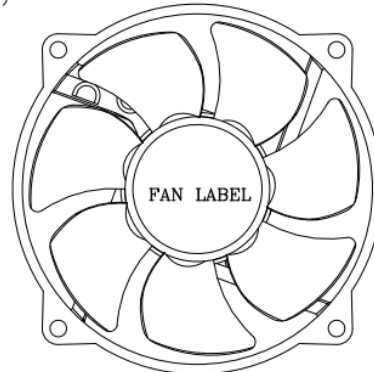
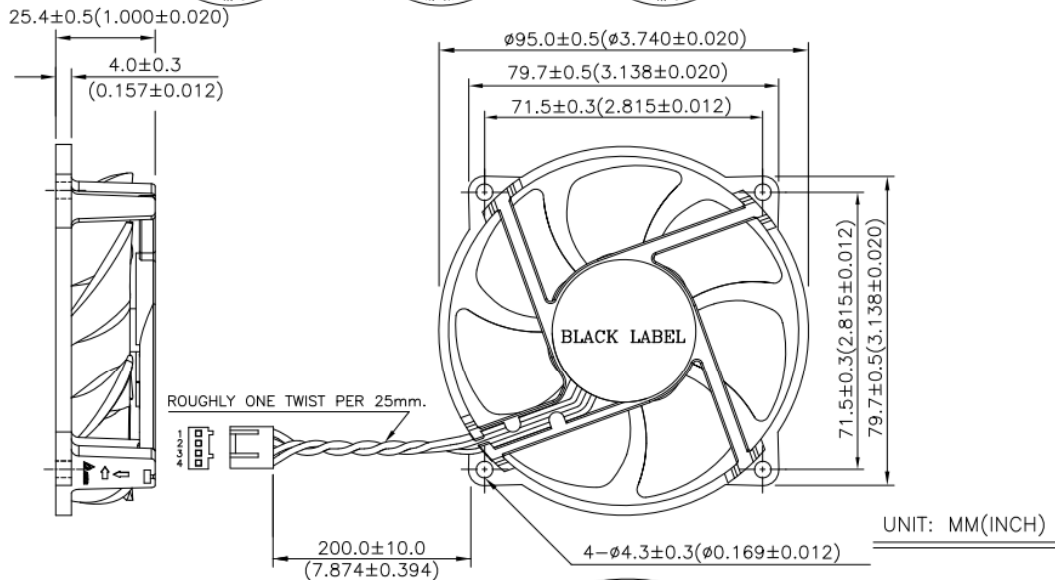


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

9. DIMENSION DRAWING:

LABEL:



1. UL 1061 -F- AWG #26
 PIN 1 : BLACK WIRE: NEGATIVE(-)
 PIN 2 : RED WIRE: POSITIVE(+)
 PIN 3 : YELLOW WIRE: TACHOMETER OUTPUT (F00)
 PIN 4 : BLUE WIRE: SPEED CONTROL (PWM)

2. HOUSING : CKM 25410108-04
3. TERMINAL : CKM 25410301
4. BALANCE MATERIAL : SUS FOIL
5. THIS PRODUCT IS RoHS COMPLIANT

A00

page: 5

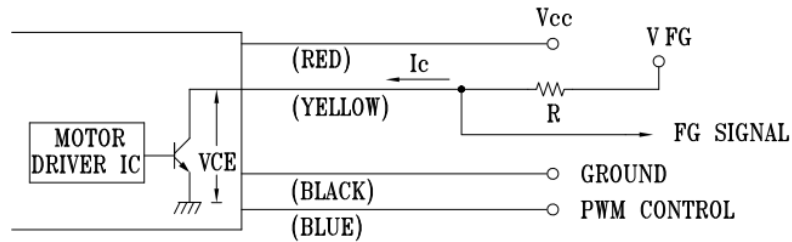


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



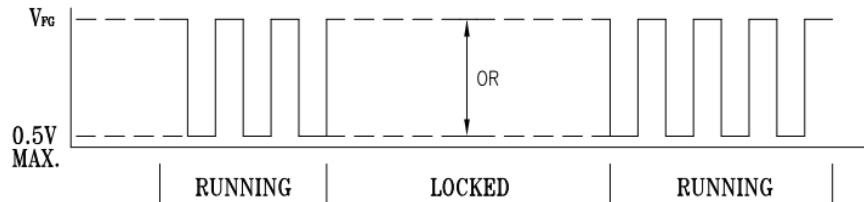
CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

10-2. SPECIFICATION:

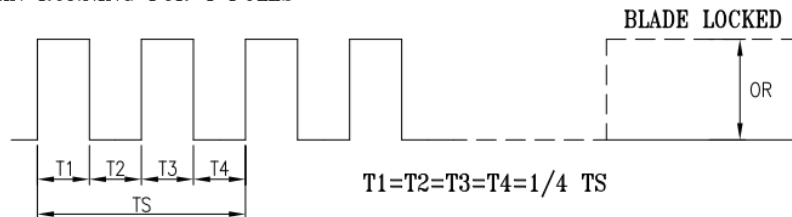
$V_{ce(sat)} = 0.5V \text{ MAX.}$ $V_{FG} = 5.0V \text{ TYP. (} V_{cc} \text{ MAX.)}$

$I_c = 5mA \text{ MAX.}$ $R \geq V_{FG} / I_c$

10-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$N = \text{R.P.M}$

$TS = 60 / N (\text{SEC})$

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

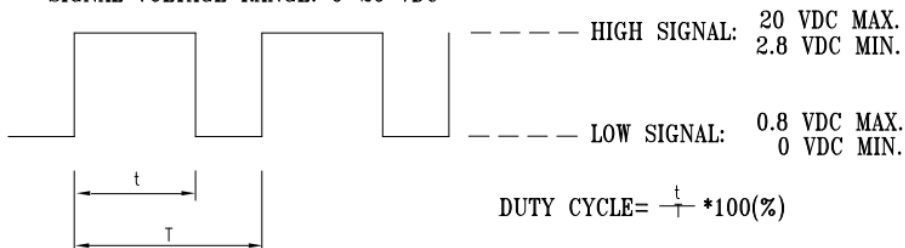


PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~20 VDC



- THE PREFERRED OPERATING POINT FOR THE FAN IS 20K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.

12. SPEED VS PWM CONTROL SIGNAL:

(AT 25°C, RATED VOLTAGE & PWM SIGNAL AS FOLLOW)

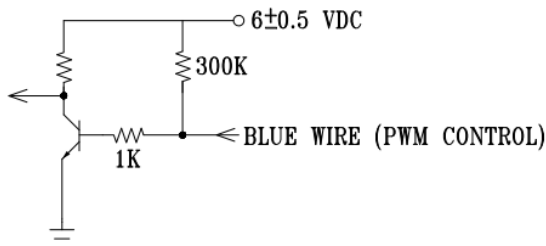
DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	4500±10%	0.40
75	3600±10%	0.22
50	2500±10%	0.10
25	1200±250	0.04
0	0	0.01

* PWM SIGNAL
PWM FREQUENCY = 20KHz



- MIN. START DUTY CYCLE : 30% (MAX.)
WHEN DUTY CYCLE IS SET FOR MORE THAN 30%, THE FAN WILL BE ABLE TO START FROM A DEAD STOP.

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:





Application Notice

1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.
2. A written request should be submitted to Delta prior to approval if deviation from this specification is required.
3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fan was hard-dropped to the production floor.
4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.
5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.
6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, if there is no foolproof method to protect against such error specifically mentioned in this spec.
7. Delta fans without special protection are not suitable where any corrosive fluids are introduced to their environment.
8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.
9. Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.
10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.
11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.
12. Except where specifically stated, all tests are carried out at room (ambient) temperature and relative humidity conditions of 25°C, 65% RH. The test value is only for fan performance itself.
13. Be certain to connect an “4.7 μ F or greater” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.



ONLINE CERTIFICATIONS DIRECTORY

GPWV2.E132003 Fans, Electric - Component

Page Bottom

Fans, Electric - Component

See General Information for Fans, Electric - Component

DELTA ELECTRONICS INC

E132003

252 SHANG YING RD

KUET SHAN

TAOYUAN HSIEN, 333 TAIWAN

DC fans. Model AFB followed by 0405, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0512, followed by HB, HNB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by H, L or M, followed by R00, R05, R80 or RR05, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0805, followed by H, L or M, followed by (Y); Model AFB followed by 0612, 0624, 0624, followed by EH, SH, VH, followed by (Y); Model AFB followed by 0912, 0924, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612, 0624, 0812, 0924, 0912 or 0924, followed by H, HB, HH, HHB, L, LB, LLB, M, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Models ASB042MA, ASB042LA, ASB0405MA followed by (Y); Model ASB followed by 0405, 0412, followed by NA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0505, followed by HB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0512, 0524, followed by HB, HNB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0812, 0824, followed by HB, HNB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0612 or 0624, followed by IL, III, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model ASB followed by 0912 or 0924, followed by IL, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0505, 0512 or 0524, followed by HB, HNB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612, 0624, followed by IL, III, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0912, 0924, followed by N, HH, L, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0612 or 0624, followed by L, M, II or III, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0812 or 0824, followed by HB, HNB, LB, LLB, MB, SHB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AUB followed by 0924, followed by L, M, II, III or VII, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model BFB followed by 1212, followed by H, HH, L, LL, M or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 1224, followed by IL, III, L, LL, M or VII, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 1248, followed by H, HH, L, LL, M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 1012, followed by A, B or C, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0405 or 0412, followed by H, L, LL, M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0612, 0812, 0912, 0824 or 0924 followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0612, 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFB followed by 0612, 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFC followed by 0612, 0812 or 0912, followed by "A" or "B", followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model DFD followed by 0612 or 0624, followed by H, HH, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, followed by HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, 0812, 0824, followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, followed by HD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0612, 0624, followed by H, HD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0812, 0824, followed by HH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model SB followed by 0812, followed by HSA or MSG, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFC0612D(Y) where (Y) may be A through Z, 0 through 9, "-" or blank; Models AFB0612DH-8G33(Y), E17199(Y), E47159(Y), DTC-CDAY, DTC-CDY, FFR1212DHE(Y), FFR0812DHE(Y), KFB0612ND-8K16(Y), FB80712HB-8A97(Y), KUC1012D(Y) series, where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Models TFA1424AG(Y), TFA1424AGL(Y), TFA1448(X)G(Y), TFA1448AGL(Y) series, where (X) may be A, B or C, (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank

Model AFB followed by 02505, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 02512, followed by HA, HHA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0305, followed by -HA, -LA, -LLA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0312, followed by -HA, LA, LLA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 03505, followed by HA, LA, MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0405, followed by HD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 03512, followed by LA, MA or HA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0405, 0412 or 0424, followed by HD, HHD, LD, MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0412 or 0424, followed by HD, HHD, LD or MD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0505, 0512, followed by HA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0524, followed by HB, HNB, LB or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by HB, HNB, LB, LLB, MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by LLD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0605, followed by HA, LA or MA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612, followed by HA, HB, HNB, LA, MA or MB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612 or 0624, followed by HD, HHD, LB, LD, LLD, MD, VHB or VHD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0612 or 0624, followed by HD, HHD, LB, LD, LLD, MD, VHB or VHD, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0624, followed by HB, HNB, LB, HB or VHB, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0648, followed by EH, H, HH, L, M, SH or VH, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0705, followed by H, L or M, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank; Model AFB followed by 0712 or 0724, followed by H, HA, HH, HHA, L, LA, M, MA, VH or VHA, followed by (Y), where (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank

file://C:\DOCUMENTE-INCELINE-1\LIAVLOCALS-1\Temp\Y4P8D7F8.htm

2010/4/29



CERTIFICATION RECORD

The company named below has been authorized by CSA International to represent the products listed in this record as "CSA Certified" and to affix the CSA Mark to these products according to the terms and conditions of the CSA Service Agreement and applicable CSA program requirements (including additional Markings).

File No: 091949_0_000
Class No: 3812 01 FANS AND BLOWERS

SUBMITTOR

4510824 Delta Electronics Inc
252 Shang Ying Rd
Kuei San
Taoyuan Hsien, 333
Taiwan

FACTORIES

4510824 Delta Electronics Inc
252 Shang Ying Rd
Kuei San
Taoyuan Hsien, 333
Taiwan

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Wujiang City, Jiangsu 215200
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4678360 Delta Electronics (Thailand) Public
Co., Ltd.
111 Moo 9 Wellgrow Ind Estate
Bangna-Trad Road, Tambon Bangwua

Amphur Bangpakong
Chachoengsao, Chachoengsao 24180
Thailand

4753103 Delta Electronics
(Dongguan) Co Ltd
HeTianXia High Tech Industrial Pk



AFB0848H	48	110	-
AFB0848HH	48	120	-
AFB08512LD	12	140	0 to 9, A to Z, blank or ".,"
AFB08512MD	12	200	0 to 9, A to Z, blank or ".,"
AFB08512HD	12	270	0 to 9, A to Z, blank or ".,"
AFB08512HHD	12	360	0 to 9, A to Z, blank or ".,"
AFB08512VHD	12	600	0 to 9, A to Z, blank or ".,"
AFB0912H	12	300	STD, F00, R00, F05, R05, RR0, RR05, A to Z, 0 to 9, blank or ".,"
AFB0912H-A	12	300	0 to 9, A to Z
AFB0912HF	12	280	0 to 9, A to Z
AFB0912HH	12	400	STD, F00, R00, F05, R05, RR0, RR05, A to Z, 0 to 9, blank or ".,"
AFB0912HH-A	12	400	0 to 9, A to Z
AFB0912HHF	12	420	0 to 9, A to Z
AFB0912H-SB	12	300	-
AFB0912L	12	150	STD, F00, R00, F05, R05, RR0, RR05, A to Z, 0 to 9, blank or ".,"
AFB0912L-A	12	150	0 to 9, A to Z
AFB0912LF	12	130	0 to 9, A to Z
AFB0912L-SB	12	150	-
AFB0912M	12	200	STD, F00, R00, F05, R05, RR0, RR05, A to Z, 0 to 9, blank or ".,"
AFB0912M-A	12	200	0 to 9, A to Z
AFB0912MF	12	190	0 to 9, A to Z
AFB0912M-SB	12	200	-
AFB0912SH-A	12	1000	0 to 9, A to Z
AFB0912SHF	12	900	0 to 9, A to Z
AFB0912SH	12	900	0 to 9, A to Z
AFB0912SH-SP16	12	900	0 to 9, A to Z
AFB0912SH-SP20	12	900	0 to 9, A to Z
AFB0912VH	12	600	STD, F00, R00, F05, R05, RR0, RR05, A to Z, 0 to 9, blank or ".,"
AFB0912VH-A	12	600	0 to 9, A to Z



VDE Prüf- und Zertifizierungsinstitut

GUTACHTEN MIT FERTIGUNGSÜBERWACHUNG CERTIFICATE OF CONFORMITY WITH FACTORY SURVEILLANCE

Delta Electronics Inc.
252 Shangying Road
Guishan Industrial Zone
33341 TAOYUAN COUNTY
TAIWAN

ist berechtigt, für ihr Produkt /
is authorized to use for their product

Einbauventilator für IT-Geräte
Fan for building-in, IT-equipment

die hier abgebildeten markenrechtlich geschützten Zeichen
für die ab Blatt 2 aufgeführten Typen zu benutzen /
the legally protected Marks as shown below for the types referred to on page 2 ff.



Geprüft und zertifiziert nach /
Tested and certified according to:

DIN EN 62368-1 (VDE 0866-1):2015-05; EN 62368-1:2014
IEC 62368-1:2014



VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Zertifizierungsstelle / Certification

Aktenzeichen: 5000878-2611-0007 / 2503R2
File ref.

Ausweis-Nr. 1754
Certificate No.

Blatt 1
Page

Weitere Bedingungen siehe Rückseite und Folienblätter /
Further conditions see reverse and following pages

Offenbach, 1994-06-06

(letzte Änderung / updated: 2019-03-18)

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Ausweis-Nr. /
Certificate No. 1764 Blatt /
Page 2

Name und Sitz des Genehmigungs-Inhabers / Name and registered seat of the Certificate holder
Delta Electronics Inc., 252 Shangying Road, Guishan Industrial Zone, 33341 TAOYUAN COUNTY, TAIWAN

Aktenzeichen / File ref.
5000878-2611-0007 / 259382 / TL4 / SFK

letzte Änderung / updated Datum / Date
2019-03-18 1994-06-08

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Gutachtens mit Fertigungsüberwachung Nr. 1764.
This supplement is only valid in conjunction with page 1 of the Certificate of Conformity with factory surveillance No. 1764.

Einbauventilator für IT-Geräte Fan for building-in, IT-equipment

Typ(en) / Type(s)

ASB0612H/M/L/HH
ASB0624H/M/L/HH
BFB1212HE
AFB0605H/M/L
AFB0505HA/LA/MA
AFB0512HA/LA/MA
BFB0712H/L/M
BFB0724H/L/M
AFB0405LA/MA/HA/HHA
AFB0412LA/MA/HA/HHA
ASB0605L
ASB0605M
ASB0605H
DSB0812L/M/H
AFC0812A/B
AFC0912A/B
BFC1212A/B
BFB1212LL/L/M/H/HH/VH
BFB1224LL/L/M/H/HH/VH
AFB0405LD/MD/HD
AFB0412LD/MD/HD/HHD
AFB0424LD/MD/HD/HHD
AFB0612LA/MA/HA
ASB0812LL/L/M/H/HH
ASB0912L/M/H/HH
ASB0824LL/L/M/H/HH
ASB0924L/M/H/HH
AFB0705L/M/H
AFB0712L/M/H/HH/VH
AFB0724L/M/H/HH/VH

Fortsetzung siehe Blatt 3 /
continued on page 3

VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute



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Phone: +49 (0) 69 83 08-0
Telefax: +49 (0) 69 83 08-555



VDE Prüf- und Zertifizierungsinstitut Gutachten mit Fertigungsüberwachung

Ausweis-Nr. /
Certificate No.
1764

Blatt /
Page
3

Name und Sitz des Genehmigungs-Inhabers / Name and registered seat of the Certificate holder
Delta Electronics Inc., 252 Shangying Road, Guishan Industrial Zone, 33341 TAOYUAN COUNTY, TAIWAN

Aktenzeichen / File ref.
5000878-2611-0007 / 259382 / TL4 / SFK

letzte Änderung / updated
2019-03-18

Datum / Date
1994-06-08

Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Gutachtens mit Fertigungsüberwachung Nr. 1764.
This supplement is only valid in conjunction with page 1 of the Certificate of Conformity with factory surveillance No. 1764.

Einbauventilator für IT-Geräte Fan for building-in, IT-equipment

Typ(en) / Type(s)

AFB0812LL/L/M/H/HH/VH/SH
AFB0824LL/L/M/H/HH/VH/SH
AFB0912L/M/H/HH/VH
AFB0924L/M/H/HH/VH
AFC0612A
AFC0612B
AFB0605LB/MB/HB/HHB
AFB0605LLD/LD/MD/HD/HHD
AFB0612LLD/LD/MD/HD/HHD/VHD
AFB0624LLD/LD/MD/HD/HHD/VHD
AFC0912A/B-(M/H/HH)
AFC0912A/B-F00(M/H/HH)
AFC0912A/B-R00(M/H/HH)
DSB0612L/M/H
BFB1012LL/L/M/H/HH(-F00/R00)
BFB1024LL/L/M/H/HH(-F00/R00)
BFC1012A/B(-F00/F05/R00)
BFC1012C(-F00)
AFB1212LE/ME/HE/HHE/VHE(-F00/F05/R00)
AFB1224LE/ME/HE/HHE/VHE(-F00/F05/R00)
BFB1224LE/ME/HE(-F00/R00)
BFB1248LE/ME/HE(-F00/R00)
AFB0612/M-SB/H-SB
AFB0912/M-SB/H-SB(F00)
AFB02505LA/MA/HA
AFB02512LA/MA/HA/HHA
AFC0712A/B
AFB0305LLA/LA/MA/HA
AFB0312LLA/LA/MA/HA
ASB0912/M-SB/H-SB

Fortsetzung siehe Blatt 4 /
continued on page 4

VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute



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Phone: +49 (0) 21 93 93 39-0
Telex: +49 (0) 21 93 93 39-0



VDE Prüf- und Zertifizierungsinstitut Gutachten mit Fertigungsüberwachung

Ausweis-Nr. /
Certificate No. 1764
Beiblatt /
Supplement

Name und Sitz des Genehmigungs-Inhabers / Name and registered seat of the Certificate holder
Delta Electronics Inc., 252 Shangying Road, Guishan Industrial Zone, 33341 TAOYUAN COUNTY, TAIWAN

Aktenzeichen / File ref.
5000878-2611-0007 / 259382 / TL4 / SFK

letzte Änderung / updated
2019-03-18
Datum / Date
1994-06-08

Dieses Beiblatt ist Bestandteil des Gutachtens mit Fertigungsüberwachung Nr. 1764.
This supplement is part of the Certificate of Conformity with factory surveillance No. 1764.

Einbauventilator für IT-Geräte Fan for building-in, IT-equipment

Fertigungsstätte(n) Place(s) of manufacture

- | | |
|---------------------------------------|--|
| Referenz/Reference
30009495 | Delta Electronics
(Dongguan) Co., Ltd.
Hetianxia village
523300 SHUIE TOWN, DONGGUAN CITY
Guangdong
CHINA |
| Referenz/Reference
30011790 | Delta Electronics
(Jiang Su) Ltd.
No. 1688 Jiangxing East Road
Wujiang Economy Developm. Zone
215200 WUJIANG CITY, SUZHOU CITY
Jiangsu
CHINA |
| Referenz/Reference
30013236 | Delta Electronics (Thailand)
Public Co., Ltd.
111 Moo.9 Weilgrow Industrial Estate
Bangna-Trad Road, Tambon Bangwa
AMPHUR BANGPAKONG 24180
Chachoengsao
THAILAND |
| Referenz/Reference
30020541 | DELTA Electronics (ChenZhou) Co.Ltd.
Chen Zhou Export Zone
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Hunan
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VDE Prüf- und Zertifizierungsinstitut GmbH * Testing and Certification Institute

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VDE Prüf- und Zertifizierungsinstitut Gutachten mit Fertigungsüberwachung

Ausweis-Nr. /
Certificate No. 1764
Beiblatt /
Supplement

Name und Sitz des Genehmigungs-Inhabers / Name and registered seat of the Certificate holder
Delta Electronics Inc., 252 Shangying Road, Guishan Industrial Zone, 33341 TAOYUAN COUNTY, TAIWAN

Aktenzeichen / File ref.	letzte Änderung / updated	Datum / Date
5000878-2611-0007 / 259382 / TL4 / SFK	2019-03-18	1994-06-08

Dieses Beiblatt ist Bestandteil des Gutachtens mit Fertigungsüberwachung Nr. 1764.
This supplement is part of the Certificate of Conformity with factory surveillance No. 1764.

VDE Prüf- und Zertifizierungsinstitut GmbH
VDE Testing and Certification Institute
Fachgebiet TL4
Section TL4





VDE Prüf- und Zertifizierungsinstitut Gutachten mit Fertigungsüberwachung

Ausweis-Nr. /
Certificate No. 1764
Infoblatt /
info sheet

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Delta Electronics Inc., 252 Shangying Road, Guishan Industrial Zone, 33341 TAOYUAN COUNTY, TAIWAN

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Dieses Blatt gilt nur in Verbindung mit Blatt 1 des Gutachtens mit Fertigungsüberwachung Nr. 1764.
This supplement is only valid in conjunction with page 1 of the Certificate of Conformity with factory surveillance No. 1764.

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Der VDE-Zeichengenehmigungsausweis wird ausschließlich auf der ersten Seite unterzeichnet.

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The approval is valid as long as the VDE specifications are in force, on which the certification is based on, unless it is withdrawn according to the VDE Testing and Certification Procedure (PM102E).

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The approval is solely signed on the first page.



DC FAN LIFE EXPERIMENT REPORT

Available for these models with lower speed and same physical structure. All model may be followed by ARxx or AFxx series suffixes. This test report applies to AFB92x92x25.4 mm series as the right table	AFB0912VH-4E91				
	AFB0912VH-4E64				
Representative Test P/N :AFB0912VH-SP21 (4E64)					
Equipment:1.Oven: E24-F0032					

© **L₁₀ Expectancy: 70,000 hours minimum @ fan rated voltage and the temperature of 40°C**
 According to the equation for **Weibull distribution**, $MTTF \cong 7 \times L_{10} = 490,000$ hours
 And we rely on a zero failure Weibull test strategy and accelerated testing technique, to determine the total test time (t) for verifying the above life estimation by the equations,

$$t = 1.036 \times MTTF \times [(B_{r,c}) \div n]^{0.91 \div A_F}, \text{ and } A_F = 2^{(T_s - T_u) / 10}$$

where, (B_{r,c}) is Poisson distribution factor with the failure number of r equal to 0 and the decimal confidence level of c equal to 0.90(90%).

Stress/Elevated Temperature T _s (°C) (Actual Test Temperature)	Unstress Temperature T _u (°C)	Acceleration Factor A _F	Quantity of Test Devices n (pcs)	Poisson Distribution Factor B _{r,c}	Required test time with zero failure t (hours)	Actual test time with zero failure t (hours)	Verified MTTF 40 °C (hours)	Verified L ₁₀ 40 °C (hours)
60	40	4.00	56	2.303	6,956	6,956.0	490,033	70,005

Test Progress:

Date for Test Beginning	Date for Test Termination (at least)	Current Test Status			Current Total Test Time (hours)
2004/9/7 4:40 PM	2005/11/15 8:31 AM	<input type="checkbox"/> In process	<input type="checkbox"/> In process (exceed requested)	<input checked="" type="checkbox"/> Termination	6956.0

Herewith, we could assume as right on the basis of above test result. Besides, if the actual test time exceed the required, it comes out that those fans' L₁₀ expectancy and MTTF are greater than the warrant. (MTTF : means Mean Time To Failures, it should be used in a non-repairable system setting. Now we show the MTTF in our life report, that's because we will not repair the failed fans during life experiment. MTBF: means Mean Time Between failures, it should be used in a repairable system setting.)

Temperature for MTTF Estimation (°C)	Acceleration Factor A _F	Estimated MTTF (hours)	Estimated L ₁₀ (hours)
25	11.31	1,386,023	198,003
30	8.00	980,066	140,009
40	4.00	490,033	70,005
50	2.00	245,017	35,002
60	1.00	122,508	17,501

Fan permission criteria for the measurement after test :

1. For current, the limit is less than spec.(max.).
2. For speed, the allowable decrease is less than 15%.
3. For noise, the limit is less than spec.(max.). + 3 dB

Test Result	<input checked="" type="checkbox"/> Accept
	<input type="checkbox"/> Reject

QE File No.	Time-out for function test or others (hours)	Issued Date	Reported By	Approved By
DG04FNL240	3452.30	2005/11/15 9:00 AM	Guie.Lin	Gx.Xu



DC FAN FUNCTION TEST RECORD FOR LIFE EXPERIMENT

Available for these models with lower speed and same physical structure.
All model may be followed by ARxx or AFxx series suffixes. This test report applies to AFB92x92x25.4 mm series as the right table

AFB0912VH-4E91			
AFB0912VH-4E64			

Required Test Time (hrs)	Date for Test Beginning	Date for Test Termination	Sample Size (pcs):	Failure (pcs):	Current Total Test Time (hrs)
6,956	2004/9/7 4:40 PM	2005/11/15 8:31 AM	56	0	6956.0
Representative Test P/N :AFB0912VH-SP21 (4E64)			Current Test Status	<input type="checkbox"/> In process <input type="checkbox"/> In process (exceed requested) <input checked="" type="checkbox"/> Termination	
Equipment:1.Oven: E24-F0032					

Test Data Between Initial Test and Final Test

Sample No.	Initial Test Current Spec. (A)	Final Test Current Spec. (A)	Deviation (%)	Initial Test Speed Spec. (RPM)	Final Test Speed Spec. (RPM)	Deviation (%)	Initial Test Noise Spec. (dB A)	Final Test Noise Spec. (dB A)	Deviation (%)
	0.44Max.	0.44Max.		4140-4860	4140-4860		51.5Max	51.5Max	
1	0.34	0.34	0.0	4674	4558	-2.5	48.0	48.7	1.5
2	0.34	0.33	-2.9	4595	4574	-0.5	48.7	49.0	0.6
3	0.32	0.33	3.1	4494	4444	-1.1	48.2	48.8	1.2
4	0.33	0.33	0.0	4511	4592	1.8	48.5	48.9	0.8
5	0.33	0.33	0.0	4595	4576	-0.4	48.1	48.7	1.2
6	0.35	0.34	-2.9	4629	4434	-4.2	48.7	49.0	0.6
7	0.34	0.35	2.9	4575	4614	0.9	48.2	48.9	1.5
8	0.34	0.34	0.0	4494	4507	0.3	48.8	49.1	0.6
9	0.35	0.35	0.0	4672	4563	-2.3	48.7	48.7	0.0
10	0.32	0.33	3.1	4597	4434	-3.5	48.2	48.9	1.5
11	0.31	0.32	3.2	4616	4526	-1.9	48.5	49.0	1.0
12	0.31	0.32	3.2	4702	4698	-0.1	48.8	48.9	0.2
13	0.31	0.33	6.5	4599	4545	-1.2	48.7	48.8	0.2
14	0.32	0.35	9.4	4572	4580	0.2	48.5	48.9	0.8
15	0.32	0.32	0.0	4627	4669	0.9	48.2	49.1	1.9
16	0.35	0.36	2.9	4592	4648	1.2	48.5	48.8	0.6
17	0.34	0.32	-5.9	4535	4448	-1.9	48.3	49.0	1.4
18	0.35	0.36	2.9	4627	4661	0.7	48.8	48.9	0.2
19	0.35	0.36	2.9	4575	4579	0.1	48.1	48.7	1.2
20	0.32	0.33	3.1	4497	4448	-1.1	48.2	48.9	1.5
21	0.36	0.36	0.0	4672	4557	-2.5	48.0	48.9	1.9
22	0.35	0.34	-2.9	4667	4544	-2.6	48.3	48.7	0.8
23	0.35	0.33	-5.7	4654	4493	-3.5	48.9	48.9	0.0
24	0.35	0.34	-2.9	4661	4532	-2.8	48.7	49.0	0.6
25	0.33	0.34	3.0	4527	4567	0.9	48.4	48.9	1.0
26	0.32	0.32	0.0	4592	4523	-1.5	48.5	48.7	0.4
27	0.34	0.34	0.0	4545	4541	-0.1	48.0	48.7	1.5
28	0.34	0.33	-2.9	4497	4478	-0.4	48.2	48.8	1.2
29	0.33	0.33	0.0	4484	4437	-1.0	48.5	49.1	1.2
30	0.34	0.31	-8.8	4500	4375	-2.8	48.1	49.0	1.9
31	0.34	0.32	-5.9	4541	4486	-1.2	48.2	48.7	1.0
32	0.35	0.36	2.9	4492	4568	1.7	48.6	48.8	0.4
33	0.34	0.34	0.0	4749	4556	-4.1	48.9	48.9	0.0
34	0.36	0.38	5.6	4621	4678	1.2	48.4	48.8	0.8
35	0.35	0.35	0.0	4595	4515	-1.7	48.1	48.7	1.2

QE File No.	Time-out for function test or others (hours)	Issued Date	Reported By	Approved By
DG04FNL240	3452.30	2005/11/15 9:00 AM	Guie.Lin	Gx.Xu



DC FAN FUNCTION TEST RECORD FOR LIFE EXPERIMENT

Available for these models with lower speed and same physical structure. All model may be followed by ARxx or AFxx series suffixes. This test report applies to AFB92x92x25.4 mm series as the right table				AFB0912VH-4E91					
				AFB0912VH-4E64					
Required Test Time (hrs)	Date for Test Beginning	Date for Test Termination	Sample Size (pcs):	Failure (pcs):	Current Total Test Time (hrs)				
6,956	2004/9/7 4:40 PM	2005/11/15 8:31 AM	56	0	6956.0				
Representative Test P/N :AFB0912VH-SP21 (4E64)				Current Test Status	<input type="checkbox"/> In process	<input type="checkbox"/> In process (exceed requested)	<input checked="" type="checkbox"/> Termination		
Equipment:1.Oven: E24-F0032									
Test Data Between Initial Test and Final Test									
Sample No.	Initial Test	Final Test	Deviation (%)	Initial Test	Final Test	Deviation (%)	Initial Test	Final Test	Deviation (%)
	Current Spec. (A) 0.44Max.	Current Spec. (A) 0.44Max.		Speed Spec. (RPM) 4140-4860	Speed Spec. (RPM) 4140-4860		Noise Spec. (dB A) 51.5Max	Noise Spec. (dB A) 51.5Max	
36	0.34	0.36	5.9	4627	4528	-2.1	48.2	49.0	1.7
37	0.34	0.35	2.9	4594	4448	-3.2	48.5	49.1	1.2
38	0.34	0.33	-2.9	4527	4517	-0.2	48.8	48.7	-0.2
39	0.34	0.34	0.0	4742	4688	-1.1	48.5	48.9	0.8
40	0.29	0.30	3.4	4491	4363	-2.9	48.1	49.1	2.1
41	0.32	0.31	-3.1	4527	4471	-1.2	48.9	49.0	0.2
42	0.30	0.31	3.3	4496	4511	0.3	48.9	49.1	0.4
43	0.32	0.32	0.0	4521	4469	-1.2	48.7	48.9	0.4
44	0.36	0.37	2.8	4725	4733	0.2	48.5	49.0	1.0
45	0.37	0.34	-8.1	4669	4495	-3.7	48.5	48.7	0.4
46	0.32	0.32	0.0	4507	4460	-1.0	48.5	48.9	0.8
47	0.33	0.32	-3.0	4492	4464	-0.6	48.3	49.2	1.9
48	0.35	0.34	-2.9	4622	4643	0.5	48.1	49.1	2.1
49	0.32	0.32	0.0	4527	4461	-1.5	48.3	48.8	1.0
50	0.32	0.33	3.1	4556	4512	-1.0	48.4	49.0	1.2
51	0.31	0.33	6.5	4496	4457	-0.9	48.3	48.7	0.8
52	0.34	0.33	-2.9	4547	4427	-2.6	48.1	48.9	1.7
53	0.32	0.31	-3.1	4529	4500	-0.6	48.5	49.0	1.0
54	0.32	0.34	6.3	4472	4507	0.8	48.2	48.7	1.0
55	0.34	0.34	0.0	4517	4569	1.2	48.4	49.0	1.2
56	0.29	0.31	6.9	4396	4393	-0.1	48.8	49.1	0.6
X-Bar	0.333	0.335	-	4573.9	4528.0	-	48.43	48.90	-
σ	0.017	0.017	-	77.284	83.893	-	0.269	0.143	-
QE File No.	Time-out for function test or others (hrs)		Issued Date		Reported By		Approved By		
DG04FNL240	3452.30		2005/11/15 9:00 AM		Guic.Lin		Gx.Xu		



Ref. No.: 1764(1164100-2611-0001) _ CE1

Declaration of Conformity

Manufacturer name: Delta Electronics, Inc.

Add: 252, Shangying Road, Guishan Industrial Zone, Taoyuan City 33341, Taiwan

Tel: 886-3-359-1968

Fax: 886-3-359-1991

EU Contact address:

Delta Electronics (Netherlands) BV

Zandsteen 15, 2132 MZ Hoofddorp, The Netherlands

Is herewith confirmed the following equipment

Product: DC Fan

Type Designation: WFB1224HE(Y), ASB0612H(Y), ASB0612M(Y), ASB0612L(Y), ASB0612HH(Y), ASB0624H(Y), ASB0624M(Y), ASB0624(Y), ASB0624HH(Y), BFB1212HE(Y), AFB0605H(Y), AFB0605M(Y), AFB0605L(Y), AFB0505HA(Y), AFB0505LA(Y), AFB0505MA(Y), AFB0512HA(Y), AFB0512LA(Y), AFB0512MA(Y), BFB0712H(Y), BFB0712L(Y), BFB0712M(Y), BFB0724H(Y), BFB0724L(Y), BFB0724M(Y), AFB0405LA(Y), AFB0405MA(Y), AFB0405HA(Y), AFB0405HHA(Y), AFB0412LA(Y), AFB0412MA(Y), AFB0412HA(Y), AFB0412HHA(Y), ASB0605L(Y), ASB0605M(Y), ASB0605H(Y), DSB0812L(Y), DSB0812M(Y), DSB0812H(Y), AFC0812A(Y), AFC0812B(Y), AFC0912A(Y), AFC0912B(Y), BFC1212A(Y), BFC1212B(Y), BFB1212LL(Y), BFB1212L(Y), BFB1212M(Y), BFB1212H(Y), BFB1212HH(Y), BFB1212VH(Y), BFB1224LL(Y), BFB1224L(Y), BFB1224M(Y), BFB1224H(Y), BFB1224HH(Y), BFB1224VH(Y), AFB0405LD(Y), AFB0405MD(Y), AFB0405HD(Y), AFB0412LD(Y), AFB0412MD(Y), AFB0412HD(Y), AFB0412HHD(Y), AFB0424LD(Y), AFB0424MD(Y), AFB0424HD(Y), AFB0424HHD(Y), AFB0612LA(Y), AFB0612MA(Y), AFB0612HA(Y), ASB0812LL(Y), ASB0812L(Y), ASB0812M(Y), ASB0812H(Y), ASB0812HH(Y), ASB0912L(Y), ASB0912M(Y), ASB0912H(Y), ASB0912HH(Y), ASB0824LL(Y), ASB0824L(Y), ASB0824M(Y), ASB0824H(Y), ASB0824HH(Y), ASB0924L(Y), ASB0924M(Y), ASB0924H(Y), ASB0924HH(Y), AFB0705L(Y), AFB0705M(Y), AFB0705H(Y), AFB0712L(Y), AFB0712M(Y), AFB0712H(Y), AFB0712HH(Y), AFB0712VH(Y), AFB0724L(Y), AFB0724M(Y), AFB0724H(Y), AFB0724HH(Y), AFB0724VH(Y), AFB0812LL(Y), AFB0812L(Y), AFB0812M(Y), AFB0812H(Y), AFB0812HH(Y), AFB0812VH(Y), AFB0812SH(Y), AFB0824LL(Y), AFB0824L(Y), AFB0824M(Y), AFB0824H(Y), AFB0824HH(Y), AFB0824VH(Y), AFB0824SH(Y), AFB0912L(Y), AFB0912M(Y), AFB0912H(Y), AFB0912HH(Y), AFB0912VH(Y), AFB0924L(Y), AFB0924M(Y), AFB0924H(Y), AFB0924HH(Y), AFB0924VH(Y), AFC0612A(Y), AFC0612B(Y), AFB0605LB(Y), AFB0605MB(Y), AFB0605HB(Y), AFB0605HHB(Y), AFB0605LLD(Y), AFB0605LD(Y), AFB0605MD(Y), AFB0605HD(Y), AFB0605HHD(Y), AFB0612LLD(Y), AFB0612LD(Y), AFB0612MD(Y), AFB0612HD(Y), AFB0612HHD(Y), AFB0612VHD(Y), AFB0624LLD(Y), AFB0624LD(Y), AFB0624MD(Y), AFB0624HD(Y), AFB0624HHD(Y), AFB0624VHD(Y), AFC0912A/B-(M/H/HH)(Y),



Ref. No.: 1764(1164100-2611-0001) _ CE1

AFC0912A/B-F00(M/H/HH)(Y), AFC0912A-R00(M/H/HH)(Y), AFC0912B-R00(M/H/HH)(Y),
ASB0912L-V(Y), DSB0612L(Y), DSB0612M(Y), DSB0612H(Y),
BFB1012LL(-F00/R00)(Y), BFB1012L(-F00/R00)(Y), BFB1012M(-F00/R00)(Y),
BFB1012H(-F00/R00)(Y), BFB1012HH(-F00/R00)(Y), BFB1024LL(-F00/R00)(Y),
BFB1024L(-F00/R00)(Y), BFB1024M(-F00/R00)(Y), BFB1024H(-F00/R00)(Y),
BFB1024HH(-F00/R00)(Y), BFC1012A(-F00/F05/R00)(Y), BFC1012B(-F00/F05/R00)(Y),
BFC1012C(-F00)(Y), AFB1212LE(-F00/F05/R00)(Y), AFB1212ME(-F00/F05/R00)(Y),
AFB1212HE(-F00/F05/R00)(Y), AFB1212HHE(-F00/F05/R00)(Y), AFB1212VHE(-F00/F05/R00)(Y),
AFB1224LE(-F00/F05/R00)(Y), AFB1224ME(-F00/F05/R00)(Y), AFB1224HE(-F00/F05/R00)(Y),
AFB1224HHE(-F00/F05/R00)(Y), AFB1224VHE(-F00/F05/R00)(Y), BFB1224LE(-F00/R00)(Y),
BFB1224ME(-F00/R00)(Y), BFB1224HHE(-F00/R00)(Y), BFB1248LE/ME/HE(-F00/R00)(Y),
AFB0612L-SB(Y), AFB0612M-SB(Y), AFB0612H-SB(Y), AFB0812L-SB(F00)(Y),
AFB0812M-SB(F00)(Y), AFB0812H-SB(F00)(Y), AFB0912L-SB(F00)(Y), AFB0912M-SB(F00)(Y),
AFB0912H-SB(F00)(Y), ASB0612L-SB(Y), ASB0612M-SB(Y), ASB0612H-SB(Y), AFB02505LA(Y),
AFB02505MA(Y), AFB02505HA(Y), AFB02512LA(Y), AFB02512MA(Y), AFB02512HA(Y),
AFB02512HHA(Y), AFC0712A(Y), AFC0712B(Y), AFB0305LLA(Y), AFB0305LA(Y), AFB0305MA(Y),
AFB0305HA(Y), AFB0312LLA(Y), AFB0312LA(Y), AFB0312MA(Y), AFB0312HA(Y), ASB0812L-SB(Y),
ASB0812M-SB(Y), ASB0812H-SB(Y), ASB0912L-SB(Y), ASB0912M-SB(Y), ASB0912H-SB(Y),
BFB1212LE(-F00/R00)(Y), BFB1212ME(-F00/R00)(Y), BFB1212HHE(-F00/R00)(Y), AFB0505LB(Y),
AFB0505MB(Y), AFB0505HB(Y), AFB0512LB(Y), AFB0512MB(Y), AFB0512HB(Y), AFB0512HHB(Y),
BFB0505L(Y), BFB0505M(Y), BFB0512L(Y), BFB0512M(Y), BFB0512H(Y), BFB0512HH(Y),
AFB0605LA(Y), AFB0605MA(Y), AFB0605HA(Y), AFB03505LA(Y), AFB03505MA(Y), AFB03505HA(Y),
AFB0748L(Y), AFB0748M(Y), AFB0748H(Y), AFB0748HH(Y), AFB0848L(Y), AFB0848M(Y),
AFB0848H(Y), AFB0848HH(Y), AFB0948L(Y), AFB0948M(Y), AFB0948H(Y), AFB0948HH(Y),
AFC0824A(Y), AFC0824B(Y), AFC0924A(Y), AFC0924B(Y), AFB03512LA(Y), AFB03512MA(Y),
AFB03512HA(Y), BFB1212HH(Y), BFB1212VH(Y), BFB1224HH(Y), BFB1224VH(Y), BFB1248LL(Y),
BFB1248L(Y), BFB1248M(Y), BFB1248H(Y), BFB1248HH(Y), AFB0605L-R00(Y), AFB0605M-R00(Y),
AFB0605H-R00(Y), BFB0405LE(Y), BFB0405ME(Y), BFB0405HE(Y), BFB0412LE(Y), BFB0412ME(Y),
BFB0412HE(Y), BFB0412HHE(Y), BFB1612L(Y), BFB1612M(Y), BFB1612H(Y), BFB1624L(Y),
BFB1624M(Y), BFB1624H(Y), BFB1648L(Y), BFB1648M(Y), AFB0648L(Y), AFB0648M(Y),
AFB0648H(Y), AFB0648HH(Y), AFB0405HHD(Y), AUB0812L(Y), AUB0812M(Y), AUB0812H(Y),
AUB0812HH(Y), AUB0812VH(Y), AUB0824L(Y), AUB0824M(Y), AUB0824H(Y), AUB0824HH(Y),
AUB0824VH(Y), AFB02505HHA(Y), AFB0812LLB(Y), AFB0812LB(Y), AFB0812MB(Y), AFB0812HB(Y),
AFB0812HHB(Y), AFB0812VHB(Y), AFB0812SHB(Y), AFB0824LLB(Y), AFB0824LB(Y),
AFB0824MB(Y), AFB0824HB(Y), AFB0824HHB(Y), AFB0824VHB(Y), AFB0824SHB(Y), AFC0812C(Y),
AFC0824C(Y), AFC0912C(Y), AFC0924C(Y), AFC0612AD(Y), AFC0612BD(Y), EFB1212LF(Y),
EFB1212MF(Y), EFB1212HF(Y), EFB1212HHF(Y), EFB1212VHF(R00(Y),F00(Y),STD)(Y),
EFB1224LF(R00(Y),F00(Y),STD)(Y), EFB1224MF(R00(Y),F00(Y),STD)(Y),
EFB1224HF(R00(Y),F00(Y),STD)(Y), EFB1224HHF(R00(Y),F00(Y),STD)(Y),
EFB1224VHF(R00(Y),F00(Y),STD)(Y), AFB0524LB(R00(Y),F00(Y),STD)(Y),



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AFB0524MB(R00(Y),F00(Y),STD)(Y), AFB0524HB(R00(Y),F00(Y),STD)(Y),
AFB0524HHB(R00(Y),F00(Y),STD)(Y), BFB0524L(R00(Y),F00(Y),STD)(Y),
BFB0524M(R00(Y),F00(Y),STD)(Y), BFB0524H(R00(Y),F00(Y),STD)(Y),
BFB0524HH(R00(Y),F00(Y),STD)(Y), AUB0612L(Y), AUB0612M(Y), AUB0612H(Y), AUB0612HH(Y),
AUB0624L(Y), AUB0624M(Y), AUB0624H(Y), AUB0624HH(Y), AUB0912L(Y), AUB0912M(Y),
AUB0912H(Y), AUB0912HH(Y), AUB0912VH(Y), AUB0924L(Y), AUB0924M(Y), AUB0924H(Y),
AUB0924HH(Y), AUB0924VH(Y), EFB0405LLD(Y), EFB0405LD(Y), EFB0405MD(Y), EFB0405HD(Y),
EFB0405HHD(Y), EFB0405VHD(Y), EFB0412LLD(Y), EFB0412LD(Y), EFB0412MD(Y),
EFB0412HD(Y), EFB0412HHD(Y), EFB0412VHD(Y), EFB0424LLD(Y), EFB0424LD(Y), EFB0424MD(Y),
EFB0424HD(Y), EFB0424HHD(Y), EFB0424VHD(Y), AFB0605HH(Y), EFB1248LF(Y), EFB1248MF(Y),
EFB1248HF(Y), EFB1248HHF(Y), EFB1248VHF(Y), DSB0812L-N(Y), DSB0812M-N(Y),
DSB0812H-N(Y), BFB0305LA(Y), BFB0305MA(Y), BFB0305HA(Y), BFB0305HHA(Y), BFB0312LA(Y),
BFB0312MA(Y), BFB0312HA(Y), BFB0312HHA(Y), BFB03505LA(Y), BFB03505MA(Y),
BFB03505HA(Y), BFB03505HHA(Y), BFB03512LA(Y), BFB03512MA(Y), BFB03512HA(Y),
BFB03512HHA(Y), EFB1212L(Y), EFB1212M(Y), EFB1212H(Y), EFB1212HH(Y), EFB1212VH(Y),
EFB1212SH(Y), EFB1224L(Y), EFB1224M(Y), EFB1224H(Y), EFB1224HH(Y), EFB1224VH(Y),
EFB1224SH(Y), EFB0912L(Y), EFB0912M(Y), EFB0912H(Y), EFB0912HH(Y), EFB0912VH(Y),
EFB0912SH(Y), EFB0924L(Y), EFB0924M(Y), EFB0924H(Y), EFB0924HH(Y), EFB0924VH(Y),
EFB0924SH(Y), AFB02505LB(Y), AFB02505MB(Y), AFB02505HB(Y), AFB02505HHB(Y),
FFB1212HE(Y), FFB1212HHE(Y), FFB1212VHE(Y), FFB1212SHE(Y), FFB1224HE(Y),
FFB1224HHE(Y), FFB1224VHE(Y), FFB1224SHE(Y), FFB1224EHE(Y), AFB0648VH(Y),
AFB0648SH(Y), AFB0648EH(Y), EFC1212DE(Y), EFC1224DE(Y), EFB0912LE(Y), EFB0912ME(Y),
EFB0912HE(Y), EFB0912HHE(Y), EFB0924LE(Y), EFB0924ME(Y), EFB0924HE(Y), EFB0924HHE(Y),
EUB0405LLD(Y), EUB0405LD(Y), EUB0405MD(Y), EUB0405HD(Y), EUB0405HHD(Y),
EUB0412LLD(Y), EUB0412LD(Y), EUB0412MD(Y), EUB0412HD(Y), EUB0412HHD(Y),
EUB0412VHD(Y), EUB0424LLD(Y), EUB0424LD(Y), EUB0424MD(Y), EUB0424HD(Y),
EUB0424HHD(Y), EUB0424VHD(Y), EFC0412AD(Y), EFC0412BD(Y), FFB0912HHE(Y),
FFB0912VHE(Y), FFB0912SHE(Y), FFB0912EHE(Y), FFB0924HHE(Y), FFB0924VHE(Y),
FFB0924SHE(Y), FFB0924EHE(Y), BFB0405LA(Y), BFB0405MA(Y), BFB0405HA(Y),
BFB0405HHA(Y), BFB0412LA(Y), BFB0412MA(Y), BFB0412HA(Y), BFB0412HHA(Y), BFB04505LA(Y),
BFB04505MA(Y), BFB04505HA(Y), BFB04505HHA(Y), BFB04512LA(Y), BFB04512MA(Y),
BFB04512HA(Y), BFB04512HHA(Y), BFB0505LA(Y), BFB0505MA(Y), BFB0505HA(Y),
BFB0505HHA(Y), BFB0512LA(Y), BFB0512MA(Y), BFB0512HA(Y), BFB0512HHA(Y), AFB0712LA(Y),
AFB0712MA(Y), AFB0712HA(Y), AFB0712HHA(Y), AFB0712VHA(Y), EFC1248EE(Y), AFB1524L(Y),
AFB1524M(Y), AFB1524H(Y), AFB1524HH(Y), AFB1724L(Y), AFB1724M(Y), AFB1724H(Y),
AFB1724HH(Y), AFB0612LB(Y), AFB0612MB(Y), AFB0612HB(Y), AFB0612HHB(Y), AFB0612VHB(Y),
AFB0624LB(Y), AFB0624MB(Y), AFB0624HB(Y), AFB0624HHB(Y), AFB0624VHB(Y),
FFB0948HHE(Y), FFB0948VHE(Y), FFB0948SHE(Y), FFB1212SHE(Y), FFB1212EHE(Y),
FFB1224SHE(Y), FFB1224EHE(Y), FFB1248VHE(Y), FFB1248SHE(Y), FFB1248EHE(Y),
AUB0605LB(Y), AUB0605MB(Y), AUB0605HB(Y), AUB0605HHB(Y), AUB0612LB(Y), AUB0612MB(Y),



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AUB0612HB(Y), AUB0612HHB(Y), AUB0612VHB(Y), AUB0624LB(Y), AUB0624MB(Y),
 AUB0624HB(Y), AUB0624HHB(Y), AUB0624VHB(Y), FFB0812HHE(Y), FFB0812VHE(Y),
 FFB0812SHE(Y), FFB0812EHE(Y), FFB0824HHE(Y), FFB0824VHE(Y), FFB0824SHE(Y),
 FFB0824EHE(Y), FFB0848HHE(Y), FFB0848VHE(Y), FFB0848SHE(Y), EFB0612LA(Y),
 EFB0612MA(Y), EFB0612HA(Y), EFB0612HHA(Y), EFB0812LE(Y), EFB0812ME(Y), EFB0812HE(Y),
 EFB0812HHE(Y), EFB0824LE(Y), EFB0824ME(Y), EFB0824HE(Y), EFB0824HHE(Y),
 AUB0812LLB(Y), AUB0812LB(Y), AUB0812MB(Y), AUB0812HB(Y), AUB0812HHB(Y),
 AUB0812VHB(Y), AUB0812SHB(Y), AUB0824LLB(Y), AUB0824LB(Y), AUB0824MB(Y),
 AUB0824HB(Y), AUB0824HHB(Y), AUB0824VHB(Y), AUB0824SHB(Y), EFB0505LA(Y),
 EFB0505MA(Y), EFB0505HA(Y), EFB0512LA(Y), EFB0512MA(Y), EFB0512HA(Y), EFB0512HHA(Y),
 AUB0812VHD(Y), BFB0512LA-A(Y), BFB0512MA-A(Y), BFB0512HA-A(Y), BFB0512HHA-A;
 DSB0412LA(Y), DSB0412MA(Y), DSB0412HA(Y), DSB0412HHA(Y), DSB0824HH(Y), DSB0824VH(Y),
 DSB0924L(Y), DSB0924M(Y), DSB0924H(Y), DSB0924HH(Y), AFB02505LB-A(Y), AFB02505MB-A(Y),
 AFB02505HB-A(Y), AFB02505HHB-A(Y), NFB0612LB(Y), NFB0612MB(Y), NFB0612HB(Y),
 NUB0612LB(Y), NUB0612MB(Y), NUB0612HB(Y), AUB0712HH-T6L1(Y), DSB0612LA(Y),
 DSB0612MA; AFB02505LA(Y), AFB02505MA(Y), AFB02505HA(Y), AFB02505HHA(Y), AFB0305LA(Y),
 AFB0305MA(Y), AFB0305HA; AFB03505LA(Y), AFB03505MA(Y), AFB03505HA(Y), BFB0712HD-A(Y),
 AUB0812HE(Y), AUB0812HHE(Y), AUB0812VHE(Y), AUB0824HE(Y), AUB0824HHE(Y),
 AUB0824VHE(Y), AUC0812DE(Y), FFB03612EHN(Y), BSB04505HA(Y), BFB0605LB-SX(Y),
 QFR0812DE(Y), AFB1212HHE-8C2A(Y)

(Y) may be xxxxx ,where X may be A through Z, 0 through 9, "-" or blank

Comply with the following directives and requirements set out in the Council Directive on the Approximation for the Laws of the Member States

- Low Voltage Directive 2014/35/EU
 - EN 60950-1: 2006+A11: 2009+A1: 2010+A12: 2011 +A2:2013
(Report No.: 1764(1164100-2611-0001))
 - EN 60335-1: 2012+A11 (Report No.:
 - EN 60335-2-80:2003+A1:2004+A2:2009 (Report No.:
 - EN 60335-2-40:2003+A11+A12+A1+A2+A13 (Report No.:)
 - EN 62233:2008 (Report No.:)
- Risk Assessment Report (Report No.: 1764(1164100-2611-0001)_RA)
- RoHS Directive 2011/65/EU
 - EN 50581: 2012
(Ref. No.: 1764(1164100-2611-0001)_RoHS)
- ErP Directive 2009/125/EC, Commission Regulation (EU) No 327/2011
(Report No.:)



Ref. No.: 1764(1164100-2611-0001) _ CE1

Person responsible for making this declaration

Name, Surname: Tammy Chen

Title: Senior Safety Engineer

Place: Taiwan, Delta

Date: 2016-04-22

Signature: *Tammy Chen*



8. Metal / Plastic part reliability test record table

金屬/塑膠件信賴性測試記錄表						
類別	檢驗項目	標準	Test 1	Test 2	Test 3	
烤漆	百格(附著力)	ISO Class 1 ASTM Class 4B	N/A	N/A	N/A	
	硬度	3H	N/A	N/A	N/A	
	色差/光澤	依研華規範	N/A	N/A	N/A	
	耐酒精	濃度95%酒精		N/A	N/A	N/A
		無水乙醇		N/A	N/A	N/A
	膜厚	液體塗裝：20~100 μ m		N/A	N/A	N/A
粉體塗裝：40~100 μ m			N/A	N/A	N/A	
印刷	耐酒精	濃度95%酒精	N/A	N/A	N/A	
		無水乙醇	N/A	N/A	N/A	
	附著力	不切割,不得有漆塊被撕起之情形	N/A	N/A	N/A	
塑膠	扭拉力(埋銅釘)	(M3)-依實測值	N/A	N/A	N/A	
	扭拉力(埋銅釘)	(M4)-依實測值	N/A	N/A	N/A	
	導電值(導電漆)	依實測值	N/A	N/A	N/A	
金屬	耐酒精(電鍍)	濃度95%酒精	PASS	PASS	PASS	
		無水乙醇	PASS	PASS	PASS	
	膜厚(電鍍)	電鍍膜厚應為5.0~8.0 μ m (平面5 μ m 轉直角3 μ m)	5.1 μ m	5.0 μ m	5.1 μ m	
	鹽霧(電鍍)	1.鍍鎳(NI)鹽水噴霧試驗8小時	8	8	8	
		2.鍍鋅(Zn, 五彩鋅, 藍鋅等, 鹽水噴霧試驗48 小時	N/A	N/A	N/A	
	色差/光澤(陽極)	依樣品或限度樣目視表面差異	N/A	N/A	N/A	
	推拉力(nut/standoff 鉚合) 依不同規格確認 (Ex. Nut M3, Standoff M3)	(Nut M3)-依實測值	N/A	N/A	N/A	
		(Nut M3)-依實測值	N/A	N/A	N/A	
(Standoff M3)-依實測值		N/A	N/A	N/A		
()-依實測值		N/A	N/A	N/A		
備註	ACL：金屬參考研華M-10-A018檢驗規範；塑膠參考研華M-10-A008檢驗規範。 AKMC：金屬參考研華KAQ-A-120檢驗規範，塑膠參考研華KAQ-A-104檢驗規範。					



9. PERFORMANCE

Cooler Master Co., Ltd. www.coolermaster.com												
Thermal Module Test Data Sheet ---Thermal Resistance Test Report												
Test Platform: Intel 1700 TTV				Test odd: CMTC-A20220402-02								
Testing Engineer: wen				Date: 2022/4/2								
Test Description: 樣品效能測試												
Heatsink/fan description												
1. Heatsink Change List	Heatsink Rev.		Description & Change List									
	PC-05937		鋁擠									
	PC-05938		塞銅									
	PC-05963		高度降低									
2. Heatsink Photo												
3. Test condition	Heatsink Vendor		CoolerMaster									
	Clip Force (lbf)		35									
	CPU		Intel 1700 TTV									
	Mainboard Model		***									
	Test environment		open system									
	Ambient Temp (°C)		25°C									
	Ambient Humidity (RH)		60%									
	Fan		12V Fan									
Heatsink grease		ShinEtsu 7762										
Test Result												
Item	Tc(°C)	Ta (°C)	Current1 (A)	Real Voltage1(V)	Current2 (A)	Real Voltage2(V)	Power(w)	Rca(t/w)	Ta1 (°C)	Ta2 (°C)	Ta3 (°C)	Ta4 (°C)
PC-07682-01-GP2	44.41	24.91	1.23	26.45	1.21	26.76	64.913	0.3005	24.97	24.81	24.99	24.85
Comments												
Mean:												
Max:												
Min:												
Range:												
Standard Dev:												
Testing Conclusion												



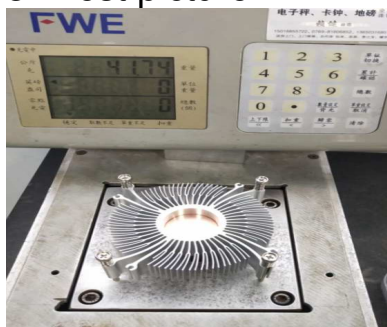
10. FORCE TEST

1. CPU loading force: 42lb \pm 8

2. Test Result:


NO	TEST Result(lbF)
1	44.06
2	42.94
3	41.74

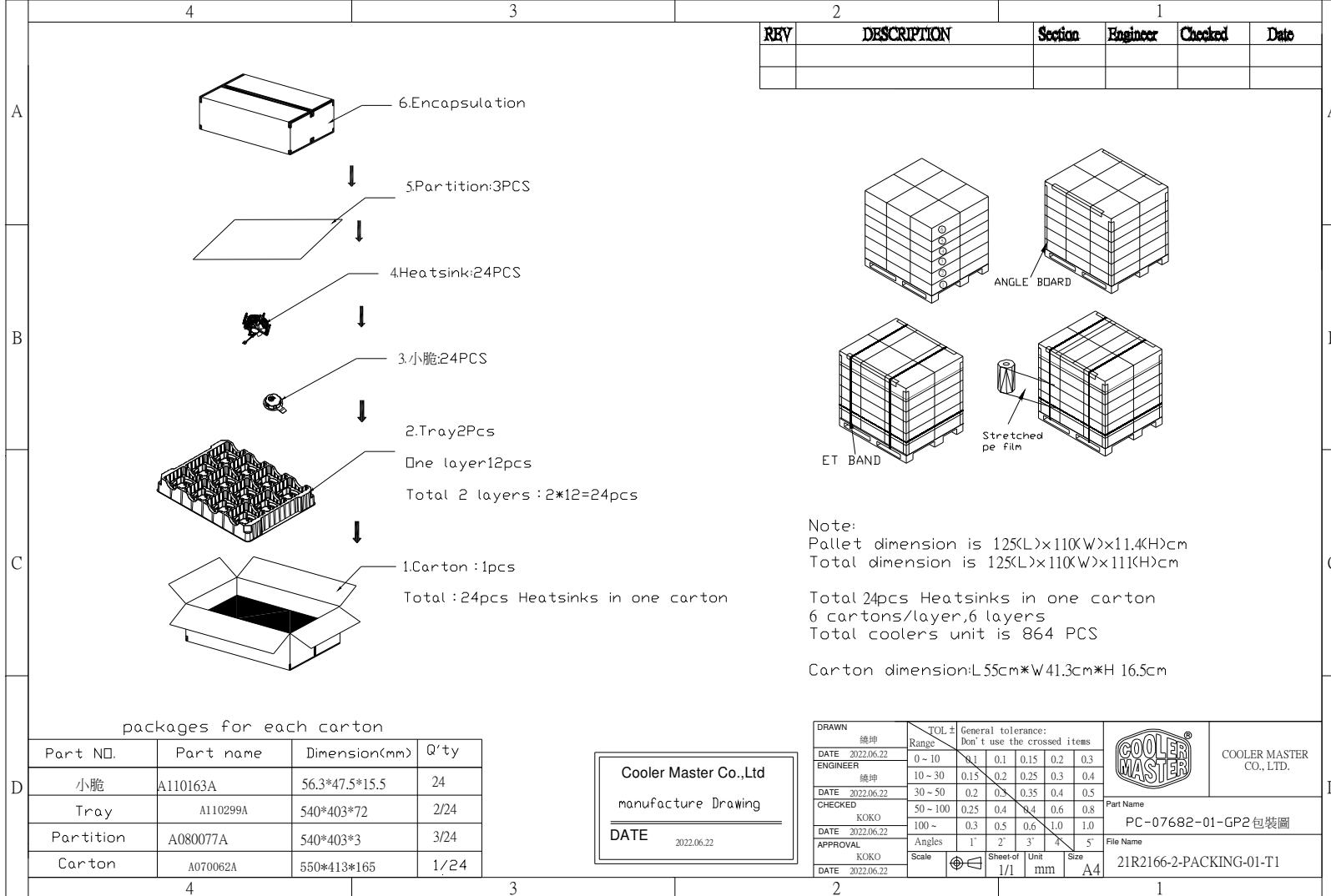
3. Test picture:





11. FAI

 Cooler Master Co., Ltd. <small>www.cooler-master.com</small>					Part Name	Cooler				Material:	AL6063+C110		
					Part Number	PC-07682-01-GP2				Date :	2022/4/21		
					MEASURED DIMENSION							ACCEPTABLE VARIANCE	
DIM. #	DIMENSION	+ TOL.	- TOL.	Tool Equipment	1#	2#	3#	4#	5#	UPPER (%)	LOWER (%)	Accept	Reject
1	78.00	0.50	0.50	CMM	78.240	78.020	78.140	78.160	78.040	48%	0%		
2	78.00	0.50	0.50	CMM	78.050	78.110	78.030	78.080	78.180	36%	0%		
3	55.40	1.00	1.00	CMM	55.340	55.240	55.450	55.560	55.680	28%	16%		
4	5.00	0.20	0.20	CMM	4.95	4.89	5.01	4.97	5.05	25%	55%		
5	32.00	1.00	1.00	卡尺	32.52	32.04	31.87	32.15	31.78	52%	22%		
6	0.15	0.10	0.00	檢具	OK	OK	OK	OK	OK				
Inspected: 郭霞					Engineer : 周興兵					Checked by: 周慧華			



REV	DESCRIPTION	Section	Engineer	Checked	Date

12. PACKING

Note:
 Pallet dimension is 125(L)×110(W)×11.4(H)cm
 Total dimension is 125(L)×110(W)×111(H)cm
 Total 24pcs Heatsinks in one carton
 6 cartons/layer, 6 layers
 Total coolers unit is 864 PCS
 Carton dimension: L 55cm*W 41.3cm*H 16.5cm

packages for each carton

Part NO.	Part name	Dimension(mm)	Q'ty
小脆	A110163A	56.3*47.5*15.5	24
Tray	A110299A	540*403*72	2/24
Partition	A080077A	540*403*3	3/24
Carton	A070062A	550*413*165	1/24

Cooler Master Co.,Ltd
 manufacture Drawing
 DATE 2022.06.22

DRAWN 繞坤	TOL ± Range	General tolerance: Don't use the crossed items					
		0.1	0.15	0.2	0.3	0.4	0.5
DATE 2022.06.22	0 ~ 10	0.1	0.15	0.2	0.3	0.4	0.5
ENGINEER 繞坤	10 ~ 30	0.15	0.2	0.25	0.3	0.4	0.5
DATE 2022.06.22	30 ~ 50	0.2	0.25	0.35	0.4	0.5	0.8
CHECKED KOKO	50 ~ 100	0.25	0.4	0.4	0.6	0.8	1.0
DATE 2022.06.22	100 ~	0.3	0.5	0.6	1.0	1.0	1.0
APPROVAL KOKO	Angles	1'	2'	3'	4'	5'	5'
DATE 2022.06.22	Scale	Sheet of 1/1		Unit mm	Size A4		



COOLER MASTER CO., LTD.

Part Name PC-07682-01-GP2 包裝圖

File Name 21R2166-2-PACKING-01-T1



Cooler Master Co., Ltd.



13. CE



SPORTON LAB.



Certificate No: EC621413

CERTIFICATE

EQUIPMENT : Cooler

MODEL NO. : 'XXXXXXXXXXXXXXXX (X=0-9, a-z, blank or "-")

APPLICANT : Cooler Master Co., Ltd.

9F, No. 786, Chung-Cheng Rd., Chung-Ho City, Taipei Hsien, 235 Taiwan, R.O.C.



HEREBY CERTIFY THAT:

THE MEASUREMENTS SHOWN IN THIS TEST REPORT WERE MADE IN ACCORDANCE WITH THE PROCEDURES GIVEN IN EUROPEAN COUNCIL DIRECTIVE 89/336/EEC. THE EQUIPMENT WAS PASSED THE TEST PERFORMED ACCORDING TO European Standard EN 55022:1998/A1:2000/A2:2003 Class B, EN 61000-3-2:2000, EN 61000-3-3:1995/A1:2001 and EN 55024:1998/A1:2001/A2:2003 (IEC 61000-4-2:1995/A2:2000, IEC 61000-4-3:1995/A2:2002, IEC 61000-4-4:1995/A2:2001, IEC 61000-4-5:1995/A1:2000, IEC 61000-4-6:1996/A1:2000, IEC 61000-4-8:1993/A1:2000, IEC 61000-4-11:1994/A1:2000). THE TEST WAS CARRIED OUT ON Feb. 16, 2006 AT SPORTON INTERNATIONAL INC. LAB.

Jones Chan Feb. 24. 2006
Jones Chan
Supervisor



14. UL



**UL International, L.L.C.
Taiwan Branch**

美商優力安全認證有限公司台灣分公司
UL International, L.L.C. Taiwan Branch
台北市 112 北投區大業路 260 號 1 樓
1st Fl 260 Da-Yeh Road Peitou Taipei City Taiwan 112
電話: 886-2-2896-7790
傳真: 886-2-2891-7644
<http://www.ul.com.tw>

NOTICE OF AUTHORIZATION TO APPLY THE UL MARK

May 12, 2006

MS. Juyu Chen
Cooler Master Co Ltd
9th FL 786 Chung-Cheng Rd
Chung-Ho, Taipei Hsien 235
Taiwan

Fax number: 02-32340051
E-mail: juyu-chen@coolermaster.com.tw

Reference: File E189887 Project 06CA23884 P.O. Number U621412
Product: UL/CUL Investigation For COOLER FAN, employing the revise model designation A1A2-A3A4A5-A6A7A8A9, B1B2-B3B4B5-B6B7B8B9, C1C2-C3C4C5-C6C7C8C9 to A1A2-A3A4A5-A6A7A8A9-A10A11, B1B2-B3B4B5-B6B7B8B9-B10B11, C1C2-C3C4C5-C6C7C8C9-C10C11; and alternate model designation X1X2-X3X4X5-X6X7X8X9-X10X11.

Dear Ms. Chen,

Any information and documentation provided to you involving UL Mark services are provided on behalf of Underwriters Laboratories Inc.

UL's investigation of your product has been completed under the above project number and the subject product was determined to comply with the applicable requirements.

This letter temporarily supplements the UL Follow-Up Services Procedure and serves as authorization to apply the UL Recognized Marking and/or Recognized Component Mark only at the factory under UL's Follow-Up Service Program to the subject product, which is constructed as described below:

Similar to products covered in the UL Follow-Up Services Procedure, File E189887, Volume X1, Report Reference No, E189887-A1-UL-1, except for employing the revise model designation A1A2-A3A4A5-A6A7A8A9, B1B2-B3B4B5-B6B7B8B9, C1C2-C3C4C5-C6C7C8C9 to A1A2-A3A4A5-A6A7A8A9-A10A11, B1B2-B3B4B5-B6B7B8B9-B10B11, C1C2-C3C4C5-C6C7C8C9-C10C11; and alternate model designation X1X2-X3X4X5-X6X7X8X9-X10X11

To provide the manufacturer with the intended authorization to use the UL Mark, the addressee must send a copy of this Notice and all attached material to each manufacturing location as currently authorized in File E189887, Volume X1.

This authorization is effective from the date of this Notice and only for products at the indicated manufacturing locations. Records in the Follow-Up Services Procedure covering the product are now being prepared and will be sent to the indicated manufacturing locations in the near future. Please note that Follow-Up Services Procedures are sent to the manufacturers only unless the Applicant specifically requests this document.

Products that bear the UL Mark shall be identical to those that were evaluated by UL and found to comply with UL's requirements. If changes in construction are discovered, appropriate action will be taken for products not in conformance with UL's requirements and continued use of the UL Mark may be withdrawn.

Sincerely,

Jay Hsu

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An independent organization working for a safer world with integrity, precision and knowledge.

