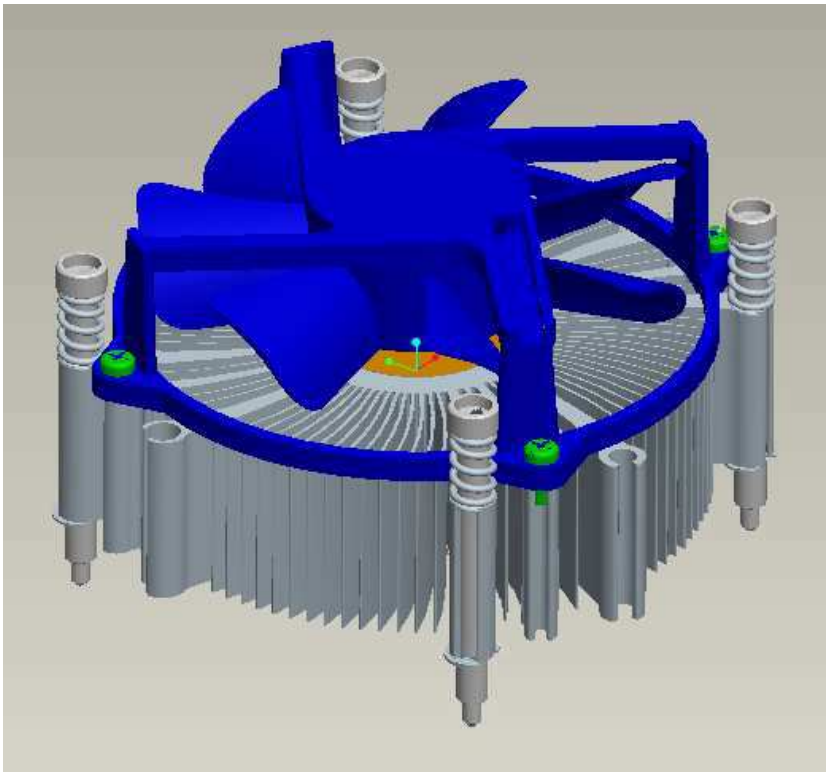
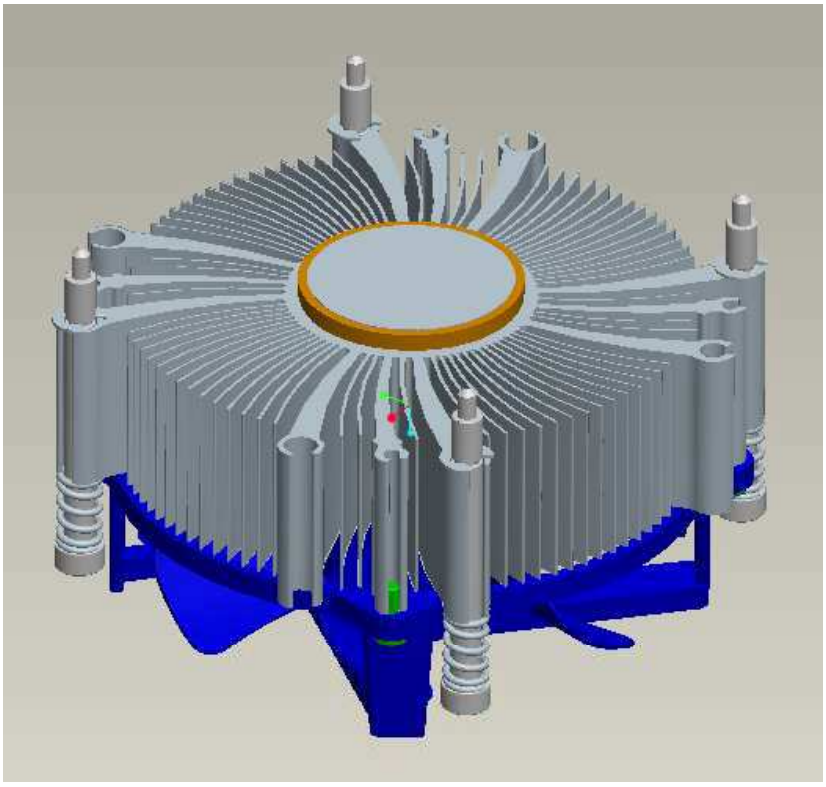
1. Contents

2. Product BOM

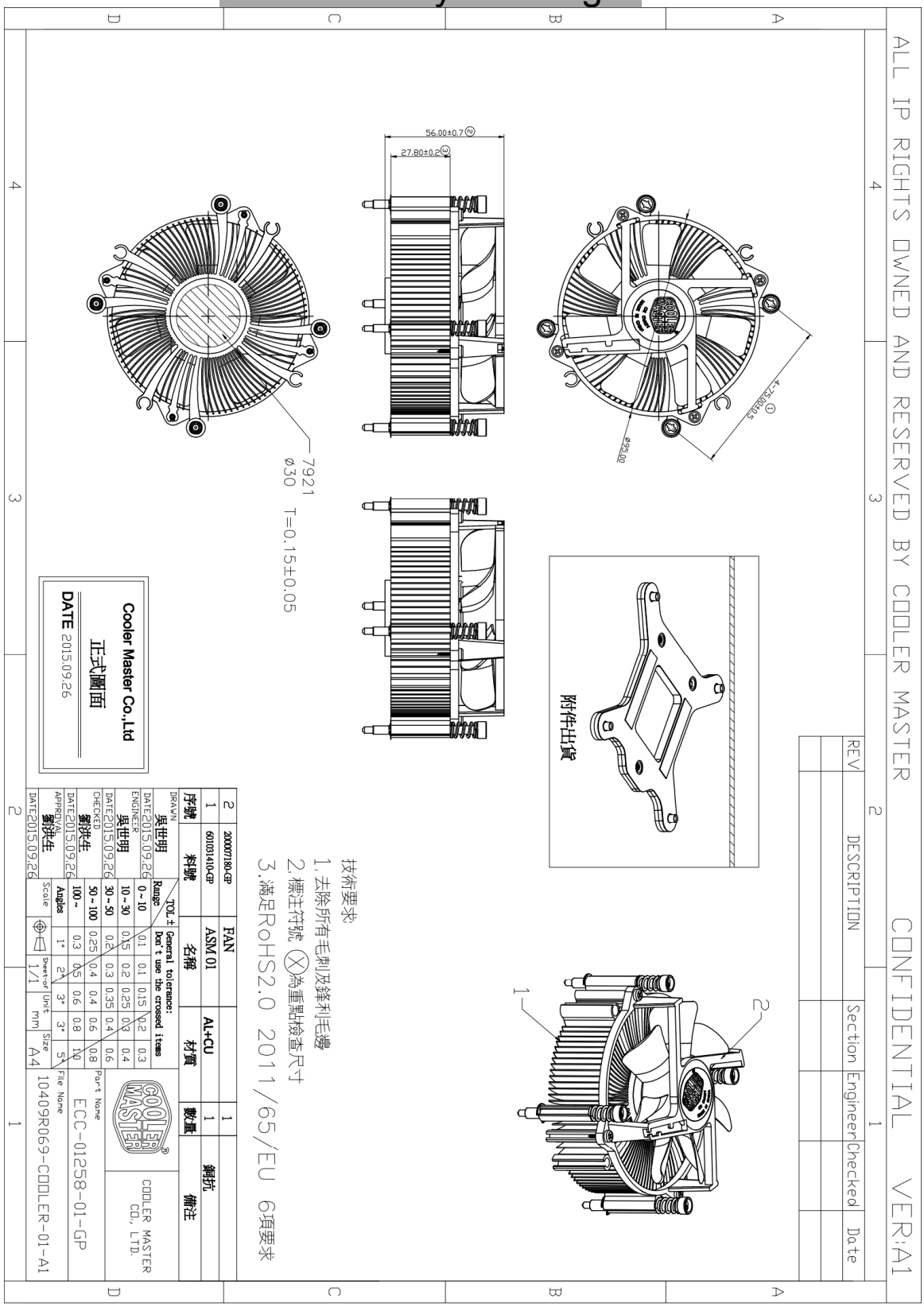
NO.	PART NO	PART NAME	QTY
1	601031410-GP	ASM 01	1
1.1	600027850-GP	ASM 02	1
1.1.1	250059350-01-GP	SINK	1
1.1.2	270014550-GP	CU POLE	1
1.2	150039750-GP	SCREW	4
1.3	450012870-GP	SPRING	4
1.4	300002012-GP	E-RING	4
1.5	150027000-HF	FAN SCREW	4
1.6	359000530-GP3	FAN LABEL	1
1.7	520001200-GP2	7921-GREASE	0.25g
1.8	330017820-GP	BACK PLATE	1
2	200007180-GP	FAN	1

3. Product Photo



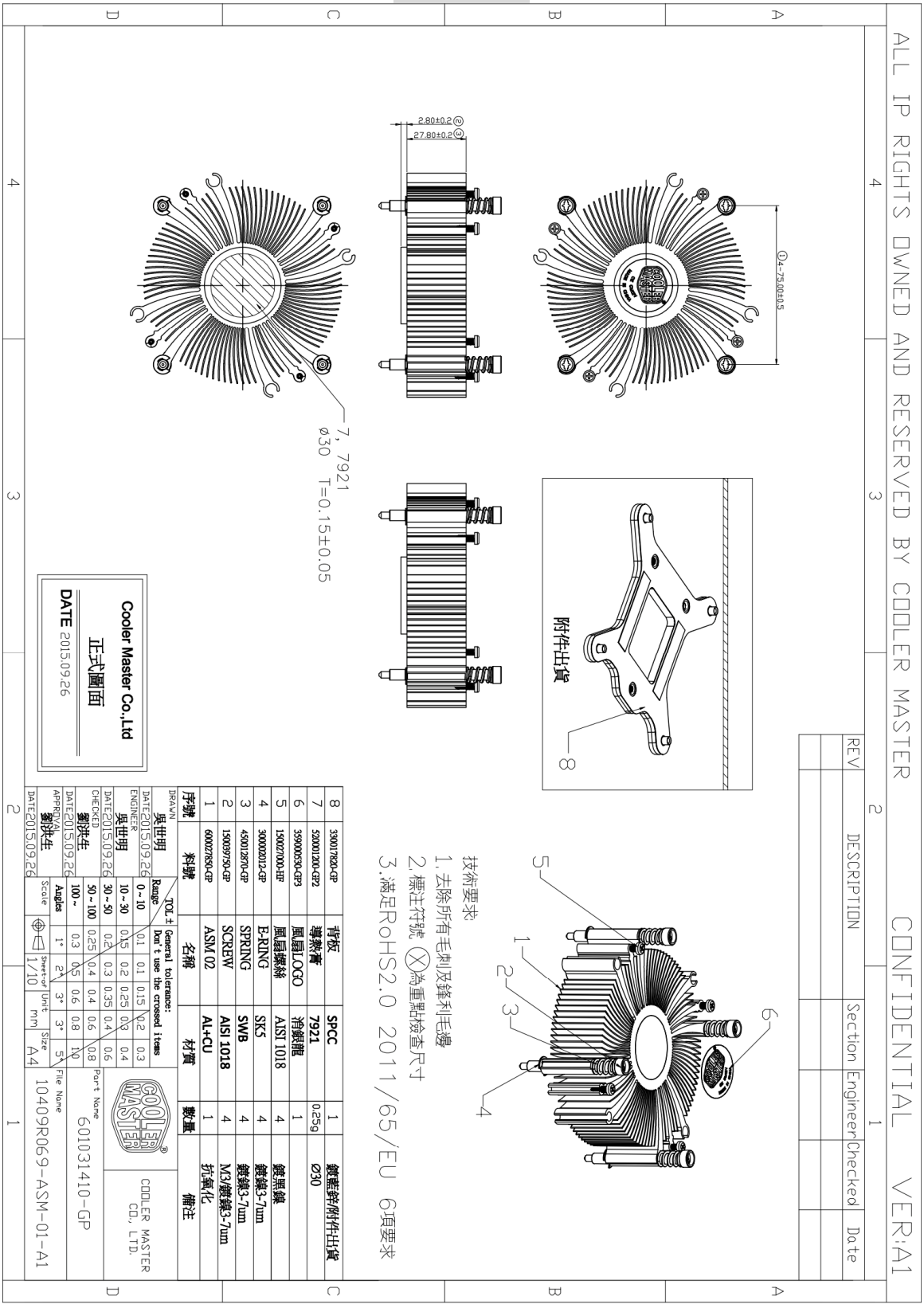


4.Assembly Drawing

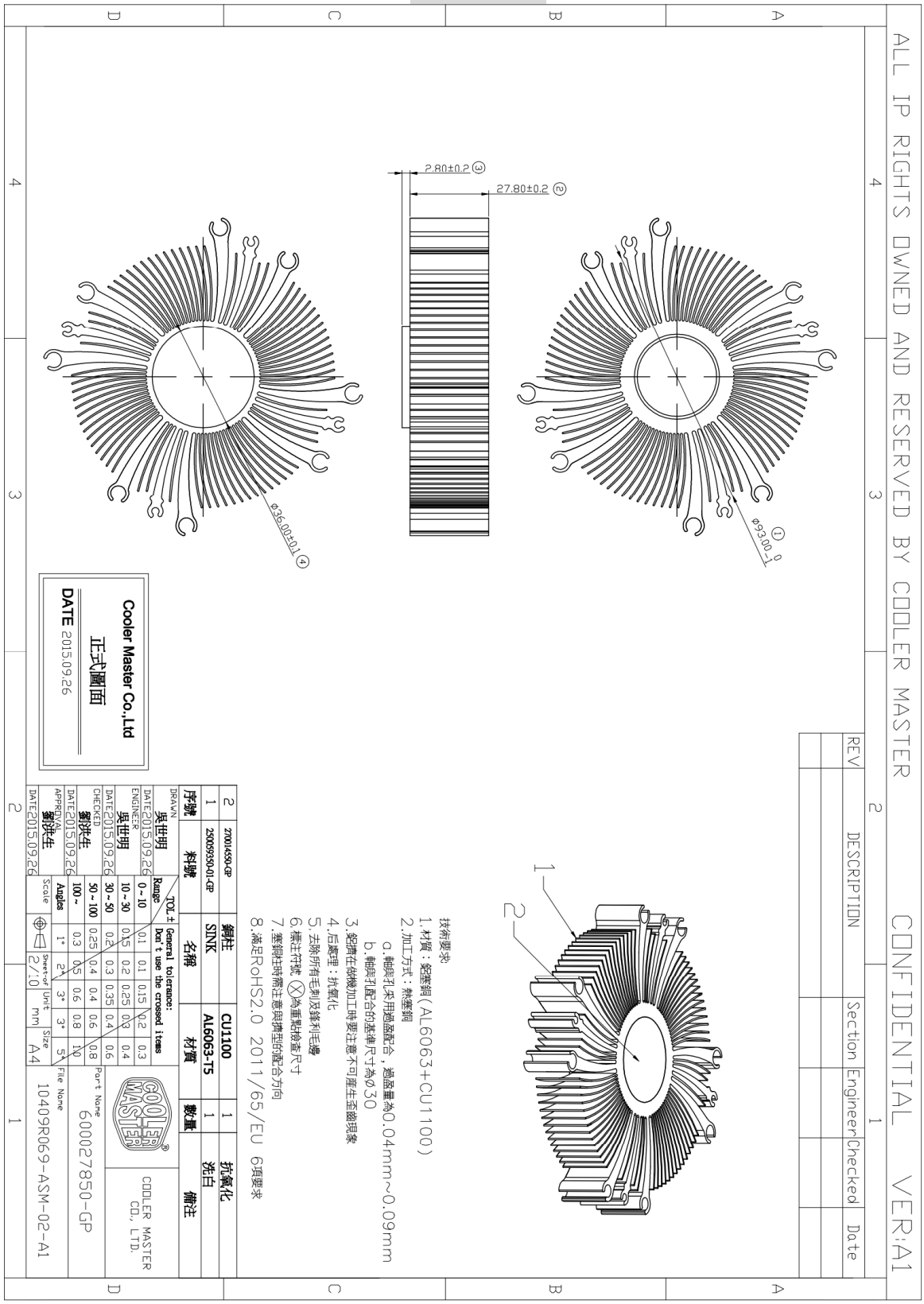


5. Specification & Drawing

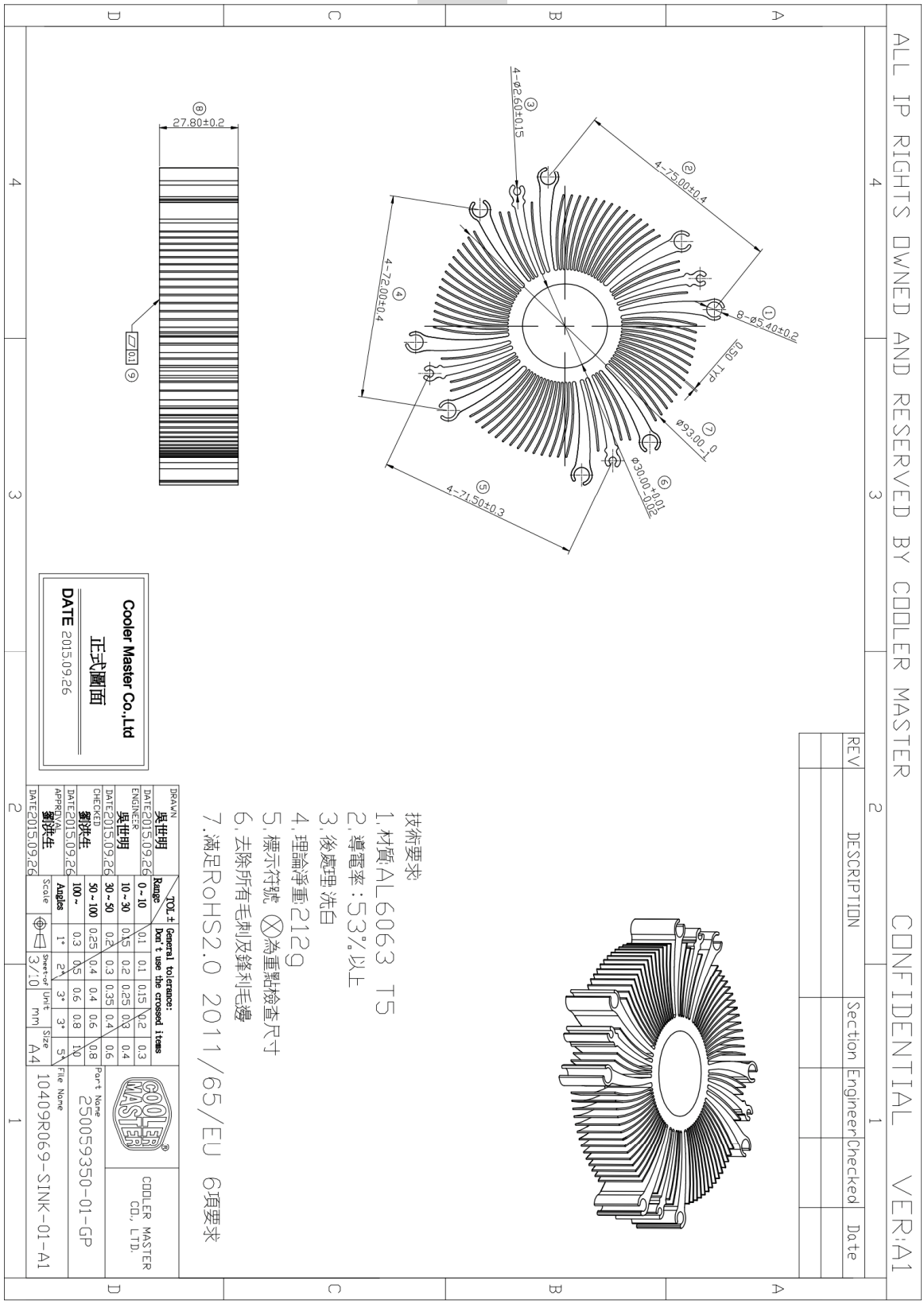
ASM 01



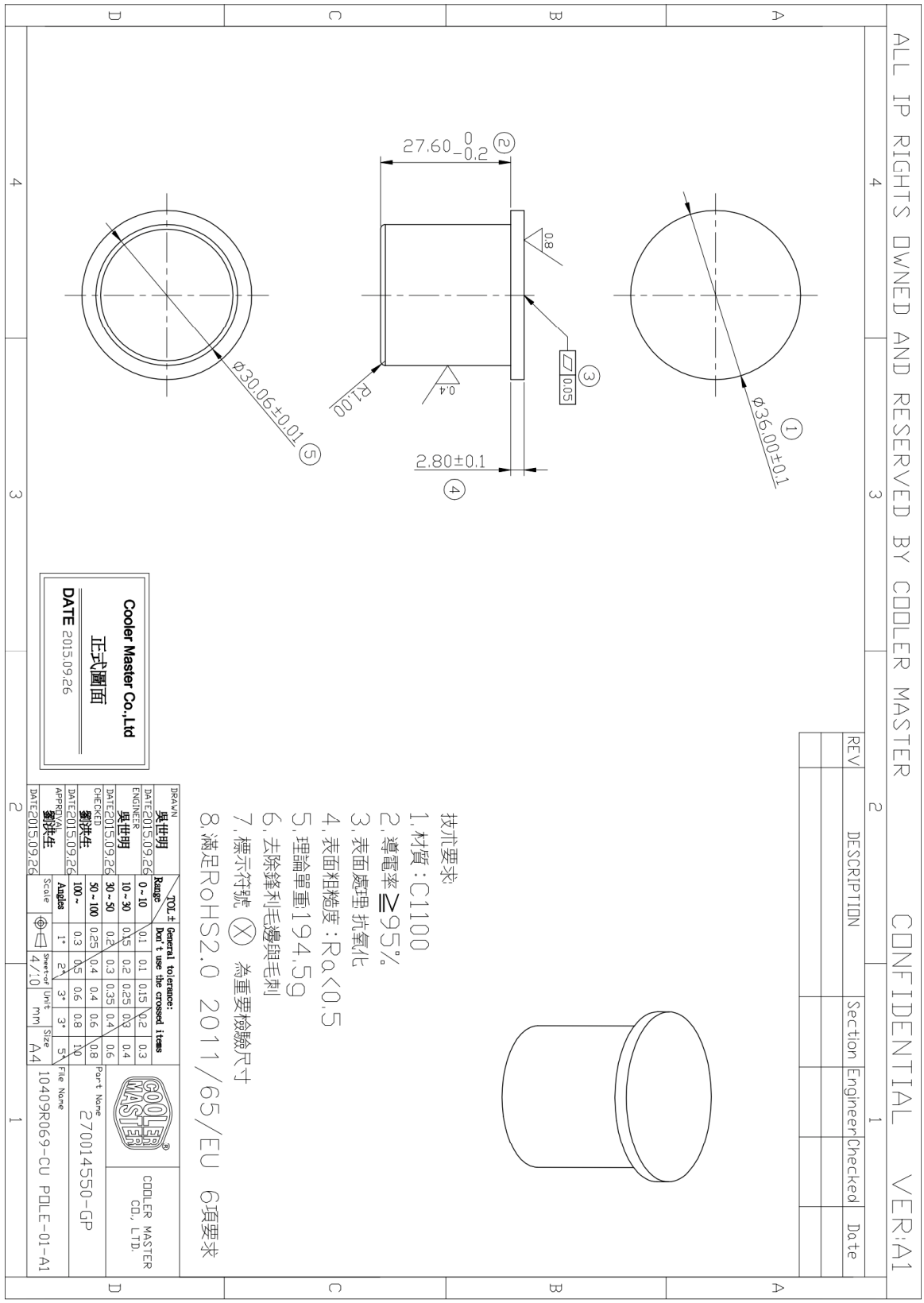
ASM 02


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
2.80±0.2 ③
27.80±0.2 ②
ø93.00±0.1 ①
ø36.00±0.1 ④
1
2
技術要求
1.材質：鋁壓鑄(AL6063+CU1100)
2.加工方式：熱壓銅
a.軸與孔采用過盈配合，過盈量為0.04mm~0.09mm
b.軸與孔配合的基準尺寸為ø30
3.鉚頂在做機加工時要注意不可產生塗圈現象
4.后處理：抗氧化
5.去除所有毛刺及銳利毛邊
6.標注符號 ⊗ 為重點檢查尺寸
7.壓銅柱時需注意與模型的配合方向
8.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2015.09.26
2 270014550-GP 銅柱 CU1100 1 抗氧化
1 2500959350-01-GP SINK AL6063-T5 1 洗白
序號 料號 名稱 材質 數量 備注
DRAWN 吳世明 DATE 2015.09.26
ENGINEER 吳世明 DATE 2015.09.26
CHECKED 劉洪生 DATE 2015.09.26
APPROVAL 劉洪生 DATE 2015.09.26
TOL± General tolerance: Don't use the crossed items
Range 0~10 10~30 30~50 50~100 100~
0.1 0.1 0.15 0.2 0.3
0.2 0.25 0.3 0.4
0.3 0.35 0.4 0.6
0.4 0.4 0.6 0.8
0.5 0.6 0.8 1.0
Angles 1° 2° 3° 5°
Scale 2/1:0
Sheet of Unit mm Size A4
COOLER MASTER CO., LTD.
Part Name 60002785O-GP
File Name 10409R069-ASM-02-A1

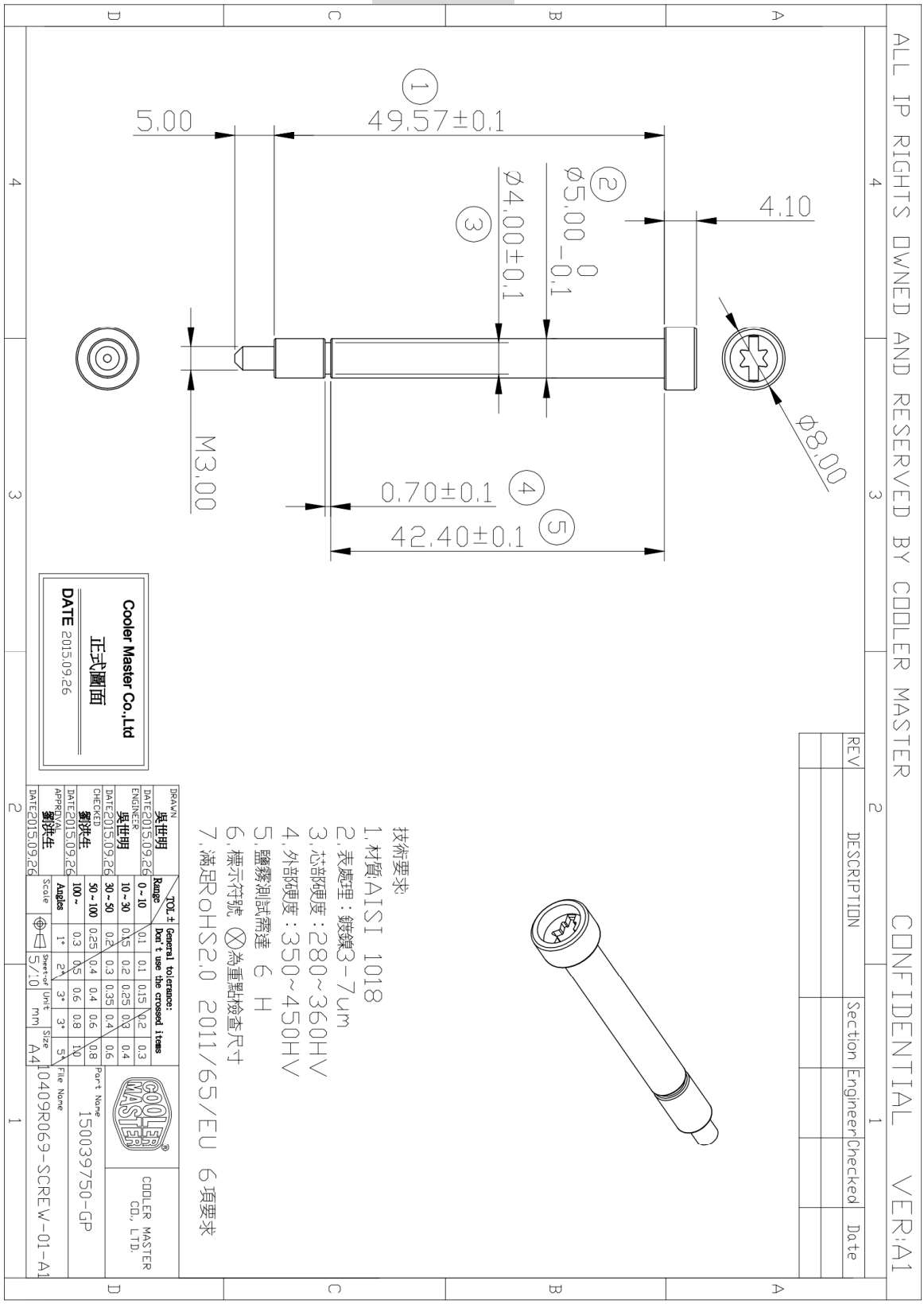
SINK


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
4-ø2.60±0.15 ③
4-75.00±0.4 ②
4-72.00±0.4 ④
8-ø5.40±0.2 ①
0.50 TYP
ø93.00 0 -0.1 ⑦
ø30.00 +0.01 -0.02 ⑥
4-71.50±0.3 ⑤
27.80±0.2 ⑧
0.1 ⑨
技術要求
1.材質:AL6063 T5
2.導電率:53%以上
3.後處理:洗白
4.理論淨重:212g
5.標示符號 ⊗為重點檢查尺寸
6.去除所有毛刺及鋒利毛邊
7.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2015.09.26
DRAWN 吳世明 DATE2015.09.26
ENGINEER 吳世明 DATE2015.09.26
CHECKED 劉洪生 DATE2015.09.26
APPROVAL 劉洪生 DATE2015.09.26
General tolerance: Don't use the crossed items
Range / TOL±
0 ~ 10 ±0.1 ±0.1 ±0.15 ±0.2 ±0.3
10 ~ 30 ±0.15 ±0.2 ±0.25 ±0.3 ±0.4
30 ~ 50 ±0.2 ±0.3 ±0.35 ±0.4 ±0.6
50 ~ 100 ±0.25 ±0.4 ±0.4 ±0.6 ±0.8
100 ~ ±0.3 ±0.5 ±0.6 ±0.8 ±1.0
Angles 1° 2° 3° 3° 5°
Scale 3/1:0
Structure Unit mm
Size A4
COOLER MASTER CO., LTD.
Part Name 25005935O-01-GP
File Name 10409R069-SINK-01-A1

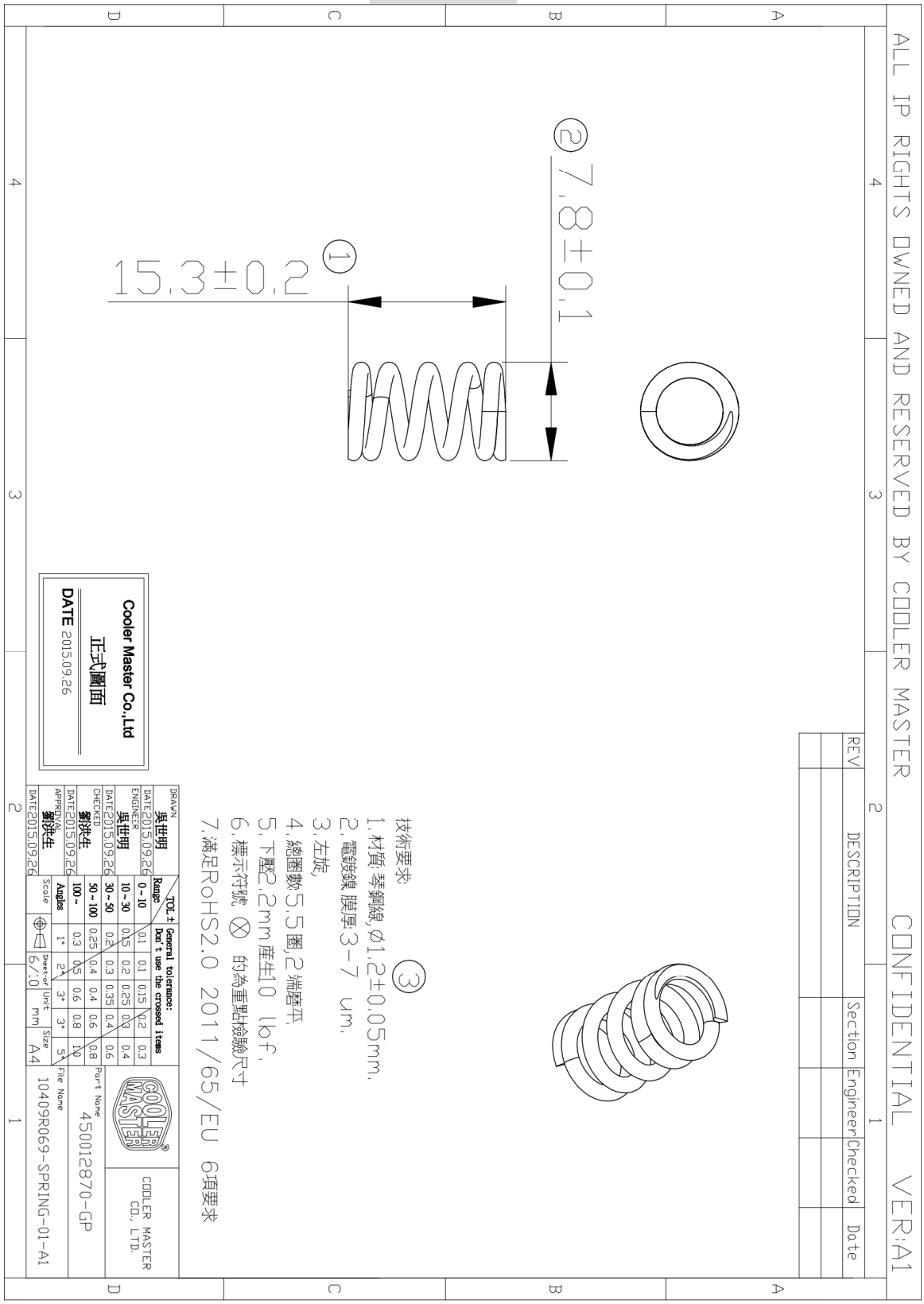
CU POLE


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
φ36.00±0.1 ①
27.60 0 -0.2 ②
0.8
0.4
R1.0
0.05 ③
2.80±0.1 ④
φ30.06±0.01 ⑤
技术要求
1.材質:C1100
2.導電率≧95%
3.表面處理 抗氧化
4.表面粗糙度:Ra<0.5
5.理論單重194.5g
6.去除鋒利毛邊與毛刺
7.標示符號 Ⓧ 為重要檢驗尺寸
8.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2015.09.26
DRAWN 吳世明 DATE 2015.09.26
ENGINEER 吳世明 DATE 2015.09.26
CHECKED 劉洪生 DATE 2015.09.26
APPROVAL 劉洪生 DATE 2015.09.26
TOL ± General tolerance: Don't use the crossed items
Range 0~10 10~30 30~50 50~100 100~
0.1 0.15 0.2 0.25 0.3
0.1 0.2 0.25 0.3 0.4
0.15 0.2 0.3 0.35 0.4
0.2 0.25 0.35 0.4 0.6
0.25 0.3 0.4 0.6 0.8
Scale
Angles 1° 2° 3° 5°
0.3 0.5 0.6 0.8 1.0
4/1.0
Sheet of
Unit mm
Size A4
Part Name 27001455O-GP
File Name 10409R069-CU POLE-01-A1
COOLER MASTER CO., LTD.

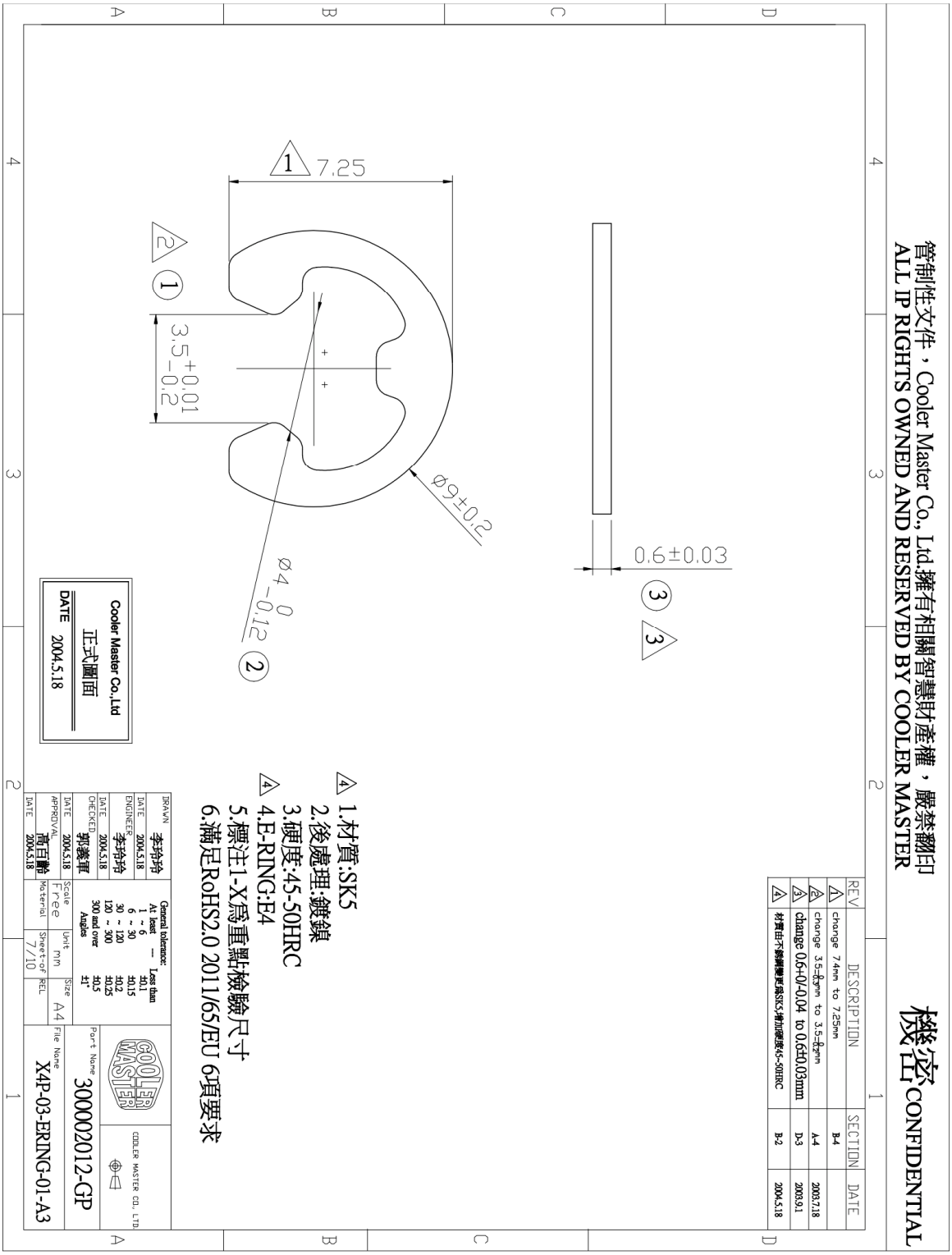
SCREW


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
5.00
49.57±0.1
Ø5.00 0 -0.1
Ø4.00±0.1
4.10
Ø8.00
M3.00
0.70±0.1
42.40±0.1
技術要求
1.材質:AISI 1018
2.表處理:鍍鎳3-7um
3.芯部硬度:280~360HV
4.外部硬度:350~450HV
5.鹽霧測試需達 6 H
6.標示符號 ⊗為重點檢查尺寸
7.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2015.09.26
REV
DESCRIPTION
Section
Engineer
Checked
Date
DRAWN
吳世明
DATE 2015.09.26
ENGINEER
吳世明
DATE 2015.09.26
CHECKED
劉洪生
DATE 2015.09.26
APPROVAL
劉洪生
DATE 2015.09.26
TOL ± General tolerance: Don't use the crossed items
Range
0 ~ 10 0.1 0.1 0.15 0.2 0.3
10 ~ 30 0.15 0.2 0.25 0.3 0.4
30 ~ 50 0.2 0.3 0.35 0.4 0.6
50 ~ 100 0.25 0.4 0.4 0.6 0.8
100 ~ 1° 2° 3° 3° 5°
Angles
Scale
Sheet of
5/10
Unit
mm
Size
A4
COOLER MASTER CO., LTD.
Part Name
150039750-GP
File Name
0409R069-SCREW-01-A1

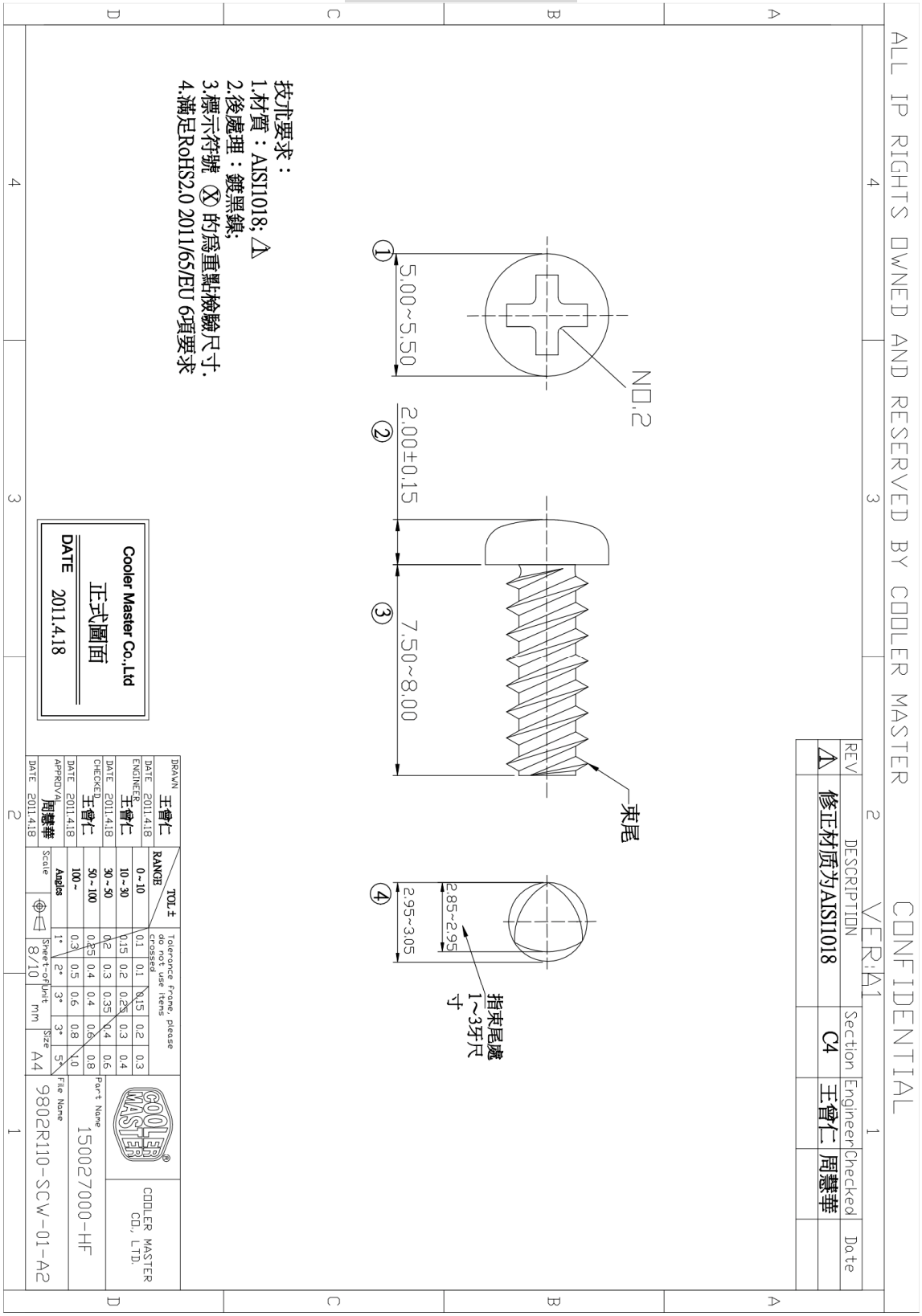
SPRING


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
① 15.3±0.2
② 7.8±0.1
③
技術要求
1.材質:琴鋼線,Ø1.2±0.05mm,
2.電鍍鎳 膜厚3-7 um,
3.左旋,
4.總圈數5.5圈,2端磨平,
5.下壓2.2mm產生10 lbf,
6.標示符號 ⊗ 的為重點檢驗尺寸
7.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2015.09.26
DRAWN 吳世明 DATE 2015.09.26
ENGINEER 吳世明 DATE 2015.09.26
CHECKED 劉洪生 DATE 2015.09.26
APPROVAL 劉洪生 DATE 2015.09.26
TOL ± General tolerance: Don't use the crossed items
Range 0~10 10~30 30~50 50~100 100~
0.1 0.15 0.2 0.3
0.2 0.25 0.3 0.4
0.3 0.35 0.4 0.6
0.4 0.4 0.6 0.8
Scale 6/10
Angles 1° 2° 3° 5°
Unit mm
Size A4
COOLER MASTER CO., LTD.
Part Name 450012870-GP
File Name 10409R069-SPRING-01-A1

E-RING


管制性文件，Cooler Master Co., Ltd.擁有相關智慧財產權，嚴禁翻印
ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
機密 CONFIDENTIAL
REV DESCRIPTION SECTION DATE
1 change 7.4mm to 7.25mm B-4
2 change 3.5±0.1mm to 3.5±0.2mm A-4 2003.7.18
3 change 0.6-0/-0.04 to 0.6±0.03mm D-3 2003.9.1
4 材質由不銹鋼變更爲SK5,增加硬度45-50HRC B-2 2004.5.18
7.25
3.5+0.01 −0.2
Ø9±0.2
Ø4.0 −0.12
0.6±0.03
1.材質:SK5
2.後處理:鍍鎳
3.硬度:45-50HRC
4.E-RING:E4
5.標注1-X爲重點檢驗尺寸
6.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2004.5.18
DRAWN 李玲玲 DATE 2004.5.18
ENGINEER 李玲玲 DATE 2004.5.18
CHECKED 郭泰軍 DATE 2004.5.18
APPROVAL 高百齡 DATE 2004.5.18
General tolerance: At Least — Less than
1 ~ 6 ±0.1
6 ~ 30 ±0.15
30 ~ 120 ±0.2
120 ~ 300 ±0.25
300 and over ±0.5
Angles ±1°
Scale Free
Material
Unit mm
Sheet of 7/10
REL
Size A4
COOLER MASTER CO., LTD.
Part Name 300002012-GP
File Name X4P-03-ERING-01-A3

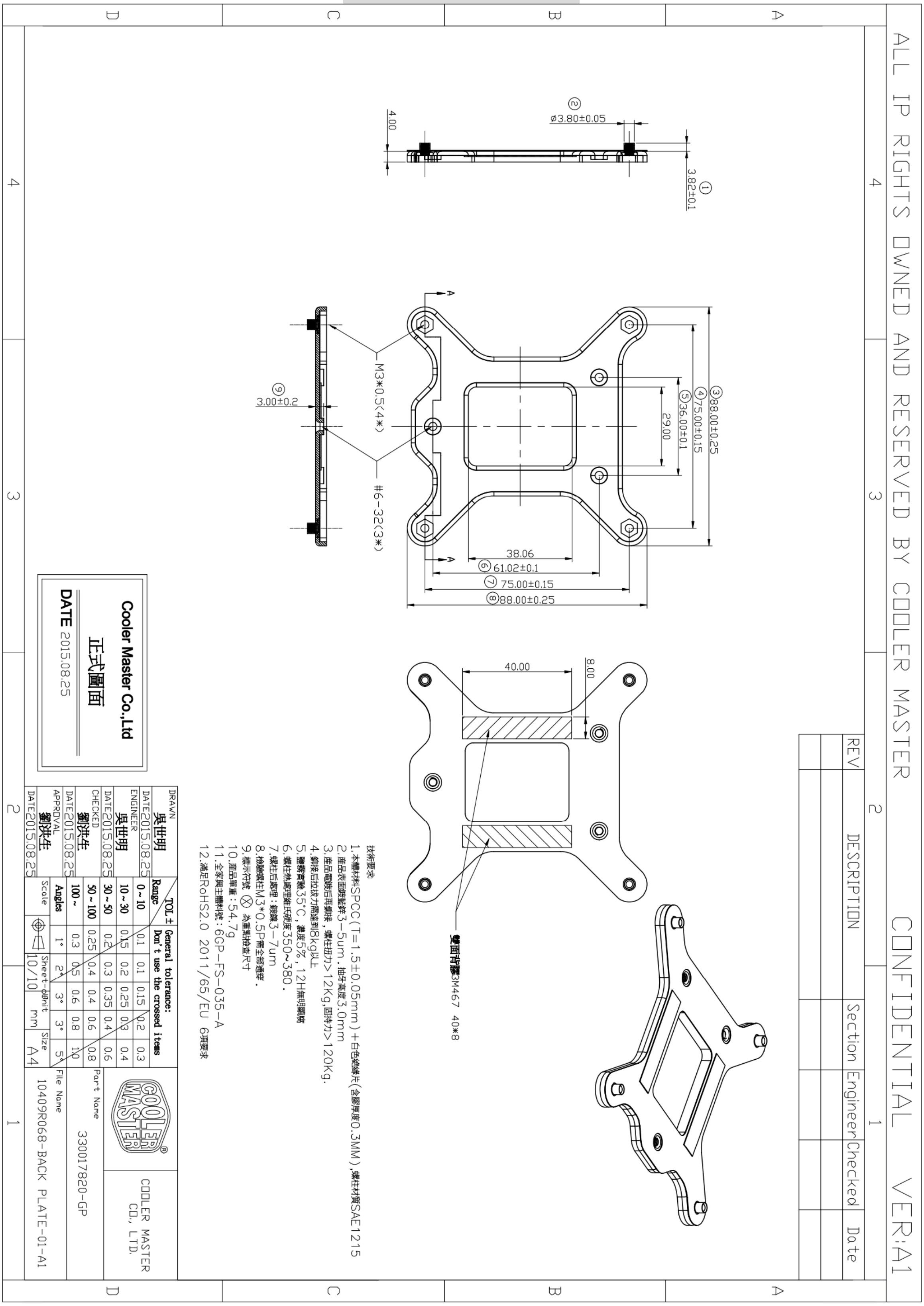
FAN SCREW


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER CONFIDENTIAL
VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
修正材质为AISI1018
C4
王會仁
周慧華
技术要求：
1.材質：AISI1018; △1
2.後處理：鍍黑鎳;
3.標示符號 ⓧ 的爲重點檢驗尺寸.
4.滿足RoHS2.0 2011/65/EU 6項要求
NO.2
5.00~5.50
2.00±0.15
7.50~8.00
束尾
2.85~2.95
2.95~3.05
指束尾處
1~3牙尺
寸
Cooler Master Co.,Ltd
正式圖面
DATE 2011.4.18
DRAWN 王會仁 DATE 2011.4.18
ENGINEER 王會仁 DATE 2011.4.18
CHECKED 王會仁 DATE 2011.4.18
APPROVA 周慧華 DATE 2011.4.18
Tolerance Frame, please do not use these items crossed
RANGE
TOL±
0~10 0.1 0.1 0.15 0.2 0.3
10~30 0.15 0.2 0.25 0.3 0.4
30~50 0.2 0.3 0.35 0.4 0.6
50~100 0.25 0.4 0.4 0.6 0.8
100~ 0.3 0.5 0.6 0.8 1.0
Angles 1° 2° 3° 3° 5°
Scale
Sheet-of 8/10
Unit mm
Size A4
COOLER MASTER CO., LTD.
Part Name 15002700-HF
File Name 9802R110-SCW-01-A2

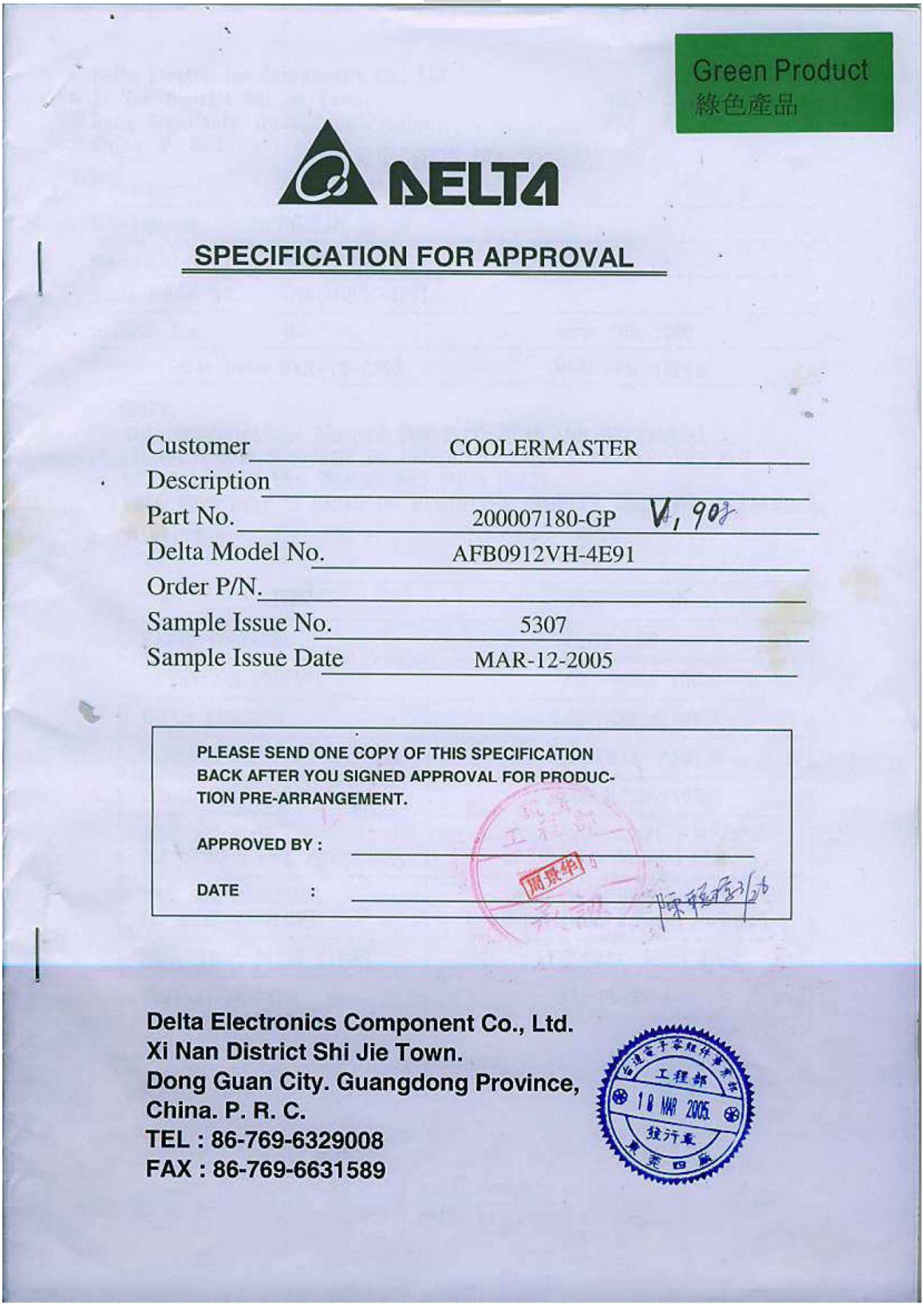
FAN LABEL

ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL
VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
RoHS2.0
HF
Φ25①
NOTE:
1.材質:25#消銀龍,表面需加護膜,耐高溫(-40~80).
2.顏色:Pantone320C,表面加護膜.
3.標示符號 1 ~ X 的爲重點檢驗尺寸
4:THE MATERIAL/PART/ASSEMBLY SHOULD COMPLY TO" HP GSE HP-00011-00 REV.N " FOR ENVIRONMENT-RESTRICTED SUBSTANCES.
5:BFR/PVC/CFR FREE REQUIREMENT SHOULD COMPLY WITH "HP GSE 011-1 SECTION 3.15 REV.N".
6:ROHS 2.0 REQUIREMENT SHOULD COMPLY WITH " HP ROHS 2 COMPLIANCE SPECIFICATION REV.C1".
7.滿足RoHS2.0 2011/65/EU 6項要求
Cooler Master Co.,Ltd
正式圖面
DATE 2010.12.13
DRAWN 郭威 2010.12.13
ENGINEER
CHECKED 郭威 2010.12.13
APPROVAL 周慧華 2010.12.13
DATE 2010.12.13
TOL± General tolerance: Don't use the crossed items
Range 0 ~ 10 0.1 0.1 0.15 0.2 0.3
10 ~ 30 0.15 0.2 0.25 0.3 0.4
30 ~ 50 0.2 0.3 0.35 0.4 0.6
50 ~ 100 0.35 0.4 0.4 0.6 0.8
100 ~ 1.0
Angles 1° 2° 3° 3° 5°
Scale
Sheet 9/10
Unit mm
Size A4
COOLER MASTER CO., LTD.
Part Name 35900530-GP3
File Name 9817R014-Label-A1

BACK PLATE


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
Cooler Master Co.,Ltd
正式圖面
DATE 2015.08.25
COOLER MASTER CO., LTD.
330017820-GP
10409R068-BACK PLATE-01-A1

FAN



Green Product
綠色產品

DELTA

SPECIFICATION FOR APPROVAL

Customer COOLERMASTER
Description
Part No. 200007180-GP V1.90
Delta Model No. AFB0912VH-4E91
Order P/N.
Sample Issue No. 5307
Sample Issue Date MAR-12-2005

PLEASE SEND ONE COPY OF THIS SPECIFICATION BACK AFTER YOU SIGNED APPROVAL FOR PRODUCTION PRE-ARRANGEMENT.

APPROVED BY :

DATE :

Delta Electronics Component Co., Ltd.
Xi Nan District Shi Jie Town.
Dong Guan City. Guangdong Province,
China. P. R. C.
TEL : 86-769-6329008
FAX : 86-769-6631589

Delta Electronics Component Co., Ltd.
Xi Nan District Shi Jie Town,
Dong Guan City. Guangdong Province,
China. P. R. C.
TEL : 86-769-6329008
FAX : 86-769-6631589

SPECIFICATION FOR APPROVAL

Customer: COOLERMASTER

Description: DC FAN

Customer P/N: 200007180-GP REV: 02

Delta Model NO.: AFB0912VH-4E91

Sample Rev: 02 Issue NO: 5307

Sample Issue Date: MAR-12-2005 Quantity: 10PCS

1. SCOPE:
THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN. THE FAN MOTOR IS WITH TWO PHASES AND FOUR POLES.
FOLLOWING DATA IS BASED ON PROTOTYPE SAMPLES, ONLY FOR REFERENCE.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	7.0 - 12.5 VDC
INPUT CURRENT	0.40 (MAX. 0.60) A
INPUT POWER	4.80 (MAX. 7.20) W
SPEED (REF.)	4500 R.P.M.±10%
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_2O 0.338 (MIN. 0.274) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	47.5 (MAX. 51.5) dB-A
INSULATION TYPE	UL: CLASS A

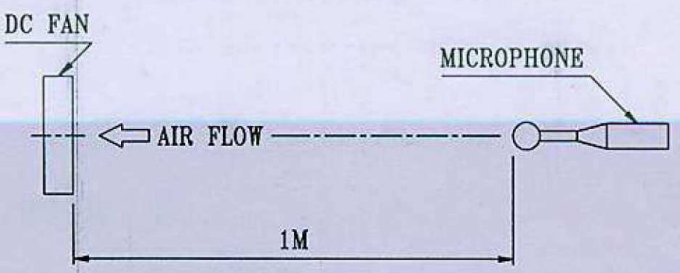
(continued)

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 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. THE VALUES WRITTEN IN PARENS , ( ), ARE LIMITED SPEC.
3. 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.

page: 2

A00

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.

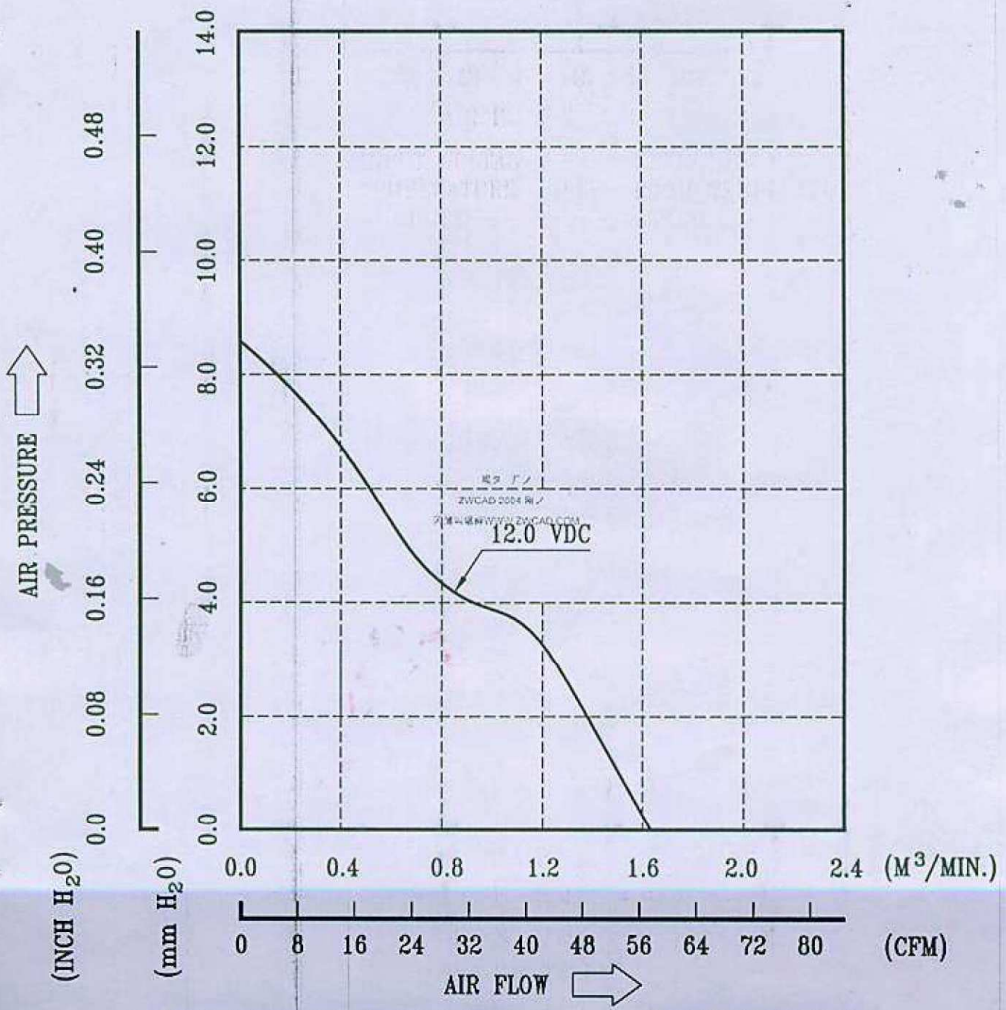
7. PRODUCTION LOCATION

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

PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

9. P & Q CURVE:



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

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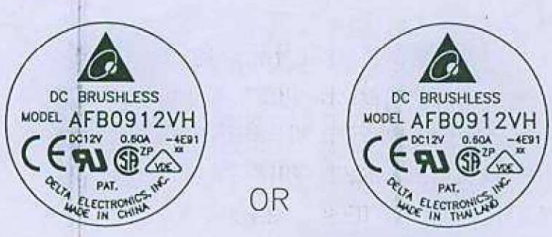
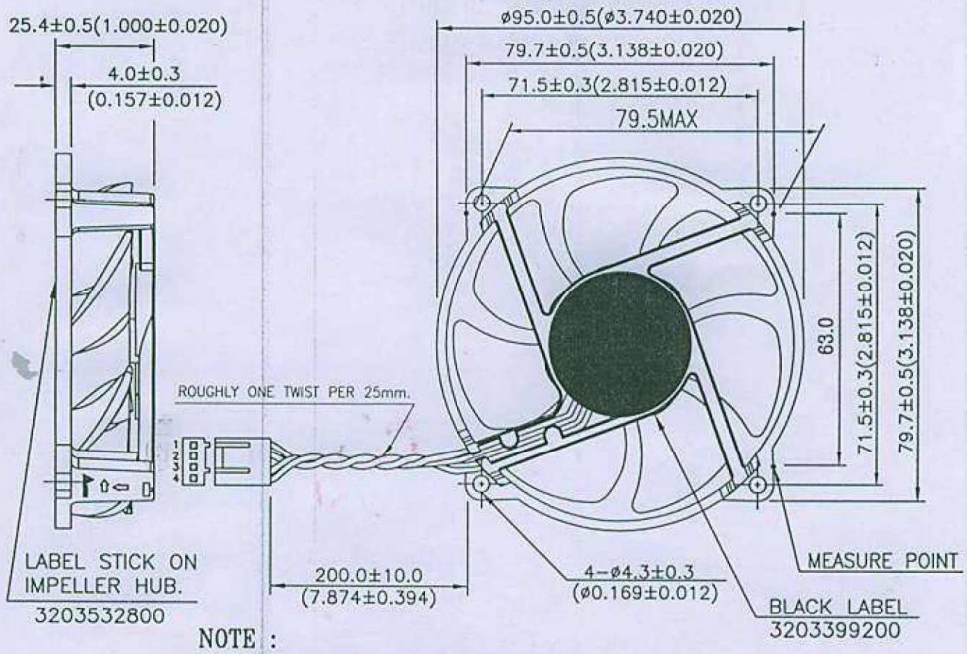
PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

10. DIMENSION DRAWING:

LABEL:





NOTE :

1. LEAD WIRE UL 1061 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 : WIESON G2510C888-001 OR EQUIVALENT
3. TERMINAL : WIESON G2511-T1 OR EQUIVALENT
4. LEAD FREE MODEL

UNIT: MM(INCH)

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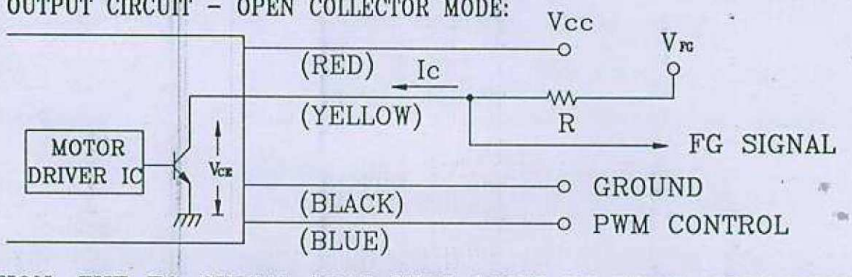
PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

11. ROTATION DETECT (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



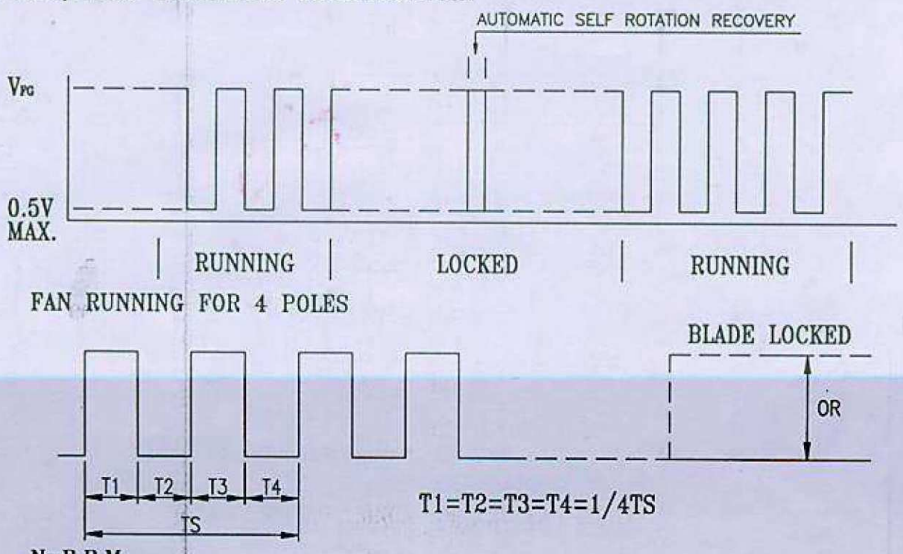
CAUTION: THE FG SINGAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "−" LEAD WIRE.

2. SPECIFICATION:

$V_{CE}(sat)$=0.5V MAX V_{FG}=13.8V MAX

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

3. FREQUENCY GENERATOR WAVEFORM:



N=R.P.M

TS=60/N(SEC)

*VOLTAGE LEVEL AFTER BLADE LOCKED

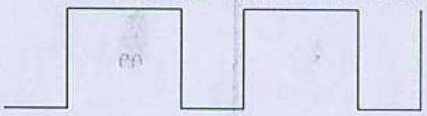
*4 POLES

PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

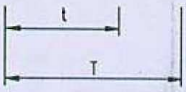
12. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: -0.8~20VDC



HIGH SIGNAL: 20 VDC MAX. 2.8 VDC MIN.

LOW SIGNAL: 0.4 VDC MAX. -0.8 VDC MIN.



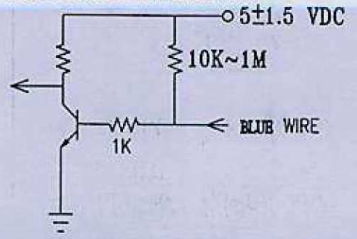
DUTY CYCLE= $\frac{t}{T}$ *100(%)

- THE FREQUENCY FOR CONTROL SINGAL OF THE FAN SHALL BE ABLE TO ACCEPT A 30HZ~300 KHZ.
- 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.
- AT 20K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO STAR FROM A DEAD STOP .

13. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=20KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)	CURRENT (A) TYP.
100	4500±10%	0.40
75	3600±10%	0.22
50	2500±10%	0.10
25	1200±150	0.04
0	0	0.01

14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



14-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROLL INPUT IS LEFT UNCONNECTED.

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PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

ATTACHMENT:TEST DATA FOR SAMPLE:

TEST ITEM	AIR PRESSURE mm H2O	AIR FLOW M3/MIN	SPEED R.P.M. TEST ITEM	RATED CURRENT (A)	NOISE dB (A)
SPEC NO.	6.97MIN.	1.471MIN.	4500REF.	0.60MAX.	51.5MAX.
1	8.36	1.611	4436	0.37	47.2
2	8.75	1.648	4539	0.38	47.7
3	8.94	1.666	4589	0.40	47.9
4	8.89	1.662	4576	0.39	47.9
5	8.50	1.625	4474	0.36	47.4
6	8.89	1.661	4575	0.38	47.9
7	8.86	1.658	4567	0.39	47.8
8	9.09	1.680	4627	0.39	48.1
9	9.08	1.679	4623	0.40	48.1
10	8.87	1.659	4569	0.38	47.8

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

REPORTED BY	CHECKED BY	APPROVED BY.	Q.E
Wong	3/17/05	3/17/05	3/18/05

page: TEST DATA

PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

ATTACHMENT:TEST DATA FOR SAMPLE:

	25%		50%		75%	
TEST ITEM	SPEED R.P.M. TEST ITEM	RATED CURRENT (A)	SPEED R.P.M. TEST ITEM	RATED CURRENT (A)	SPEED R.P.M. TEST ITEM	RATED CURRENT (A)
SPEC NO.	1200REF.	0.04REF.	2500REF.	0.10REF.	3600REF.	0.22REF.
1	1179	0.04	2493	0.10	3606	0.22
2	1164	0.03	2501	0.10	3645	0.22
3	1184	0.03	2506	0.10	3615	0.22
4	1169	0.04	2492	0.11	3643	0.23
5	1188	0.04	2488	0.10	3589	0.22
6	1141	0.04	2460	0.11	3584	0.23
7	1154	0.03	2471	0.10	3556	0.21
8	1119	0.03	2393	0.10	3481	0.21
9	1172	0.04	2479	0.11	3598	0.23
10	1108	0.03	2386	0.11	3490	0.21

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

REPORTED BY	CHECKED BY	APPROVED BY.	Q.E
	WZHME.WANG 3/17/05	3/18/05	yx.xu 3/17/05

page: TEST DATA

CSA INTERNATIONAL

CERTIFICATION RECORD

The company named below has been authorized by CSA 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.
31-1 Shien Pam Rd
Kuei Shan Industrial Zone
Taoyuan Hsien,333
Taiwan

FACTORIES

4510824 Delta Electronics, Inc.
31-1 Shien Pam Rd
Kuei Shan Industrial Zone
Taoyuan Hsien,333
Taiwan

4554827 Delta Electronics Component
(Dongguan) Co., Ltd.
Yue Yun Central Rd
Xinan District Shijie Town
Dongguan,Guangdong 511724
China

4562908 Delta Electronics Components
(Thailand) Ltd.
699 SOI E5 E.P.Z
Bangpoo Ind Estate Sukhumvit Rd
Km 37 Praksa District Amphur
Samutprakran, 10280
Thailand

November 17, 2000(Replaces:August 17,2000)

CATEGORIES:

- Extra Low Voltage Fans and Ventilators

Notes:
1.The above categories are components of other certified equipment,where the suitability of the combination is to be determined by CSA International.

DQD No.548 99/04/08

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CSA INTERNATIONAL

Certification Record No: 091949 0 000
Class No: 3812 01

AFB0824VHB	24	180	STD R00 F00
AFB0848L	48	90	-
AFB0848M	48	110	-
AFB0848H	48	110	-
AFB0848HH	48	120	-
AFB0912H	12	300	STD R00 F00
AFB0912HH	12	400	STD R00 F00
AFB0912L	12	150	STD R00 F00
AFB0912L-SB	12	150	-
AFB0912M-SB	12	200	-
AFB0912H-SB	12	300	-
AFB0912M	12	200	STD R00 F00
AFB0912VH	12	600	STD R00 F00
AFB0924H	24	200	STD R00 F00
AFB0924HH	24	250	STD R00 F00
AFB0924L	24	100	STD R00 F00
AFB0924M	24	150	STD R00 F00
AFB0924VH	24	400	STD R00 F00
AFB0948L	48	80	-
AFB0948M	48	80	-
AFB0948H	48	90	-
AFB0948HH	48	140	-
AFB1212LE	12	300	-
AFB1212ME	12	400	-
AFB1212HE	12	480	-
AFB1212HHE	12	700	-
AFB1212SHE	12	1600	STD R00 F00
AFB1212VHE	12	900	-
AFB1224HE	24	360	-

DQD No. 548 99/04/08

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Online Certifications Directory

GPWV2.E132003
Fans,Electric-Component

Page Bottom Notice of Disclaimer Questions? Previous Page

Fans,Electric-Component

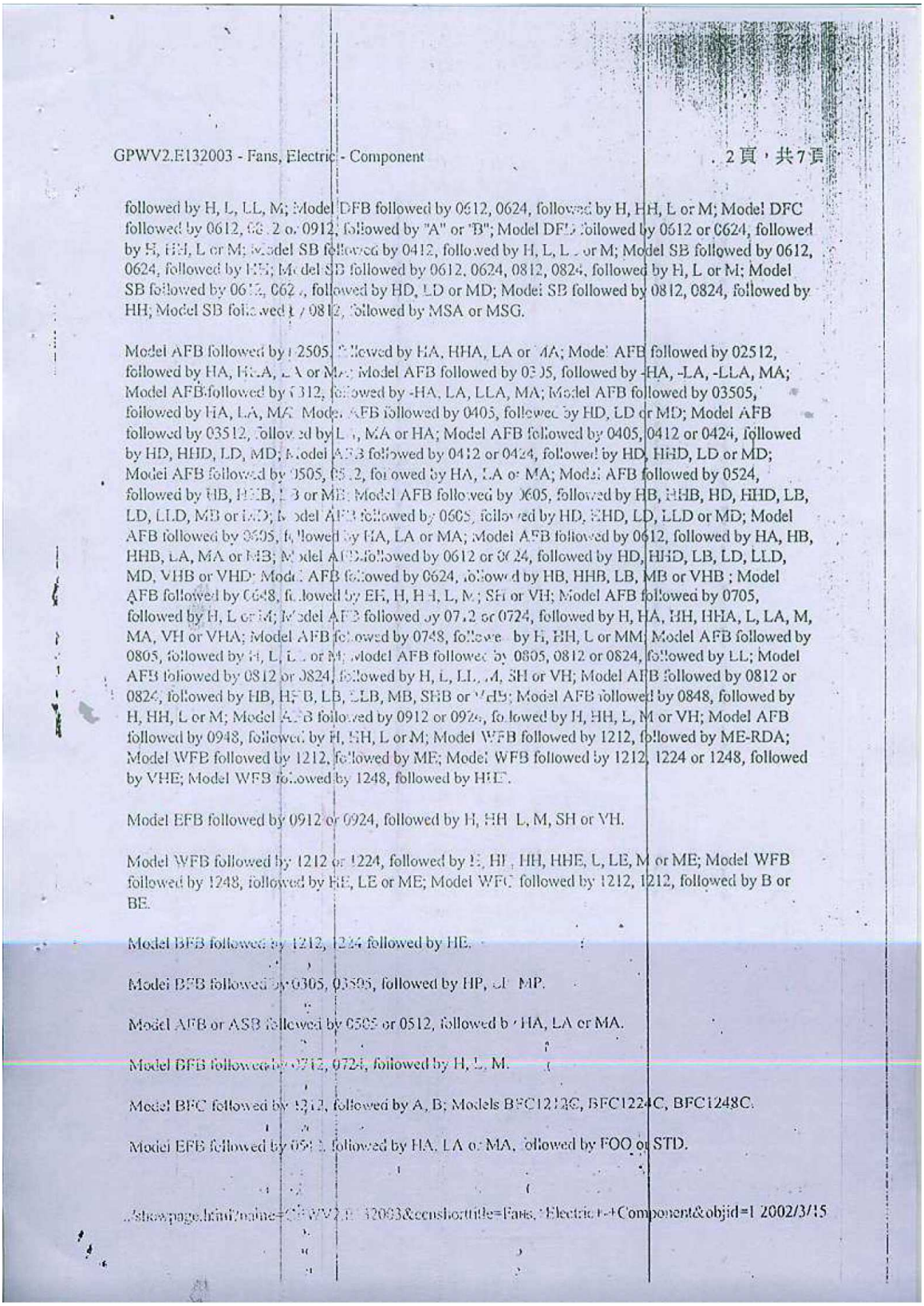
Guide Information

DELTA ELECTRONICS INC
14TH FL
266 2ND WEN-HWA RD,SEC 1
LINKOU
TAIPEI HSIEN 244,TAIWAN

E132003

Model AFB followed by 0405,0412,followed by HA,HHA,LA or MA;Model AFB followed by 0505, followed by HB,LB or MB; Model AFB followed by 0512, followed by HB, HHB LB or MB;Model AFB followed by 0605, followed by H, L or M, followed by R00, R05,RR 0 or RR05;Model AFB followed by 0605 or 0805, followed by H,L or M; Model AFB followed by 0612, 0624, followed by EH, SH VH; Model AFB0612LB; Model AFB followed by 0612, 0624, 0812, 0824, 0912 or 0924, followed by H,HB, HH, HHB, LB, LLB, MB, SHB or VHB; Models ASB0412MA,ASB0412LA, ASB0405MA; Model ASB followed by 0405,0412,followed by HA, HHA, LA or MA; Model ASB followed by 0505, followed by HB, LB or MB;Model ASB followed by 0512, 0524, followed by HB, HHB,LB or MB; Model ASB followed by 0812, 0824, followed by HB, HHB, LB,LLB, MB, SHB or VHB; Model ASB followed by 0612 or 0624,followed by H,HH, L or M; Model ASB followed by 0812,followed by L or M; Model ASB followed by 0912 or 0924, followed by H, L, or M; Model AUB followed b0505,0512 or 0524, followed by HB, HHB, LB or MB, Model AUB followed by 0612, 0624, followed by H, HH, L or M; Model AUB followed by 0912, K 0924,followed by H, HH, L,M or VH; Model AUB followed by 0612 or 0624, followed by L, M, H or HH; Model AUB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB; Model AUB followed by 0924, followed by L, M, H, HH or VH, Model BFB followed by 1212, followed by H, HH, L, LL, M or VH;Model BFB followed by 1224, followed by H, HH, L, LL, M or VH; Model BFB followed by 1248, followed by H,HH, L, LL, M; Model BFC followed by 1012,followed by A, B or C; Model DFB followed by 0405 or 0412,followed by H, L, LL, M; Model DFB followed by 0612, 0812, 0912, 0824 or 0924,followed by H, L or M;Model DFB followed by 0612,0812,0824,0912 or 0924, followed by HH; Model DFB followed by 0424,

.../showpage.html?name=GPWV2.E132003&ccnshorttitle=Fans,+Electric+-Component&objid=102002/3/15



followed by H, L, LL, M; Model DFB followed by 0612, 0624, followed by H, HH, L or M; Model DFC followed by 0612, 0812 or 0912, followed by "A" or "B"; Model DFD followed by 0612 or 0624, followed by H, HH, L or M; Model SB followed by 0412, followed by H, L, LL or M; Model SB followed by 0612, 0624, followed by H; Model SB followed by 0612, 0624, 0812, 0824, followed by H, L or M; Model SB followed by 0612, 0624, followed by HD, LD or MD; Model SB followed by 0812, 0824, followed by HH; Model SB followed by 0812, followed by MSA or MSG.

Model AFB followed by 02505, followed by HA, HHA, LA or MA; Model AFB followed by 02512, followed by HA, HHA, LA or MA; Model AFB followed by 0305, followed by -HA, -LA, -LLA, MA; Model AFB followed by 0312, followed by -HA, LA, LLA, MA; Model AFB followed by 03505, followed by HA, LA, MA; Model AFB followed by 0405, followed by HD, LD or MD; Model AFB followed by 03512, followed by LA, MA or HA; Model AFB followed by 0405, 0412 or 0424, followed by HD, HHD, LD, MD; Model AFB followed by 0412 or 0424, followed by HD, HHD, LD or MD; Model AFB followed by 0505, 0512, followed by HA, LA or MA; Model AFB followed by 0524, followed by HB, HHB, LB or MB; Model AFB followed by 0605, followed by HB, HHB, HD, HHD, LB, LD, LLD, MB or MD; Model AFB followed by 0605, followed by HD, HHD, LD, LLD or MD; Model AFB followed by 0605, followed by HA, LA or MA; Model AFB followed by 0612, followed by HA, HB, HHB, LA, MA or MB; Model AFB followed by 0612 or 0624, followed by HD, HHD, LB, LD, LLD, MD, VHB or VHD; Model AFB followed by 0624, followed by HB, HHB, LB, MB or VHB ; Model AFB followed by 0648, followed by EH, H, HH, L, M, SH or VH; Model AFB followed by 0705, followed by H, L or M; Model AFB followed by 0712 or 0724, followed by H, HA, HH, HHA, L, LA, M, MA, VH or VHA; Model AFB followed by 0748, followed by H, HH, L or MM; Model AFB followed by 0805, followed by H, L, LL or M; Model AFB followed by 0805, 0812 or 0824, followed by LL; Model AFB followed by 0812 or 0824, followed by H, L, LL, M, SH or VH; Model AFB followed by 0812 or 0824, followed by HB, HHB, LB, LLB, MB, SHB or VHB; Model AFB followed by 0848, followed by H, HH, L or M; Model AFB followed by 0912 or 0924, followed by H, HH, L, M or VH; Model AFB followed by 0948, followed by H, SH, L or M; Model WFB followed by 1212, followed by ME-RDA; Model WFB followed by 1212, followed by ME; Model WFB followed by 1212, 1224 or 1248, followed by VHE; Model WFB followed by 1248, followed by HHE.

Model EFB followed by 0912 or 0924, followed by H, HH, L, M, SH or VH.

Model WFB followed by 1212 or 1224, followed by E, HE, HH, HHE, L, LE, M or ME; Model WFB followed by 1248, followed by HE, LE or ME; Model WFC followed by 1212, 1212, followed by B or BE.

Model BFB followed by 1212, 1224 followed by HE.

Model BFB followed by 0305, 03505, followed by HP, LP, MP.

Model AFB or ASB followed by 0505 or 0512, followed by HA, LA or MA.

Model BFB followed by 0712, 0724, followed by H, L, M.

Model BFC followed by 1212, followed by A, B; Models BFC1212C, BFC1224C, BFC1248C.

Model EFB followed by 0512, followed by HA, LA or MA, followed by FOO or STD.

VDE Prüf- und Zertifizierungsinstitut
Gutachten mit Fertigungsüberwachung

Ausweis-Nr. / Licence No. 1764 — Blatt / page 5

Name und Sitz des Genehmigungs-Inhabers / *Name and registered seat of the Licence holder*
Delta Electronics Inc., 186 Ruey Kuang Road, NEIHU TAIPEI (114), TAIWAN

Aktenzeichen / *File ref.*
1164100-2611-0001 / 11826 / F131 / S

letzte Änderung / *updated* 2002-02-26 — 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.

		Jahresgebühren-Einheiten / *Annual fee units*
BFB0712H/L/M	DC 12 V	3,00
BFB0724H/L/M	DC 24 V	3,00
AFB0405LA/MA/HA/HHA	DC 5 V	4,00
AFB0412LA/MA/HA/HHA	DC 12 V	4,00
ASB0405LA/MA/HA/HHA	DC 5 V	4,00
ASB0412LA/MA/HA/HHA	DC 12 V	4,00
AFB0612LB	DC 12 V	2,00
AFB0612MB	DC 12 V	1,00
AFB0612HB	DC 12 V	1,00
AFB0612HHB	DC 12 V	1,00
AFB0624LB	DC 24 V	2,00
AFB0624MB	DC 24 V	1,00
AFB0624HB	DC 24 V	1,00
AFB0624HHB	DC 24 V	1,00
ASB0605L	DC 5 V	2,00
ASB0605M	DC 5 V	1,00
ASB0605H	DC 5 V	1,00
WFB1248HHE/VHE	DC 48 V	2,00
WFB1212VHE	DC 12 V	2,00
WFB1224VHE	DC 24 V	2,00
DSB0612L/M/H	DC 12 V	3,00
AFC0812A/B	DC 12 V	2,00
AFC0912A/B	DC 12 V	2,00
BFC1212A/B	DC 12 V	2,00
BFB1212LL/L/M/H/HH/VH	DC 12 V	6,00
BFB1224LL/L/M/H/HH/VH	DC 24 V	6,00
AFB0405LD/MD/HD	DC 5 V	3,00
AFB0412LD/MD/HD/HHD	DC 12 V	4,00
AFB0424LD/MD/HD/HHD	DC 24 V	4,00
AFB0612LA/MA/HA	DC 12 V	3,00
ASB0812LL/L/M/H/HH	DC 12 V	5,00
ASB0912L/M/H/HH	DC 12 V	4,00
ASB0924LL/L/M/H/HH	DC 24 V	5,00
ASB0924L/M/H/HH	DC 24 V	4,00
AFB0705L/M/H	DC 5 V	3,00
AFB0712L/M/H/HH/VH	DC 12 V	5,00
AFB0724L/M/H/HH/VH	DC 24 V	5,00
AFB0805LL/L/M/H	DC 5 V	4,00
AFB0812LL/L/M/H/HH/VH/SH	DC 12 V	7,00
AFB0824LL/L/M/H/HH/VH/SH	DC 24 V	7,00
AFB0912L/M/H/HH/VH	DC 12 V	4,00

Fortsetzung siehe Blatt 6 /
continued on page 6

DELTA

Descriptions:

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 fans are 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, as there is no foolproof method to protect against such error.
7. Delta fans 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 lesd 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 relative (ambient) temperature and humidity conditions of 25°C,65%. The test value is only for fan performance itself.
13. Be certain to connect an "over 4.7uF" capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.

SHINKONG SYNTHETIC FIBERS CO.

CERTIFICATE OF ANALYSIS

PBT D202G30 (BLACK)

DF4886

P.f

ITEM	UNIT	TEST METHOD	VALUE
ASH	%	ASTM D2584	29.8
TENSILE STRENGTH	kg/cm^2	ASTM D638	1200
FLEXURAL STRENGTH	kg/cm^2	ASTM D790	1840
FLEXURAL MODULUS	kg/cm^2	ASTM D790	92200
IZOD IMPACT STRENGTH	kg-cm/cm	ASTM D256	8.6
SPECIFIC GRAVITY		ASTM D792	1.60

Lot No: M3084

P/O NO.: CFFE08701

P/N NO.: 4020303718

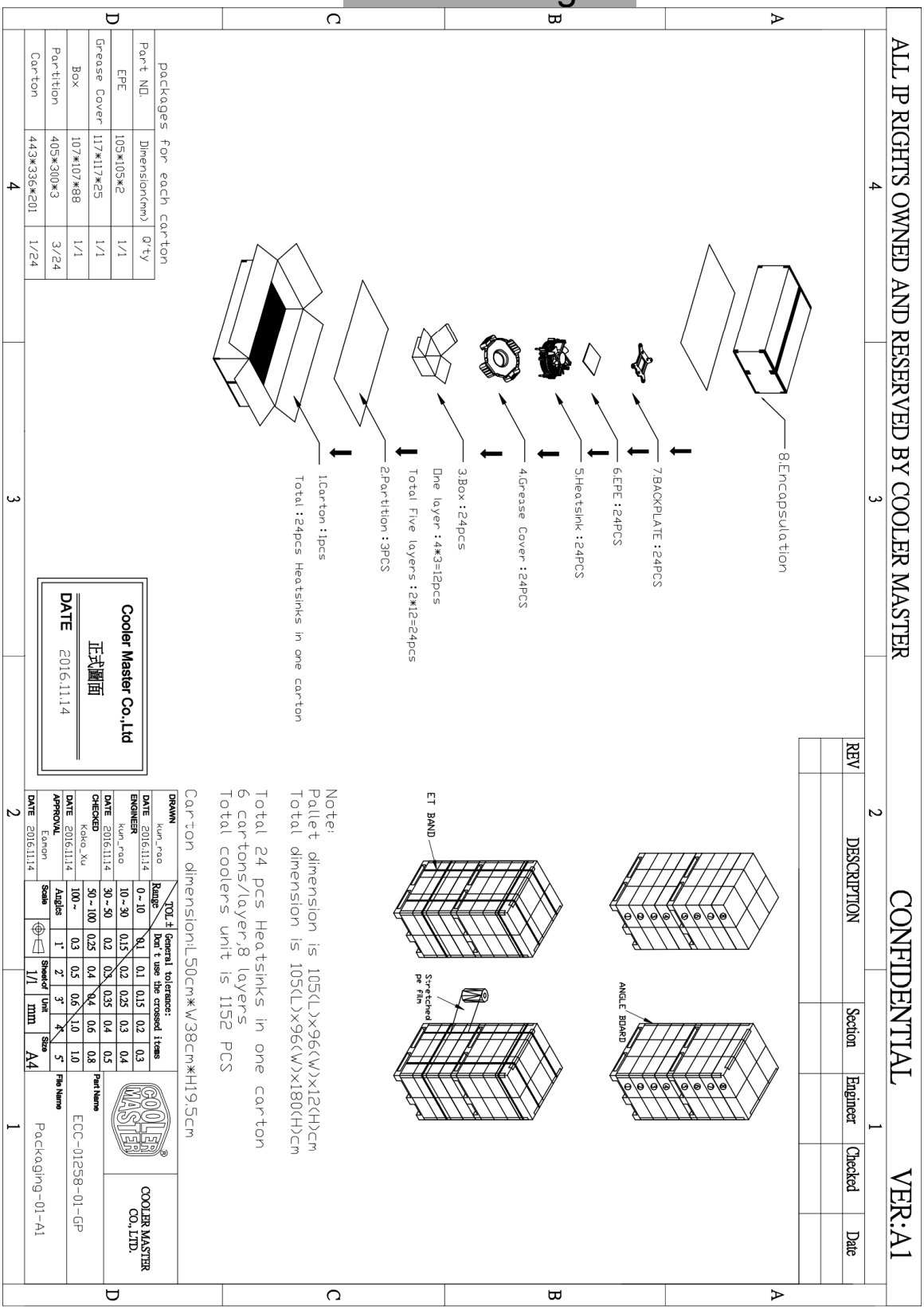
QA Manager : 廖志崑

Inspector : 鐘瑞蓮2000年10月7日

成品單位: 送出日期:

C:\QUA\材質証明

6. Packing


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL
VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
8.Encapsulation
7.BACKPLATE :24PCS
6.EPE :24PCS
5.Heatsink :24PCS
4.Grease Cover :24PCS
3.Box :24pcs
One layer :4*3=12pcs
Total Five layers :2*12=24pcs
2.Partition :3PCS
1.Carton :1pcs
Total :24pcs Heatsinks in one carton
ANGLE BOARD
ET BAND
Stretched PE Film
Note:
Pallet dimension is 105(L)×96(W)×12(H)cm
Total dimension is 105(L)×96(W)×180(H)cm
Total 24 pcs Heatsinks in one carton
6 cartons/layer,8 layers
Total coolers unit is 1152 PCS
Carton dimension:L50cm*W38cm*H19.5cm
packages for each carton
Part NO.
Dimension(mm)
Q'ty
EPE
105*105*2
1/1
Grease Cover
117*117*25
1/1
Box
107*107*88
1/1
Partition
405*300*3
3/24
Carton
443*336*201
1/24
Cooler Master Co.,Ltd
正式圖面
DATE 2016.11.14
DRAWN
kun_rao
2016.11.14
ENGINEER
kun_rao
2016.11.14
CHECKED
Koko_Xu
2016.11.14
APPROVAL
Eamon
2016.11.14
TOL± General tolerance:
Range
Don't use the crossed items
0 ~ 10
0.1
0.1
0.15
0.2
0.3
10 ~ 30
0.15
0.2
0.25
0.3
0.4
30 ~ 50
0.2
0.3
0.35
0.4
0.5
50 ~ 100
0.25
0.4
0.4
0.6
0.8
100 ~
0.3
0.5
0.6
1.0
1.0
Angles
1'
2'
3'
4'
5'
Scale
Sheet/
1/1
Unit
mm
Size
A4
COOLER MASTER CO, LTD.
Part Name
ECC-01258-01-GP
File Name
Packaging-01-A1