Product Data Sheets

Customer : _____

Part No. : _____

CoolerMaster Model No. : PC-08400-01-GP2

Edition: A1

Issued Date: 2022/04/21

Revision History：		
Date of Release	Revision No.	Description
2022/04/21	A1	初版

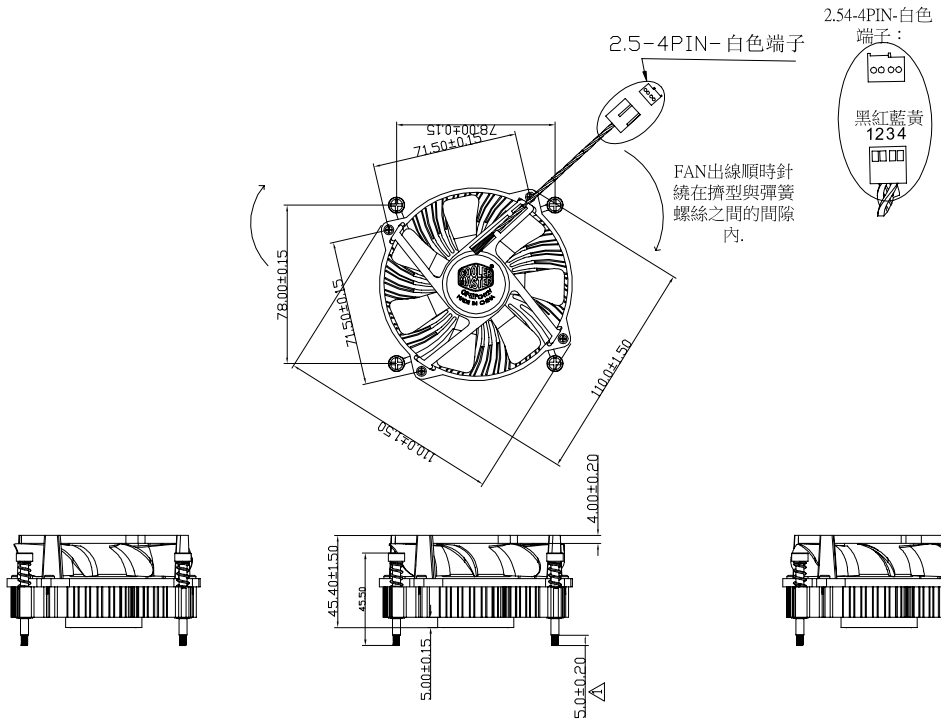
Customer	Cooler Master		
Approved by	Sales	Checked by	Drafted by
Date:	Sylvia_Tai Date: 2022/04/21	Zhouhh Date: 2022/04/21	White_zhou Date: 2022/04/21

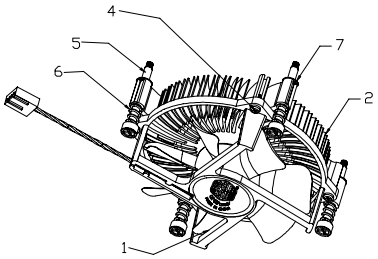
2.Whole Photo

 CONFIDENTIAL VER:A1

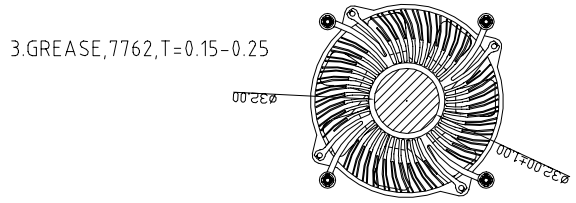
3.2D Drawing
3.1 cooler asm

REV	DESCRIPTION	Section	Engineer	Checked	Date
1	设变CPU SCREW螺丝的螺牙长度为5.0±0.20mm	C-3 , C-4	陳有定	周慧華	09.09.2022





NOTE：
1.制程：組裝.CPU功率：65W.
2.扣合壓力42±8磅;鉚柱高出PCB1.45mm.
3.外觀按一般QA檢驗規范.
4.風扇:成品轉速:4500±15%RPM
5.標示 X 的為重點檢驗尺寸
6.料件需符合RoHS2.0 2015/863/EU 10項物質要求.
7



8	LABEL	XIAOYINLONG	1	
7	oring	/	4	
6	SPRING	SWPC	4	
5	SCREW	AISI1018	4	
4	FAN SCREW	AISI1018	4	
3	GREASE	7762	0.25G	
2	HEATSINK		1	
1	FAN	/	1	
序號	名 稱	材 質	數量	備 注

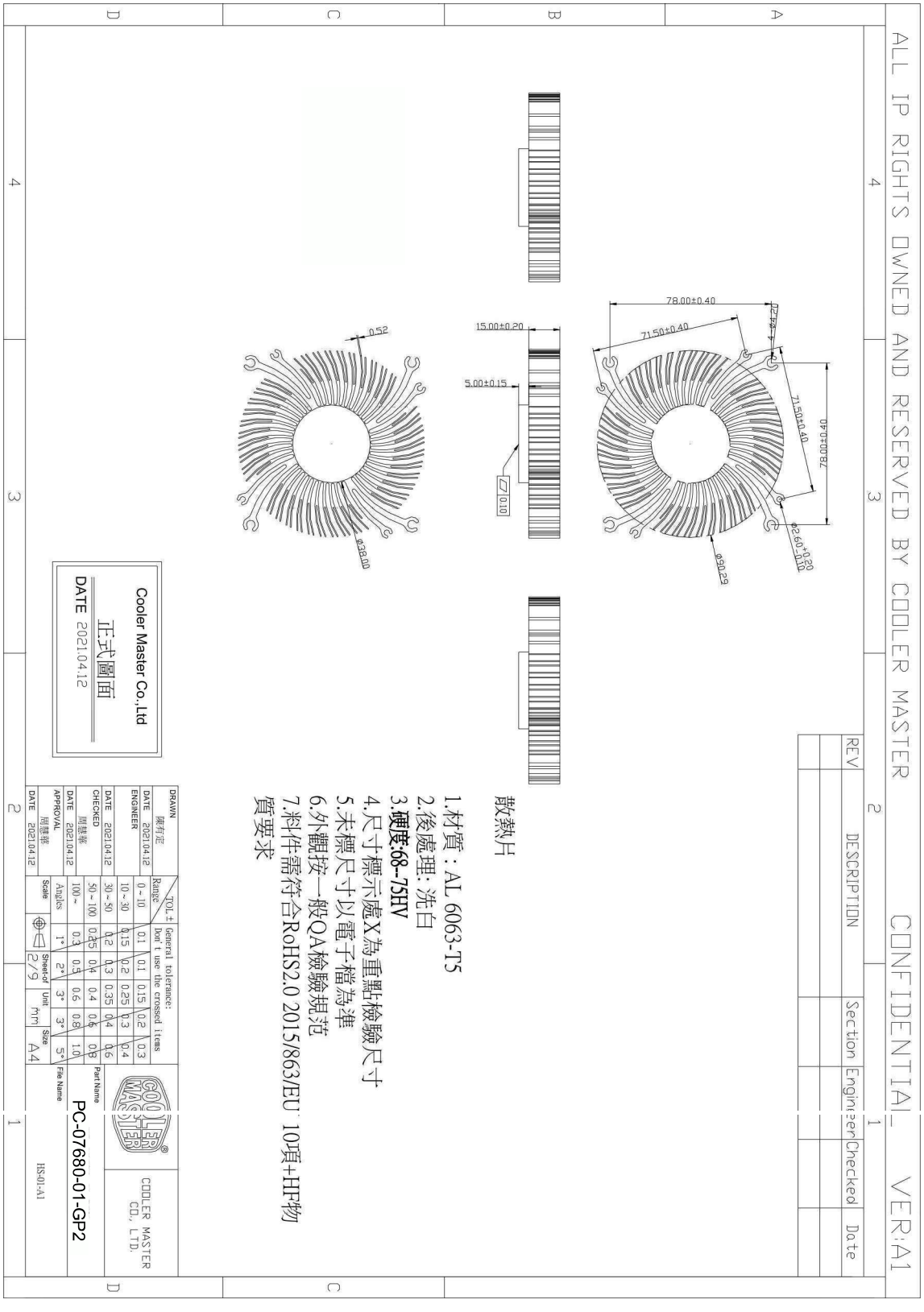
臺達FAN參數			
啟動電壓	6V	MAX電流	0.60A（MAX)
額定電壓	12V	100%DUTY轉速	4500±15%

Cooler Master Co.,Ltd
正式圖面
DATE 2021.04.12

DRAWN 陳有定	TOL ± Range	General tolerance: Don't use the crossed items				
DATE 2021.04.12	0 ~ 10	0.1	0.1	0.15	0.2	0.3
ENGINEER 陳有定	10 ~ 30	0.15	0.2	0.25	0.3	0.4
DATE 2021.04.12	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 2021.04.12	100 ~	0.3	0.5	0.6	0.8	1.0
APPROVAL 周慧華	Angles	1°	2°	3°	3°	5°
DATE	Scale		Sheet-of 1/9	Unit mm	Size A4	

COOLER MASTER CO., LTD.
Part Name PC-07680-01-GP2
File Name COOLER-01-A2

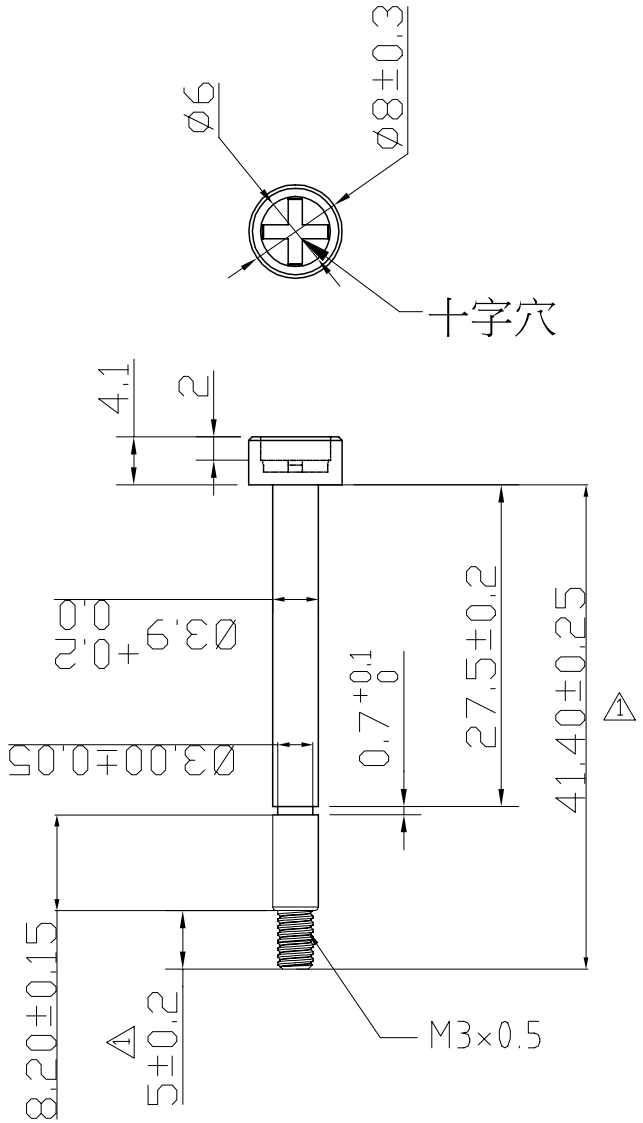
3.2 HS


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER CONFIDENTIAL VER:A1
78.00±0.40
71.50±0.40
ø60.20 +0.10 -0.10
ø50.29
15.00±0.20
5.00±0.15
0.10
0.52
ø38.00
散熱片
1.材質：AL 6063-T5
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.未標尺寸以電子檔為準
6.外觀按一般QA檢驗規范
7.料件需符合RoHS2.0 2015/863/EU 10項+HF物質要求
Cooler Master Co.,Ltd
正式圖面
DATE 2021.04.12
DRAWN 陳有宏 DATE 2021.04.12
ENGINEER DATE 2021.04.12
CHECKED 周慧華 DATE 2021.04.12
APPROVAL 周慧華 DATE 2021.04.12
General tolerance: Don't use the crossed items
TOL± Range 0~10 10~30 30~50 50~100 100~
Angles 1° 2° 3°
Size A4 Unit mm Sheet of 2/9
COOLER MASTER CO., LTD.
Part Name PC-07680-01-GP2
File Name HS:01:A1

REV	DESCRIPTION	Section	Engineer	Checked	Date
⚠	设变CPU SCREW螺丝的螺牙长度为5.0±0.20mm	D-4	陳有定	周慧華	09.09.2022

Cooler Master Co., Ltd.
TEL: +886 (2) 32340050 FAX: +886 (2) 32340051
www.coolermaster.com

3.3 CPU SCREW



技术要求：

1. 材質：AISI1018
2. 後處理：電鍍鎳,膜厚1.0um以上
3. 芯部硬度：280~360 Hv
4. 外部硬度：350~450 Hv
5. 破坏扭力測試需達 10 Kg f/mm
6. 鹽霧測試需達 8 H
7. 未標注圓角之處為自然圓角R0.3
8. 標示符號 Ⓧ 的為重點檢驗尺寸
9. 料件需符合RoHS2.0 2015/863/EU 10項物質要求

Cooler Master Co.,Ltd
正式圖面
DATE 2022.03.07

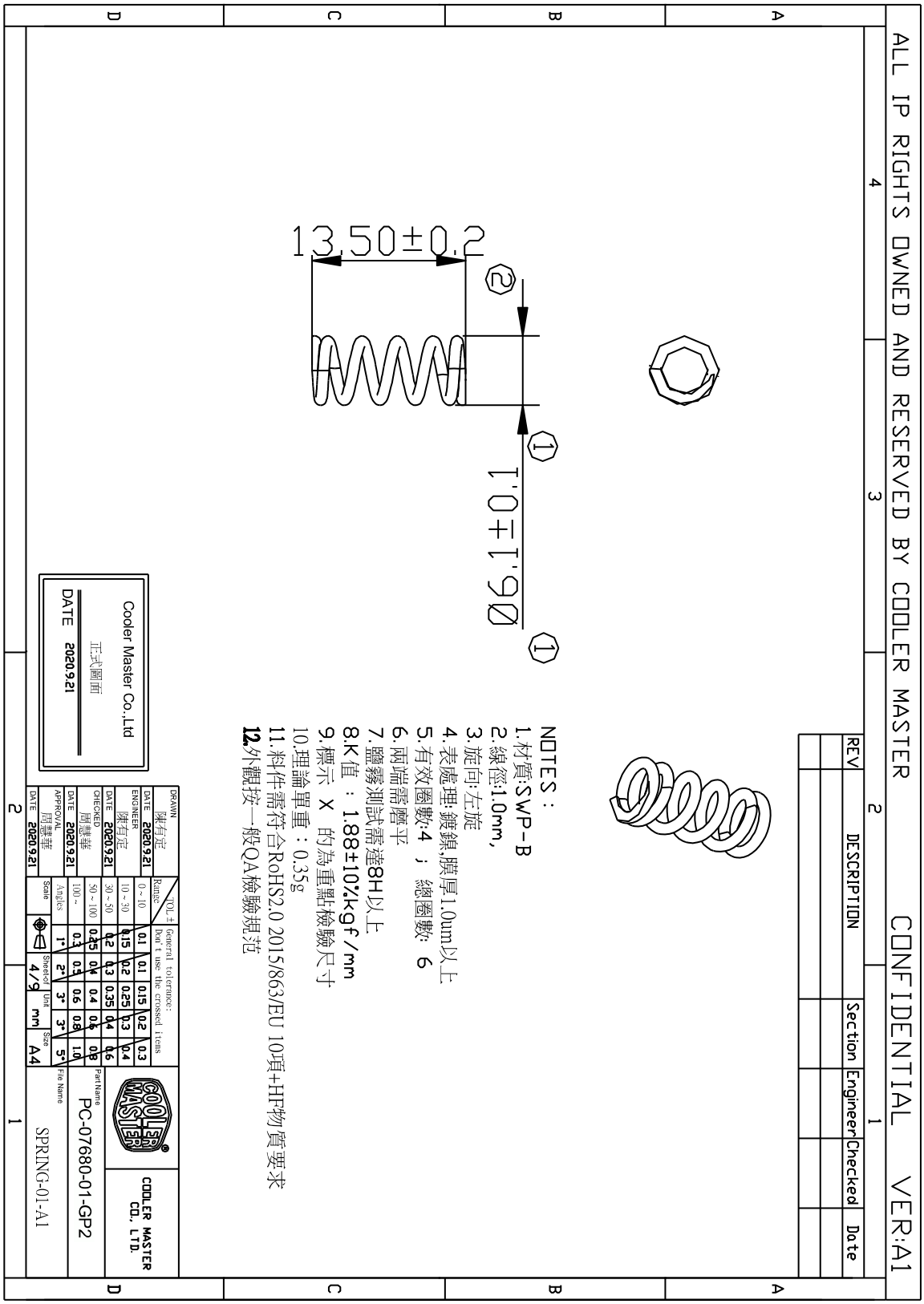
DRAWN 陳有定	TOL ± Range	General tolerance: Don't use the crossed items				
DATE 2020.9.21	0 ~ 10	0.1	0.1	0.15	0.2	0.3
ENGINEER 陳有定	10 ~ 30	0.15	0.2	0.25	0.3	0.4
DATE 2020.9.21	30 ~ 50	0.2	0.3	0.35	0.4	0.6
CHECKED 周慧華	50 ~ 100	0.25	0.4	0.4	0.6	0.8
DATE 2020.9.21	100 ~	0.3	0.5	0.6	0.8	1.0
APPROVAL 周慧華	Angles	1°	2°	3°	3°	5°
DATE 2020.9.21	Scale	Sheet-of 3/8	Unit mm	Size A4		

COOLER MASTER CO., LTD.

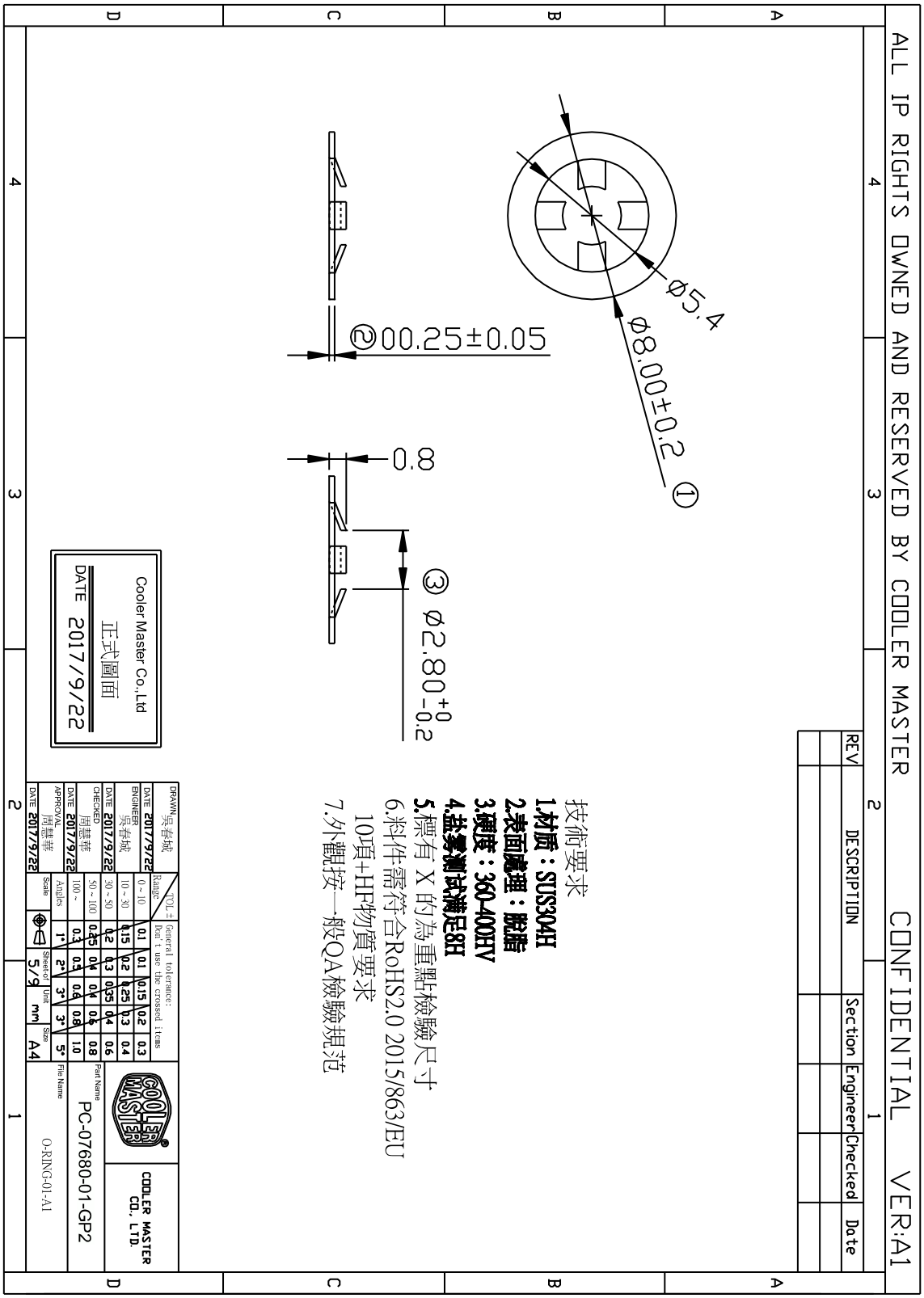
Part Name: PC-07680-01-GP2

File Name: CPU SCREW-01-A2

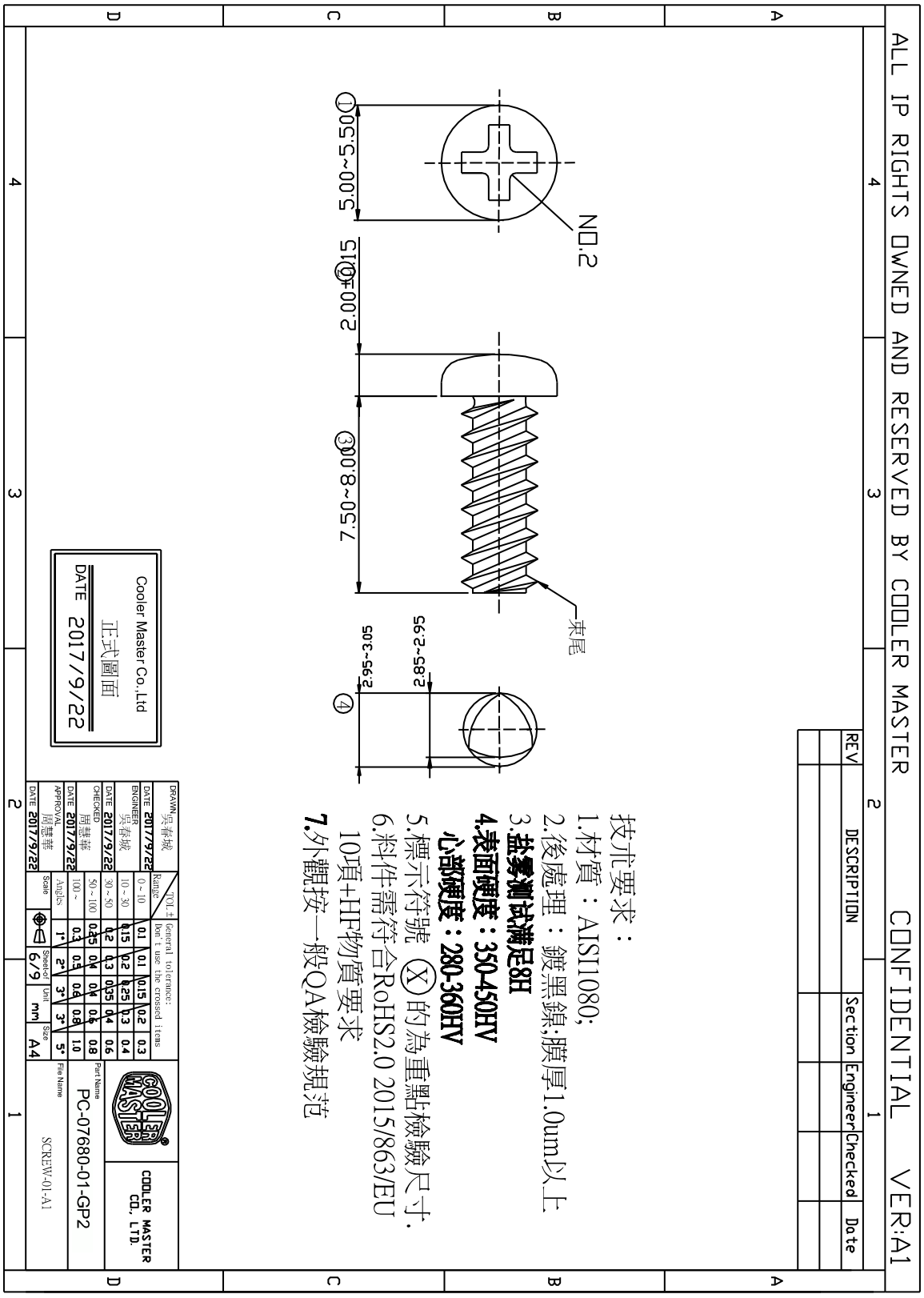
3.4 SPRING


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
13.50±0.2
10±1.90
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+HF物質要求
12.外觀按一般QA檢驗規范
Cooler Master Co.,Ltd
正式圖面
DATE 2020.9.21
DRAWN
陳有定
DATE 2020.9.21
ENGINEER
陳有定
DATE 2020.9.21
CHECKED
周慧華
DATE 2020.9.21
APPROVAL
周慧華
DATE 2020.9.21
General tolerance:
Don't use the crossed lines
TOL±
Ranges
10 ~ 30
30 ~ 50
50 ~ 100
100 ~
Angles
Scale
Sheet of
4/9
unit
mm
Size
A4
COOLER MASTER CO., LTD.
Part Name
PC-07680-01-GP2
File Name
SPRING-01-A1

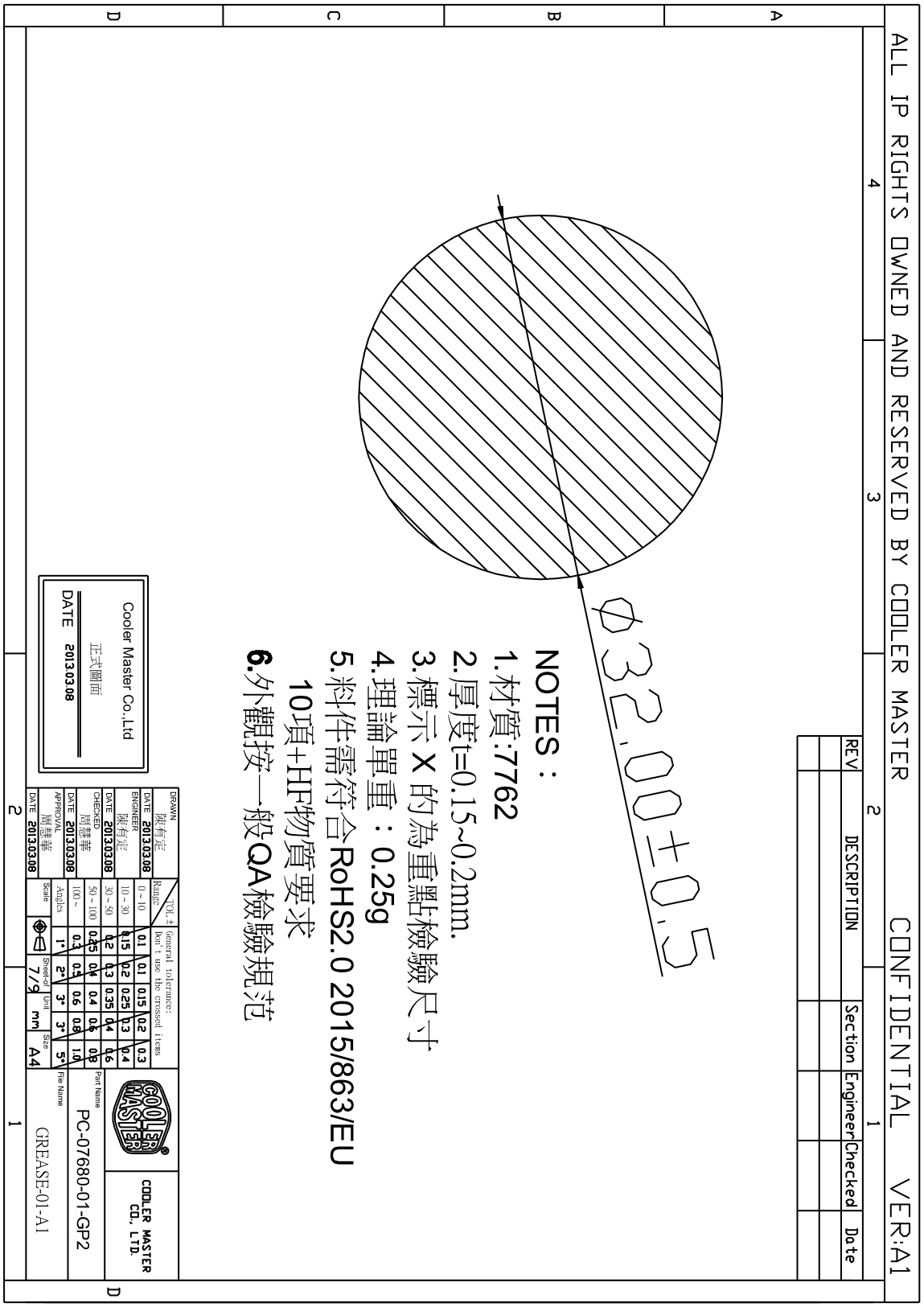
3.5 O-RING


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
技術要求
1.材质：SUS304H
2.表面處理：脫脂
3.硬度：360-400HV
4.盐雾测试满足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+HF物質要求
7.外觀按一般QA檢驗規范
Ø5.4
Ø8.00±0.2 ①
②00.25±0.05
0.8
③ Ø2.80 +0 -0.2
Cooler Master Co.,Ltd
正式圖面
DATE 2017/9/22
DRAWN 吳春城
DATE 2017/9/22
ENGINEER 吳春城
DATE 2017/9/22
CHECKED 周慧華
DATE 2017/9/22
APPROVAL 周慧華
DATE 2017/9/22
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 ~ Angles 1° 2° 3° 3° 5°
Scale Sheet of 5/9 Unit mm Size A4
COOLER MASTER CO., LTD.
Part Name PC-07680-01-GP2
File Name O-RING-01-A1

3.6 FAN SCREW


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER
CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
技术要求：
1.材質：AISI1080;
2.後處理：鍍黑鎳;膜厚1.0um以上
3.盐雾测试满足8H
4.表面硬度：350-450HV
心部硬度：280-360HV
5.標示符號 Ⓧ 的為重點檢驗尺寸.
6.料件需符合RoHS2.0 2015/863/EU
10項+HP物質要求
7.外觀按一般QA檢驗規范
NO.2
束尾
Cooler Master Co.,Ltd
正式圖面
DATE 2017/9/22
DRAWN 宾春城 DATE 2017/9/22
ENGINEER 宾春城 DATE 2017/9/22
CHECKED 周慧華 DATE 2017/9/22
APPROVAL 周慧華 DATE 2017/9/22
Scale
Angles
Sheet-of 6/9
Unit mm
Size A4
COOLER MASTER CO., LTD.
Part Name PC-07680-01-GP2
File Name SCREW-01-A1

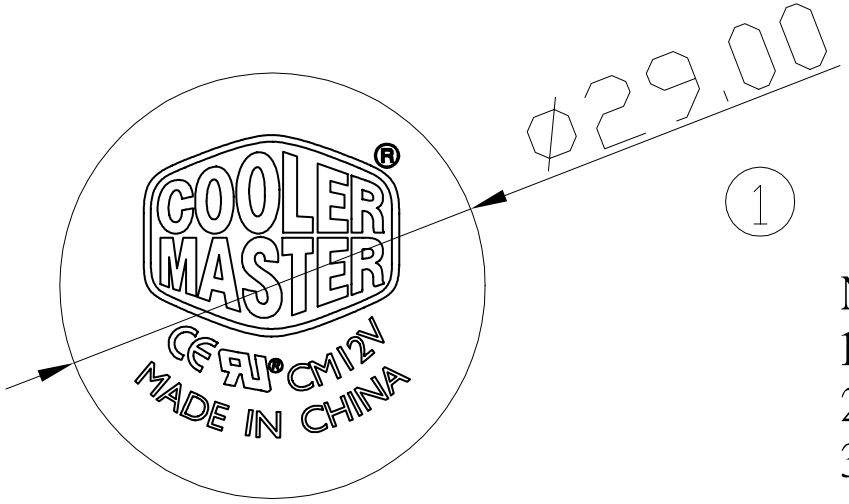
3.7 GREASE


ALL IP RIGHTS OWNED AND RESERVED BY COOLER MASTER CONFIDENTIAL VER:A1
REV
DESCRIPTION
Section
Engineer
Checked
Date
Φ32.00±0.5
NOTES :
1.材質:7762
2.厚度t=0.15~0.2mm.
3.標示 X 的為重點檢驗尺寸
4.理論單重 : 0.25g
5.料件需符合RoHS2.0 2015/863/EU
10項+HF物質要求
6.外觀按一般QA檢驗規范
Cooler Master Co.,Ltd
正式圖面
DATE 2013.03.08
DRAWN 陳有定 DATE 2013.03.08
ENGINEER 陳有定 DATE 2013.03.08
CHECKED 周慧華 DATE 2013.03.08
APPROVAL 周慧華 DATE 2013.03.08
COOLER MASTER CO., LTD.
Part Name PC-07680-01-GP2
File Name GREASE-01-A1
Size A4
Unit mm
Sheet of 7/9
Scale
Angles
Range
0 ~ 10
10 ~ 30
30 ~ 50
50 ~ 100
100 ~
TOL± general tolerance
Don't use the crossed items

CONFIDENTIAL VER:A1

3.8 CM -LABEL

REV	DESCRIPTION	Section	Engineer	Checked	Date



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 的為重點檢驗尺寸
4:料件需符合RoHS2.0 2015/863/EU 10項物質要求.

Cooler Master Co.,Ltd
正式圖面
DATE 2010.12.13

DRAWN 郭威 DATE 2010.12.13	TOL ± Range	General tolerance: Don't use the crossed items				
ENGINEER 郭威 DATE 2010.12.13	0 ~ 10	0.1	0.1	0.15	0.2	0.3
CHECKED 周慧華 DATE 2010.12.13	10 ~ 30	0.15	0.2	0.25	0.3	0.4
APPROVAL 周慧華 DATE 2010.12.13	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 1/1	Unit mm	Size A4		

COOLER MASTER CO., LTD.

Part Name PC-07680-01-GP2

File Name Label-01-A1

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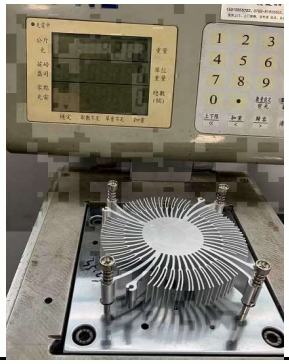
7.性能測試報告

PN	TC1	TC2	DT1	W	RPM	RTH1
SAMPLE-1#	48.1	27.6	20.5	65.1	4428	0.315
SAMPLE-2#	48.3	27.7	20.6	65.1	4410	0.317
SAMPLE-3#	48.3	27.7	20.6	65.1	4434	0.317
SAMPLE-4#	48.3	27.7	20.6	65	4422	0.317
SAMPLE-5#	46.9	26.2	20.7	65.1	4317	0.318

8. 壓力測試報告

PC-07680-01-GP2 磅力測试

序号	CPU断差高度(mm)	磅力(lbf)	图示	斷差面
1	5.58	42.02		
2	5.58	41.62		
3	5.58	41.06		

5. Fan SPEC

DELTA ELECTRONICS, INC.
252, SHANG YING ROAD, KUEI SAN TEL : 886-(0)3-3591968
TAOYUAN HSIEN 333, TAIWAN, R. O. C. 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:	06	Issue NO:	
Sample Issue Date:		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_2O 0.338 (MIN. 0.274) $inchH_2O$
ACOUSTICAL NOISE (AVG.)	47.5 (MAX. 51.5) dB-A
INSULATION TYPE	UL: CLASS A

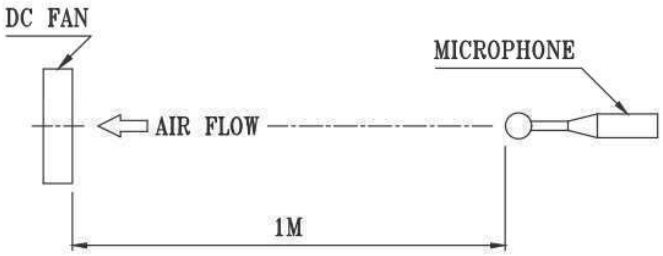
(continued)

PART NO: 731000120-GP2

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 (L10) AT LABEL VOLTAGE	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 (F00) 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.

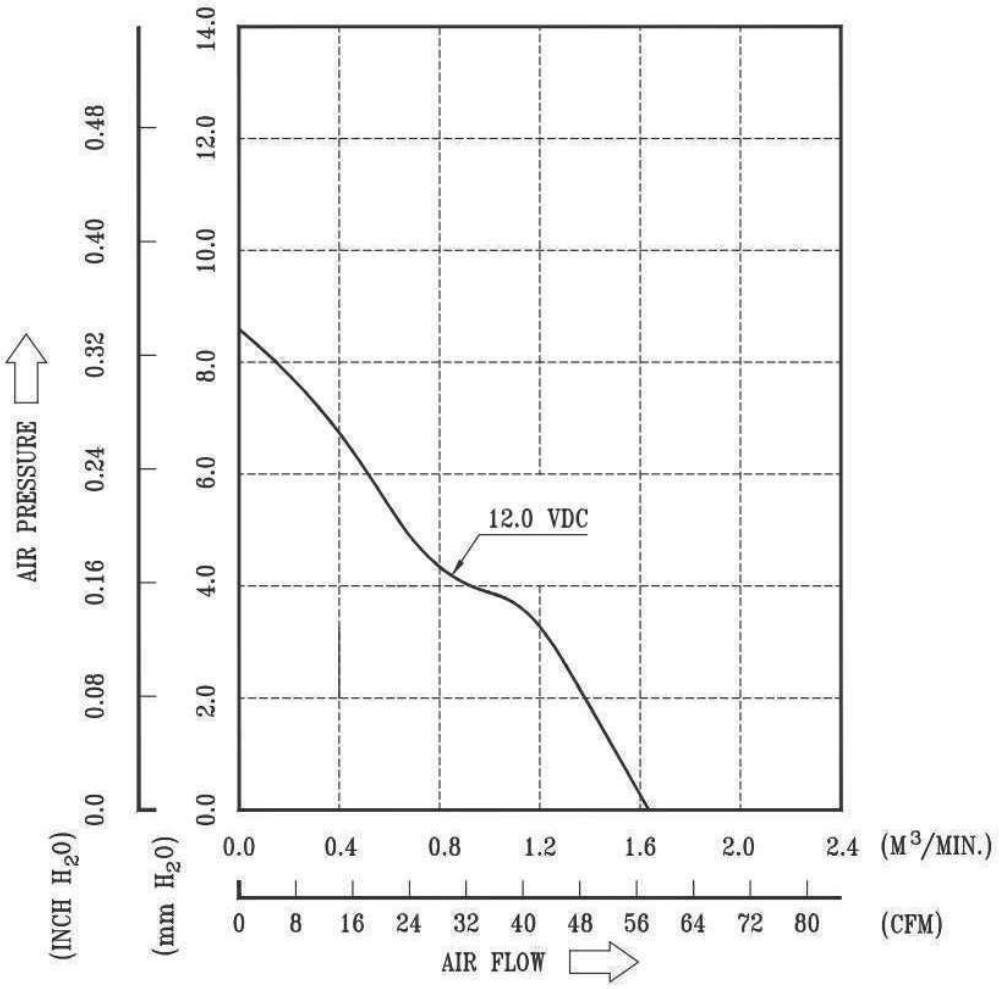
7. PRODUCTION LOCATION

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

PART NO: 200007180-GP

DELTA MODEL: AFB0912VH-4E91

8. P & Q CURVE:



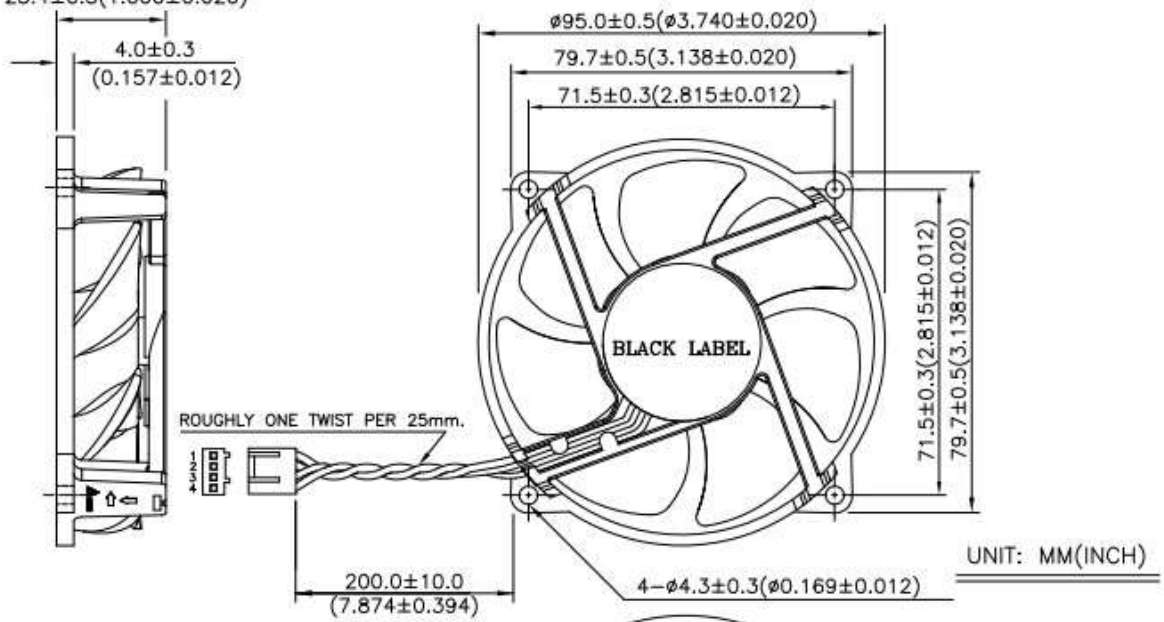
* TEST CONDITION: INPUT VOLTAGE ------- OPERATION VOLTAGE
TEMPERATURE -------- ROOM TEMPERATURE
HUMIDITY ---------- 65%RH

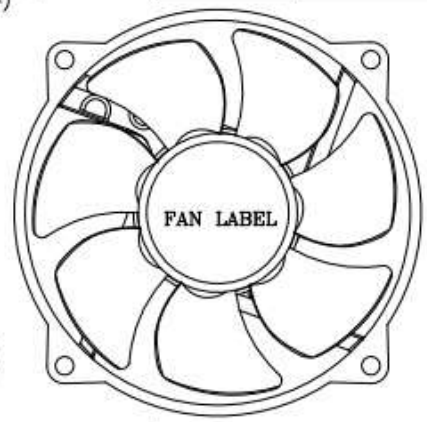
PART NO: 731000120-GP2

DELTA MODEL: AFB0912VH-4E91

9. DIMENSION DRAWING:

LABEL:





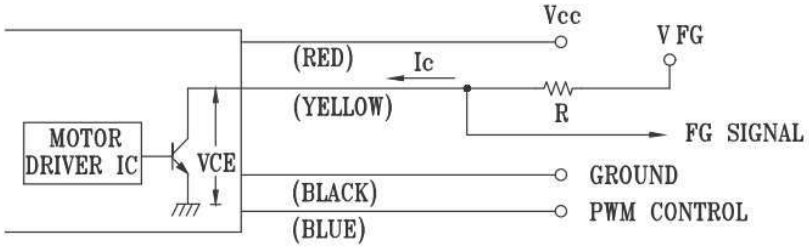
1. UL 1061 -F- AWG #26
   PIN 1 : BLACK WIRE: NEGATIVE(-)
   PIN 2 : RED WIRE: POSITIVE(+)
   PIN 3 : YELLOW WIRE: TACHOMETER OUTPUT (FOO)
   PIN 4 : BLUE WIRE: SPEED CONTROL (PWM)
2. HOUSING : CKM 25410108-04
3. TERMINAL : CKM 25410301
4. BALANCE MATERIAL : SUS FOIL
5. THIS PRODUCT IS RoHS COMPLIANT

A00

PART NO:	731000120-GP2
DELTA MODEL:	AFB0912VH-4E91

10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



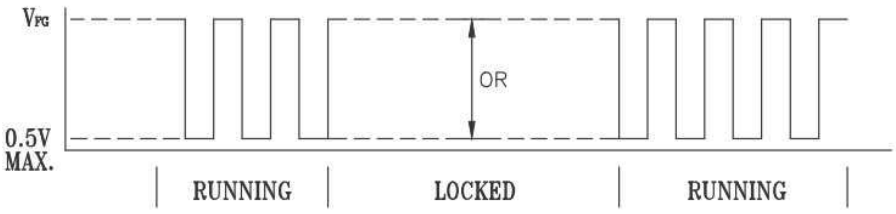
CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

10-2. SPECIFICATION:

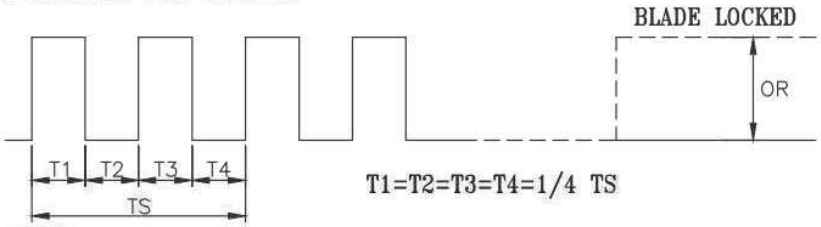
V_{CE} (sat)=0.5V MAX. V_{FG} =5.0V TYP. (Vcc MAX.)

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

10-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES

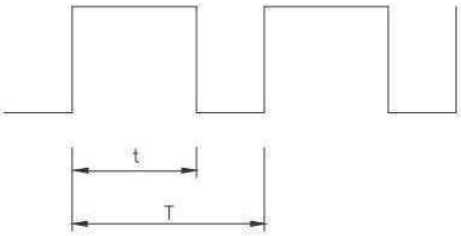


N=R.P.M
TS=60/N(SEC)
*VOLTAGE LEVEL AFTER BLADE LOCKED
*4 POLES

PART NO:	73100120-GP2
DELTA MODEL:	AFB0912VH-4E91

11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~20 VDC



HIGH SIGNAL: 20 VDC MAX. 2.8 VDC MIN.

LOW SIGNAL: 0.8 VDC MAX. 0 VDC MIN.

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

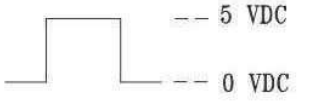
- THE PREFERRED OPERATING POINT FOR THE FAN IS 20K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.

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: