

Application:

Intel LGA1156 Nehalem(45nm 82W) / Westmere (32nm73W) CPU Lynnfield & Clarkdale sequence
(Low Profile M/B mounting hole pitch 75x 75mm)

Picture:



Thermal & Mechanical Spec.:

Thermal performance for 82W & 73W CPU
HSK Assembly Weight: 205 g (ref.)
Clipping Force: 15.9 Kgf (ref.)



Component Specification:

1. Heat Sink

Type: Extruded HSK
Material: Aluminum A6063 or Equivalent.
Dimension: 90*90*19.05 mm

2. Thermal interface material

Material: Dow Corning TC-1996 or Equivalent.

3. Fan

(90x90x25 mm with Thermistor & PWM Control)

Rated Voltage: 12 V

Life Time:

Superflo bearing 50000 hrs

Connector:

a. Lead wire: UL 1430 AWG#26

pin 1: black wire-----(-)

pin 2: yellow wire-----(+)

pin 3: green wire----- (F00)

pin 4: blue wire----- (PWM)

b. Housing: Molex 47054-1000 or equivalent

c. Terminal: Molex 2759T 08-50-0113 or equivalent

* All readings are typical values at rated voltage.

* Specifications are subject to change without notice





Delta Electronics Corp.

APPROVAL SHEET

Customer Name .:

Model Name.: COOLER

Model Name.: FHS-A9025S20

Customer Part No.:

Spec Issue Date .: 12/29/2009

Spec Revision : 00

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

Approved By:

Date:

Approval	Check	Designer
Alex-Hsia	Charles Chen	Skyler-Huang



Delta Electronics Corp.

REV.	Description	Drawn	Checked	Approved	Issue Date
00	ISSUE SPEC	Skyler-Huang12/29'09	Charles Chen 12/29'09	Alex-Hsia 12/29'09	
Description:					
SAMPLE REVISION CODE LIST					
Part No.					REV
DELTA MODEL : FHS-A9025S20			TOTAL 25 PAGE		00



Delta Electronics Corp.

CONTENTS

Item	Element Description	Page	Note
1	Specification	5	
2	Print	6	
3	Packing Plan	13	
4	Fan	16	



1. SPECIFICATION

Characters

Item	Description
Scope	THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE FAN HEATSINK
Application	INTEL CPU COOLER
Specification	
a: Thermal Resistance	0.462 (°C/W) (REF.)
b: total weight	205 g (REF.)
c: clip force	15.9 kgf (REF.)

BOM

[illegible]



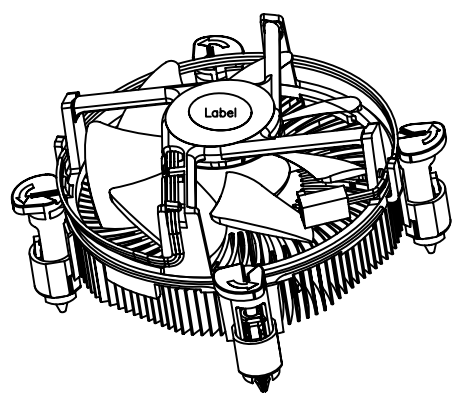
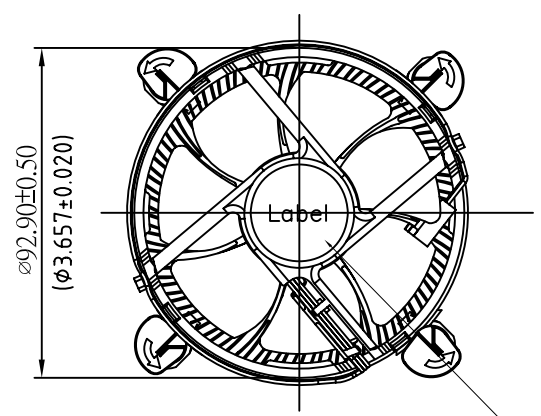
Delta Electronics Corp.

2. PRINT

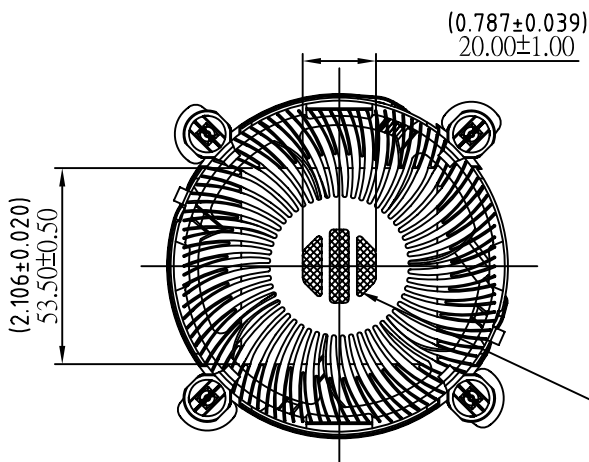
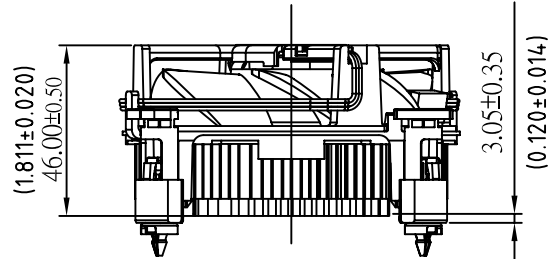
Assembly Drawing

Parts Drawing

DRAWING:



FAN LABEL P/N:3266455700





Dow Corning TC-1996 P/N:4021101500

*STENCIL THICKNESS=0.18(TYP.) 0.20(MAX.)
TIM WEIGHT ON HSK MUST BE 140mg+/-30mg

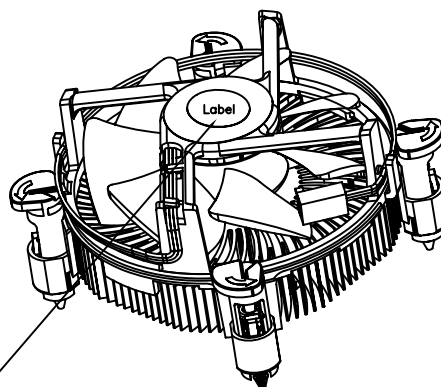
UNIT: $\frac{\text{mm}}{(\text{INCH})}$

*NOTE: PLEASE ATTENTION FAN LABEL ORIENTATION.

 <div>台達電子工業股份有限公司 DELTA ELECTRONICS, INC.</div>					DELTA MODEL: FHS-A9025S20		Drawn: Skyler Huang		
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DELTA ELECTRONICS, INC. AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SELL OF APPARATUSES OR DEVICES WITHOUT PERMISSION.					CUSTOMER NAME: -----				
					CUSTOMER P/N: -----				
<div>DIMENSIONAL TOLERANCES</div> <div><div><div>()</div><div><30 :±0.25</div><div>>30~100 :±0.35</div><div>>100~300 :±0.5</div><div>ABOVE 300:±0.6</div></div><div><div>()</div><div>X :±0.3</div><div>X.X :±0.2</div><div>X.XX:±0.1</div></div><div><div>()</div><div>UP~100 :±0.2</div><div>100~150 :±0.25</div><div>150~200:±0.3</div><div>200~250:±0.35</div></div><div><div>()</div><div>250~300:±0.4</div><div>300~350 :±0.45</div><div>350~400 :±0.5</div></div><div><div>()</div><div>UP~600 :±1.5</div><div>600~900 :±2.4</div><div>900~OVER :±3.1</div></div></div>					 <div>THIRD ANGLE PROJECTION</div>		Description: PRODUCTION SPEC. (PHYSICAL DIMENSION)		
SCALE --- UNIT mm USED ON COOLER					A4 SIZE		Part No. FHS-A9025S20-PD		REV. --
							SHEET 1 OF 2		ISSUE DATE:






DATECODE POSITION
TYPE: WHITE INK

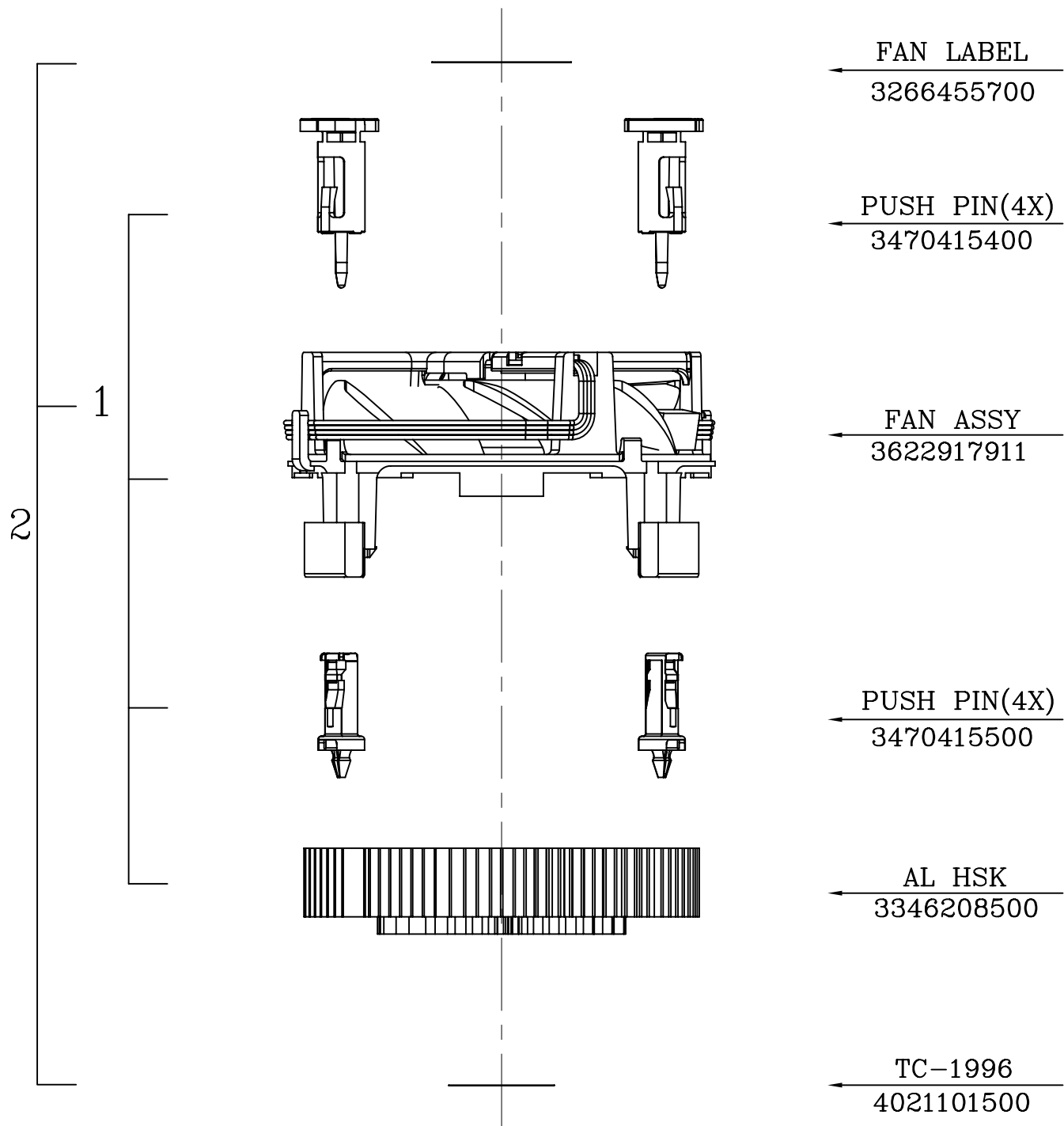


DATECODE POSITION

NOTE:

1. DATECODE ON FAN LABEL.
2. PLEASE REFER TO CP10S-00345 WHILE PRINTING DATECODE.

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	CUSTOMER P/N:		-----	
DIMENSIONAL TOLERANCES () () () () <30 :±0.25 DECIMALS UP~100 :±0.2 250~300 :±0.4 UP~600 :±1.5 >30~100 :±0.35 X :±0.3 100~150 :±0.25 300~350 :±0.45 600~900 :±2.4 >100~300 :±0.5 XX :±0.2 150~200 :±0.3 350~400 :±0.5 900~OVER :±3.1 ABOVE 300 :±0.6 XXX :±0.1 200~250 :±0.35	 THIRD ANGLE PROJECTION		Description: PRODUCTION SPEC. (PHYSICAL DIMENSION)	
 A4 SIZE	Part No. FHS-A9025S20-PD		REV. --	
	SHEET 2 OF 2		ISSUE DATE:	
SCALE	---	UNIT	mm	USED ON COOLER



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DELTA ELECTRONICS, INC.

DELTA MODEL:
FHS-A9025S20

Drawn:
Skyler Huang

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CUSTOMER NAME: -----

CUSTOMER P/N: -----

DIMENSIONAL TOLERANCES

HOLES : ± 0.05 ANGLES : $\pm 0.5^\circ$

()	()	()	()	()
<30 : ± 0.25	DECIMALS	UP~100 : ± 0.2	250~300 : ± 0.4	UP~600 : ± 1.5
>30~100 : ± 0.35	X : ± 0.3	100~150 : ± 0.25	300~350 : ± 0.45	600~900 : ± 2.4
>100~300 : ± 0.5	XX : ± 0.2	150~200 : ± 0.3	350~400 : ± 0.5	900~OVER : ± 3.1
ABOVE 300 : ± 0.6	XXX : ± 0.1	200~250 : ± 0.35		



Description: PRODUCTION SPEC.
(ASSEMBLY ORDER)

A4
SIZE

Part No. FHS-A9025S20-AS

REV.

--

SCALE --- UNIT mm USED ON COOLER

SHEET 1 OF 1 ISSUE DATE:

1

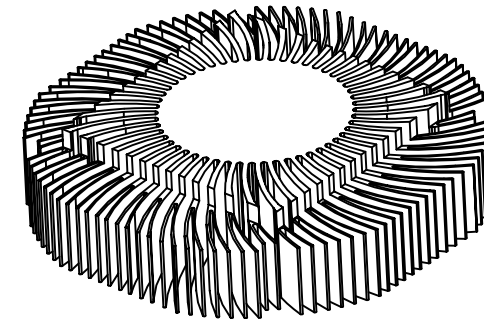
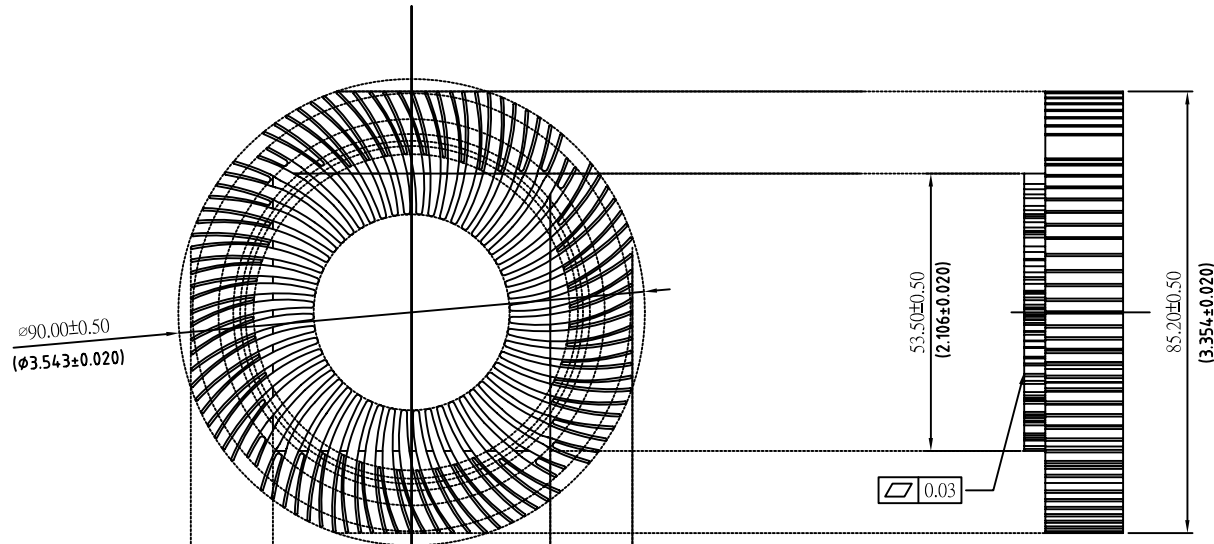
2

3

4

A

A



B

B

NOTE

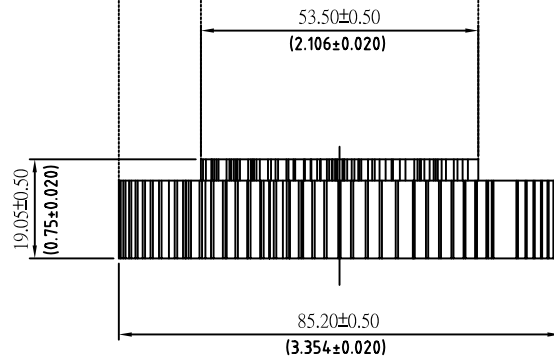
1. MATERIAL : AL A6063 T5.


2. UNLESS OTHERWISE SPECIFIED – ALL ROUNDS & FILLETS R0.1, AND BURRS & SHARP EDGES TO BE WITHIN 0.1.

3. APPEARANCE OF SURFACES TO BE UNIFORM, AND FREE OF DUST, METAL FLAKES, ADHESIVES, OIL, BLEMISHES AND SCRATCHES.

C

C



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THIRD ANGLE PROJECTION					PART NO.: 3346208500	
DIMENSIONAL TOLERANCES					REV. --	
HOLES : ± 0.05 ANGLES : $\pm 0.5^\circ$					SHEET 2 OF 2	
SCALE 1/1 UNIT mm USED ON COOLER						

1

2

3

4

1

2

3

4

A

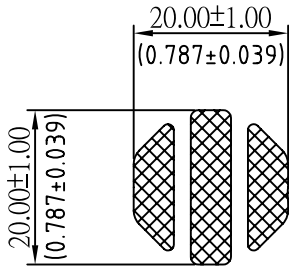
A

B



B

C

C



- NOTES:
- 1. THICKNESS: 0.18mm
 - 2. VENDOR P/N: DOW CORNING TC-1996
 - 3. COLOR: GRAY.
 - 4. THERMAL CONDUCTIVITY: 4.1 W/m-°C
 - 5. THERMAL CONTACT RESISTANCE: 0.06 °C-cm²/W @40psi
 - 6. GROSS WEIGHT: 140±30 mg
 - 7. VENDOR : DOW CORNING
 - 8. MUST MEET DELTA'S SPEC : 10000-0162

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DIMENSIONAL TOLERANCES () (✓) () <30 ±0.25 DECIMALS UP~100 ±0.2 250~300 ±0.4 UP~600 ±1.5 >30~100 ±0.35 X ±0.5 100~150 ±0.25 300~350 ±0.45 600~900 ±2.4 >100~300 ±0.5 XX ±0.2 150~200 ±0.3 350~400 ±0.5 900~OVER ±3.1 ABOVE 300 ±0.6 XXX ±0.1 200~250 ±0.35					PART NO.: 4021101500	
SCALE 1/1 UNIT mm USED ON COOLER					REV. --	
A4 SIZE					SHEET 1 OF 1	

1

2

3

4



Delta Electronics Corp.

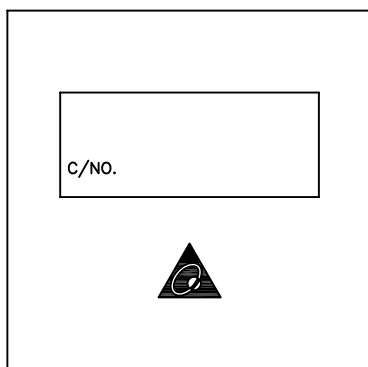
3. PACKING PLAN

Packing Specification

CARTON ILLUSTRATE	SIZE	530(L)*230(w)*335(H)(mm)	PACKING QUANTITY	4LAYERS/CARTON
	MATERIAL	3 LAYERS"AB" FLUTE	CARTON WEIGHT	0.62 kg (REF.)

CARTON OUTSIDE ILLUSTRATE

FRONT

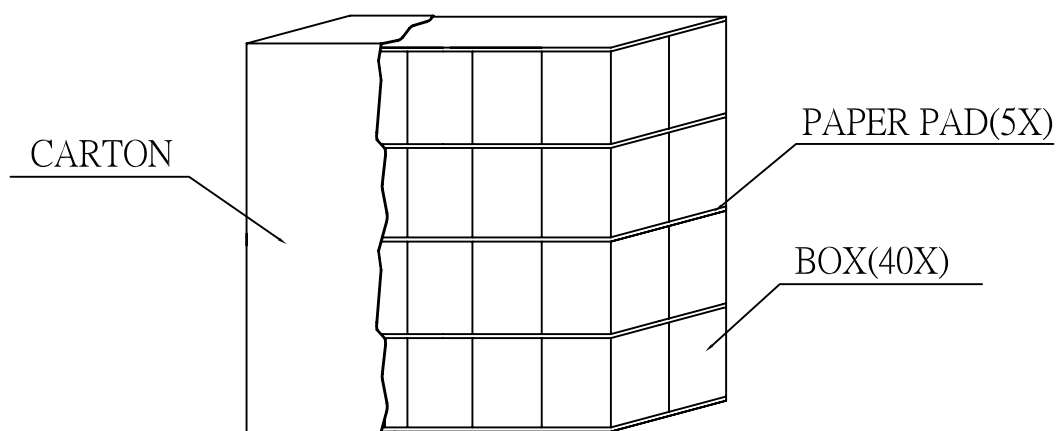


BACK

CUSTOMER PART NO.	
DELTA PART NO.	
QUANTITY	
P/O NO.	
DATE CODE	
GROSS WEIGHT	

(ONE LABEL PER CARTON)

PET TRAY PACKING ILLUSTRATE	SIZE	94(L)*94(w)*30(H)(mm)	PACKING QUANTITY	1PCS/PET TRAY
	MATERIAL	PET TRAY		
	MATERIAL WEIGHT	6g (REF.)		



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DELTA MODEL:
FHS-A9025S20

Drawn:
Skyler Huang

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CUSTOMER NAME: -----

CUSTOMER P/N: -----

DIMENSIONAL TOLERANCES		HOLES : ± 0.05	ANGLES : $\pm 0.5^\circ$
()	()	()	()
<30 : ± 0.25	DECIMALS	UP~100 : ± 0.2	250~300 : ± 0.4
>30~100 : ± 0.35	X : ± 0.3	100~150 : ± 0.25	300~350 : ± 0.45
>100~300 : ± 0.5	XX : ± 0.2	150~200 : ± 0.3	350~400 : ± 0.5
ABOVE 300 : ± 0.6	XXX : ± 0.1	200~250 : ± 0.35	900~OVER : ± 3.1



Description: PRODUCTION SPEC.
(PACKING ASSMEBLY)

A4
SIZE

Part No. FHS-A9025S20-PA

REV.

SHEET 1 OF 2 ISSUE DATE:

--

SCALE --- UNIT mm USED ON COOLER

PART NO.	FHS-A9025S20															
BASIC DATA	QUANTITY/CARTON		40PCS (4 LAYERS/CARTON, 10PCS/LAYER)													
	PRODUCTION NET WEIGHT		8.2kg (REF.)													
	PRODUCTION GROSS WEIGHT		10.9kg (REF.)													
20(ft)CONTAINER ILLUSTRATE	SIZE	5.889(L)*2.352(w)*2.386(H)m		PACKING QUANTITY												
	CONTAINER	STEEL		10PALLETS/CONTAINER												
CONTAINER FORM																
CONTAINER LOADING MATHOD																
<table border="1"> <tr> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> </tr> <tr> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> <td>PALLET</td> </tr> </table> <p>TOP VIEW</p>				PALLET	PALLET	PALLET	PALLET	PALLET	PALLET	PALLET	PALLET	PALLET	PALLET	<table border="1"> <tr> <td>PALLET</td> <td>PALLET</td> </tr> </table> <p>FRONT VIEW</p>	PALLET	PALLET
PALLET	PALLET	PALLET	PALLET	PALLET												
PALLET	PALLET	PALLET	PALLET	PALLET												
PALLET	PALLET															
PALLET LOADING ILLUSTRATE	SIZE	117(L)*107(w)*13(H)cm		PACKING QUANTITY												
	PALLET	WOOD		50 CARTONS/PALLET												
PALLET ILLUSTRATE																
PALLET LOADING MATHOD																



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DELTA MODEL:
FHS-A9025S20

Drawn:
Skyler Huang

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CUSTOMER NAME: -----

CUSTOMER P/N: -----

DIMENSIONAL TOLERANCES			HOLES : ±0.05	ANGLES : ±0.5°
()	()	()	()	()
<30 :±0.25	DECIMALS	UP~100 :±0.2	250~300 :±0.4	UP~600 :±1.5
>30~100 :±0.35	X :±0.3	100~150 :±0.25	300~350 :±0.45	600~900 :±2.4
>100~300 :±0.5	XX :±0.2	150~200 :±0.3	350~400 :±0.5	900~OVER :±3.1
ABOVE 300 :±0.6	XXX :±0.1	200~250 :±0.35		



Description: PRODUCTION SPEC.
(PACKING ASSMEBLY)

A4
SIZE

Part No. FHS-A9025S20-PA

REV.

SHEET 2 OF 2 ISSUE DATE:

--

SCALE --- UNIT mm USED ON COOLER



Delta Electronics Corp.

4. FAN

Fan Specification



Sample Issue Date MAR.27.2009

DATE : _____

DELTA ELECTRONICS, INC.
TAOYUAN PLANT
252, SHANG YING ROAD, KUEI SAN INDUSTRIAL ZONE
TAOYUAN SHIEN, TAIWAN, R.O.C.
TEL:886-(0)3-3591968
FAX:886-(0)3-3591991

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: TMPBU

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: AUC0912D-8L2V

Sample Rev: 01

Issue NO:

Sample Issue Date: MAR.23.2009

Quantity:

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION	
SENSOR TEMPERATURE	30°C	40°C
RATED VOLTAGE	12.0 VDC	
OPERATION VOLTAGE	10.8 - 13.2 VDC	
START UP CURRENT	MAX. 0.60A	MAX. 0.73A
INPUT CURRENT	0.07 (MAX. 0.14) A	0.14 (MAX. 0.46) A
INPUT POWER	0.84 (MAX. 1.68) W	1.68 (MAX. 5.52) W
SPEED (FAN ONLY)	2000±10% R.P.M.	3200±10% R.P.M.
SPEED (FAN ON SINK)	2000±10% R.P.M.	3150±10% R.P.M.
MAX. AIR FLOW (FAN ONLY) (AT ZERO STATIC PRESSURE)	0.537 (MIN. 0.483) M ³ /MIN. 18.96 (MIN. 17.06) CFM	0.914 (MIN. 0.823) M ³ /MIN. 32.29 (MIN. 29.06) CFM
MAX. AIR PRESSURE (FAN ONLY) (AT ZERO AIRFLOW)	1.53 (MIN. 1.24) mmH ₂ O 0.060 (MIN. 0.049) inchH ₂ O	3.61 (MIN. 2.92) mmH ₂ O 0.142 (MIN. 0.115) inchH ₂ O
ACOUSTICAL NOISE(ON SINK AVG.)	26.0 (MAX. 30.0) dB-A	36.0 (MAX. 40.0) dB-A
INSULATION TYPE	UL: CLASS A	

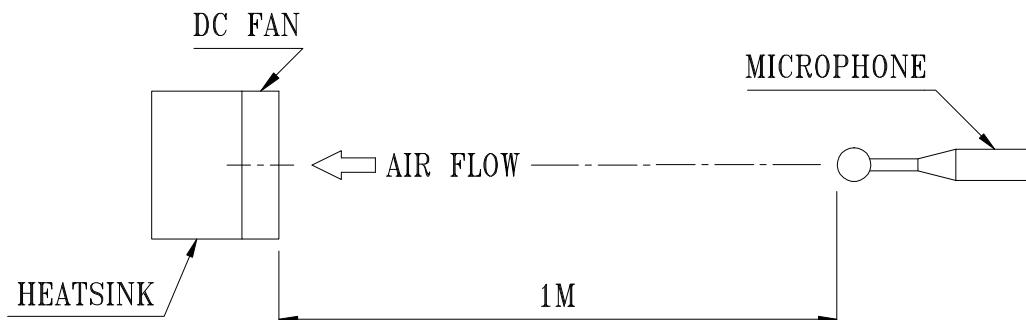
(continued)

PART NO:

DELTA MODEL: AUC0912D-8L2V

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	80,000 HOURS CONTINUOUS OPERATION AT 45 °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 10368 -F- AWG #22 BLACK WIRE:NEGATIVE(-) YELLOW WIRE:POSITIVE(+) GREEN WIRE:TACHOMETER OUTPUT (F00) 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.

PART NO:

DELTA MODEL: AUC0912D-8L2V

3. MECHANICAL:

3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING

3-2. FRAME ----- PLASTIC UL: 94V-0
(THE CONTACT OF HALOGEN LESS THAN 1500 PPM FOR USING EDX ...ETC)

3-3. IMPELLER ----- PLASTIC UL: 94V-0
(THE CONTACT OF HALOGEN LESS THAN 1500 PPM FOR USING EDX ...ETC)

3-4. BEARING SYSTEM ----- SUPERFLO BEARING

3-5. WEIGHT ----- 82 GRAMS

4. ENVIRONMENTAL:

4-1. OPERATING TEMPERATURE ----- -10 TO +70 DEGREE C

4-2. STORAGE TEMPERATURE ----- -35 TO +80 DEGREE C

4-3. OPERATING HUMIDITY --- 85% RELATIVE HUMIDITY WITH 55 DEGREE C

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.

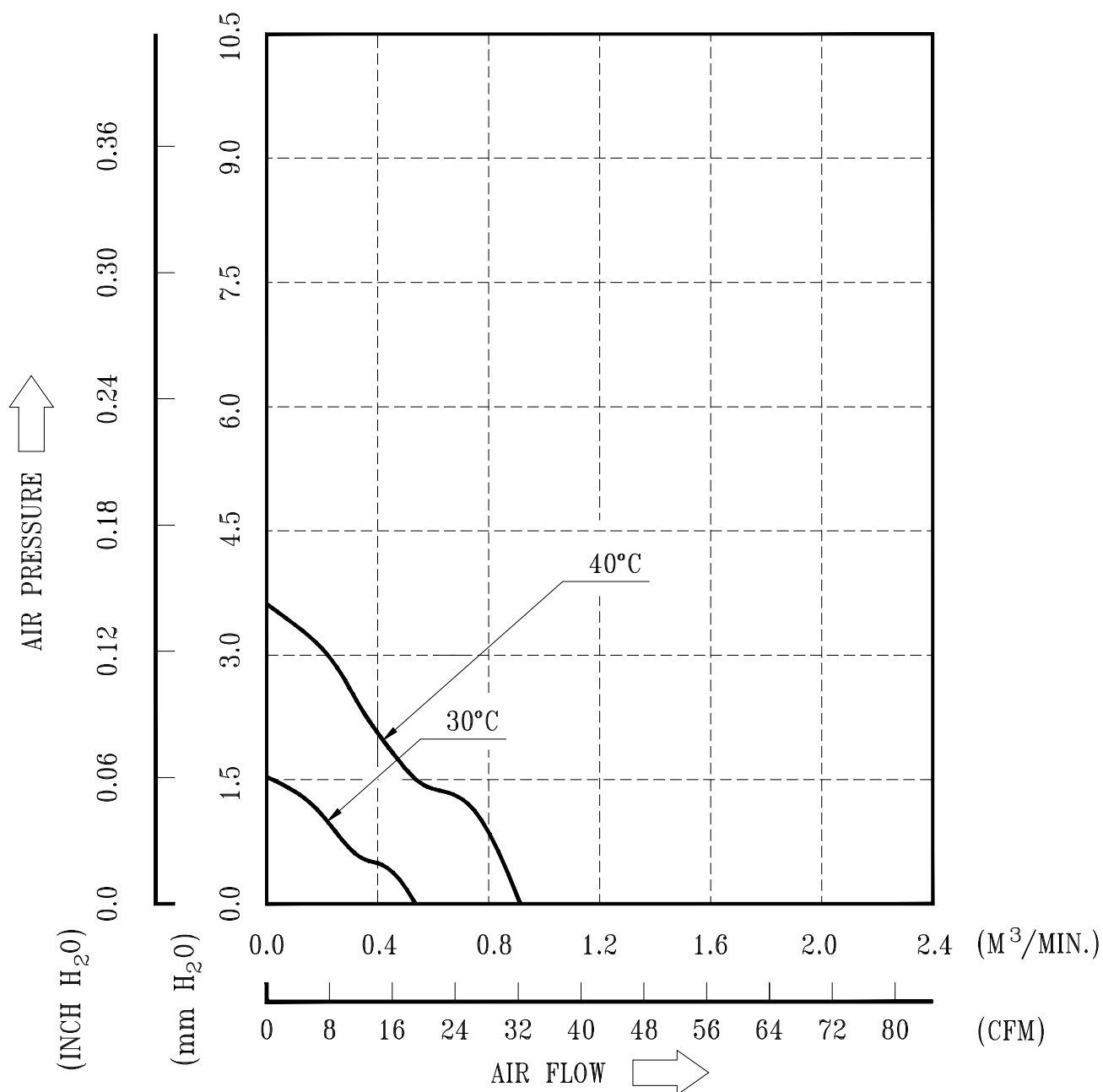
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: AUC0912D-8L2V

8. P & Q CURVE:
PWM 100% DUTY CYCLE



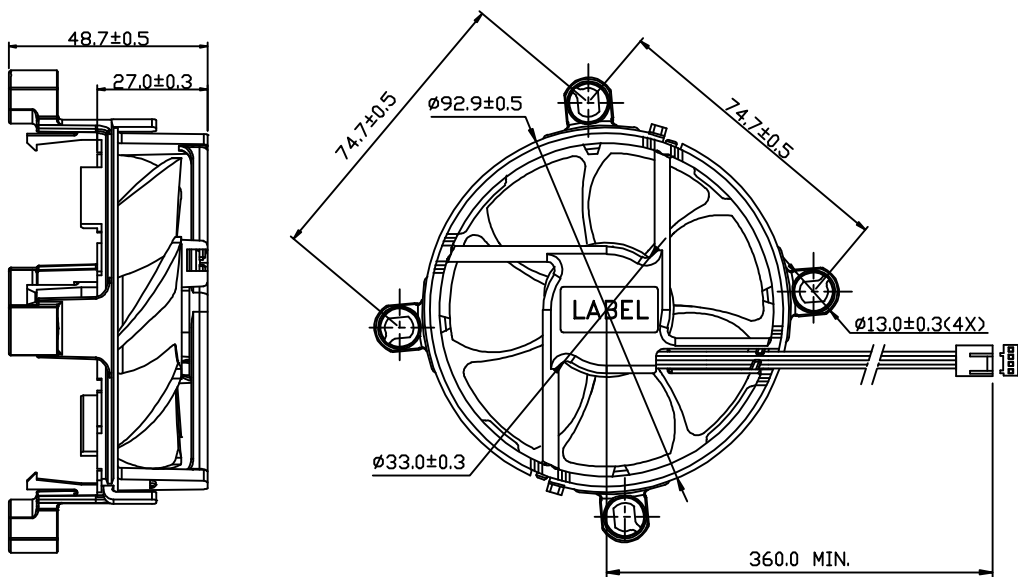
* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE
TEMPERATURE ----- ROOM TEMPERATURE
HUMIDITY ----- 65%RH

PART NO:

DELTA MODEL: AUC0912D-8L2V

9. DIMENSION DRAWING:

LABEL:



UNIT: MM

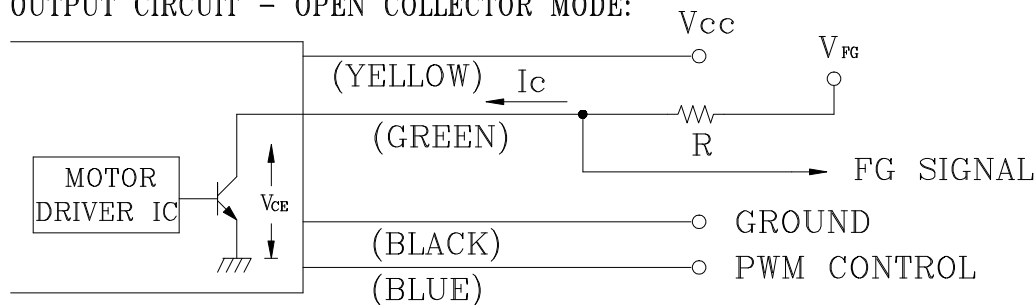
- NOTE : 1. LEAD WIRE: UL 10368 -F- AWG #22
PIN 1 : BLACK WIRE: NEGATIVE(-)
PIN 2 : YELLOW WIRE: POSITIVE(+)
PIN 3 : GREEN WIRE: TACHOMETER OUTPUT (F00)
PIN 4 : BLUE WIRE: SPEED CONTROL (PWM)
2. HOUSING : MOLEX 47054-1000 OR EQUIVALENT
3. TERMINAL : MOLEX 2759T 08-50-0113 OR EQUIVALENT
4. THIS PRODUCT IS RoHS COMPLIANT
5. DELTA'S RESTRICTIONS ON HALOGEN APPLY ONLY TO BROMINATED AND CHLORINATED COMPOUNDS. NO OTHER HALOGEN IS RESTRICTED.
SUBSTANCES RESTRICTIONS FOR HALOGEN-FREE (INCLUDE FAN PLASTIC PARTS, PWB BOARD, IC, ELECTRICAL MATERIALS & CABLE ASSY),
a. BROMINE(Br) ≤ 900 PPM.
b. CHLORINE(Cl) ≤ 900 PPM.
c. (Br) + (Cl) ≤ 1500 PPM.

PART NO:

DELTA MODEL: AUC0912D-8L2V

10. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



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

2. SPECIFICATION:

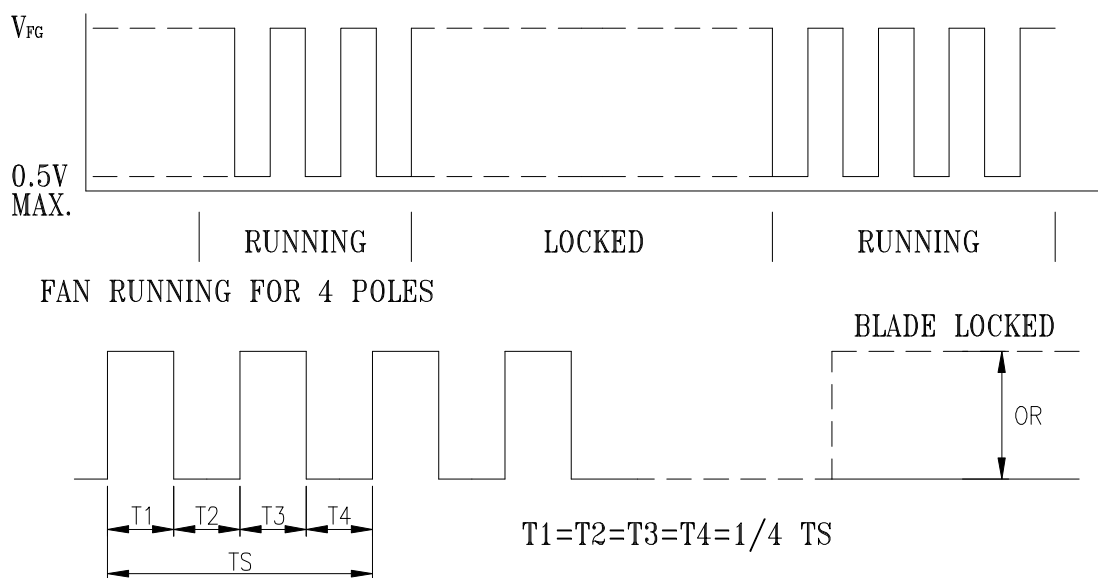
$$V_{CE(sat)} = 0.5V \text{ MAX}$$

$$V_{FG} = 5.0V \text{ TYP. (} V_{CC} \text{ MAX.)}$$

$$I_C = 10mA \text{ MAX.}$$

$$R \geq V_{FG} / I_C$$

3. FREQUENCY GENERATOR WAVEFORM:



N=R.P.M

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

*VOLTAGE LEVEL AFTER BLADE LOCKED

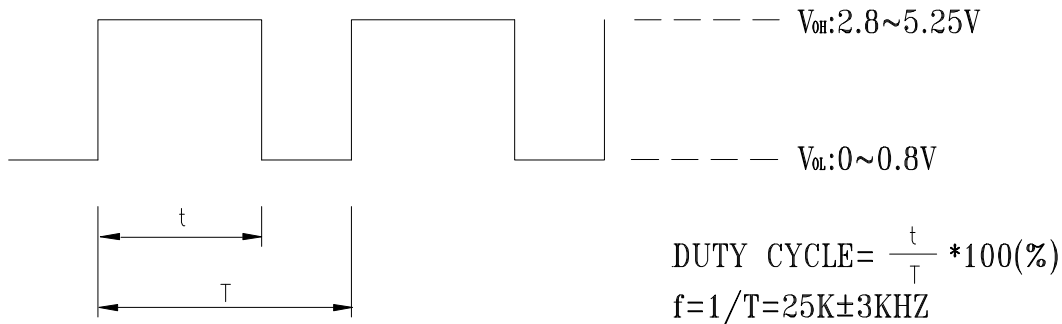
*4 POLES

PART NO:

DELTA MODEL: AUC0912D-8L2V

11. PWM CONTROL FUNCTION:(FAN ON SINK)

11-1 SIGNAL DESCRIPTION:



- AT 25K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

11-2 SPEED CONTROL

TEST CONDITION : INPUT VCC=12V PWM FREQUENCY=25KHZ

11-2-1 TEMPERATURE CONTROL

BELOW 30 DEGREE C,THE FAN SPEED IS 2000RPM.

ABOVE 40 DEGREE C,THE FAN SPEED IS 3150RPM.

BETWEEN 30~40 DEGREE C,THE FAN SPEED IS 2000RPM~3150RPM.

11-2-2 PWM CONTROL

BELOW 30 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1000RPM TO 2000RPM.

ABOVE 40 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1000RPM TO 3150RPM.

TEMPERATURE (°C)	DUTY CYCLE (%)	SPEED (R.P.M.)
30	0~20	1000±200
30	100	2000±10%
40	0~20	1000±200
40	100	3150±10%

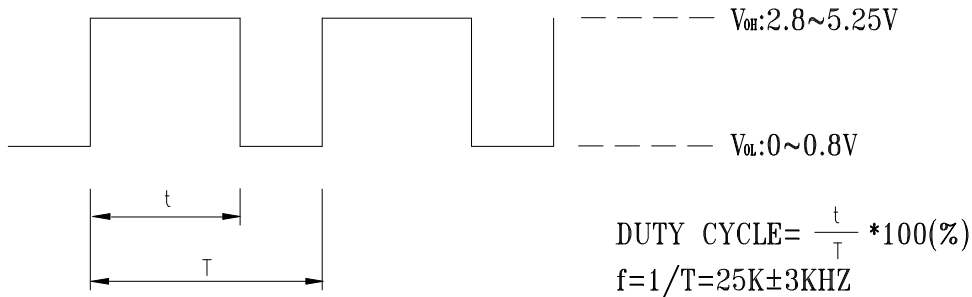
- IF THE CONTROL SIGNAL IS DISCONNECT THE FAN WILL GO TO TEMPERATURE CONTROL SPEED.

PART NO:

DELTA MODEL: AUC0912D-8L2V

12. PWM CONTROL FUNCTION:(FAN ONLY)

12-1 SIGNAL DESCRIPTION:



- AT 25K HZ 30% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

12-2 SPEED CONTROL

TEST CONDITION : INPUT VCC=12V PWM FREQUENCY=25KHZ

12-2-1 TEMPERATURE CONTROL

BELOW 30 DEGREE C,THE FAN SPEED IS 2000RPM.

ABOVE 40 DEGREE C,THE FAN SPEED IS 3200RPM.

BETWEEN 30~40 DEGREE C,THE FAN SPEED IS 2000RPM~3200RPM.

12-2-2 PWM CONTROL

BELOW 30 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1050RPM TO 2000RPM.

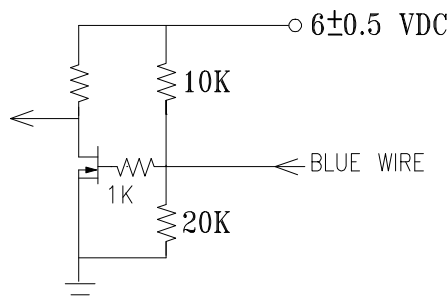
ABOVE 40 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1050RPM TO 3200RPM.

TEMPERATURE (°C)	DUTY CYCLE (%)	SPEED (R.P.M.)
30	0~20	1050±200
30	100	2050±10%
40	0~20	1050±200
40	100	3200±10%

- IF THE CONTROL SIGNAL IS DISCONNECT THE FAN WILL GO TO TEMPERATURE CONTROL SPEED.

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:





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 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 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 4.7μF” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**