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Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## 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: 180 g (ref.) 3  
 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-5630 or Equivalent 7

### 3. Fan

*(90x90x25 mm with Thermistor & PWM Control)*

Rated Voltage: 12 V  
 Life Expectance Time:  
 Superflo bearing 80000 hrs at 45°C.

### Connector:

- a. Lead wire: UL 10368 AWG #26 1
  - 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







## APPROVAL SHEET

Customer Name :

Model Name : \_\_\_\_\_ COOLER

Model Name : \_\_\_\_\_ FHS-A9025S20

Customer Part No :

Spec Issue Date : \_\_\_\_\_ 2015 / 12 / 14

Spec Revision : \_\_\_\_\_ 07

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

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

Approval	Check	Designer
<i>Charles. Chen</i>	<i>Charles. Chen</i>	Skyler.Huang



# Delta Electronics Corp.

REV.	Description	Drawn	Checked	Approved	Issue Date
00	ISSUE SPEC	Skyler-Huang 12/29'09	Charles Chen 12/29'09	Alex-Hsia 12/29'09	
01	1. The wire is changed from UL 10368 AWG#22 to UL 10368 AWG#26.	HIKARU.CHEN 06/15'11	Charles Chen 06/15'11	Alex-Hsia 06/15'11	
02	1. Add RoHS Certification.	HIKARU 09/21'11	Charles Chen 09/21'11	Alex-Hsia 09/22'11	
03	1. The HSK is changed from 3346208500 to 3346777600.	HIKARU 11/21'11	Charles Chen 11/21'11	Alex-Hsia 11/22'11	
04	1. Modify the Package spec 2. Change the Fan P/N	Skyler-Huang 08/21'12	Charles Chen 08/21'12	Alex-Hsia 08/21'12	
05	1. Change the Fan P/N 2. Correct thermal resistance 3. Updated the Rohs 4. Modify the cable length to 250mm	Skyler-Huang 05/20'13	Charles Chen 05/20'13	Charles Chen 05/20'13	
06	1. Modify the package spec 2. Modify the fan label form	Skyler-Huang 06/10'13	Charles Chen 06/10'13	Charles Chen 06/10'13	
07	1. Change the grease from TC-1996 to TC-5630 2. Update RoHS	Skyler-Huang 12/14'15	Charles Chen 12/14'15	Charles Chen 12/14'15	

Description:

SAMPLE REVISION CODE LIST

Part No.

REV

DELTA MODEL :

FHS-A9025S20

TOTAL 76PAGE

07



# Delta Electronics Corp.

## CONTENTS

Item	Element Description	Page	Note
1	Specification	5	
2	Print	6	
3	Packing Plan	12	
4	Fan Specification	15	
5	RoHS Certification	26	





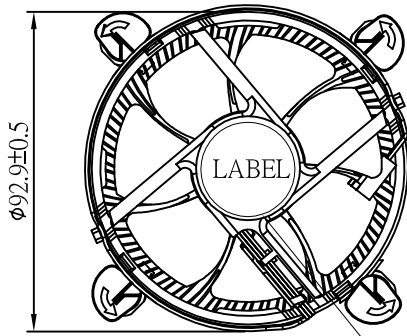
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## 2. PRINT

Assembly Drawing

Parts Drawing

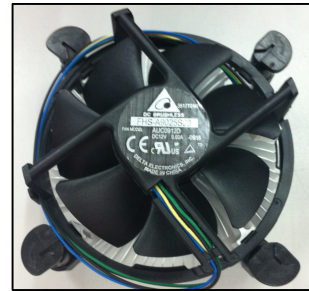
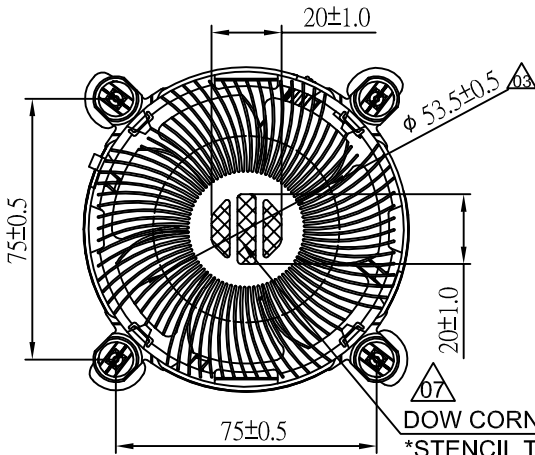
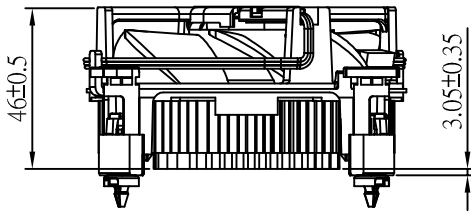
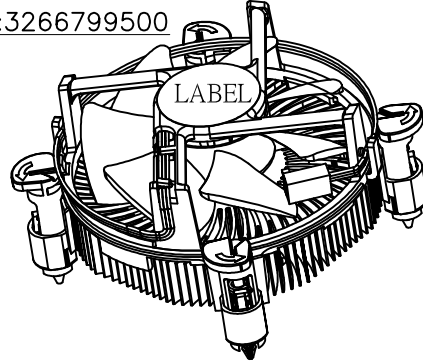
06 07



05

MODIFY THE CABLE LENGTH FROM 360MM TO 250 MM

FAN LABEL P/N:3266799500



DOW CORNING TC-5630 P/N:4021107300  
 \*STENCIL THICKNESS=0.20(TYP.) 0.22(MAX.)  
 TIM WEIGHT ON HSK MUST BE 112MG+/-25MG

\*NOTE : PLEASE ATTENTION FAN LABEL ORIENTATION.

UNIT: mm



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

THIRD ANGLE PROJECTION  
 Description: PRODUCTION SPEC. (PHYSICAL DIMENSION)

A3 SIZE  
 Part No. FHS-A9025S20-PD  
 SHEET 1 OF 2  
 ISSUE DATE:  
 REV. 07

SCALE --- UNIT --- USED ON COOLER

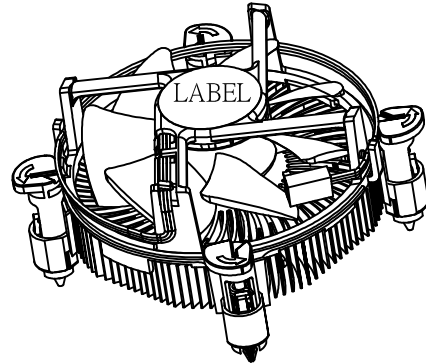


07

DATECODE POSITION





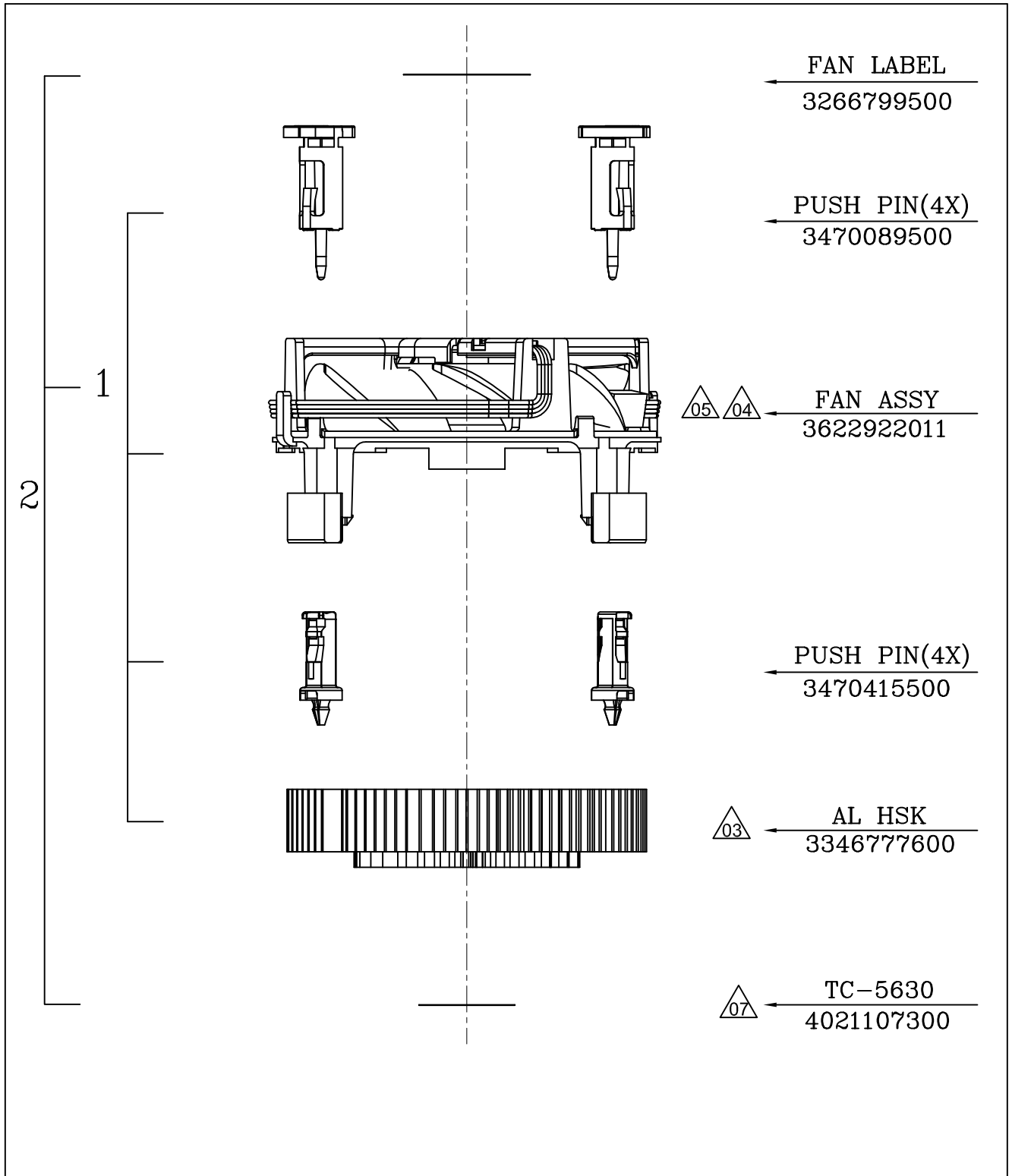
DATECODE POSITION  
TYPE : WHITE INK



NOTE :

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

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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 X.X ±0.2 150-200 ±0.3 350-400 ±0.5 900-OVER ±3.1 ABOVE 300 ±0.6 X.XX ±0.1 200-250 ±0.35	 Description: PRODUCTION SPEC. (PHYSICAL DIMENSION)	Part No. FHS-A9025S20-PD
SCALE --- UNIT --- USED ON COOLER	<b>A3</b> SIZE	SHEET 2 OF 2 ISSUE DATE:
		REV. 07



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	FHS-A9025S20	Skyler Huang																																					
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	CUSTOMER P/N: -----																																						
DIMENSIONAL TOLERANCES ( ) ( ) ( ) HOLES : ±0.05 ANGLES : ±0.5 <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;"><math>&lt;30</math></td> <td style="width: 25%;"><math>\pm 0.25</math></td> <td style="width: 25%;"><b>DECIMALS</b></td> <td style="width: 25%;"><math>UP-100</math></td> <td style="width: 25%;"><math>\pm 0.2</math></td> <td style="width: 25%;"><math>250-300</math></td> <td style="width: 25%;"><math>\pm 0.4</math></td> <td style="width: 25%;"><math>UP-600</math></td> <td style="width: 25%;"><math>\pm 1.5</math></td> </tr> <tr> <td><math>&gt;30-100</math></td> <td><math>\pm 0.35</math></td> <td><b>X</b></td> <td><math>\pm 0.3</math></td> <td><math>100-150</math></td> <td><math>\pm 0.25</math></td> <td><math>300-350</math></td> <td><math>\pm 0.45</math></td> <td><math>600-900</math></td> <td><math>\pm 2.4</math></td> </tr> <tr> <td><math>&gt;100-300</math></td> <td><math>\pm 0.5</math></td> <td><b>XX</b></td> <td><math>\pm 0.2</math></td> <td><math>150-200</math></td> <td><math>\pm 0.3</math></td> <td><math>350-400</math></td> <td><math>\pm 0.5</math></td> <td><math>900-OVER</math></td> <td><math>\pm 3.1</math></td> </tr> <tr> <td><b>ABOVE 300</b></td> <td><math>\pm 0.6</math></td> <td><b>XXX</b></td> <td><math>\pm 0.1</math></td> <td><math>200-250</math></td> <td><math>\pm 0.35</math></td> <td></td> <td></td> <td></td> </tr> </table>	$<30$	$\pm 0.25$	<b>DECIMALS</b>	$UP-100$	$\pm 0.2$	$250-300$	$\pm 0.4$	$UP-600$	$\pm 1.5$	$>30-100$	$\pm 0.35$	<b>X</b>	$\pm 0.3$	$100-150$	$\pm 0.25$	$300-350$	$\pm 0.45$	$600-900$	$\pm 2.4$	$>100-300$	$\pm 0.5$	<b>XX</b>	$\pm 0.2$	$150-200$	$\pm 0.3$	$350-400$	$\pm 0.5$	$900-OVER$	$\pm 3.1$	<b>ABOVE 300</b>	$\pm 0.6$	<b>XXX</b>	$\pm 0.1$	$200-250$	$\pm 0.35$				Description: <b>PRODUCTION SPEC.</b> (ASSEMBLY ORDER)
$<30$	$\pm 0.25$	<b>DECIMALS</b>	$UP-100$	$\pm 0.2$	$250-300$	$\pm 0.4$	$UP-600$	$\pm 1.5$																															
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<b>A4</b>	Part No.	REV.																																					
SIZE	<b>FHS-A9025S20-AS</b>	<b>07</b>																																					
SCALE: --- UNIT: --- USED ON: COOLER	SHEET -- OF --	ISSUE DATE:																																					









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### **3. PACKING PLAN**

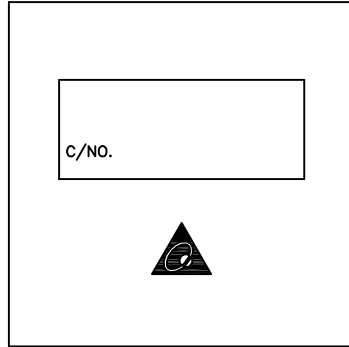
Packing Specification



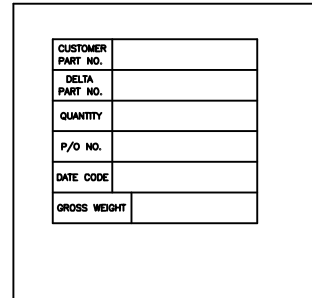
CARTON ILLUSTRATE	SIZE	524(L)*225(w)*475(H)(mm) 	PACKING QUANTITY	6LAYERS/CARTON 
	MATERIAL	3 LAYERS"AB" FLUTE	CARTON WEIGHT	0.62 kg (REF.)

CARTON OUTSIDE ILLUSTRATE

FRONT

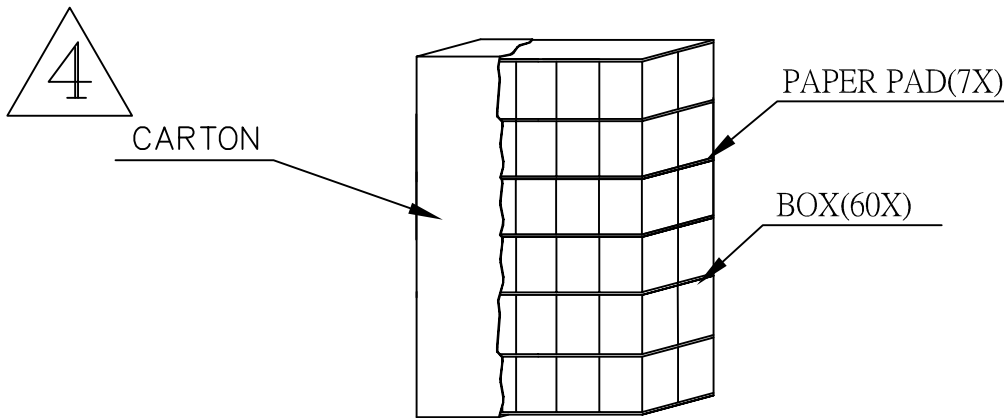


BACK



(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 P/N: -----

DIMENSIONAL TOLERANCES		HOLES : ±0.05		ANGLES : ±0.5°	
( )	( )	( )	( )	( )	( )
<30	±0.25	DECIMALS	UP~100 ±0.2	250~300 ±0.4	UP~800 ±1.5
>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)


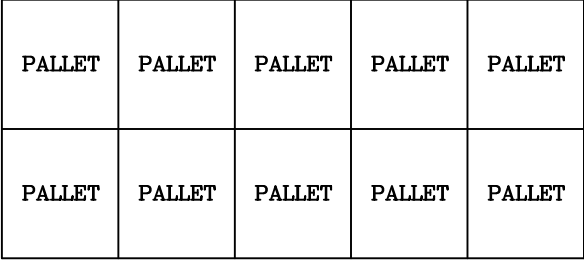
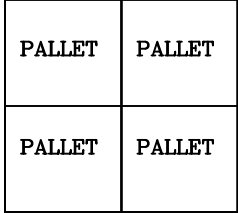
A4  
SIZE

Part No.  
FHS-A9025S20-PA

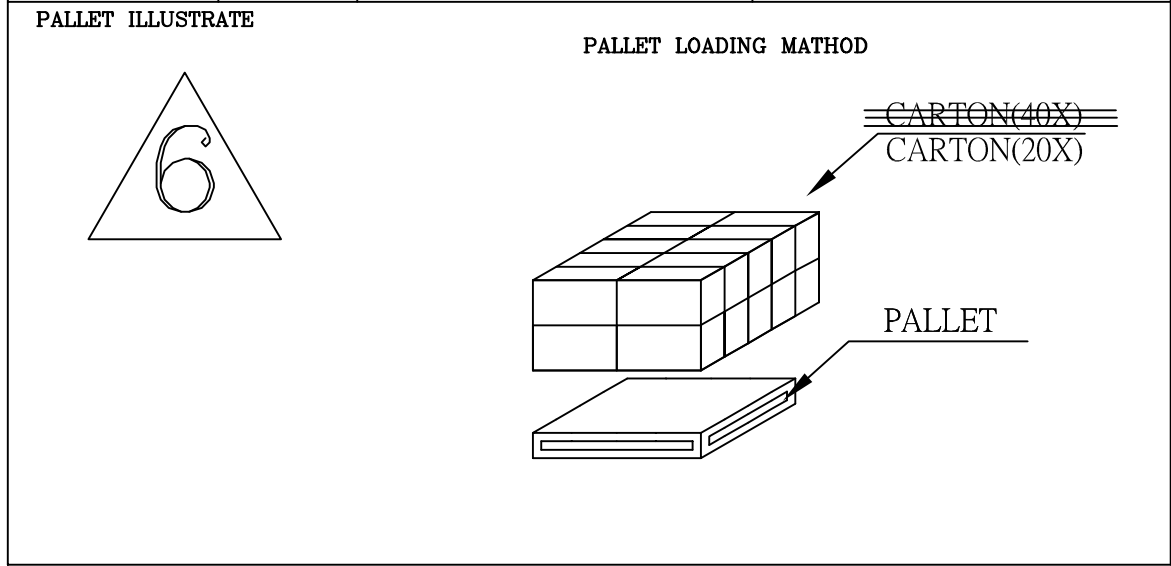
REV.  
06



SCALE --- UNIT mm USED ON COOLER

SHEET 1 OF 2 ISSUE DATE:

PART NO.	FHS-A9025S20				
BASIC DATA	QUANTITY/CARTON	60PCS (6 LAYERS/CARTON, 10PCS/LAYER) $\triangle 4$			
	PRODUCTION NET WEIGHT	10.8kg (REF.) $\triangle 4$			
	PRODUCTION GROSS WEIGHT	13.9kg (REF.) $\triangle 4$	$\triangle 6$		
20(ft)CONTAINER ILLUSTRATE	SIZE	5.889(L)*2.352(w)*2.386(H)m		PACKING QUANTITY	20PALLET/CONTAINER
	CONTAINER	STEEL			
CONTAINER FORM					
CONTAINER LOADING MATHOD					
					
TOP VIEW				FRONT VIEW	

PALLET LOADING ILLUSTRATE	SIZE	117(L)*107(w)*13(H)cm	PACKING QUANTITY	20 CARTONS/PALLET
	PALLET	WOOD		



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	CUSTOMER P/N:	-----				
DIMENSIONAL TOLERANCES ( ) ( ) ( ) HOLES : ±0.05 ANGLES : ±0.5° ( ) ( ) ( ) ( ) <30 ±0.25 DECIMALS UP~100 ±0.2 250~300 ±0.4 UP~800 ±1.5 >30~100 ±0.35 X ±0.3 100~150 ±0.25 300~350 ±0.45 800~900 ±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)	Part No.	FHS-A9025S20-PA		REV.	
SCALE --- UNIT mm USED ON COOLER	A4 SIZE	SHEET 2 OF 2	ISSUE DATE:		06	



**Delta Electronics Corp.**

## 4. FAN

Fan Specification



## SPECIFICATION FOR APPROVAL

Customer T M P B U

Description DC FAN

Part No. \_\_\_\_\_ REV. \_\_\_\_\_

Delta Model No. AUC0912D-DB55 REV. 00

Sample Issue No. \_\_\_\_\_

Sample Issue Date FEB.21.2013

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

APPROVED BY: \_\_\_\_\_

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-DB55 Delta Safety Model NO.: AUC0912D-8L2V  
 -----  
 Sample Rev: 00 Issue NO:  
 -----  
 Sample Issue Date: FEB.21.2013 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. 0.75A
INPUT CURRENT	0.07 (MAX. 0.14) A (CURRENT ON SAFETY LABEL 0.60A)	0.16 (MAX. 0.60) A (CURRENT ON SAFETY LABEL 0.60A)
INPUT POWER	0.84 (MAX. 1.68) W	1.68 (MAX. 7.20) W
SPEED (FAN ONLY)	2050±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 <sup>3</sup> /MIN. 18.96 (MIN. 17.06) CFM	0.914 (MIN. 0.823) M <sup>3</sup> /MIN. 32.29 (MIN. 29.06) CFM
MAX. AIR PRESSURE (FAN ONLY) (AT ZERO AIRFLOW)	1.53 (MIN. 1.24) mmH <sub>2</sub> O 0.060 (MIN. 0.049) inchH <sub>2</sub> O	3.61 (MIN. 2.92 ) mmH <sub>2</sub> O 0.142 (MIN. 0.115) inchH <sub>2</sub> 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)

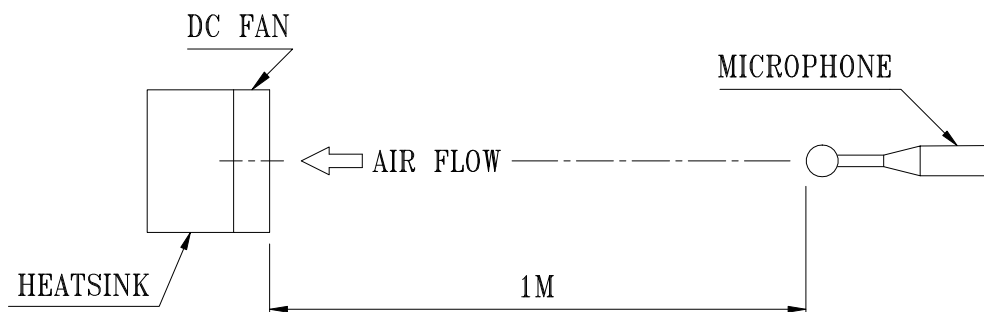


PART NO:

DELTA MODEL: AUC0912D-DB55

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 (AT LABEL VOLTAGE)	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 #26 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. 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:  
-----

DELTA MODEL:           AUC0912D-DB55  
-----

3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. FRAME ----- PLASTIC UL: 94V-0  
(THE HALOGEN SUBSTANCE CONTENT IS LESS THAN 1500 PPM FOR USING EDX ...ETC)
- 3-3. IMPELLER ----- PLASTIC UL: 94V-0  
(THE HALOGEN SUBSTANCE CONTENT IS 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.

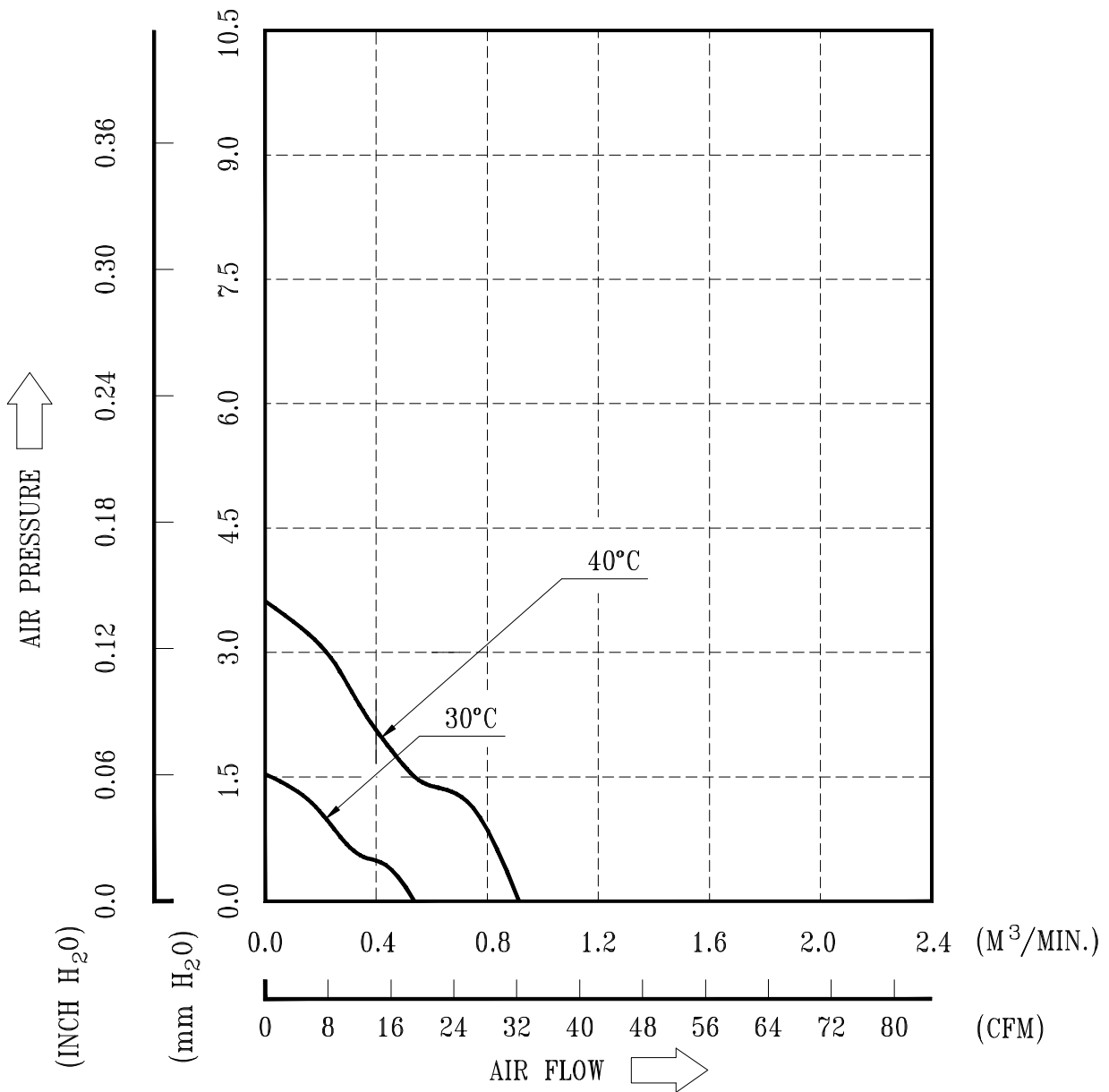
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: AUC0912D-DB55

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

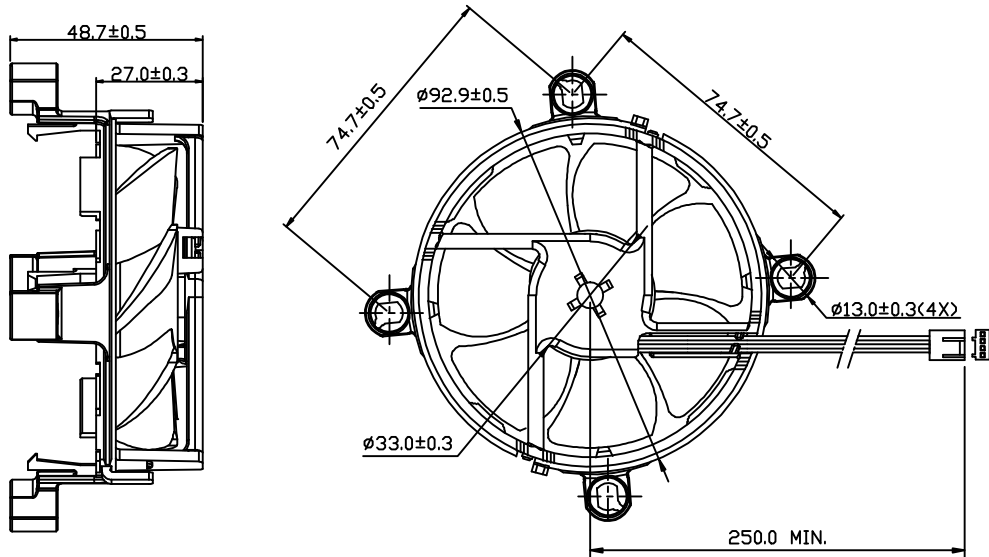


\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

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PART NO:  
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DELTA MODEL:                   AUC0912D-DB55  
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9. DIMENSION DRAWING:



UNIT: MM

- NOTE :
1. LEAD WIRE: UL 10368 -F- AWG #26  
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.



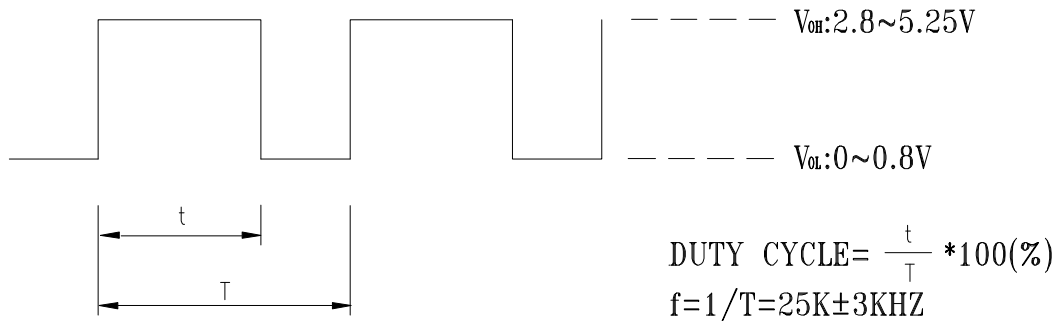


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PART NO:  
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DELTA MODEL:           AUC0912D-DB55  
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### 11. PWM CONTROL FUNCTION:(FAN ON SINK)

#### 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%

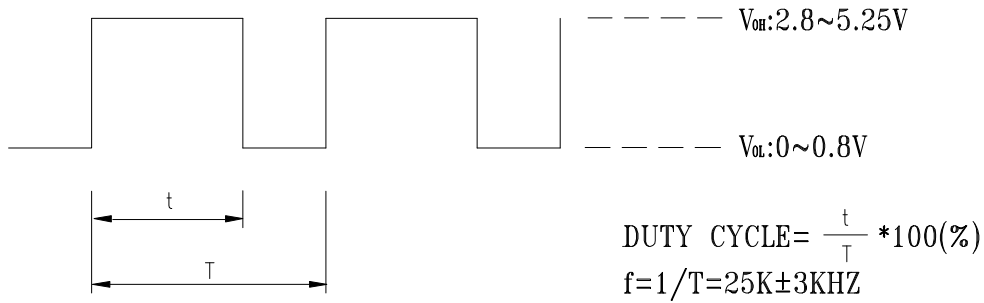
- IF THE CONTROL SIGNAL IS DISCONNECT THE FAN WILL GO TO TEMPERATURE CONTROL SPEED.

PART NO:

DELTA MODEL: AUC0912D-DB55

## 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 2050RPM.

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

BETWEEN 30~40 DEGREE C,THE FAN SPEED IS 2050RPM~3200RPM.

#### 12-2-2 PWM CONTROL

BELOW 30 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1000RPM TO 2050RPM.

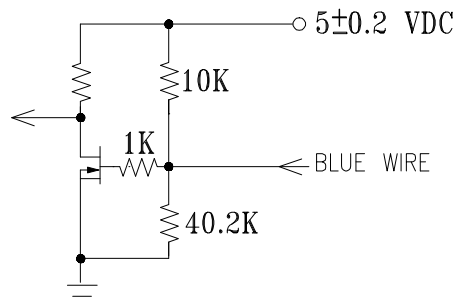
ABOVE 40 DEGREE C

BETWEEN 0%~20% TO 100% DUTY CYCLE,THE FAN SPEED IS 1000RPM TO 3200RPM.

TEMPERATURE (°C)	DUTY CYCLE (%)	SPEED (R.P.M.)
30	0~20	1000±200
30	100	2050±10%
40	0~20	1000±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:



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