



SPECIFICATION FOR APPROVAL

Customer. _____

Description. DC FAN

Project Name. _____

Part No. _____ REV. _____

Delta Model No. NS55B00-15J06 REV. 01

Sample Issue No. _____

Sample Issue Date. NOV.27 2015

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

APPROVED BY:

DATE :

STATEMENT OF DEVIATION

NONE

DESCRIPTION :

SPECIFICATION FOR APPROVAL

Customer:

Description: DC FAN

Customer P/N: REV:

Delta Model NO.: NS55B00-15J06 Delta safety model NO.: **NS55B00**

Sample Rev: 01 Issue NO:

Sample Issue Date: NOV.27 2015 Quantity:

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS AXIAL FLOW FAN.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	5.0 VDC
VOLTAGE OR D-PWM CONTROL	D-PWM
OPERATION VOLTAGE	4.5 - 5.5 VDC
MIN. STARTED DUTY CYCLE (ENVIRONMENT TEMPERATURE 25°C)	28% (23KHz)(At 5V)
LOCK CURRENT (MAXIMUM)	0.50A (AT 5V)
INPUT CURRENT (AVG.)	0.28 (MAX. 0.42) A SAFETY CURRENT ON LABEL: 0.60A
INPUT POWER (AVG.)	1.40 (2.10 MAX.) W
SPEED	5100±7% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.147 (MIN. 0.137) M ³ /MIN 5.189 (MIN. 4.826) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	12.32 (MIN. 10.66)mmH ₂ O 120.74 (MIN. 104.47)Pa
ACOUSTICAL NOISE (AVG.)	37.0 (MAX. 41.0) dB-A
INSULATION TYPE	UL: CLASS A

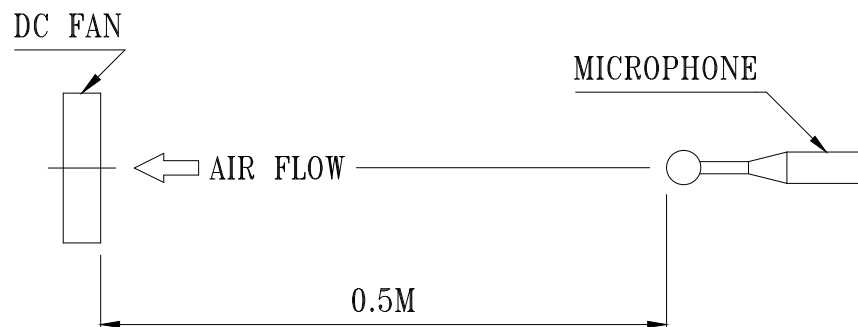
(continued)

PART NO:

DELTA MODEL: NS55B00-15J06

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)
LIFE EXPECTANCE (L10)(MTTF) (AT LABEL VOTAGE)	20,000 HOURS CONTINUOUS OPERATION AT 60 °C WITH 15 ~ 65 %RH.
ROTATION	COUNTERCLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN ROTOR LOCKED AND FIXED
MOTOR DRIVER IC	R02

- 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 HALF METER FROM THE FAN INTAKE.

PART NO:

DELTA MODEL: NS55B00-15J06

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. COVER _____ SECC
- 3-5. PILLOW _____ SECC
- 3-6. BEARING SYSTEM _____ SUPERFLOW BEARING
- 3-7. WEIGHT _____ 25.0 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE _____ 0 TO +70 DEGREE C
- 4-2. STORAGE TEMPERATURE _____ -10 TO +75 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.

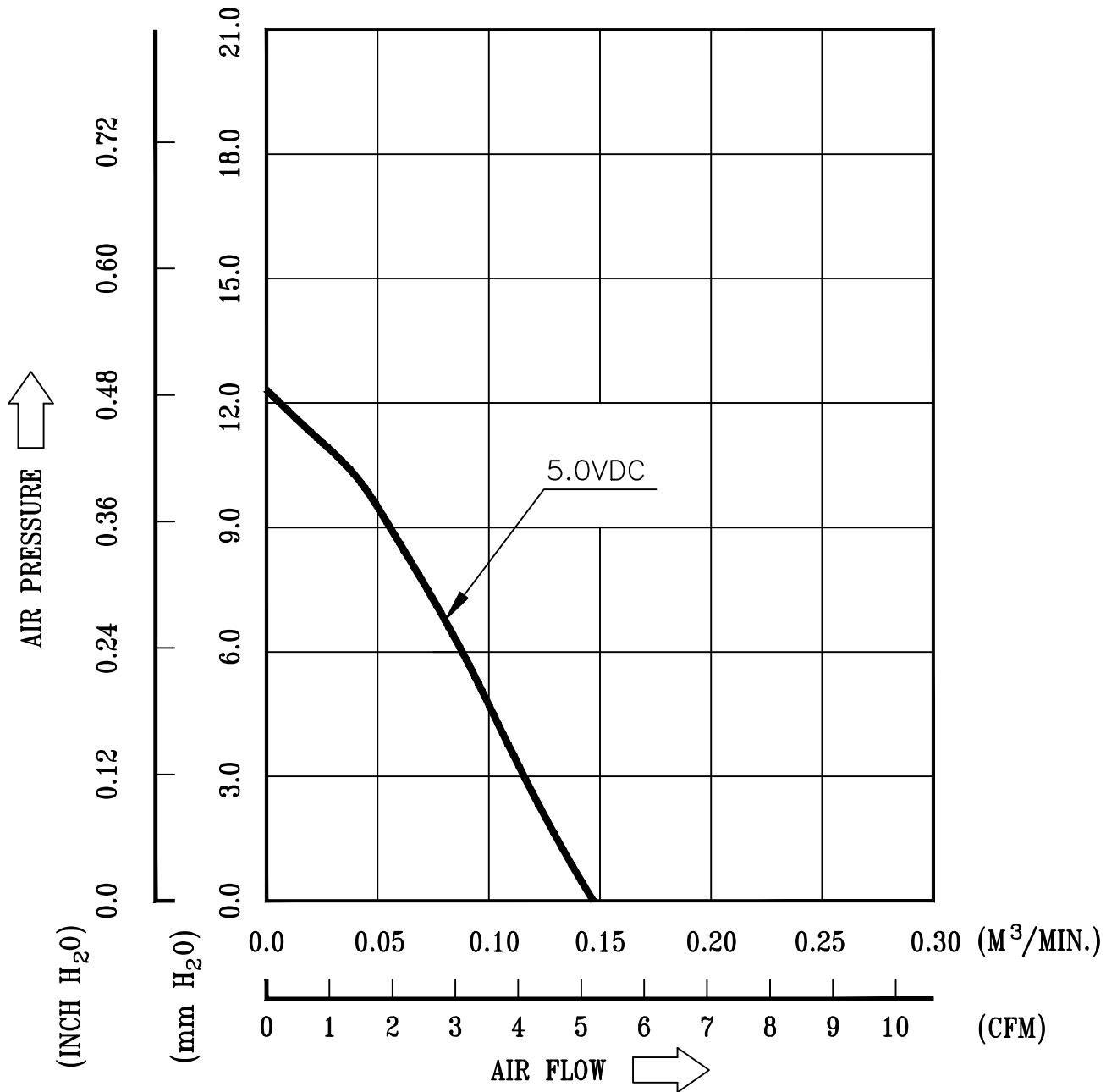
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: NS55B00-15J06

8. P & Q CURVE:



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

PART NO:

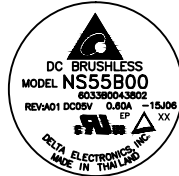
DELTA MODEL: NS55B00-15J06

9. DIMENSION DRAWING:

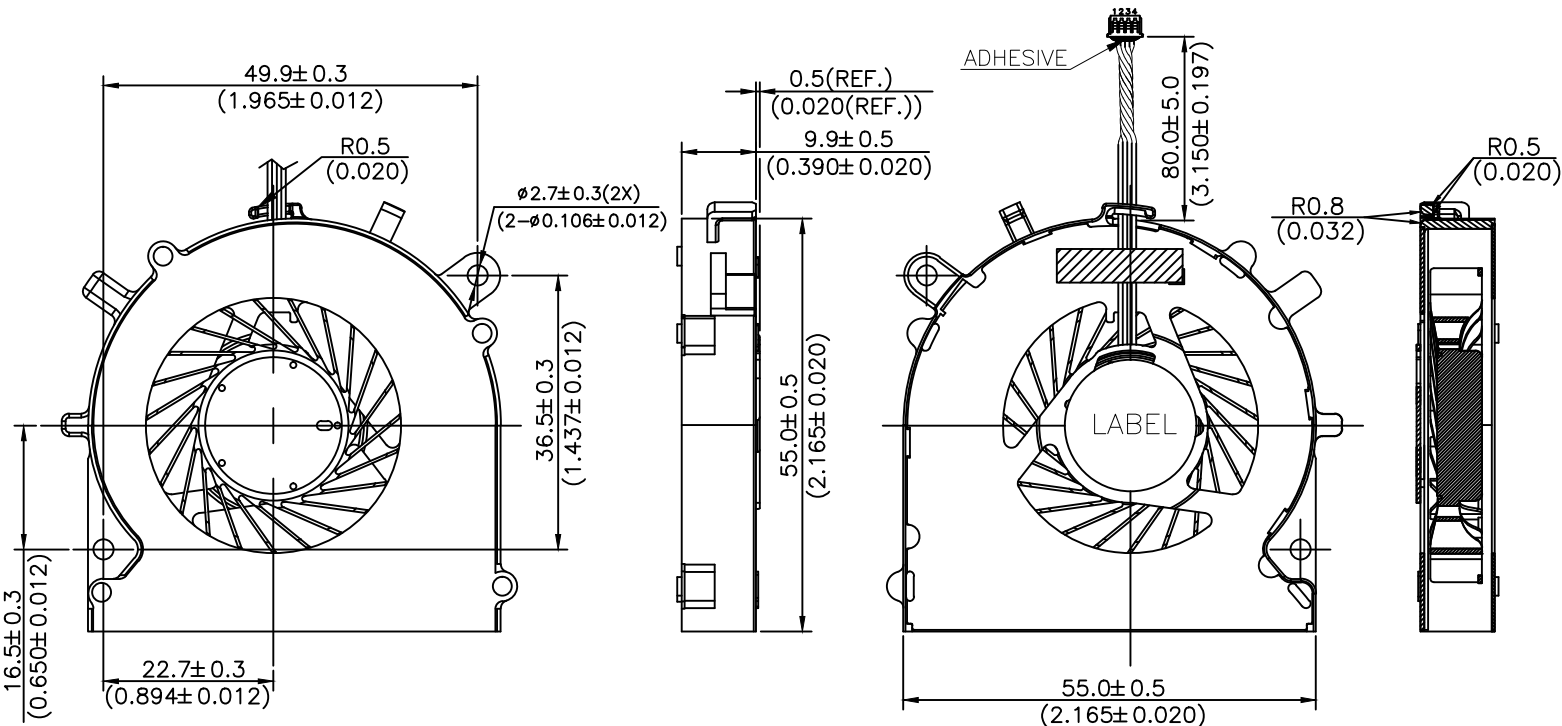
LABEL:



OR



OR



UNIT: mm(INCH)

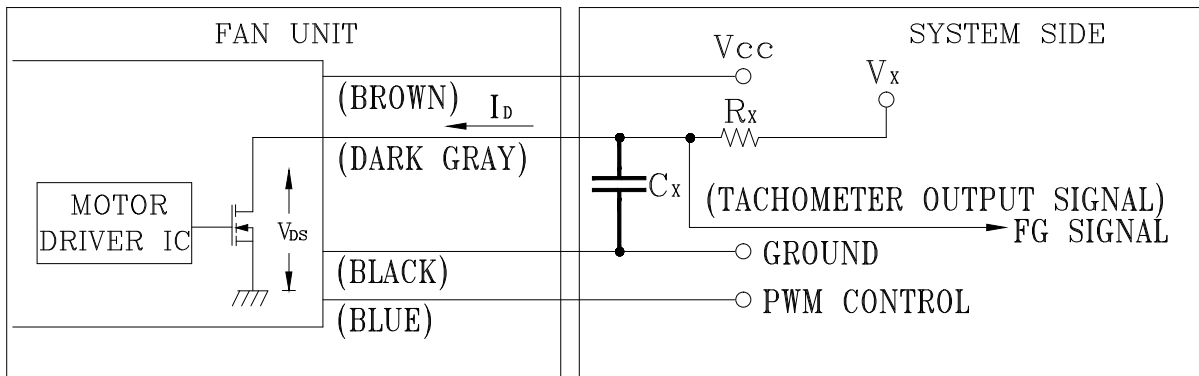
- NOTES :
- LEAD WIRE: UL 3302 AWG #32(OD=0.65±0.05)
 - PIN 1 : BROWN WIRE ----- (+)
 - PIN 2 : BLACK WIRE ----- (-)
 - PIN 3 : DARK GRAY WIRE ----- (F00)
 - PIN 4 : BLUE WIRE ----- (PWM)
 - HOUSING : MOLEX 51021-8604 OR EQUIVALENT
 - TERMINAL : MOLEX 50079-8000 OR EQUIVALENT
 - THIS PRODUCT IS RoHS COMPLIANT
 - 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).
 - (1). BROMINE(Br) < 900 PPM
 - (2). CHLORINE(Cl) < 900 PPM
 - (3). (Br) + (Cl) < 1500 PPM

PART NO:

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10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN DRAIN MODE:



GENERAL CONDITION: V_x is 3.3V, R_x is 8.2Kohm, and C_x is 4nF.

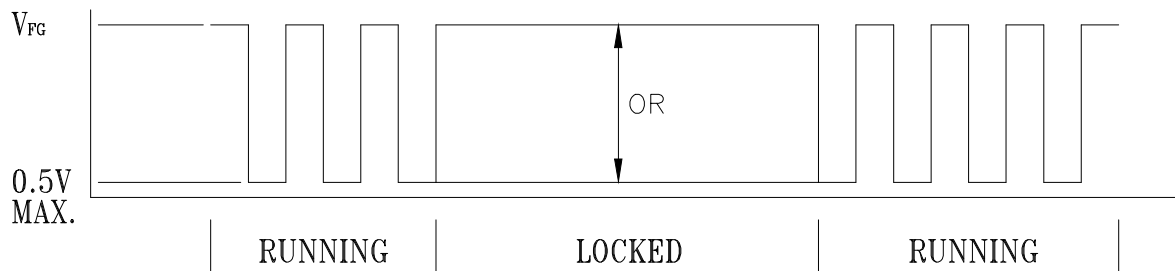
CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

10-2. SPECIFICATION:

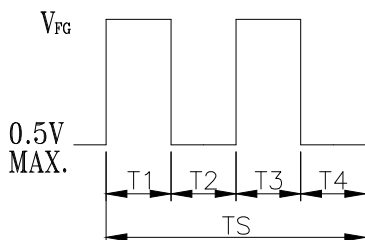
V_{ds} (LINEAR)=0.5V MAX. $V_x = 3.3V$ TYP. (V_{cc} MAX.)

$I_d = 5mA$ MAX. $R_x \geq V_x / I_d$

10-3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$$T1=T2=T3=T4=(1/4)TS$$

$$T1/(T1+T2)*100%=T2/(T1+T2)*100%=50\pm 10\%$$

$$T3/(T3+T4)*100%=T4/(T3+T4)*100%=50\pm 10\%$$

$N=R.P.M$; $TS=60/N(SEC)$; $FG=1/TS(HZ)$

DC FAN SPEED=60*FG(R.P.M)

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

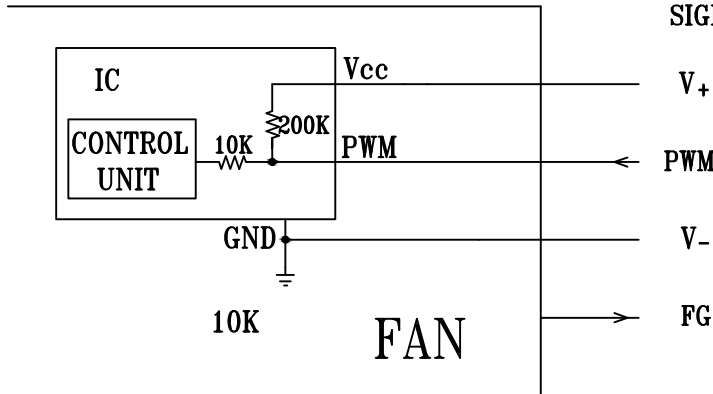
*2 PULSES PER REVOLUTION

PART NO:

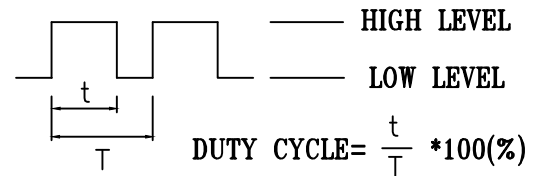
DELTA MODEL: NS55B00-15J06

11. PWM CONTROL FUNCTION

11-1. PWM CONTROL INTERFACE



SIGNAL VOLTAGE RANGE: $0 \sim (V_+ - 0.5)$ VDC



- HIGH LEVEL : $(V_+ - 0.5)$ VDC max.
2.8 VDC min.
- LOW LEVEL : 0.6 VDC max.
0 VDC min.

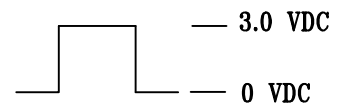
- THE PREFERRED OPERATING FREQUENCY OF PWM SIGNAL IS 23KHz.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP SPIN.
- WHEN THE PWM CONTROL LEAD WIRE IS DISCONNECTED, THE ROTOR WILL SPIN AT MAXIMUM SPEED.

11-2. FAN CHARACTERISTICS

TEST CONDITION : AT 25°C, $V_+ = 5.0$ VDC & PWM SIGNAL AS FOLLOW

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	5100±7%	0.28
0	0	0.02

* PWM SIGNAL
PWM FREQUENCY = 23 KHz

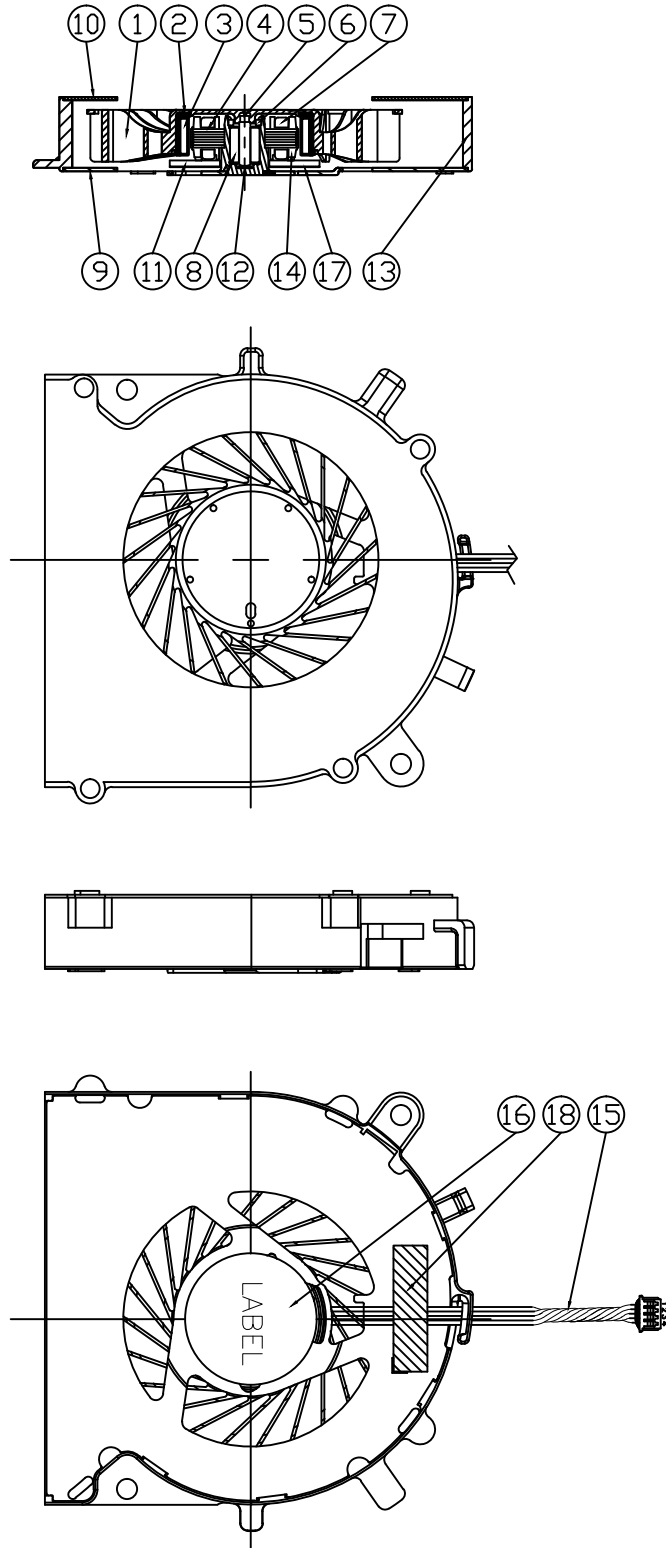


- MIN. STARTED DUTY CYCLE :
WHEN DUTY CYCLE IS SET FOR MORE THAN 28% , THE FAN WILL BE ABLE TO START FROM A DEAD STOP.

PART NO:

DELTA MODEL: NS55B00-15J06

12. PARTS LIST:



PART NO:

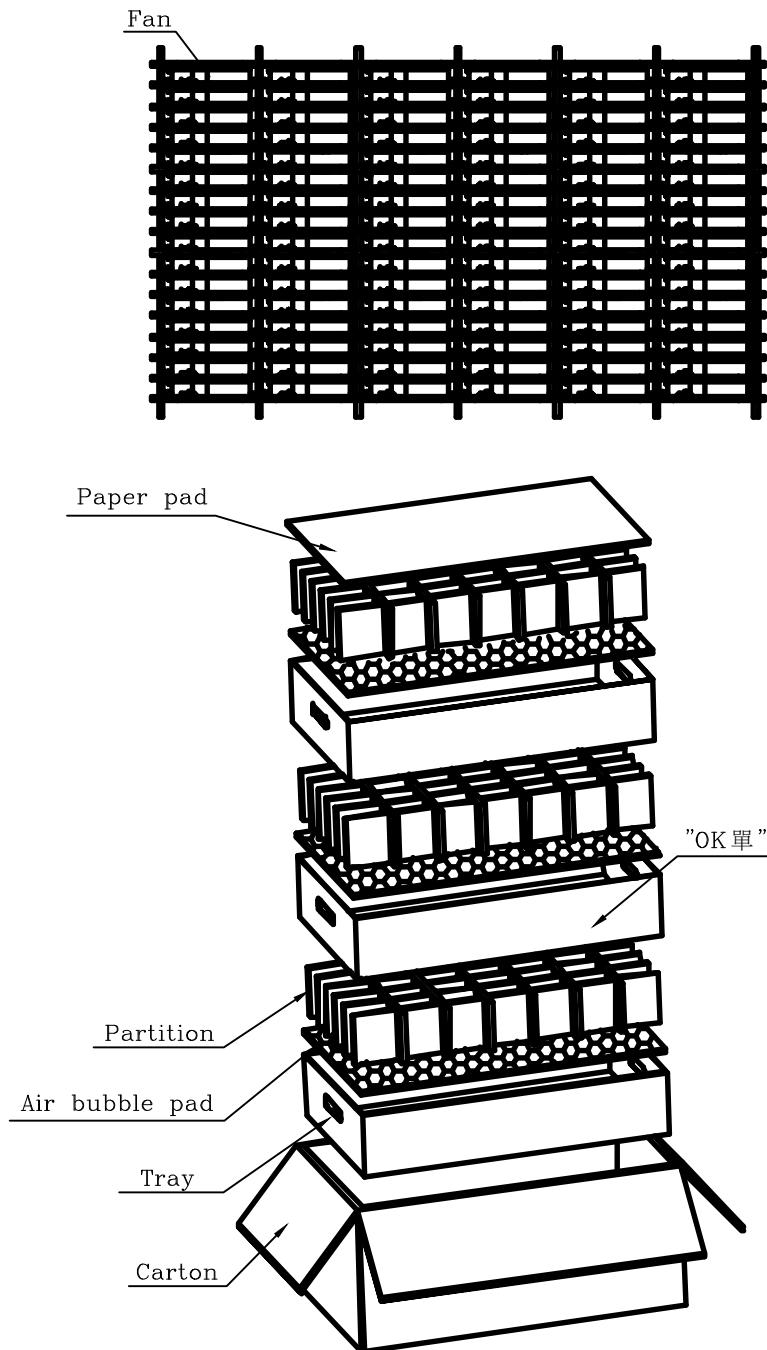
DELTA MODEL: NS55B00-15J06

ITEM	PARTS	MATERIAL	TYPE	GRADE	MAKER	UL No.
1	IMPELLER	LCP+35%GF	270B3TL	94V-0	CHANG CHUN	E59481
2	CASE	SPCC	T=0.4	-----	BAO SHAN IRON & STEEL	-----
					CHINA STEEL	-----
3	MAGNET	RUBBER	YZT13HNF	94V-0	GOLDEN SOUTH	E209692
4	SI-STEEL	35A440 (35CS440)	T=0.35	-----	CHINA STEEL	-----
5	SHAFT	SUS	420F	-----	Jin Yi Cherng	-----
			420J2	-----	TengMao	-----
			420J2	-----	FUCHUANG	-----
			420J2	-----	XIXI HARDWARE	-----
6	SEALANT	Cu-Sn Powder	-----	-----	金寶至	-----
7	CU-WIRE	2UEW	MW-75	130°C	PROSPERITY	E196072
8	SLEEVE	SLF	-----	-----	PORITE	-----
9	PILLOW	SECC	T=0.5	-----	BAO SHAN IRON & STEEL	-----
					CHINA STEEL	-----
10	COVER	SECC	T=0.4	-----	BAO SHAN IRON & STEEL	-----
					CHINA STEEL	-----
11	PWB	FR-1	-----	94V-0	WALEX	E154355
12	PAD	PEEK	FS-1100C	94HB	SUMITOMO	E41429
			SHT-PEEK4000	94HB	TORAY	E242245
			APTIV 1000	94HB	VICTREX	E161131
13	FRAME	PBT+30%GF	F202G30BK	94V-0	SHINKONG	E107536
			PBT-NPG30	94V-0	KINGFA	E171666
14	COVER	PBT+30%GF	PBT-NPG30	94V-0	KINGFA	E171666
15	LEAD WIRE (CABLE ASSEMBLY)	WIRE	UL3302 #32	VW-1	TATUNG	E315283
		HOUSING	A1251H02-4PA-HF	94V-0	JWT	E144544
		Terminal	A1251TOP-2	-----	JWT	-----
16	LABEL	PET	-----	-----	FUSHAN	MH28031
17	INSULATOR TAPE	POLYCARBONATE	DFR117	VTM-0	DONGFANG	E199019
18	INSULATOR TAPE	Acetate Cloth	AC402A	Rated 105°C	CHYUN YIH	E81174

PART NO:

DELTA MODEL: NS55B00-15J06

13. PACKING SPEC.:



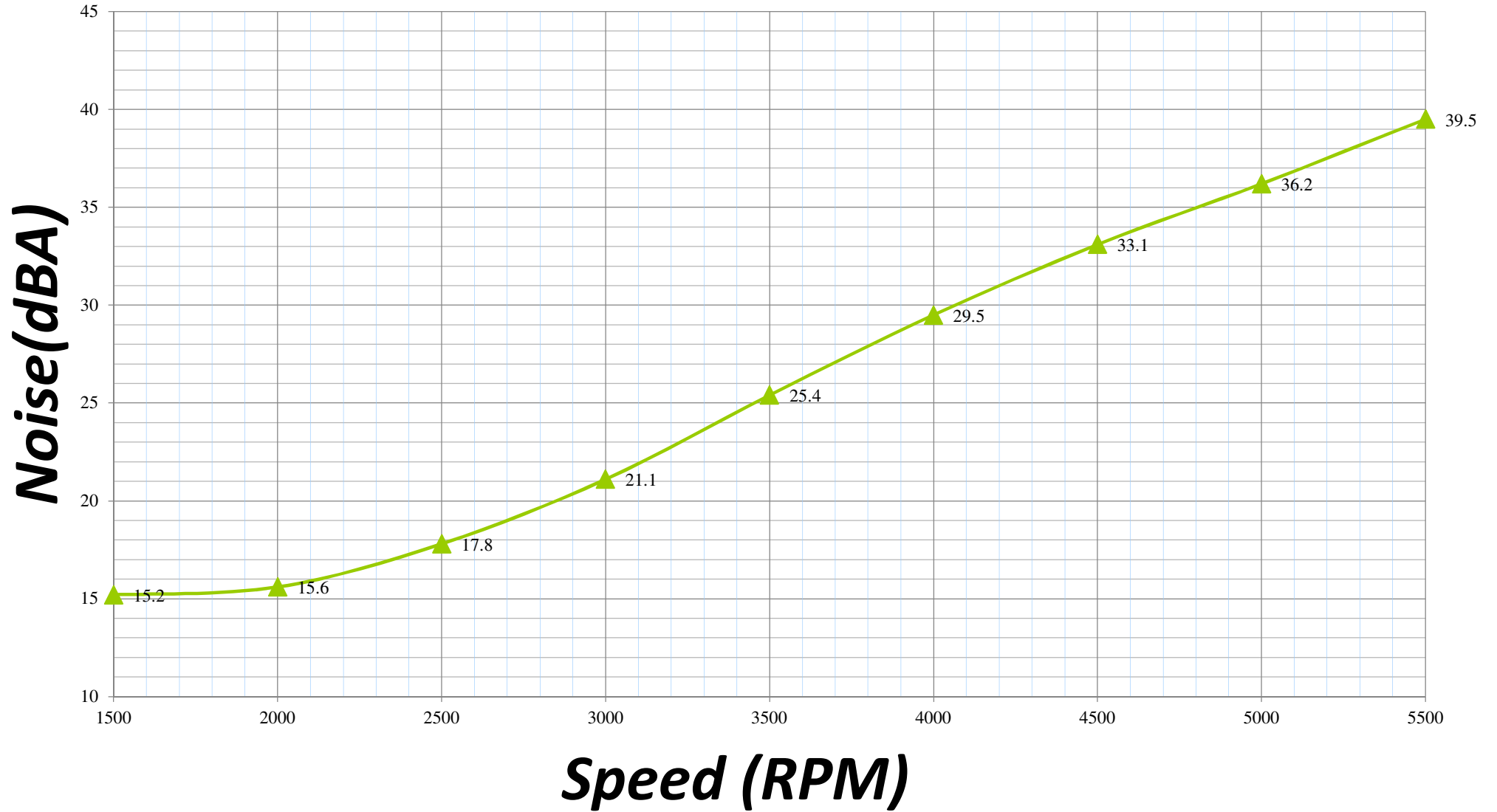
PACKING Q'TY:
THE Q'TY PER TRAY MUST BE 96 PCS, THE TOTAL IS 288PCS,
TOTAL WEIGHT: 5.0KG(REF.)

Customer P/N: 6033B0043802

Delta Model NO: NS55B00-15J06

Superman CPU Speed VS Noise

at 50cm from fan hub

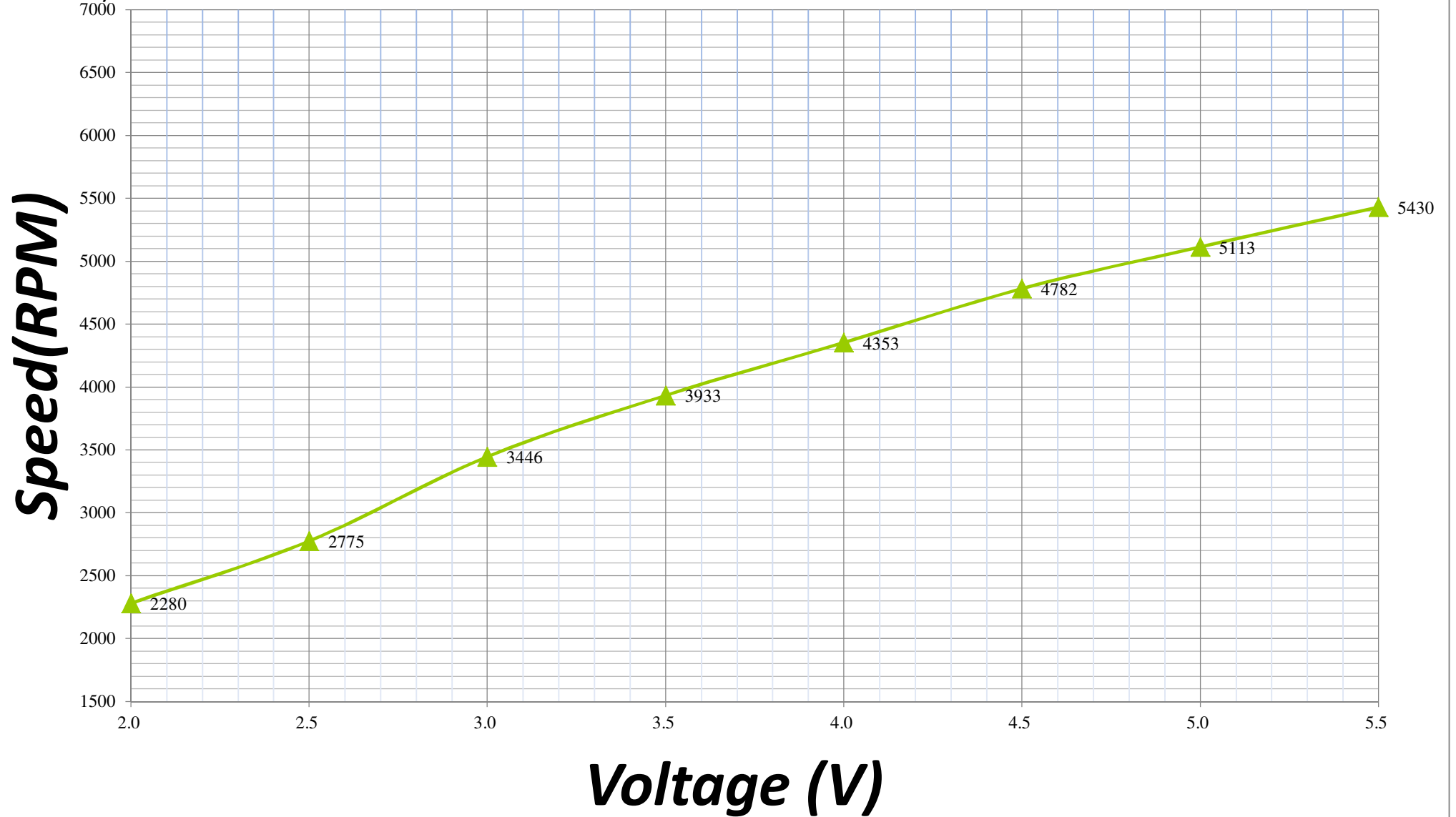


Customer P/N: 6033B0043802

Delta Model NO: NS55B00-15J06

Superman CPU Speed VS Voltage

(WITH COVER)

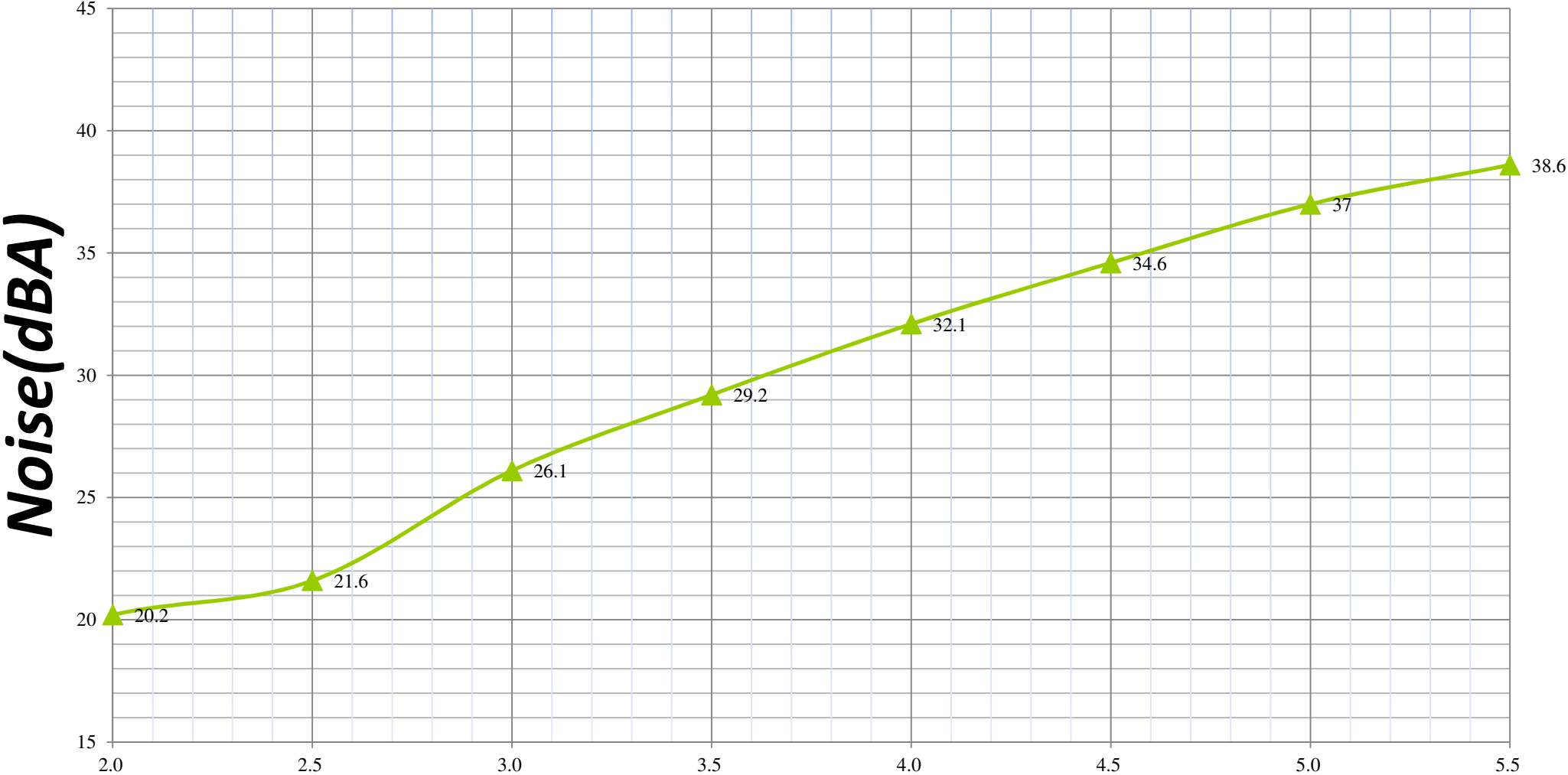


Customer P/N: 6033B0043802

Delta Model NO: NS55B00-15J06

Superman CPU Voltage VS Noise

at 50cm from fan hub



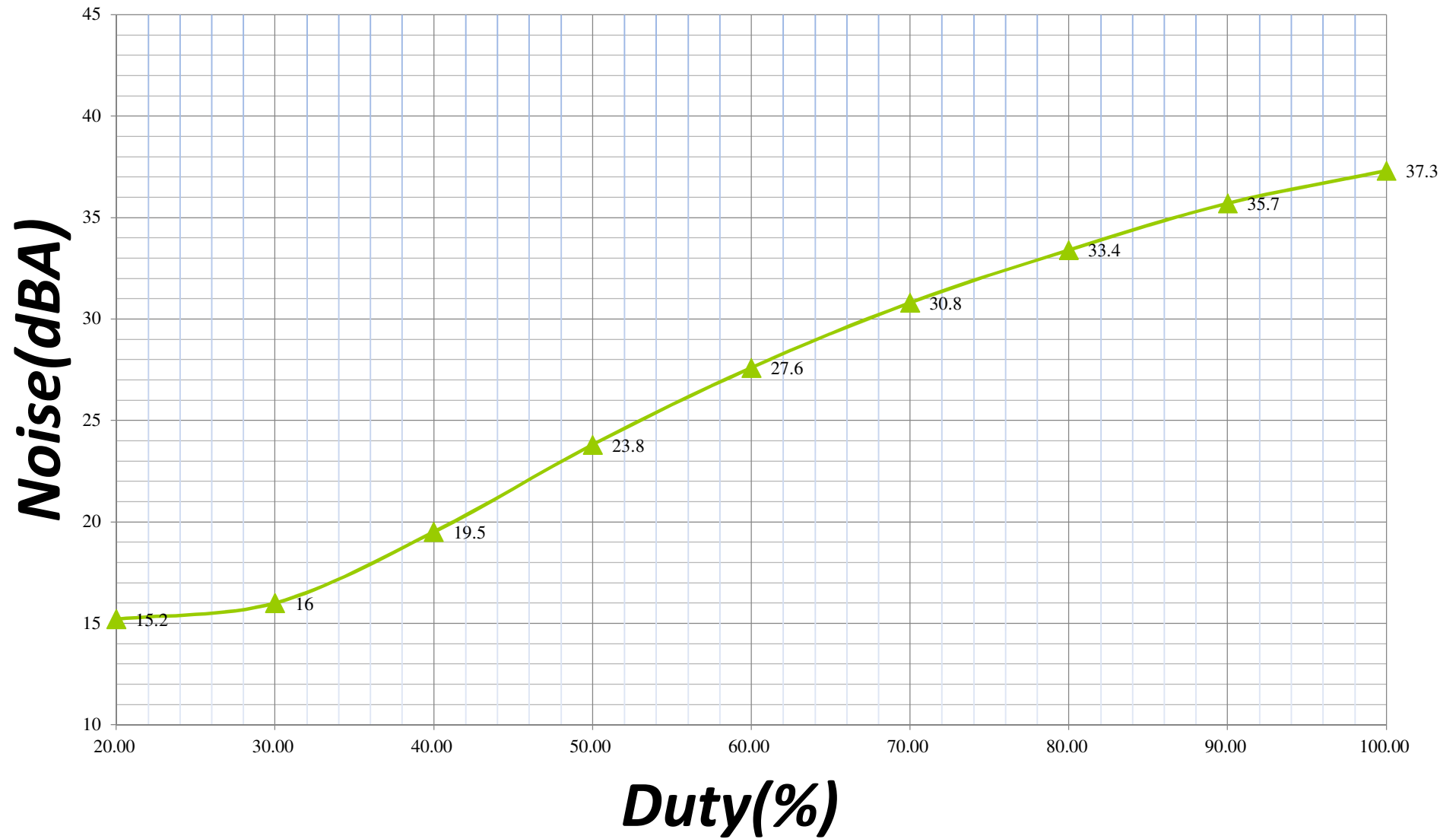
Voltage(V)

Customer P/N: 6033B0043802

Delta Model NO: NS55B00-15J06

Superman CPU Duty VS Noise

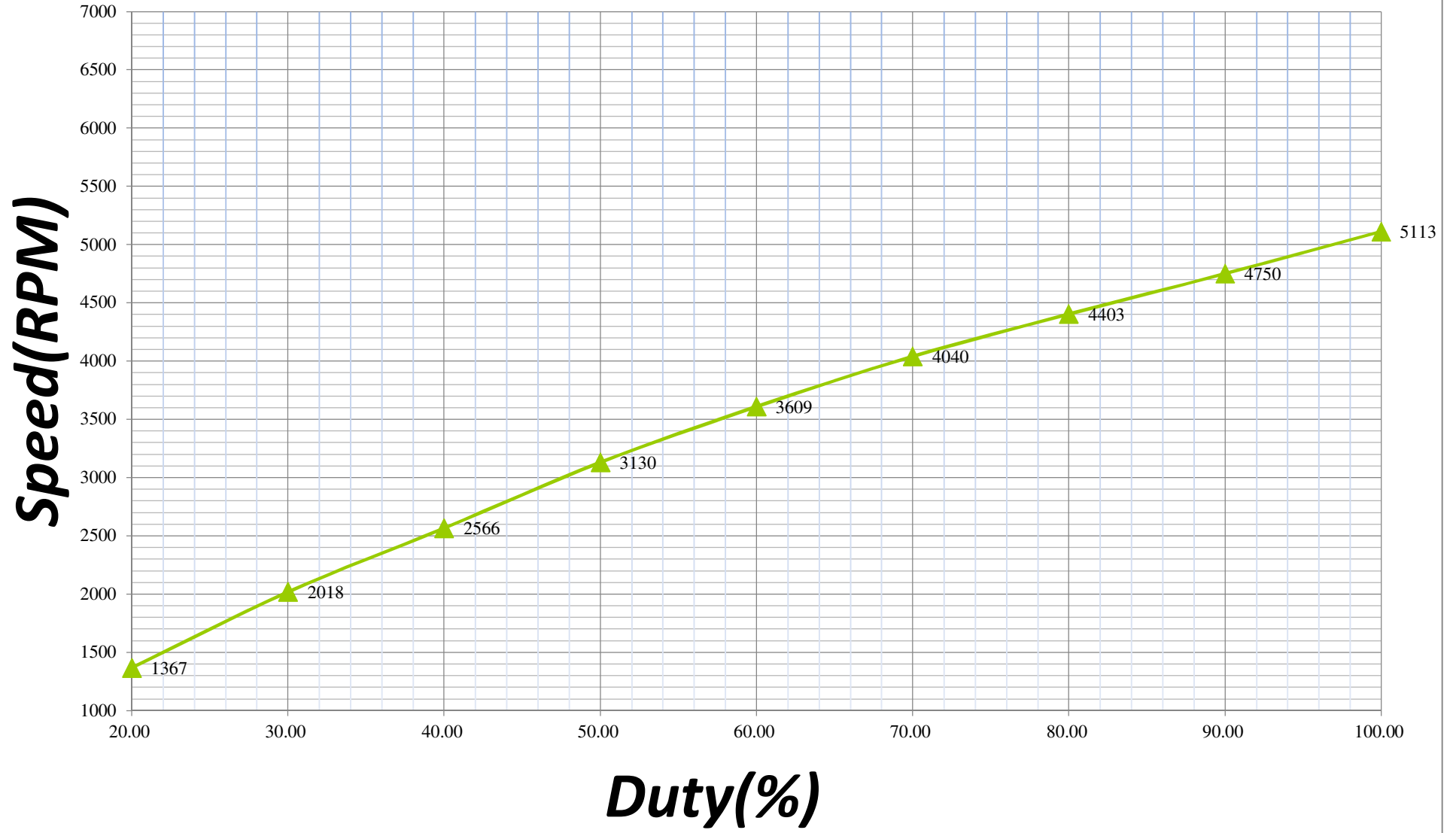
at 50cm from fan hub



Customer P/N: 6033B0043802

Delta Model NO: NS55B00-15J06

Superman CPU Duty VS Speed

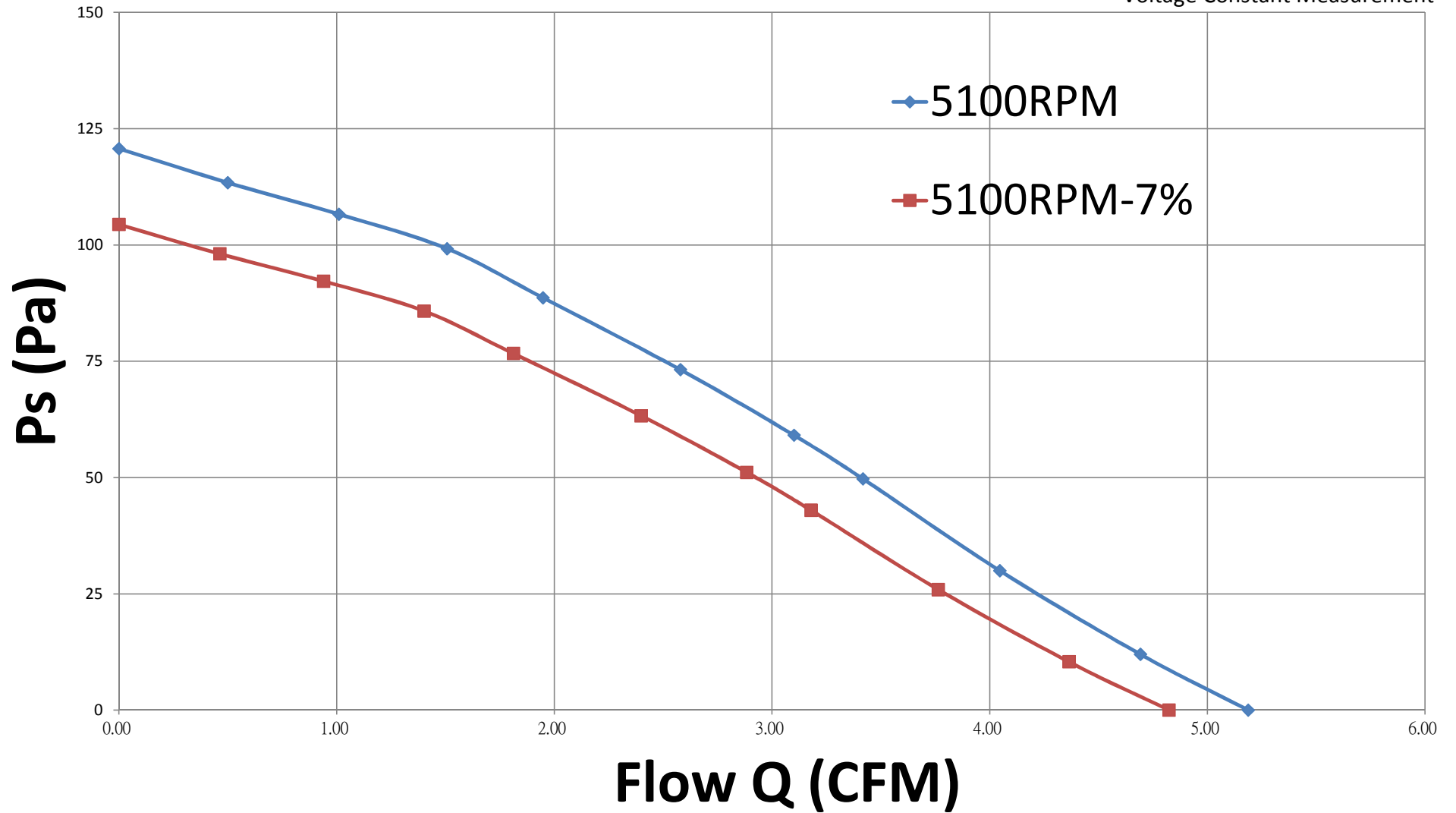


Customer P/N: 6033B0043802

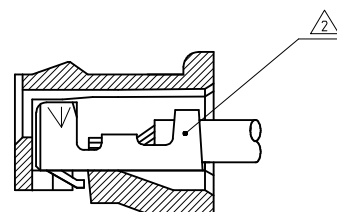
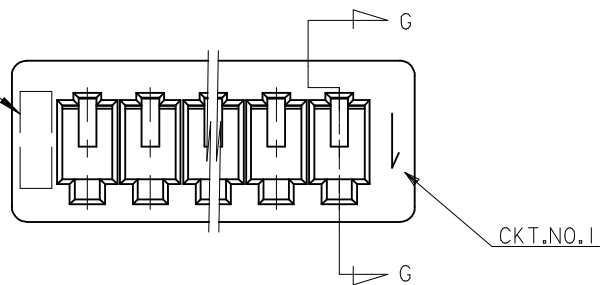
Delta Model NO: NS55B00-15J06

Superman CPU PQ Curve

Voltage Constant Measurement



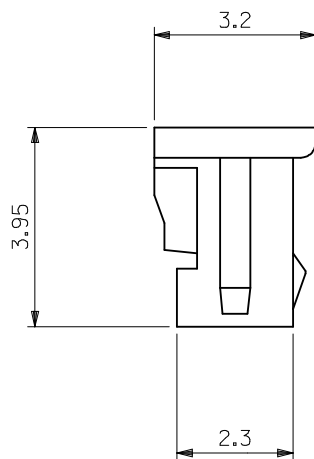
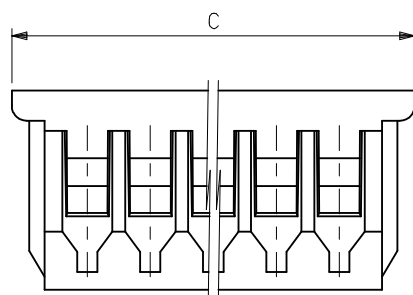
トレードマーク
TRADE MARK



SECT. G-G

注記 NOTES

1. 材料: 66ナイロン(黒)、UL94V-0 塩素系、臭素系難燃剤 非使用
66 NYLON (BLACK), UL94V-0 CHLORINATED FLAME RETARDANTS FREE/
BROMINATED FLAME RETARDANTS FREE
- △ 適合ターミナル: 50058, 50079 シリーズ
APPLICABLE TERMINAL: 50058, 50079 SERIES
3. 嵌合相手: 53047, 53048, 53261, 53398 シリーズ
MATE WITH: 53047, 53048, 53261, 53398 SERIES
- △ ロックは、2, 3極は1ヶ、4極以上は2ヶとする。
LOCKING WINDOW: ONE PLACE FOR 2 & 3 CKT.
AND TWO PLACES FOR MORE THAN 3 CKT.
5. ELV 及び RoHS適合品
ELV AND RoHS COMPLIANT.

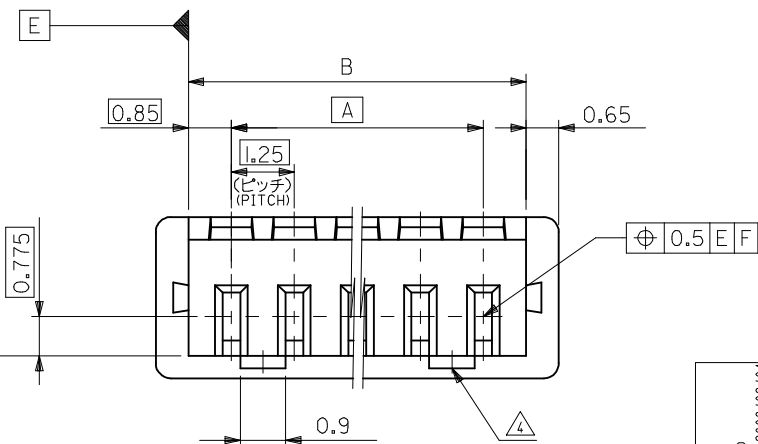


11.75	10.45	8.75	51021-8608	8
10.5	9.2	7.5	51021-8607	7
9.25	7.95	6.25	51021-8606	6
8	6.7	5	51021-8605	5
6.75	5.45	3.75	51021-8604	4
5.5	4.2	2.5	51021-8603	3
4.25	2.95	1.25	51021-8602	2
C	B	A	PLASTIC BAG ORDER No. オーダー番号	極数 CKTS.

51021-86**		MODEL NO.
DESIGN UNITS	THIRD ANGLE PROJECTION	
METRIC	1.25 W/B CONN REC.HSG	
MOLEX INCORPORATED		SHEET NO.
DOCUMENT NO.	SD-51021-003	1 OF 1
THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		

REV	DESCRIPTION	GENERAL TOLERANCES (UNLESS SPECIFIED)
	10 UNDER	±0.2
	10 OVER 30 UNDER	±0.25
	30 OVER	±0.3
REV	DESCRIPTION	ANGULAR ±3 °
0		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS

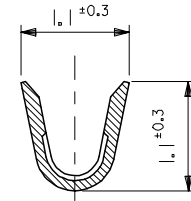
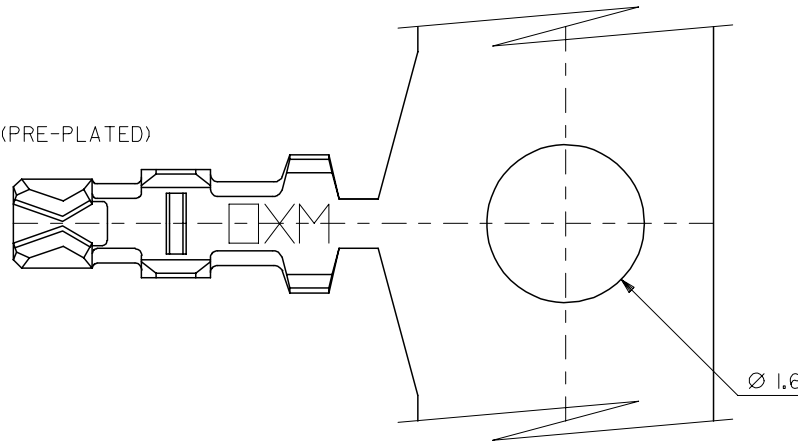
RELEASED	EC NO. J2009-0526	2008/09/01
DRWN: MABEI	2008/09/01	
CHKD: HARUYAMA	2008/09/01	
APPR: NUKITA	2008/09/01	



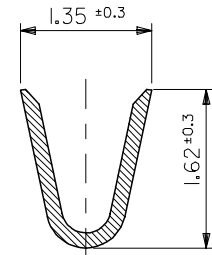
10 9 8 7 6 5 4 3 2 1

注記
NOTES

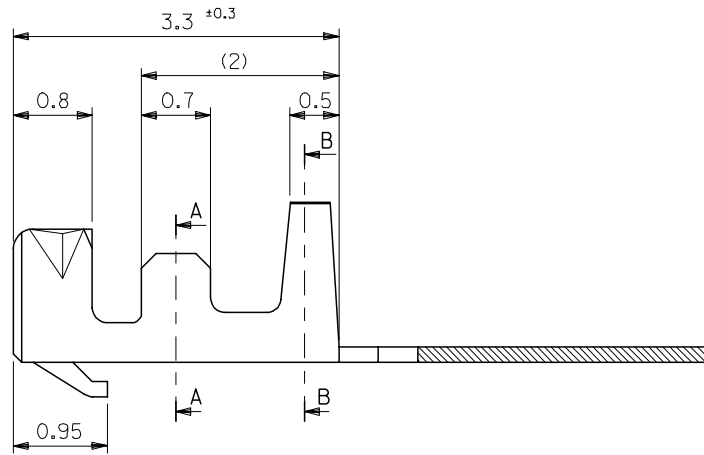
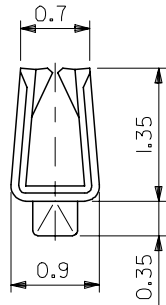
1. 適合ハウジング：51021シリーズ
APPLICABLE HOUSING : 51021 SERIES
2. メッキ仕様 PLATING
錫 0.9μm MIN. リフロー処理 (前メッキ)
TIN 0.9μm MIN. REFLOW TREATMENT (PRE-PLATED)



SECT. A-A



SECT. B-B



50079-8100	バラ状 LOOSE
50079-8000	連鎖状 CHAIN
MATERIAL NO.	端子形状 FORM

MODEL NO. 50079-8*00

材料 MATERIAL リン青銅 (t=0.15) PHOSPHOR BRONZE 仕上げ FINISH —#— 適用電線範囲 WIRE RANGE AWG #26-28 被覆外径 INS. RANGE φ0.5-1.04	REVISED EC NO: J2005-4535 DRAWN:SUZUKI 2004/11/30 CHKD:KTOJO 2004/11/30 APPR:NUKITA 2004/12/06 G	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY	SCALE 20:1	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
		10 UNDER	±0.2	DRAWN BY HHIRAMOT	DATE 92/10/21	TITLE 1.25 WIRE TO BOARD CONN. CRIMP REC. TERMINAL -LEAD FREE-		
		10 OVER 30 UNDER	±0.25	CHECKED BY SKUNISHI	DATE 98/07/07			
		30 OVER	±0.3	APPROVED BY MFUKUSHI	DATE 98/07/07	MATERIAL NO.	DOCUMENT NO. SD-50079-001	SHEET NO. 1 OF 1
ANGULAR ±3 °		DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		SEE CHART		MOLEX INCORPORATED		
SIZE A3				THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION				

10 9 8 7 6 5 4 3 2 1

F

F

E

E

D

D

C

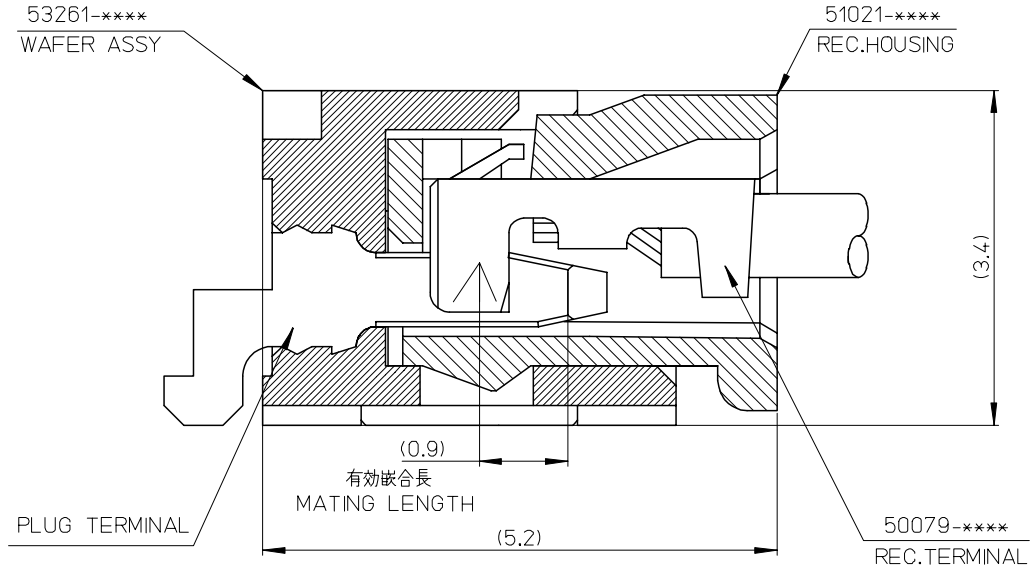
C

B

B

A

A



53261-****	WAFER ASSY	MODEL NO./MATERIAL NO.
50079-****	TERMINAL	
51021-****	HOUSING	

RELEASED EC NO: J2006-2426 DRWN: A0YAGI 2006/02/02 CHKD: YMAEDA 2006/02/03 APPR: NUKITA 2006/02/07	GENERAL TOLERANCES (UNLESS SPECIFIED)		DIMENSION STYLE MM ONLY		SCALE ---	DESIGN UNITS METRIC	THIRD ANGLE PROJECTION	
	10 UNDER	± ---	DRAWN BY Y. A0YAGI	DATE 2006/01/30	TITLE 1.25 W-TO-B CONN. 51021,53261 MATING CROSS SECTION			
	10 OVER 30 UNDER	± ---	CHECKED BY Y. MAEDA	DATE 2006/01/30	MOLEX INCORPORATED			
	30 OVER	± ---	APPROVED BY N. UKITA	DATE 2006/01/30	DOCUMENT NO. SD-51021-002			
	ANGULAR	± --- °	MATERIAL NO. SEE CHART		SHEET NO. 1 OF 1			
0	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX INCORPORATED AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION					

9

8

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4

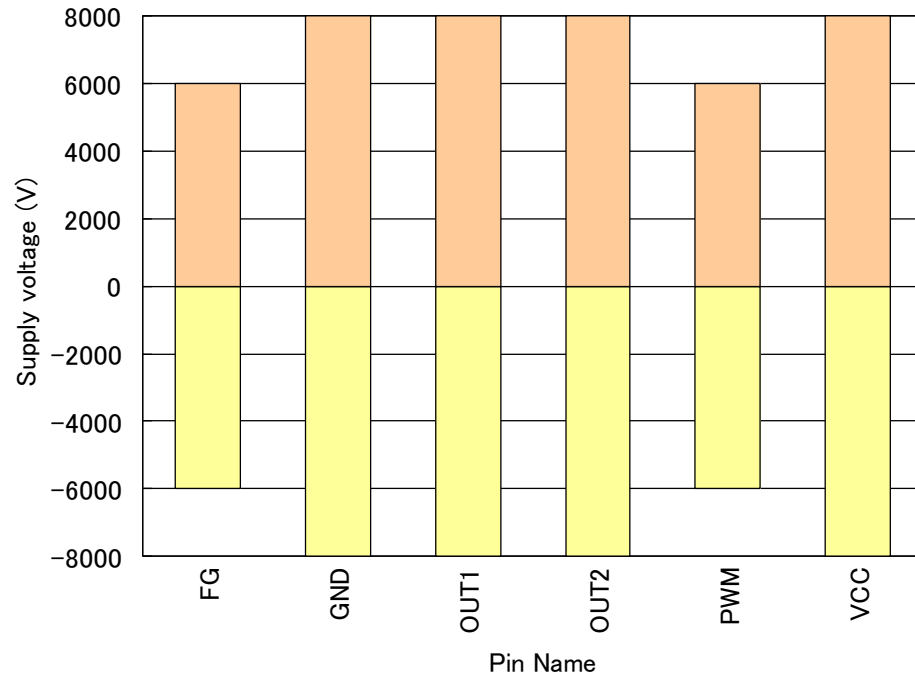
3

2

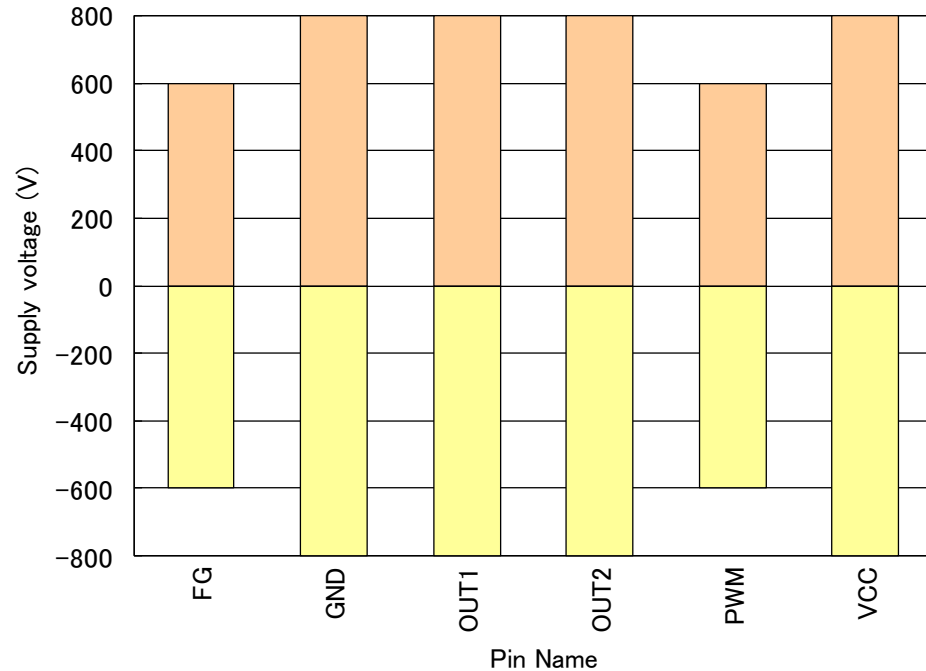
BU6909GF Result of ESD examination

CONFIDENTIAL
for Delta

Human body model (HBM)



Machine model (MM)



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. Delta fans without special protection are not suitable where any corrosive fluids are introduced to their environment.**
- 7. 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.**
- 8. 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.**
- 9. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.**
- 10 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.**
- 11. 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.**
- 12. 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.**