



SPECIFICATION FOR APPROVAL

Customer. _____

Description. DC FAN

Customer Part No. _____ REV. _____

Delta Model No. AFB0612DHXXX REV. 00

Sample Issue No. _____

Sample Issue Date. OCT-25-2017

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

APPROVED BY : _____

DATE: _____

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SPECIFICATION FOR APPROVAL

Customer:

Description:	DC FAN		
Customer P/N:		REV:	
Delta Model NO.:	AFB0612DHXXX	Delta Safety Model NO.:	AFB0612DH
Sample Rev:	00	Issue NO:	
Sample Issue Date:	OCT-25-2017	Quantity:	

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	10.8 - 13.2 VDC
INPUT CURRENT	0.84 (MAX. 1.10) A (CURRENT ON SAFETY LABEL 1.10A)
INPUT POWER	10.08 (MAX. 13.20) W
SPEED	9000 ±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.427 (MIN. 1.284) M ³ /MIN. 50.40 (MIN. 45.36) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	23.52 (MIN. 19.05) mmH ₂ O 0.926 (MIN. 0.750) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	55.0 (MAX. 59.0) dB-A
INSULATION TYPE	UL: CLASS A

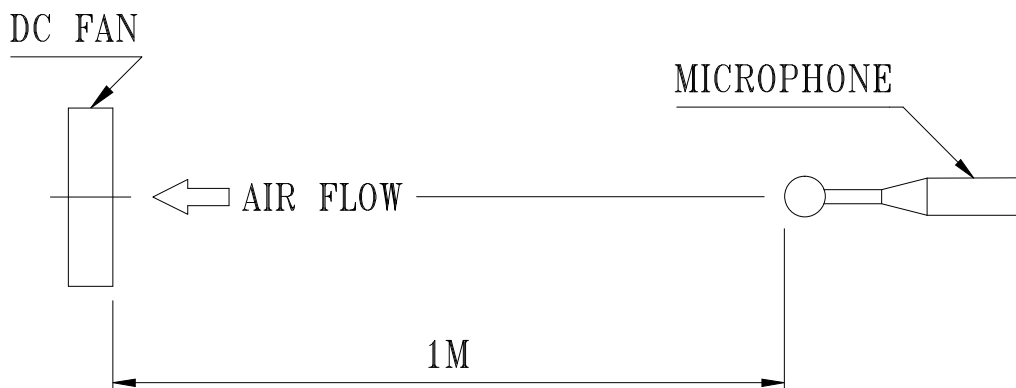
(continued)

PART NO:

DELTA MODEL: AFB0612DHXXX

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) (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.

- 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.

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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 _____ 80.0 GRAMS(REF.)

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE _____ -10 TO +70 DEGREE C
- 4-2. STORAGE TEMPERATURE _____ -40 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.

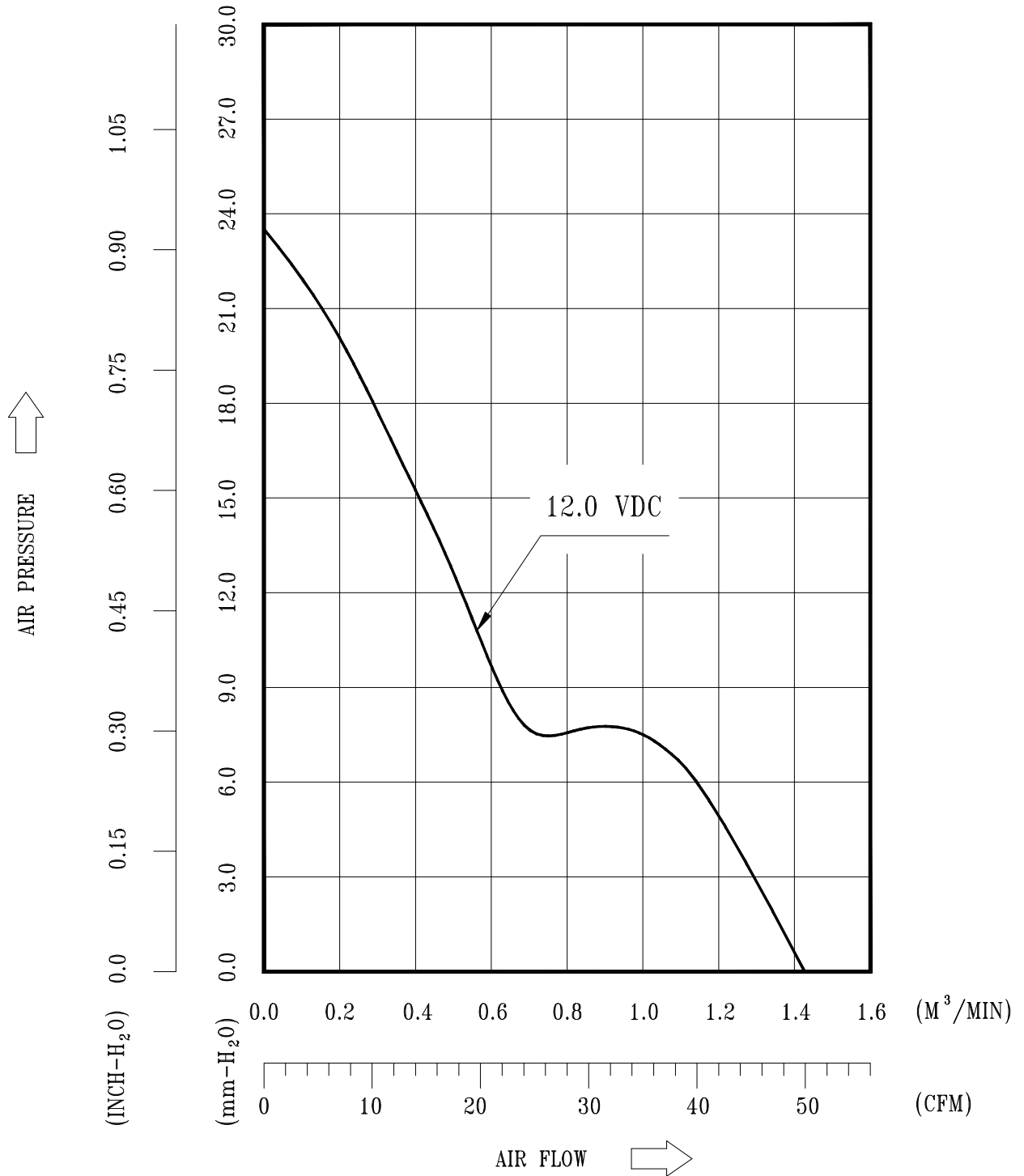
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



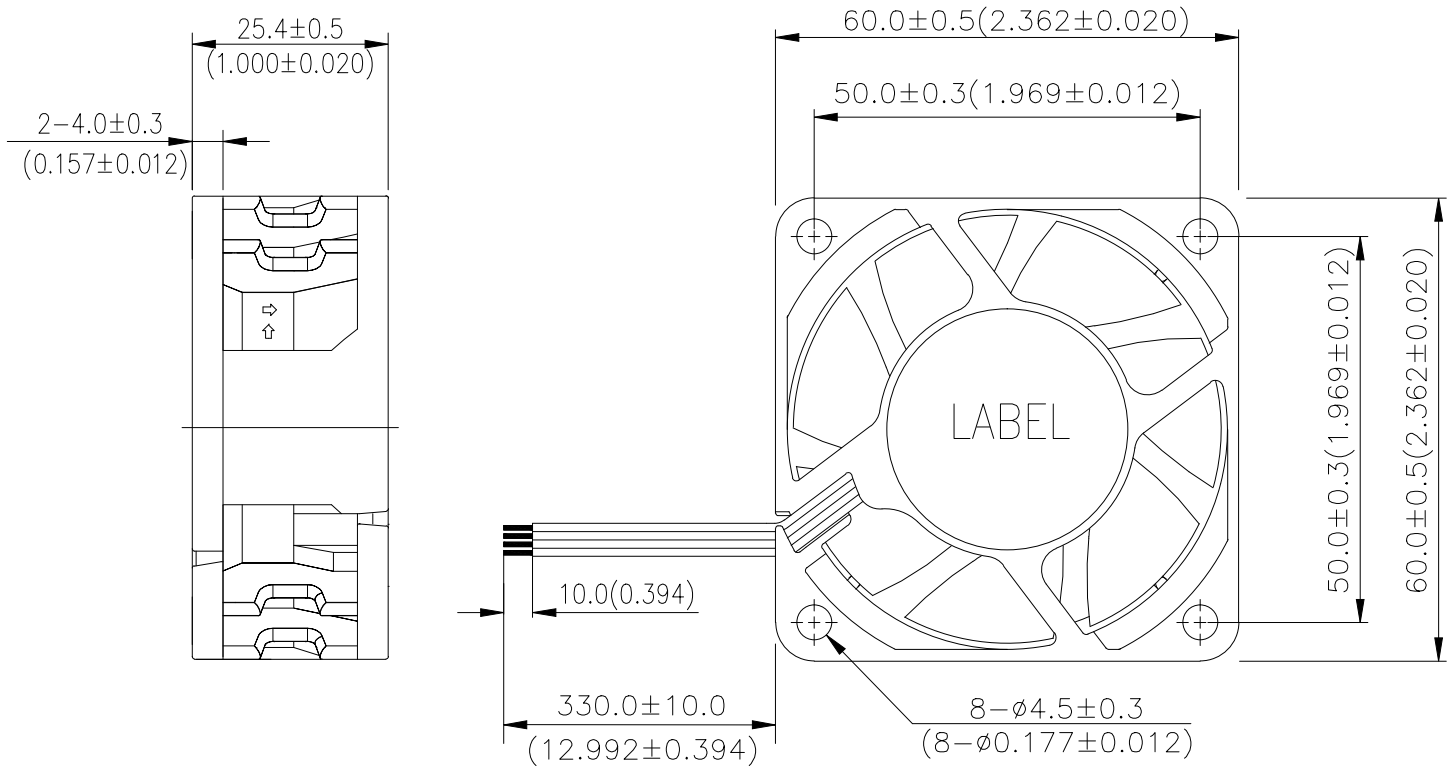
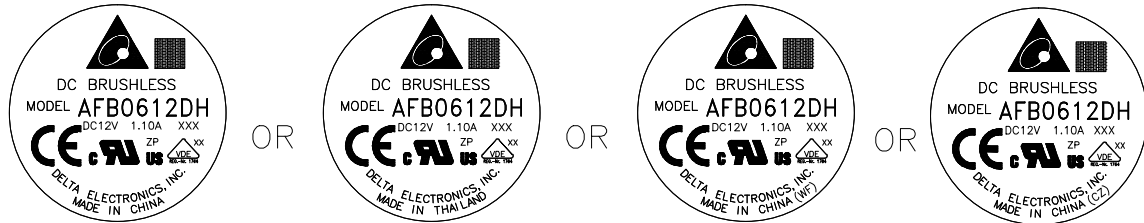
* TEST CONDITION: INPUT VOLTAGE — OPERATION VOLTAGE
TEMPERATURE — ROOM TEMPERATURE
HUMIDITY — 65%RH

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9. DIMENSION DRAWING:

LABEL:



UNIT: mm(INCH)

NOTES:

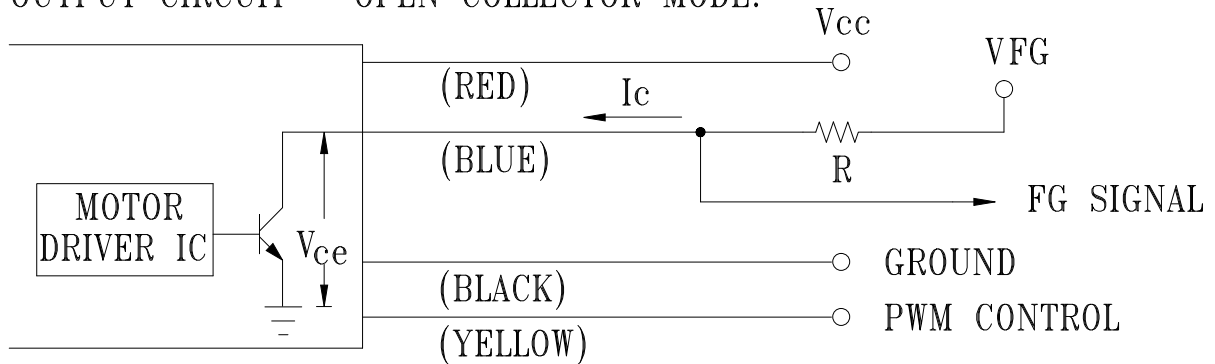
1. LEAD WIRE UL: 1061 -F- AWG #26
RED WIRE ----- (+)
BLACK WIRE ----- (-)
BLUE WIRE ----- (F00)
YELLOW WIRE ----- (PWM)
2. THIS PRODUCT IS RoHS COMPLIANT.

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10. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



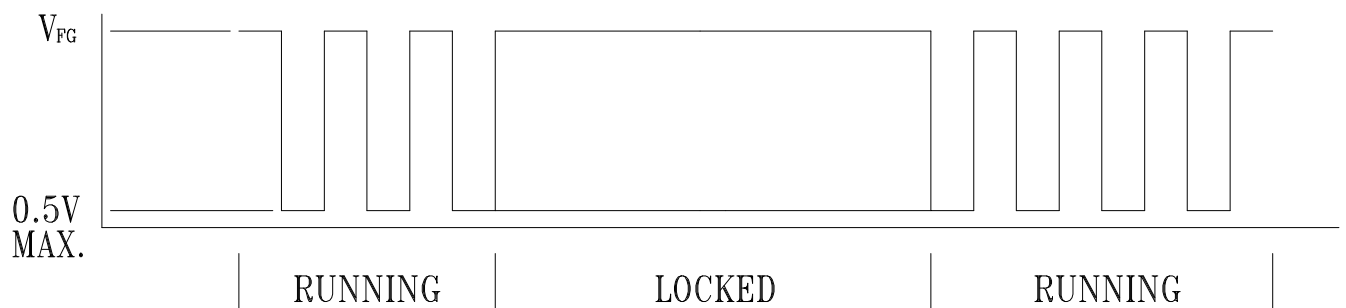
CAUTION: THE FG SIGNAL LEAD WIRE MUST BE KEPT AWAY FROM "+" LEAD WIRE & "-" LEAD WIRE.

2. SPECIFICATION:

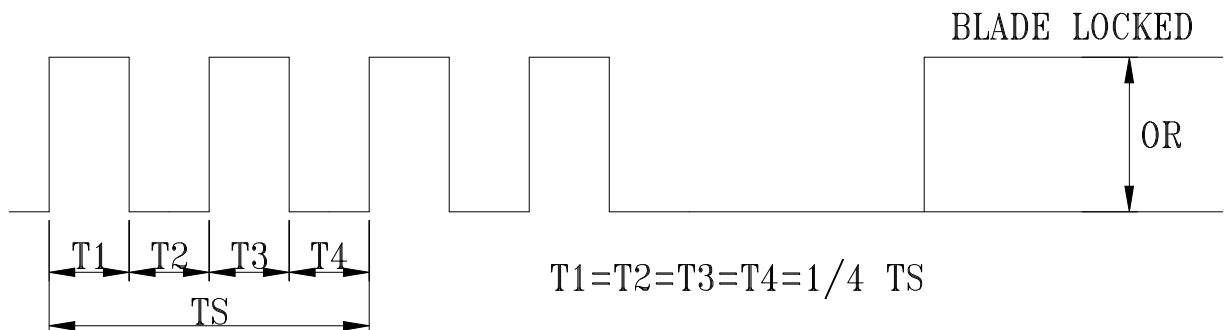
$V_{FG} = 13.2V$ MAX. $I_c = 5mA$ MAX.

$V_{ce(sat)} = 0.5V$ MAX. $R \geq V_{FG} / I_c$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$N = R.P.M$

$TS = 60 / N (SEC)$

*VOLTAGE LEVEL AFTER BLADE LOCKED

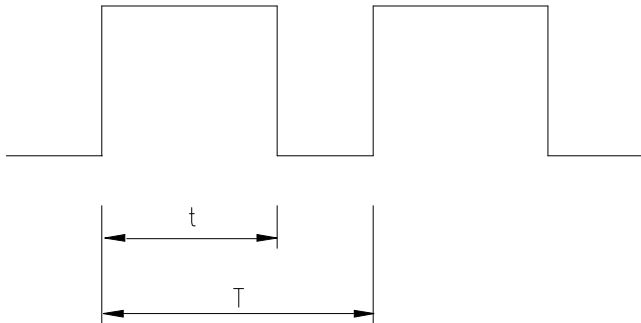
*4 POLES

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11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~15.0 VDC



HIGH SIGNAL: 15.0 VDC MAX.
2.8 VDC MIN.

LOW SIGNAL: 0.8 VDC MAX.
0 VDC MIN.

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

- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 20KHZ~30KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL STOP.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT 12.0 VDC ,25K HZ ,30% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

12. SPEED VS PWM CONTROL SIGNAL: (AT 12.0 VDC & PWM FREQ.=25KHZ & 25 DEG.C)

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	9000±10%	0.84
0	0	0.02

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:

