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 BANGNA-TRAD RD., TAMBON BANGWUA,
 AMPHUR BANGPAKONG CHACHOENGSAO
 24180 THAILAND

SPECIFICATION FOR APPROVAL

Customer:

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: AFB0412LB-F00

Sample Rev: 02

Issue NO:

Sample Issue Date: Apr 30, 08

Quantity:

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 VDC
OPERATION VOLTAGE	7.0 - 13.8 VDC
INPUT CURRENT	0.06 (MAX. 0.09) A
INPUT POWER	0.72 (MAX. 1.08) W
SPEED	5000 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.184 (MIN. 0.166) M ³ /MIN. 6.50 (MIN. 5.86) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	3.67 (MIN. 2.97) mmH ₂ O 0.144 (MIN. 0.117) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	18.5 (MAX. 23.5) dB-A
INSULATION TYPE	UL: CLASS A

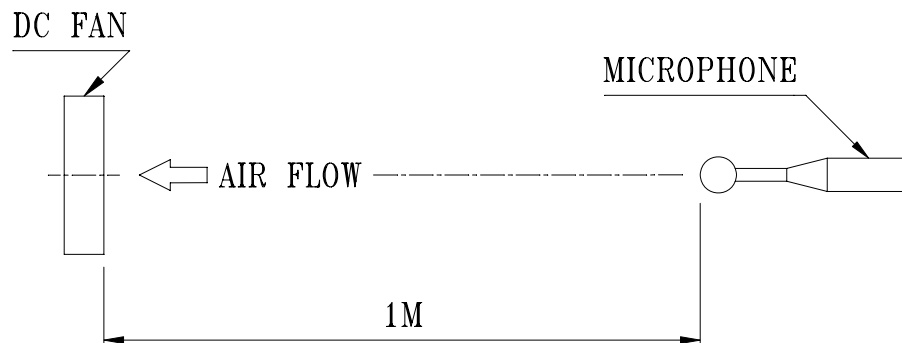
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PART NO:

DELTA MODEL: AFB0412LB-F00

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	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
LEAD WIRE	UL 1007 -F- AWG #24 BLACK WIRE NEGATIVE(-) RED WIRE POSITIVE(+) BLUE WIRE FREQUENCY(-F00)

- 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.

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PART NO:

DELTA MODEL: AFB0412LB-F00

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 ----- 25.0 GRAMS

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 OR TAIWAN.

PART NO:

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8. BASIC RELIABILITY REQUIREMENT:

8-1. THERMAL LOW TEMPERATURE: -40°C
CYCLING HIGH TEMPERATURE: +80°C
 SOAK TIME: 30 MINUTES
 TRANSITION TIME < 5 MINUTES
 DUTY CYCLES: 5

8-2. HUMIDITY TEMPERATURE: +25°C ~ +65°C
EXPOSURE HUMIDITY: 90-98% RH @ +65°C
 FOR 4 HOURS/CYCLE
 POWER: NON-OPERATING
 TEST TIME: 168 HOURS

8-3. VIBRATION TEMPERATURE: +25°C
 ORIENTATION: X, Y, Z
 POWER: NON-OPERATING
 VIBRATION LEVEL: OVERALL gRMS=3.2

FREQUENCY(Hz)	PSD(G ² /Hz)
10	0.040
20	0.100
40	0.100
800	0.002
1000	0.002

TEST TIME: 2 HOURS ON EACH ORIENTATION

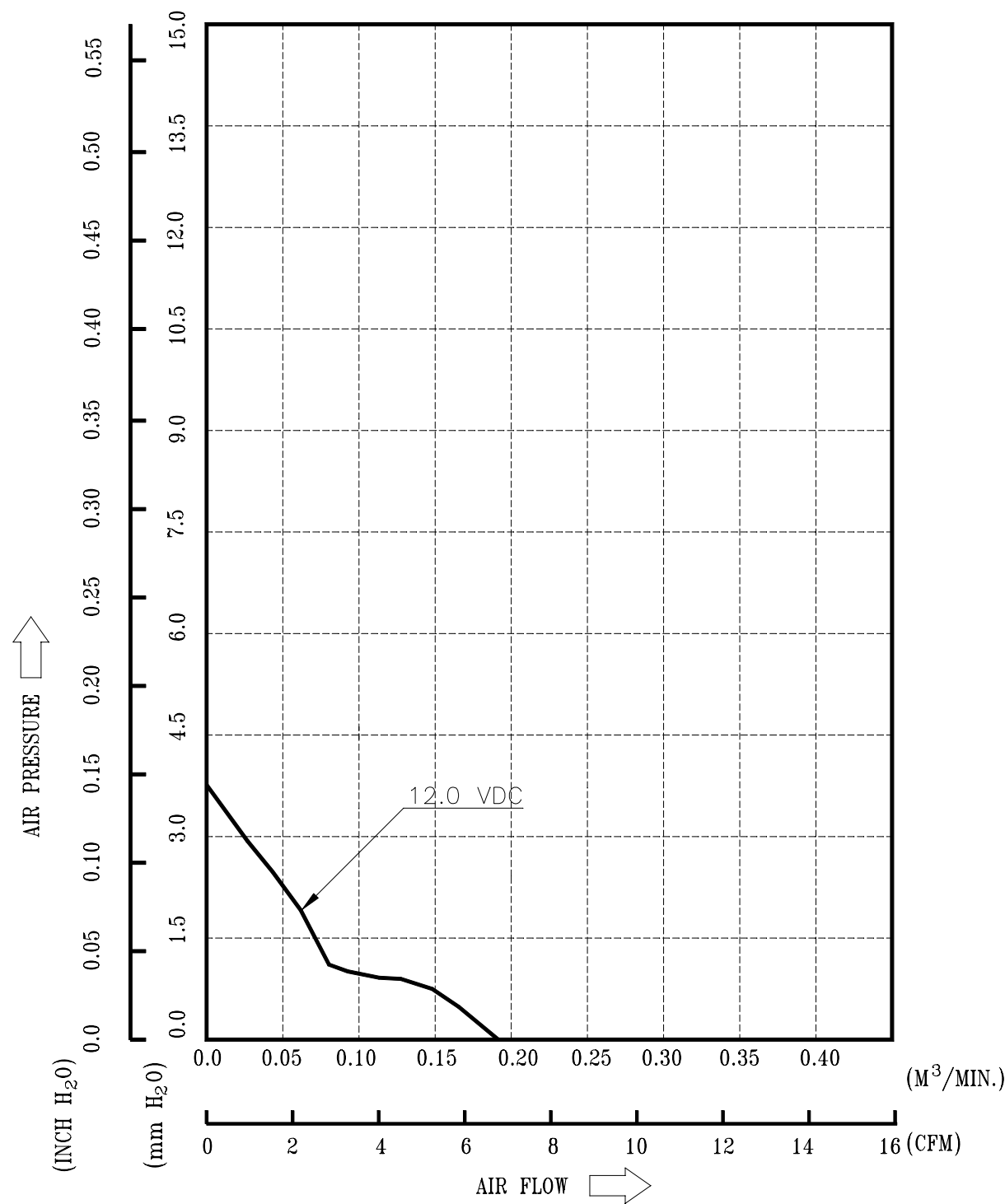
8-4. MECHANICAL TEMPERATURE: +20°C
SHOCK ORIENTATION: X, Y, Z
 POWER: NON-OPERATING
 ACCELERATION: 20 G MIN.
 PULSE: 11 ms HALF-SINE WAVE
 NUMBER OF SHOCKS: 5 SHOCKS
 FOR EACH DIRECTION

8-5. LIFE TEMPERATURE: MAX , OPERATING TEMPERATURE
 POWER: OPERATING
 DURATION: 1000 HOURS MIN.

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9. P & Q CURVE:



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

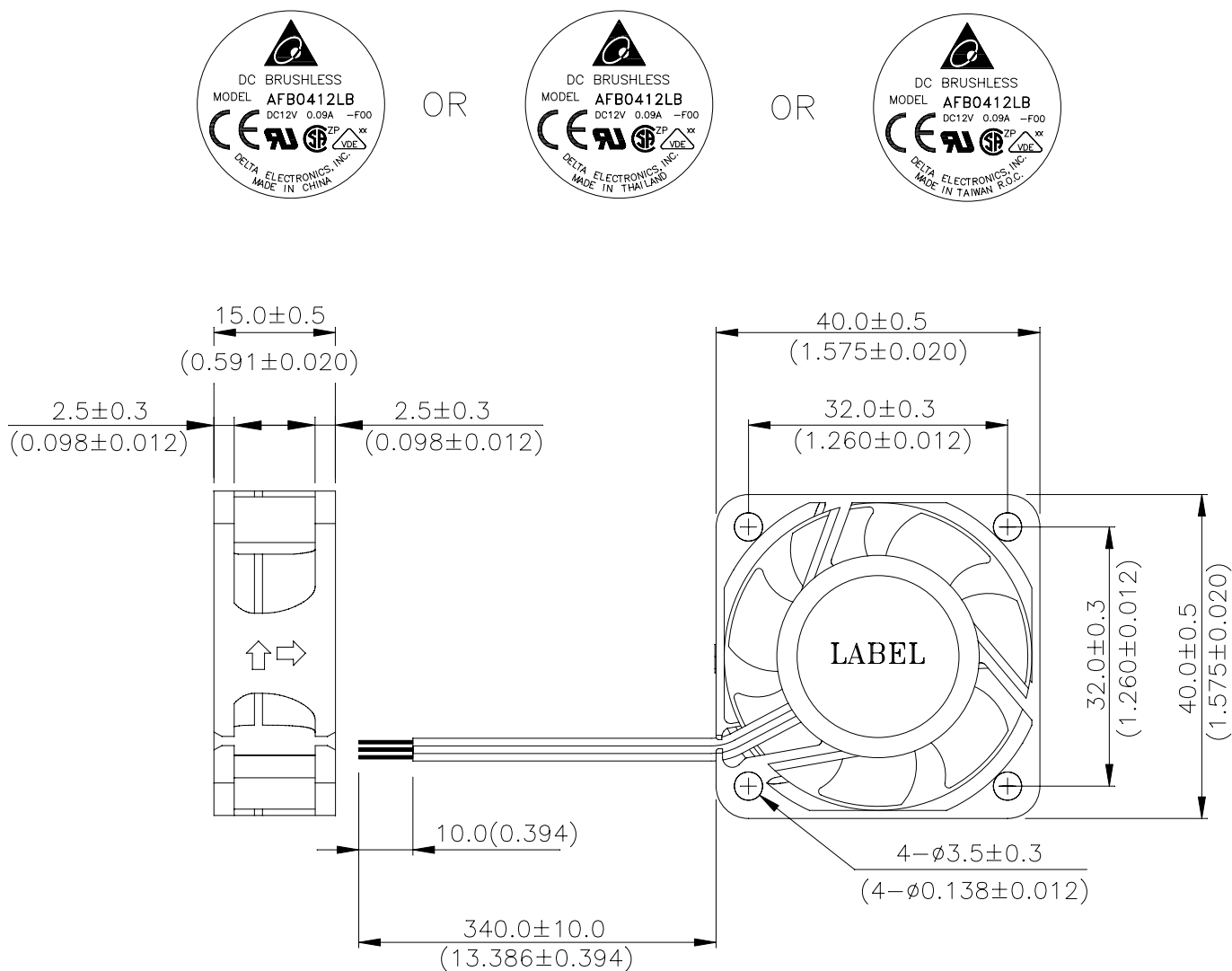
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DELTA MODEL: AFB0412LB-F00

10. DIMENSION DRAWING:

LABEL:



NOTES:

1. WIRE: UL1007 AWG#24
RED WIRE----(+)
BLACK WIRE----(-)
BLUE WIRE----(-F00)
2. THIS PRODUCT IS RoHS COMPLIANT

UNIT: mm(INCH)

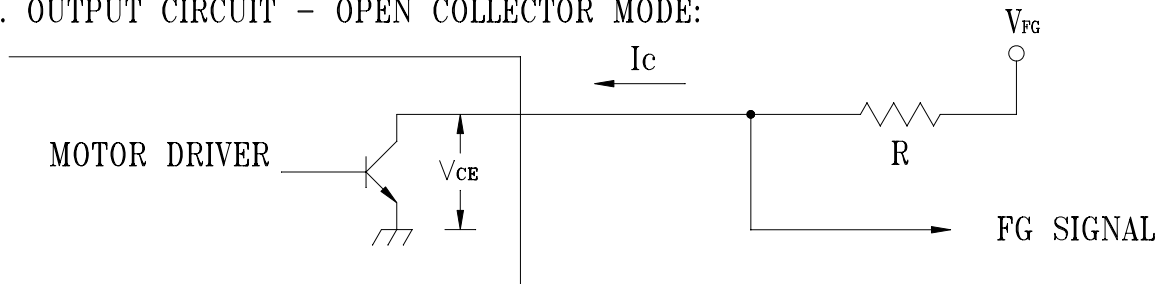
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11. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION:

THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

2. SPECIFICATION:

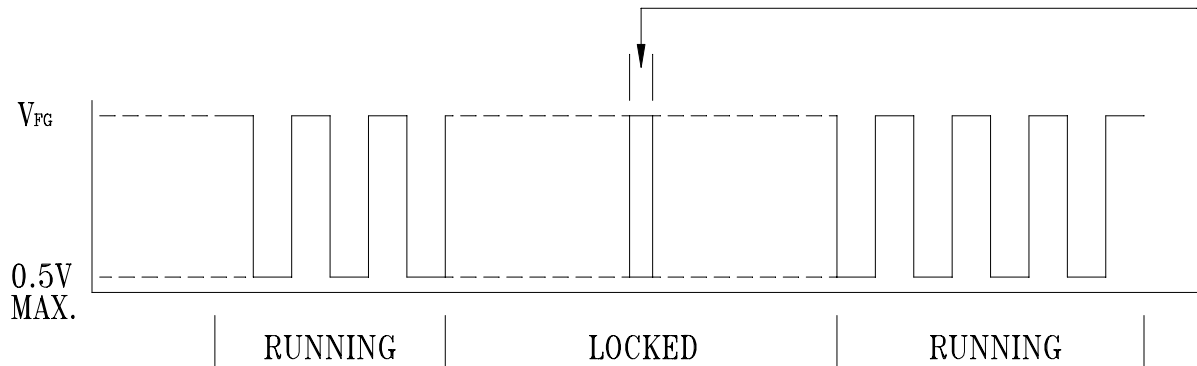
$V_{ce}(\text{sat}) = 0.5V \text{ MAX.}$

$V_{FG} = 15VDC \text{ MAX.}$

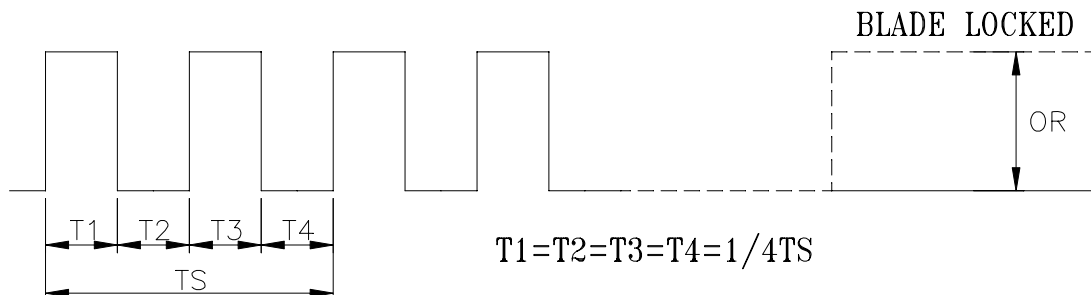
$I_c = 5mA \text{ MAX.}$

$R \geq V_{FG} / I_c$

3. FREQUENCY GENERATOR WAVEFORM: AUTOMATIC SELF ROTATION RECOVERY



FAN RUNNING FOR 4 POLES



$N = \text{R.P.M}$

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

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES

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