



## SPECIFICATION FOR APPROVAL

Customer : STD

Description : DC FAN

Customer Part No. \_\_\_\_\_

REV. : \_\_\_\_\_

Delta Model No. : PFB1224UHEP0

REV. : 01

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

Sample Issue Date : MAR.05 2020

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

APPROVED BY:

DATE :

DELTA ELECTRONICS, INC.  
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## STATEMENT OF DEVIATION

NONE

DESCRIPTION:

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## Specification For Approval

Customer : STD

Description : DC FAN

Customer P/N :

rev. :

Delta model no. : PFB1224UHEP0

Delta Safety Model No.: PFB1224UHE

Sample revision. : 01

Issue no.:

Sample issue date : MAR.05 2020

Quantity :

### 1. SCOPE:

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

### 2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	24V
OPERATION VOLTAGE RANGE	21.6 - 26.4 VDC
INPUT CURRENT(AVG.) (AT RATED VOLTAGE)	2.00 (MAX. 2.40) A SAFETY CURRENT ON LABEL : 2.40A
INPUT POWER(AVG.) (AT RATED VOLTAGE)	48.0 (MAX. 57.60) W
SPEED (AT RATED VOLTAGE)	5500 ± 10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	7.16 (MIN. 6.444) M <sup>3</sup> /MIN. 252.85 (MIN. 227.565) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	35.877 (MIN. 29.061) mmH <sub>2</sub> O 1.412(MIN. 1.144) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	66.5 (MAX. 70.5) dB-A
INSULATION TYPE	UL: CLASS A
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)

(continued)

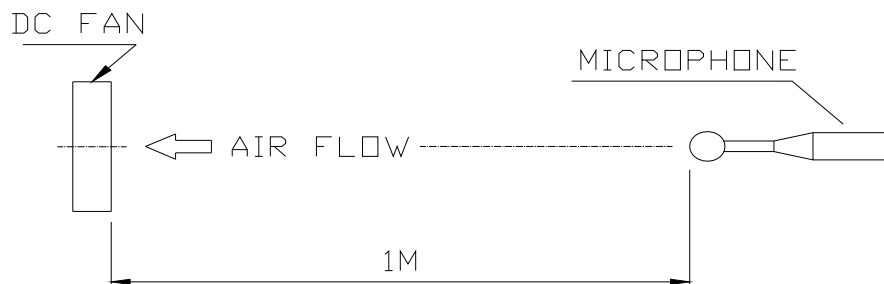
PART NO:

DELTA MODEL: PFB1224UHEP0

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
LOCKED ROTOR PROTECTION	THE CURRENT WILL SHUT DOWN TO ZERO WHILE FAN'S BLADE IS LOCKED.

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 SEMI-ANECHOIC CHAMBER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

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PART NO:

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DELTA MODEL: PFB1224UHEP0

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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----- 380 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

FAN'S PROTECTION WITHOUT FIRE IS PERFORMED IN 96 HOURS WHILE LOCKED ROTOR 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.

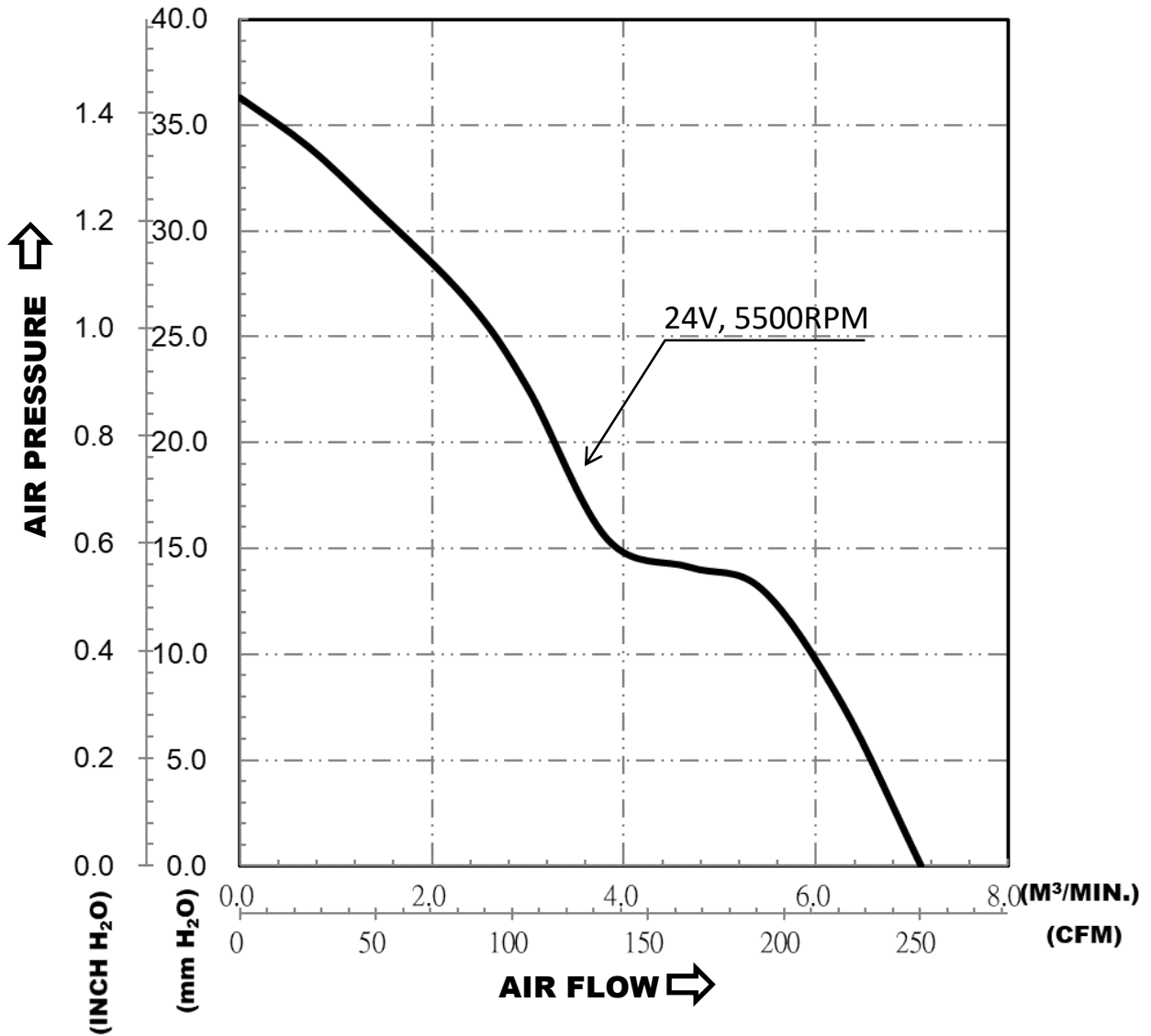
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



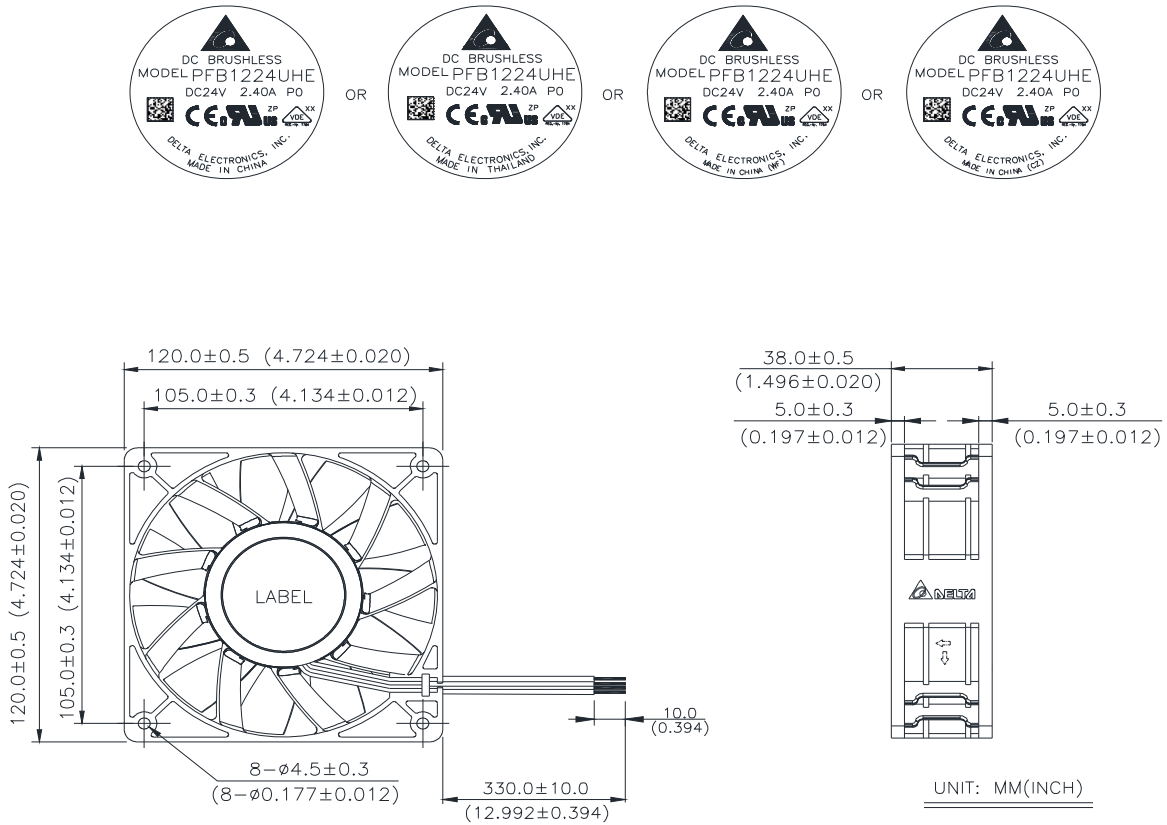
\*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE  
TEMPERATURE-----ROOM TEMPERATURE  
HUMIDITY-----65%RH

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9. DIMENSION DRAWING:

LABEL:



NOTES:

1. THIS PRODUCT IS ROHS COMPLIANT.
2. CABLE WIRE: UL 1061 AWG #22
  - RED WIRE ----(+)
  - BLACK WIRE ----(-)
  - BLUE WIRE ----(F00)
  - YELLOW WIRE ----(PWM)

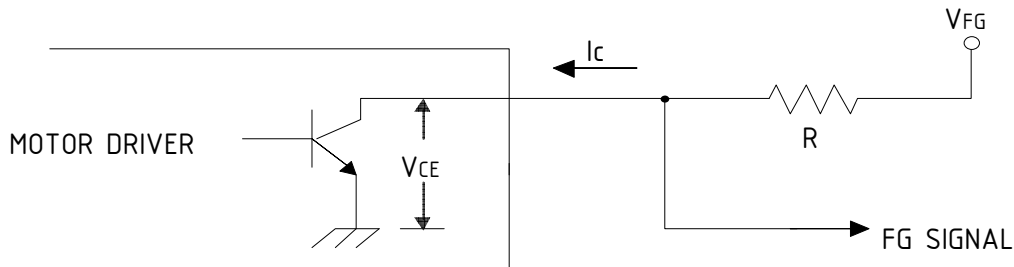


PART NO:

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10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



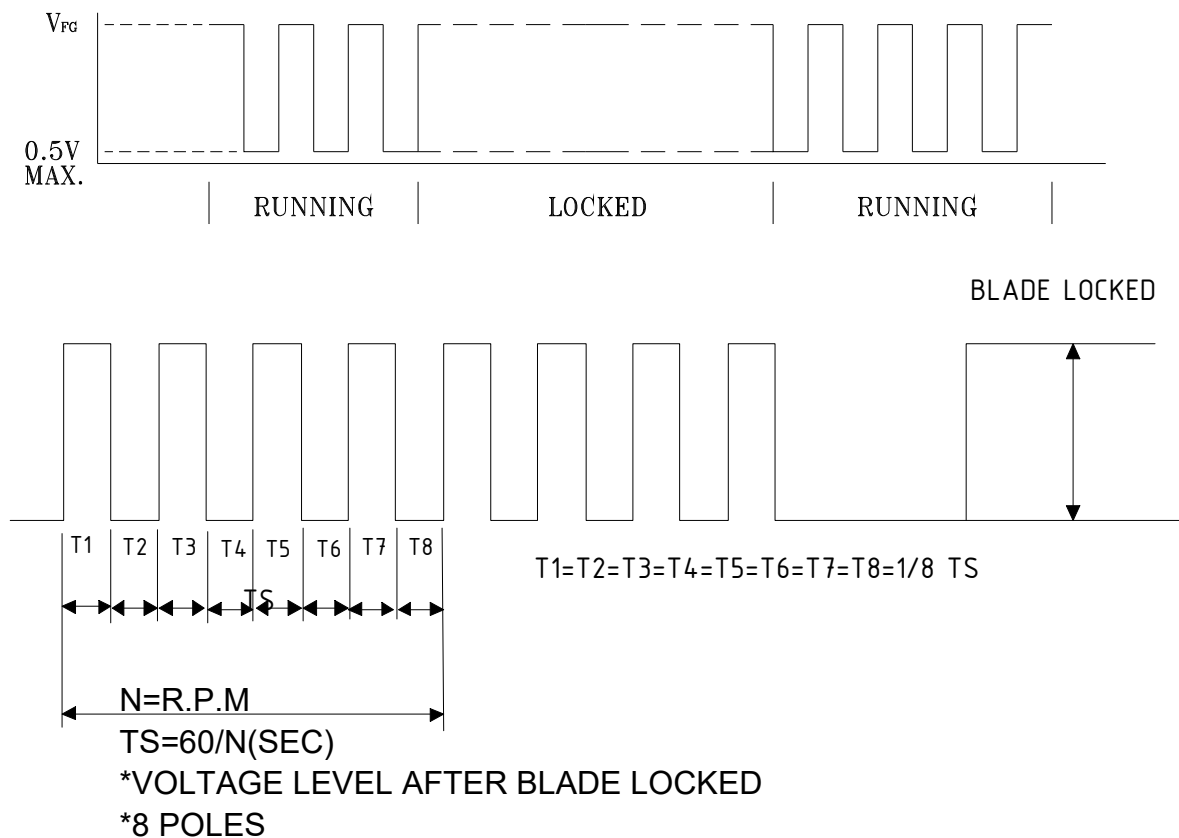
CAUTION:

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

10-2. SPECIFICATION:

$V_{FG} = 5.0$  TYP. ( $V_{CC}$  MAX.)  $I_c = 5\text{mA}$  MAX.  
 $V_{CE} = 0.5\text{V}$  MAX.  $R \geq V_{FG} / I_c$

10-3. FREQUENCY GENERATOR WAVEFORM:



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PART NO:

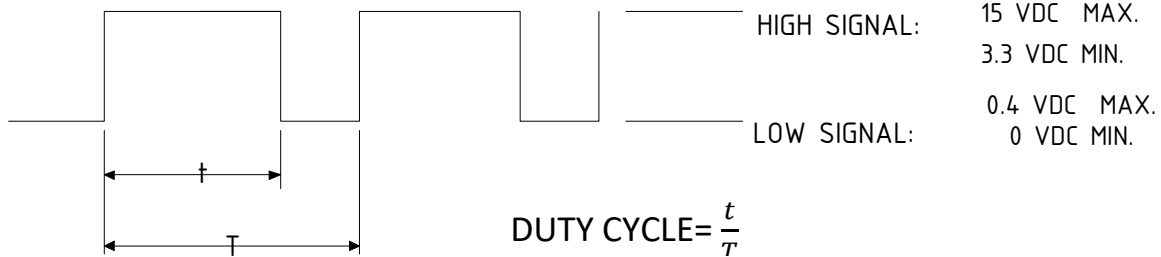
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10. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~15 VDC



\*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 SPINNING.

\* THE FAN WILL SPIN AT MAXIMUM SPEED WHILE CONTROL SIGNAL LEAD IS DISCONNECTED.

11. SPEED VS PWM CONTROL SIGNAL:

(AT 25°C, RATED VOLTAGE & PWM SIGNAL AS FOLLOW)

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A) TYP.
100	5500±10%	2.0
0	0	0.02

\*PWM SIGNAL

PWM FREQUENCY = 25KHz

