

SPECIFICATION FOR APPROVAL  
 \*\*\*\*\*

Customer:

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: FFB0824SHE-F00

Sample Rev: 00

Issue NO:

Sample Issue Date: NOV.16.2006

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	24 VDC
OPERATION VOLTAGE	14.0 - 27.6 VDC
INPUT CURRENT	0.34 (MAX. 0.51) A
INPUT POWER	8.16 (MAX. 12.24) W
SPEED	4900 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.940 (MIN. 1.740 ) M <sup>3</sup> /MIN. 68.51 (MIN. 61.45 ) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	15.01 (MIN. 12.16 ) mmH <sub>2</sub> O 0.591 (MIN. 0.479 ) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	48.5 (MAX. 52.5) dB-A
INSULATION TYPE	UL: CLASS A

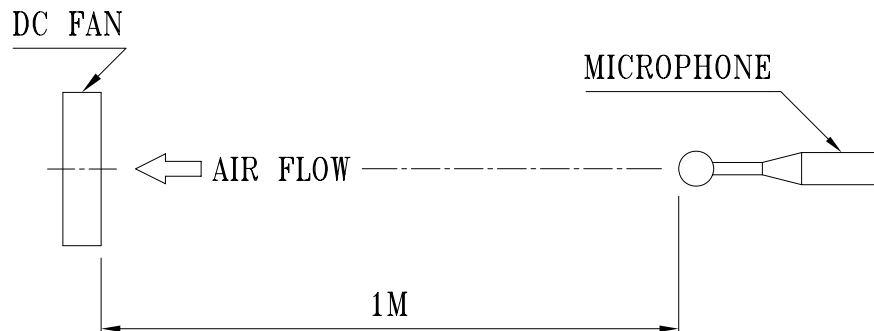
(continued)

PART NO:

DELTA MODEL: FFB0824SHE-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
OVER CURRENT SHUT DOWN	THE CURRENT WILL SHUT DOWN WHEN LOCKING ROTOR.
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.

-----  
PART NO:  
-----

DELTA MODEL: FFB0824SHE-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 ----- 170 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:  
-----

DELTA MODEL: FFB0824SHE-F00  
-----

8. BASIC RELIABILITY REQUIREMENT:

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

8-2. HUMIDITY EXPOSURE      TEMPERATURE: +25°C ~ +65°C  
                                  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 <sup>2</sup> /Hz)
10	0.040
20	0.100
40	0.100
800	0.002
1000	0.002

TEST TIME: 2 HOURS ON EACH ORIENTATION

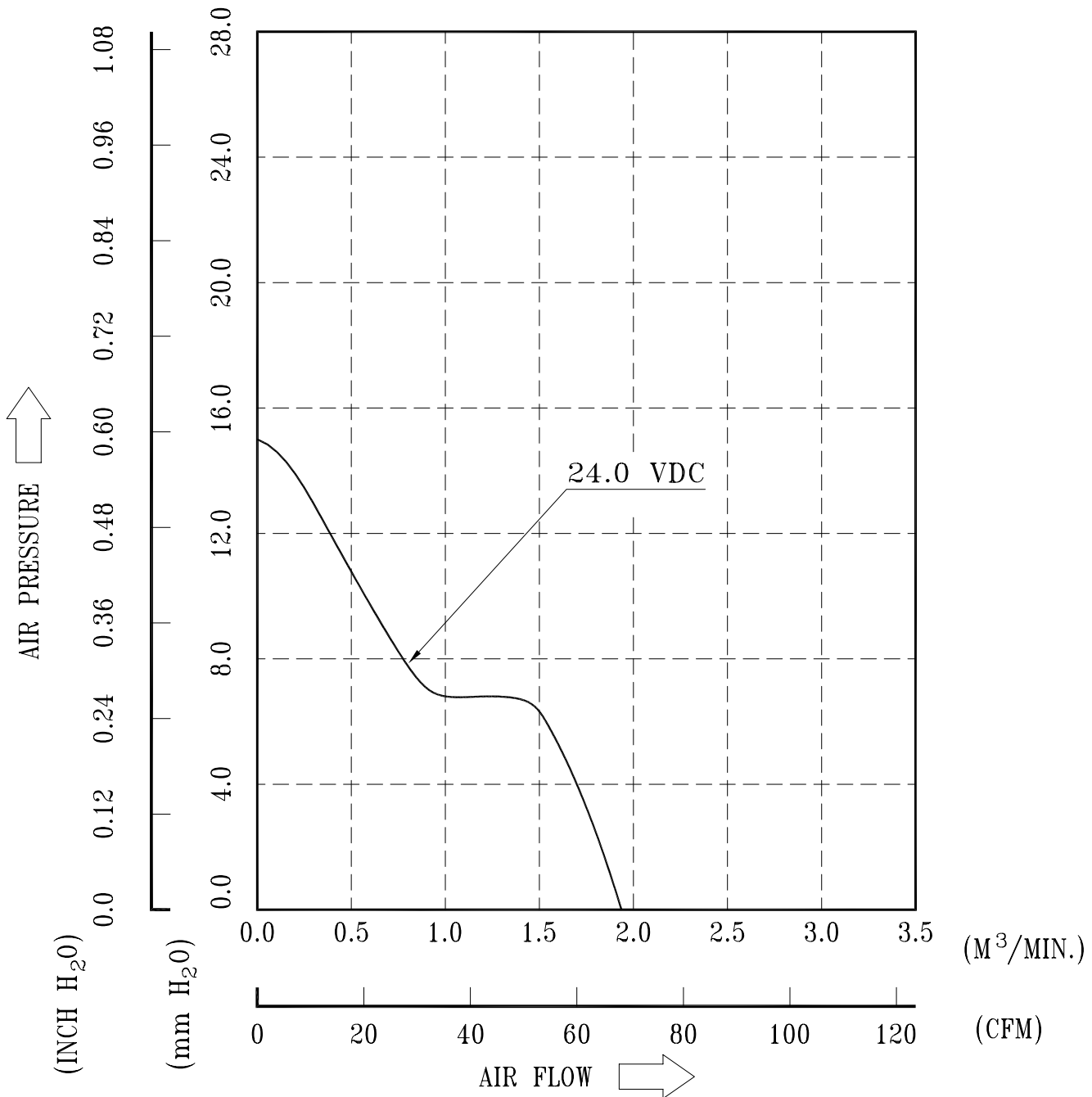
8-4. MECHANICAL SHOCK      TEMPERATURE: +20°C  
                                  ORIENTATION: X, Y, Z  
                                  POWER: NON-OPERATING  
                                  ACCELERATION: 20 G MIN.  
                                  PULSE: 11 ms HALF-SINE WAVE  
              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

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

PART NO:

DELTA MODEL: FFB0824SHE-F00

9. P & Q CURVE:



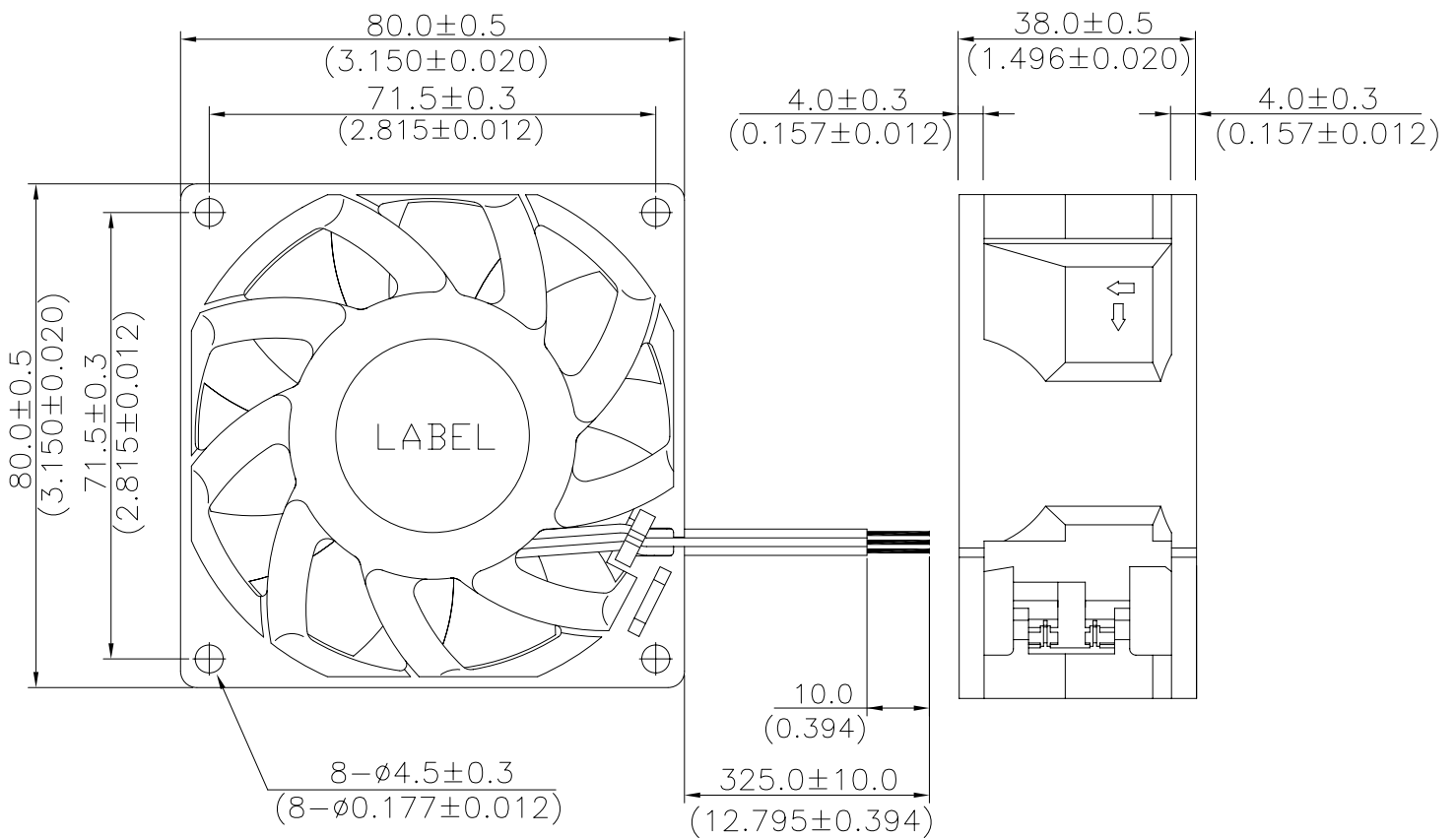
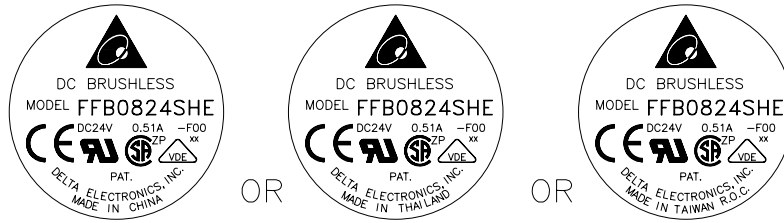
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

PART NO:

DELTA MODEL: FFB0824SHE-F00

10. DIMENSION DRAWING:

LABEL:



UL 1007 -F- AWG #24  
BLACK WIRE NEGATIVE(-)  
RED WIRE POSITIVE(+)  
BLUE WIRE FREQUENCY(-F00)

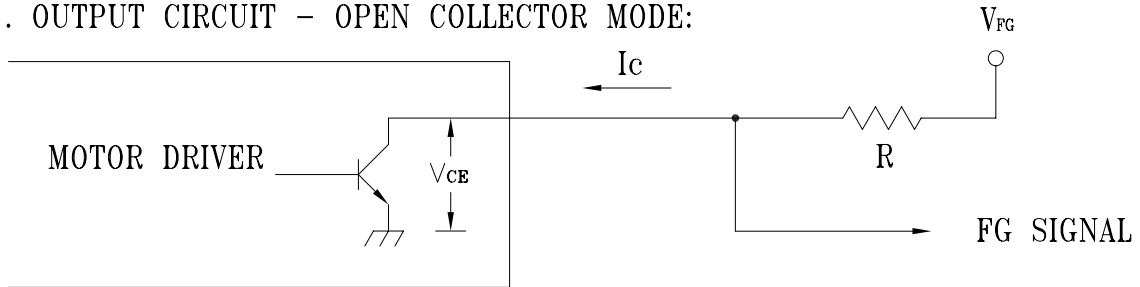
UNIT:mm(INCH)

PART NO:

DELTA MODEL: FFB0824SHE-F00

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:

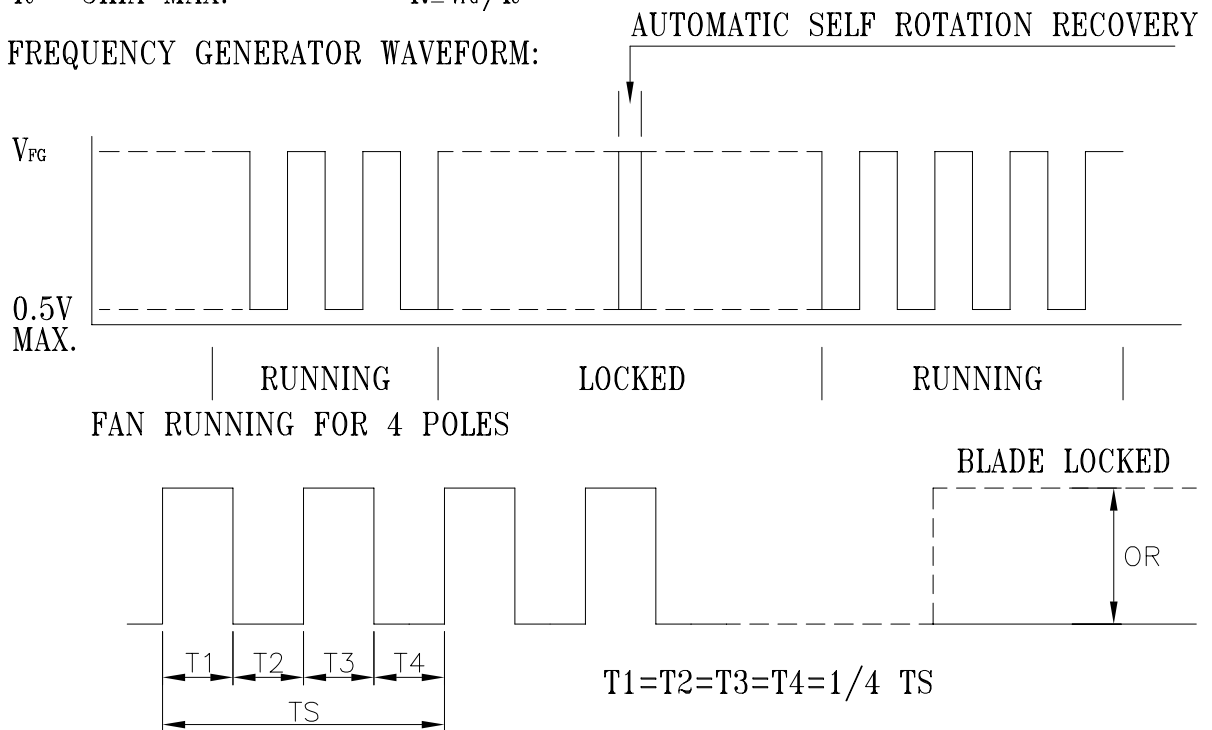
$V_{CE}(\text{sat}) = 0.5\text{V MAX.}$

$V_{FG} = 27.6\text{VDC MAX.}$

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

$R \geq V_{FG}/I_c$

3. FREQUENCY GENERATOR WAVEFORM:



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

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

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES