

SPECIFICATION FOR APPROVAL

Customer:

Description:	DC FAN		
Customer P/N:		REV:	
Delta Model NO.:	EFB1548HG-F00		
Sample Rev:	02	Issue NO:	
Sample Issue Date:	SEP.30.2008	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	48 VDC
OPERATION VOLTAGE	24.0 - 60.0 VDC
INPUT CURRENT	0.31 (MAX. 0.53) A
INPUT POWER	14.88 (MAX. 25.44) W
SPEED	3350 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	7.130 (MIN. 6.420) M ³ /MIN. 251.79 (MIN. 226.72) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	17.49 (MIN. 14.20) mmH ₂ O 0.689 (MIN. 0.559) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	55.0 (MAX. 58.0) dB-A
INSULATION TYPE	UL: CLASS A

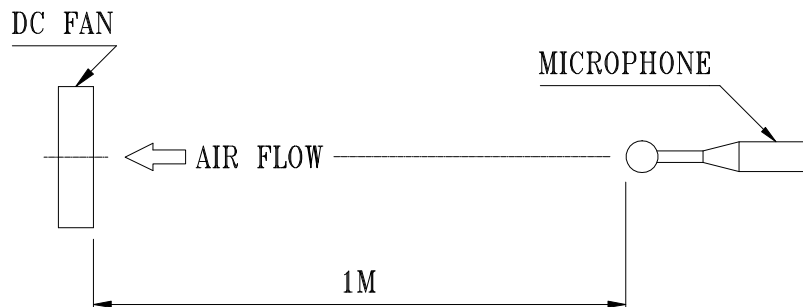
(continued)

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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	80,000 HOURS CONTINOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	COUNTER 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.

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3. MECHANICAL:

- 3-1. DIMENSIONS _____ SEE DIMENSIONS DRAWING
- 3-2. FRAME — — — _____ DIE-CAST ALUMINUM
- 3-3. IMPELLER _____ PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM _____ TWO BALL BEARINGS
- 3-5. WEIGHT _____ 840 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, PBB0s, CFCs, PBBEs, PBDPEs AND HCFCs.

7. PRODUCTION LOCATION

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

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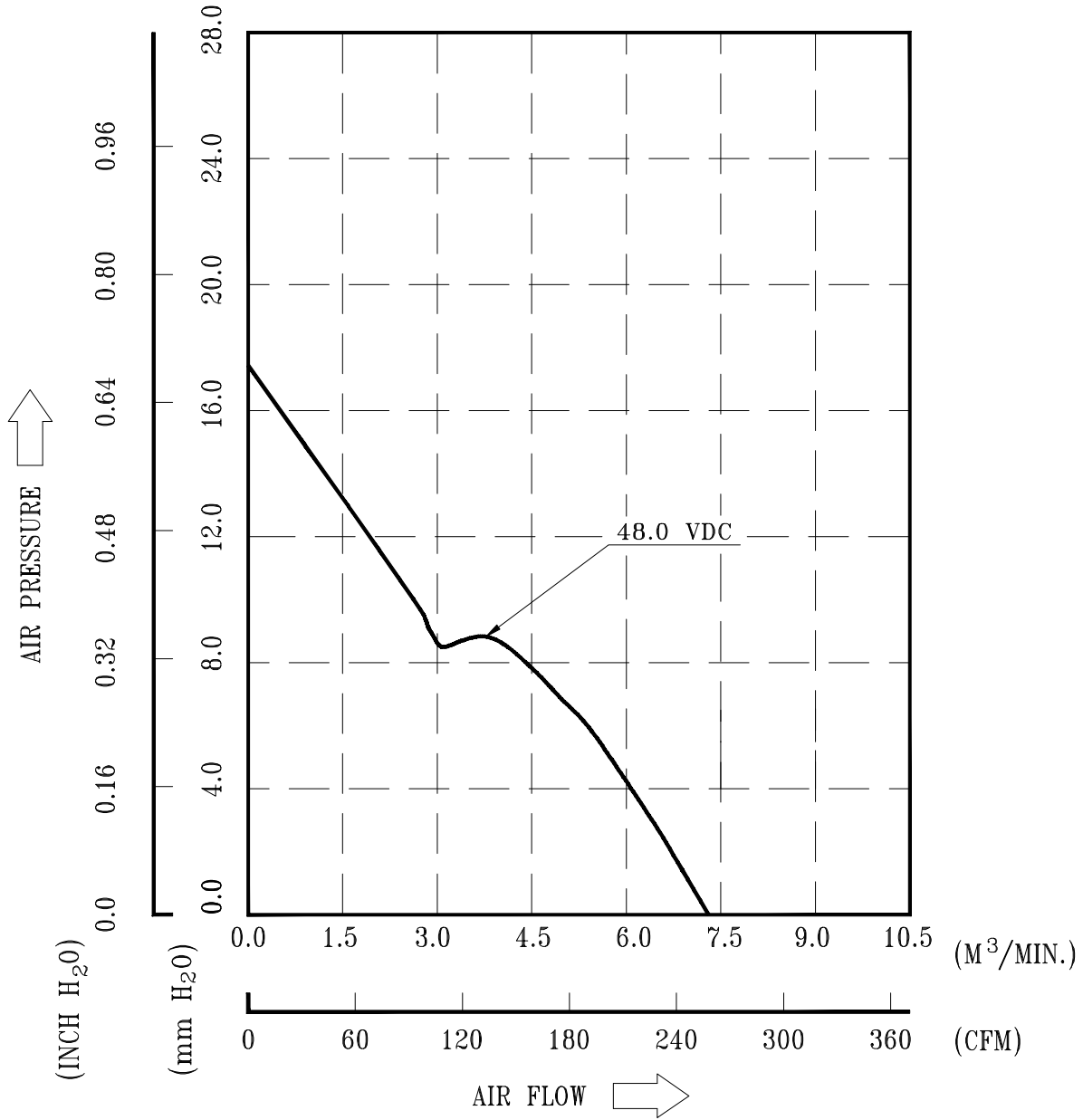
8. BASIC RELIABILITY REQUIREMENT:

- 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 $g_{RMS}=3.2$
- | 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 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.

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9. P & Q CURVE:



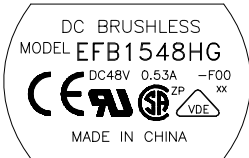
* TEST CONDITION: INPUT VOLTAGE — OPERATION VOLTAGE
TEMPERATURE — ROOM TEMPERATURE
HUMIDITY — 65%RH

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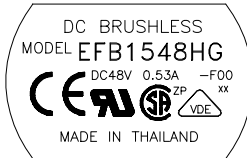
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10. DIMENSION DRAWING:

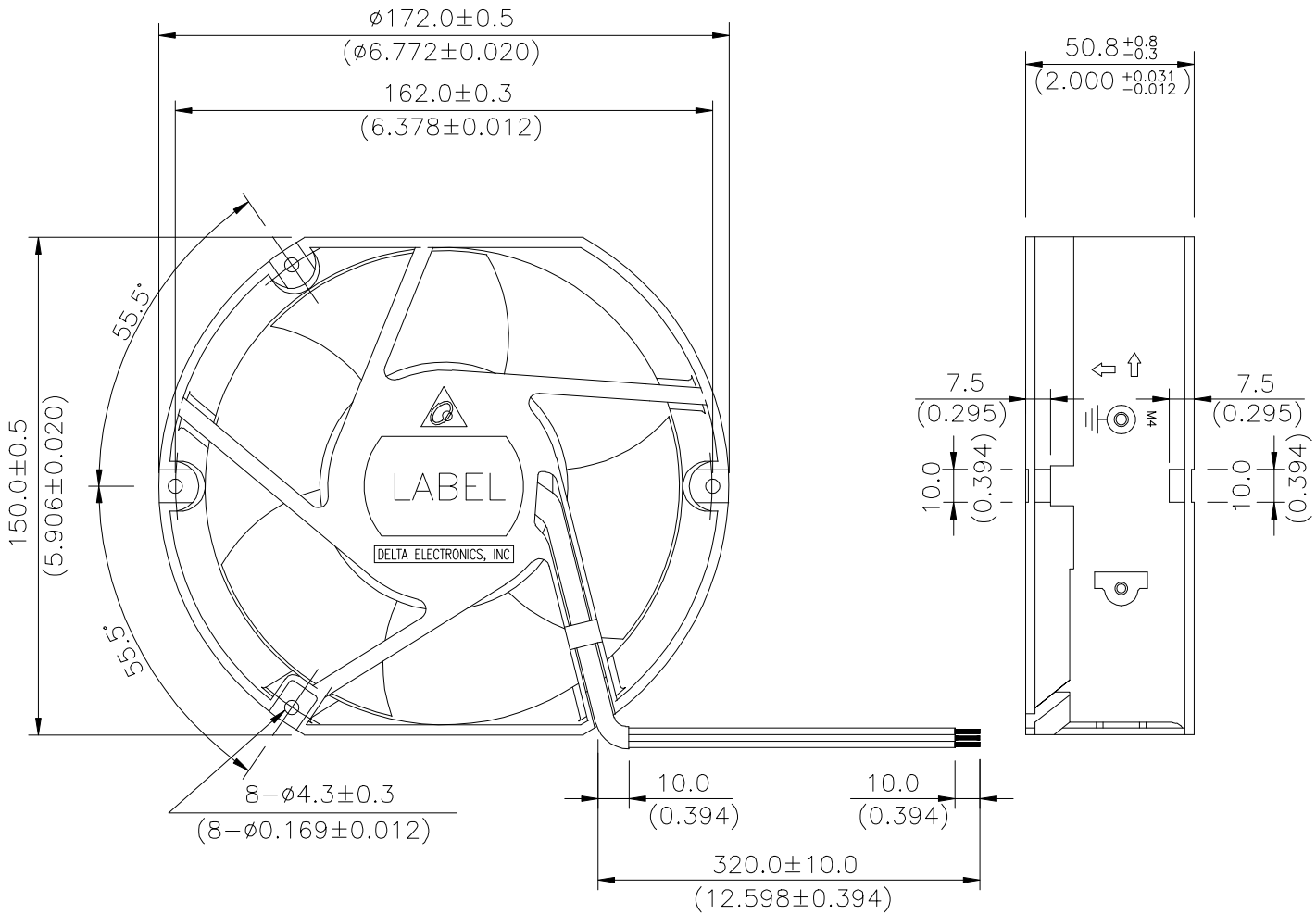
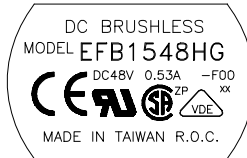
LABEL:



OR



OR



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

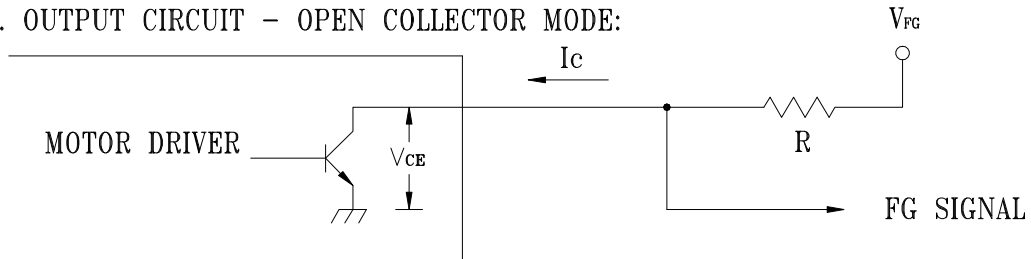
UNIT: mm(INCH)

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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:

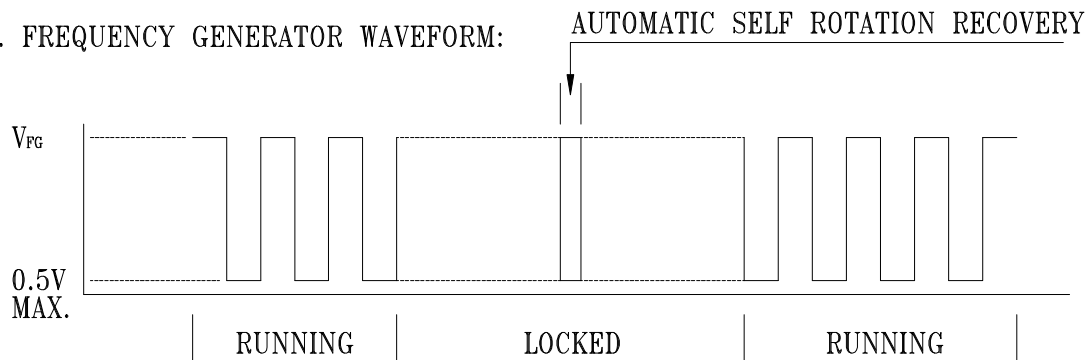
$V_{CE} (sat) = 0.5V$ MAX.

$V_{FG} = 60.0VDC$ MAX.

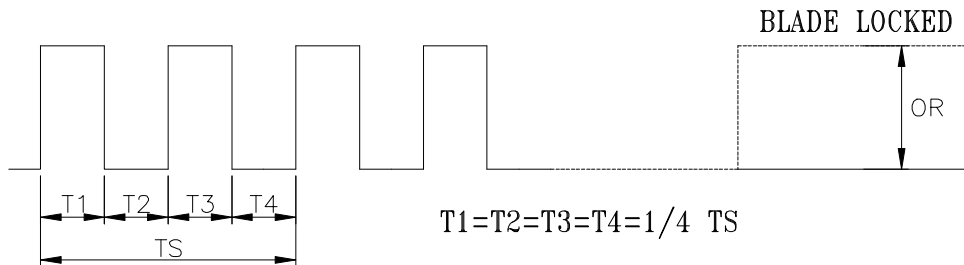
$I_c = 5mA$ MAX.

$R \geq V_{FG} / I_c$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$N = R.P.M$

$TS = 60 / N (SEC)$

*VOLTAGE LEVEL AFTER BLADE LOCKED

*4 POLES