

DELTA ELECTRONICS, INC.
 252, SHANG YING ROAD, KUEI SAN
 TAOYUAN HSIEN 333, TAIWAN, R. O. C.

TEL : 886-(0)3-3591968
 FAX : 886-(0)3-3591991

SPECIFICATION FOR APPROVAL

Customer: STD

 Description: DC FAN

 Customer P/N: REV:

 Delta Model NO.: THC1248ME

 Sample Rev: 01 Issue NO:

 Sample Issue Date: NOV.13.2017 Quantity:

1. SCOPE:

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

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	48 VDC
OPERATION VOLTAGE	36.0 - 60.0 VDC
INPUT CURRENT	0.80 (MAX. 0.96) A
INPUT POWER	38.40 (MAX. 46.08) W
SPEED	7750±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	5.418 (MIN. 4.876) M ³ /MIN. 191.33 (MIN. 172.19) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	53.68 (MIN. 43.48) mmH ₂ O 2.114 (MIN. 1.712) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	68.0 (MAX. 72.0) dB-A
INSULATION TYPE	UL: CLASS A

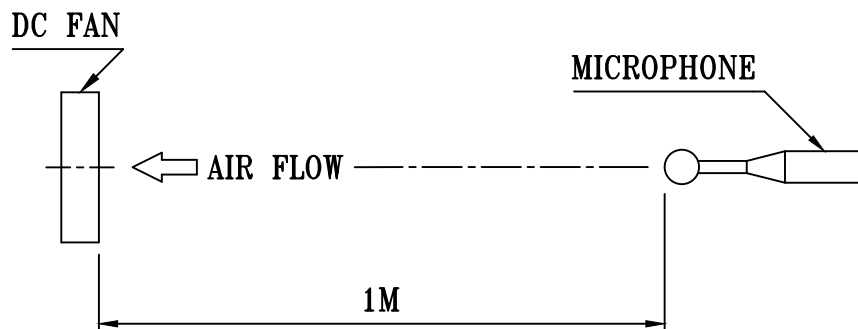
(continued)

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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 50/60 Hz ONE MINUTE, (BETWEEN FRAME AND (+) TERMINAL)
EXTERNAL COVER	OPEN TYPE
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
LEAD WIRE	UL 2464 AWG#24 BLACK WIRE NEGATIVE (-) RED WIRE POSITIVE (+) BLUE WIRE FREQUENCY (F00) YELLOW WIRE SPEED CONTROL (PWM)

- 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 ---- PLASTIC UL: 94V-0(SECONDARY MATERIALS NOT ALLOWED)
- 3-3. IMPELLER --- PLASTIC UL: 94V-0(SECONDARY MATERIALS NOT ALLOWED)
- 3-4. BEARING SYSTEM ----- TWO BALL BEARINGS
- 3-5. WEIGHT ----- 385 GRAMS
- 3-5-1. IMPELLER WEIGHT ----- 55 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.

5-3. INGRESS PROTECTION

THE FAN MEET GR-487 SALT FOG TEST AND A MOTOR ENCLOSURE RATE IP68.

6. RE OZONE DEPLETING SUBSTANCES:

- 6-1. NO CONTAINING PBBs, PBBOs, CFCs, PBBEs, PBDPEs AND HCFCs.

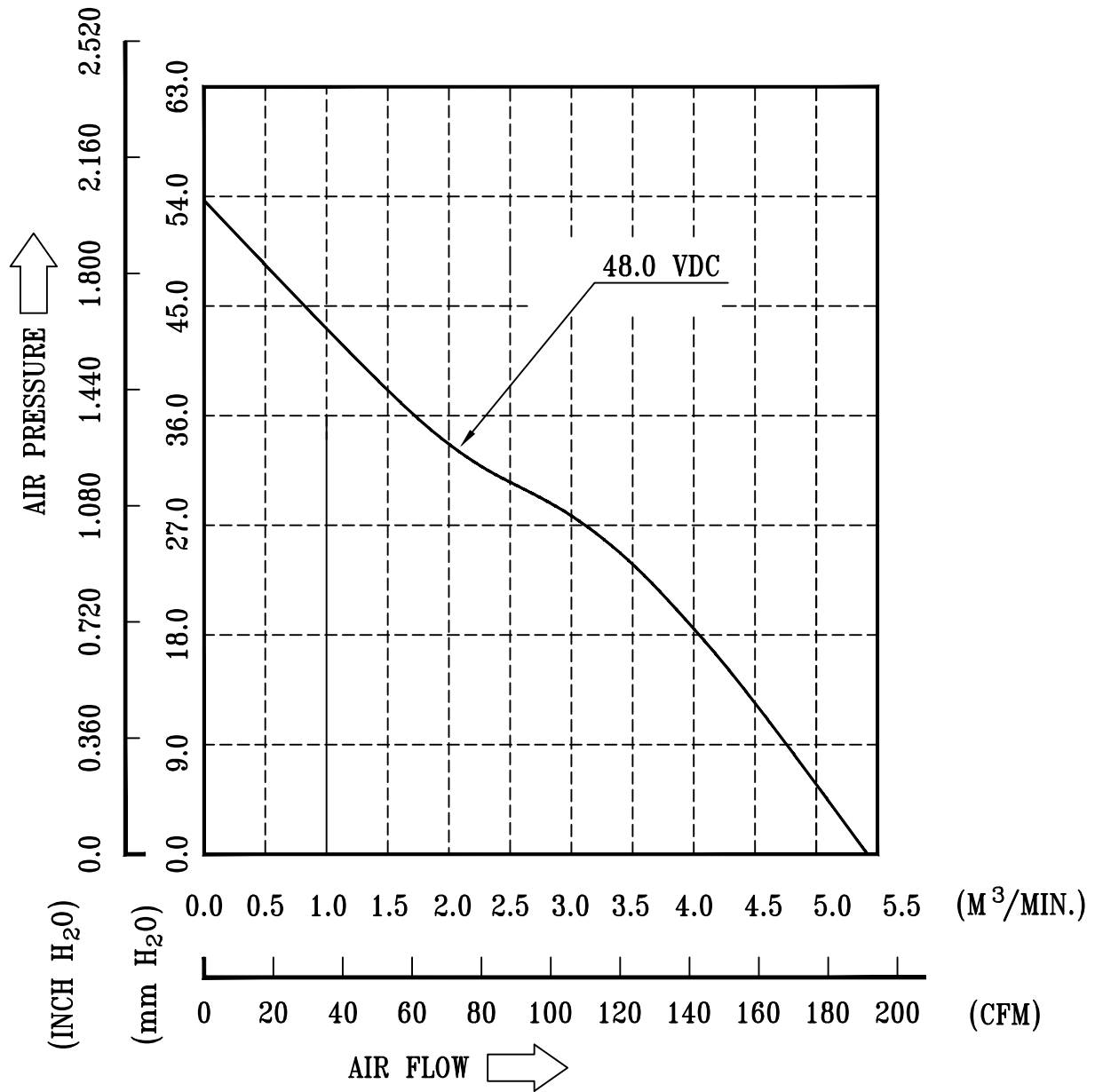
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



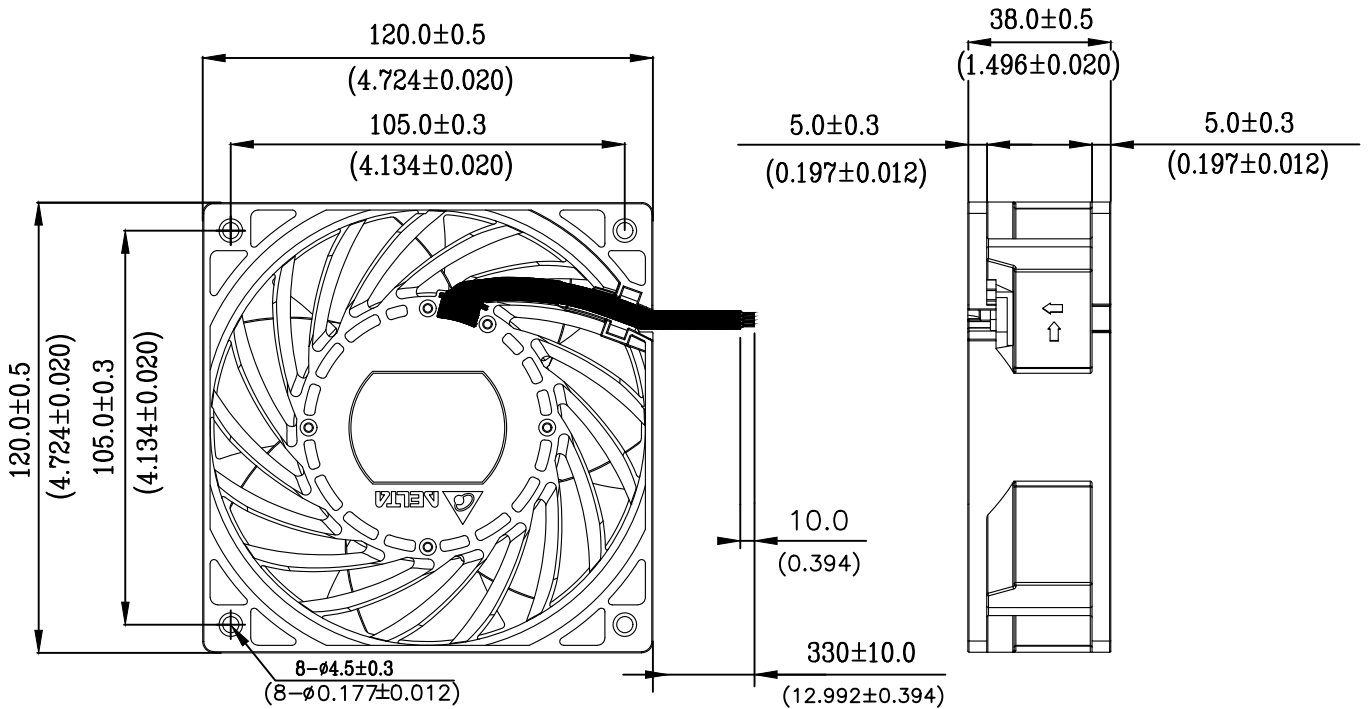
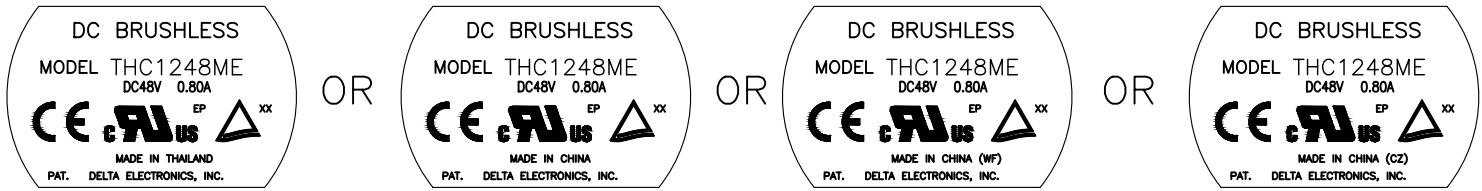
* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE
TEMPERATURE ----- ROOM TEMPERATURE
HUMIDITY ----- 65%RH

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9. DIMENSION DRAWING:

LABEL:



UNIT : mm(INCH)

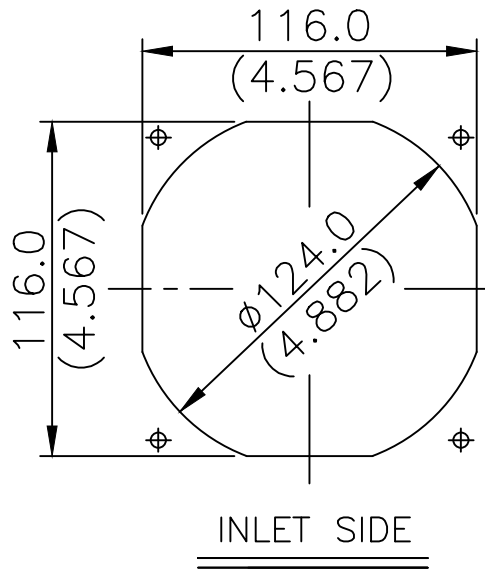
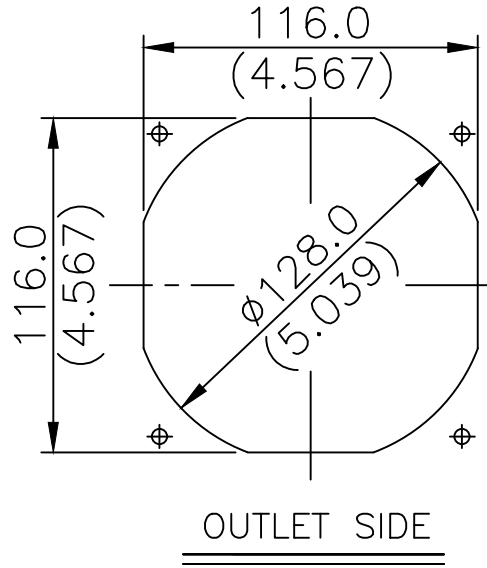
NOTES:

1. LEAD WIRE: UL2464 AWG#24 (ZHULI CABLE WITH UV RESSISTANCE)
RED WIRE----(+)
BLACK WIRE----(-)
YELLOW WIRE----(PWM)
BLUE WIRE----(F00)
2. THIS PRODUCT IS RoHS COMPLIANT

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10. MOUNTING PANEL CUTOUT:

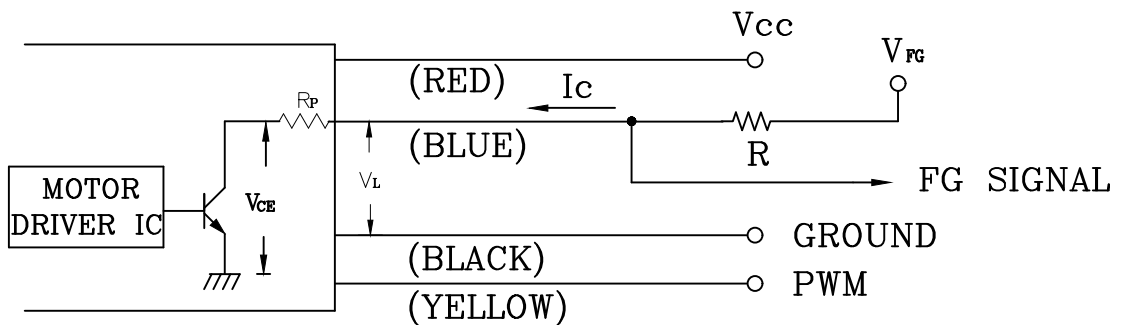


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11. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



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

2. SPECIFICATION:

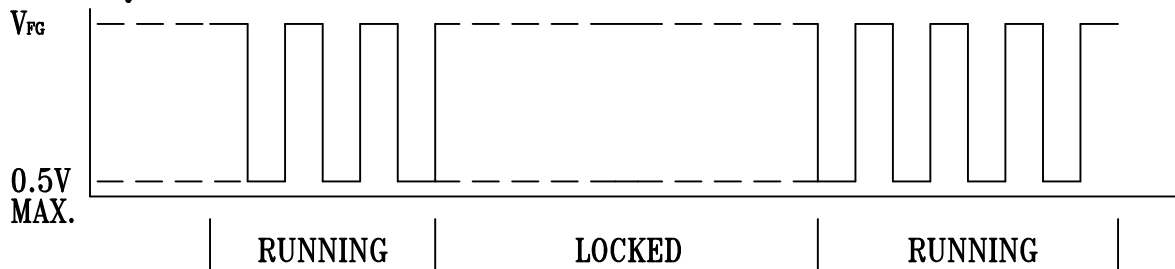
$$V_{CE}(\text{sat}) = 0.5V \text{ MAX}$$

$$V_{FG} = 5V \text{ TYP (OPERATION VOLTAGE MAX)}$$

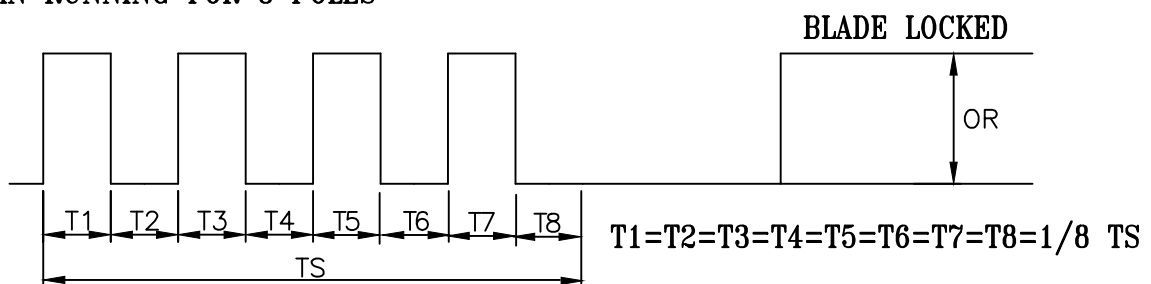
$$I_c = 7.5mA \text{ MAX.}$$

$$R \geq V_{FG} / I_c$$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 8 POLES



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

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

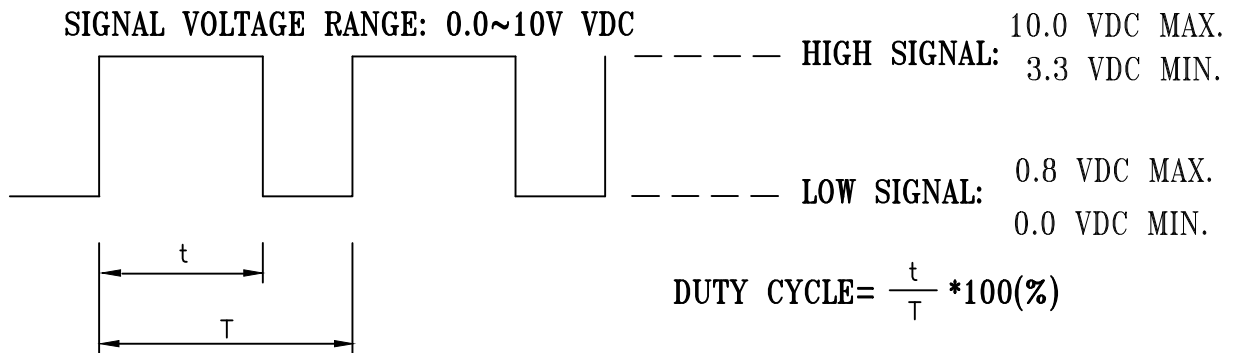
*VOLTAGE LEVEL AFTER BLADE LOCKED

*8 POLES

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12. PWM CONTROL SIGNAL:



- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 15KHZ~25KHZ.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 20KHZ.
- 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 DC48V 20KHZ 20% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

13. SPEED VS PWM CONTROL SIGNAL: (AT 48VDC & F=20KHZ & T=25 DEG.C)

DUTY CYCLE (%)	SPEED R.P.M.	CURRENT (A)
100	7750±10%	0.80
75	6540±10%	0.50
50	4520±10%	0.25
25	2500±10%	0.15
0	0	0.02

14. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:

