



SPECIFICATION FOR APPROVAL

Customer. \_\_\_\_\_

Description. DC BLOWER

Part No. \_\_\_\_\_ REV. \_\_\_\_\_

Delta Model No. TCA1048AB0C REV. 02

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

Sample Issue Date. AUG.11 2016

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

APPROVED BY:

DATE :

DELTA ELECTRONICS, INC.

TAOYUAN PLANT

252, SHANG YING ROAD, KUEI SAN INDUSTRIAL ZONE TAOYUAN

SHIEN, TAIWAN, R.O.C.

TEL:886-(0)3-3591968

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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

STATEMENT OF DEVIATION  
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<input checked="" type="checkbox"/> NONE
<input type="checkbox"/> DESCRIPTION :

DELTA ELECTRONICS, INC.  
 252, SHANG YING ROAD, KUEI SAN  
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**SPECIFICATION FOR APPROVAL**  
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Customer:

Description: DC BLOWER

Customer P/N:

REV:

Delta Model NO.: TCA1048AB0C

Delta Safety Model No: TCA1048A

Smample Rev: 02

Issue NO:

Sample Issue Date: AUG.11 2016

Quantity:

**1. SCOPE:**

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

**2. CHARACTERS:**

ITEM	DESCRIPTION
RATED VOLTAGE	48.0 VDC
OPERATION VOLTAGE	36.0-60.0 VDC
INPUT CURRENT (AVG)	0.39 (MAX. 0.47) A ( SAFETY CURRENT ON LABEL: 0.47A)
INPUT POWER (AVG)	18.72 (MAX. 22.56) W
SPEED	6700±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	1.945 (MIN. 1.751) M <sup>3</sup> /MIN. 68.67 (MIN. 61.80) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	48.12 (MIN. 38.98) mmH <sub>2</sub> O 1.895 (MIN. 1.535) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	65.0 (MAX. 69.0) dB-A
INSULATION TYPE	UL:CLASS A

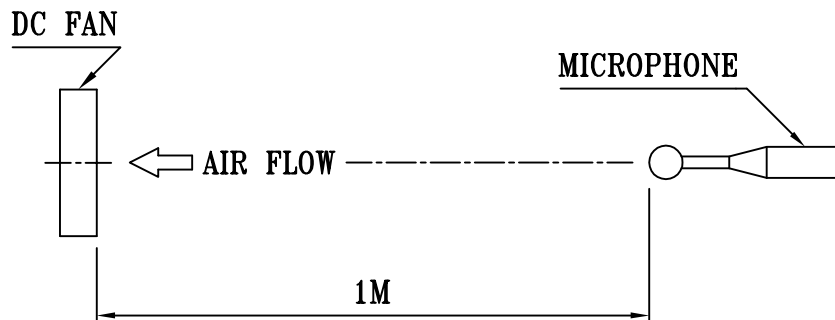
(continued)

PART NO:

DELTA MODEL: TCA1048AB0C

INSULATION STRENGTH	10 MEG OHM MIN. AT 500 VDC (BETWEEN PILLOW AND (+) TERMINAL)
DIELECTRIC STRENGTH	5 mA MAX. AT 500 VAC 50/60 Hz ONE MINUTE, (BETWEEN PILLOW AND (+) TERMINAL)
LIFE EXPECTANCE (L10) AT LABEL VOLTAGE	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH.
ROTATION	COUNTER CLOCKWISE VIEW FROM NAME PLATE SIDE

- 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 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:  
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3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. PILLOW ----- ALUMINUM
- 3-3. IMPELLER ----- PLASTIC UL: 94V-0
- 3-4. BEARING SYSTEM ----- TWO BALL BEARINGS
- 3-5. WEIGHT ----- 136 GRAMS(REF.)
- 3-6. ROTOR WEIGHT ----- 64 GRAMS(REF.)
- 3-7. INGRESS PROTECTION ----- IP55

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.

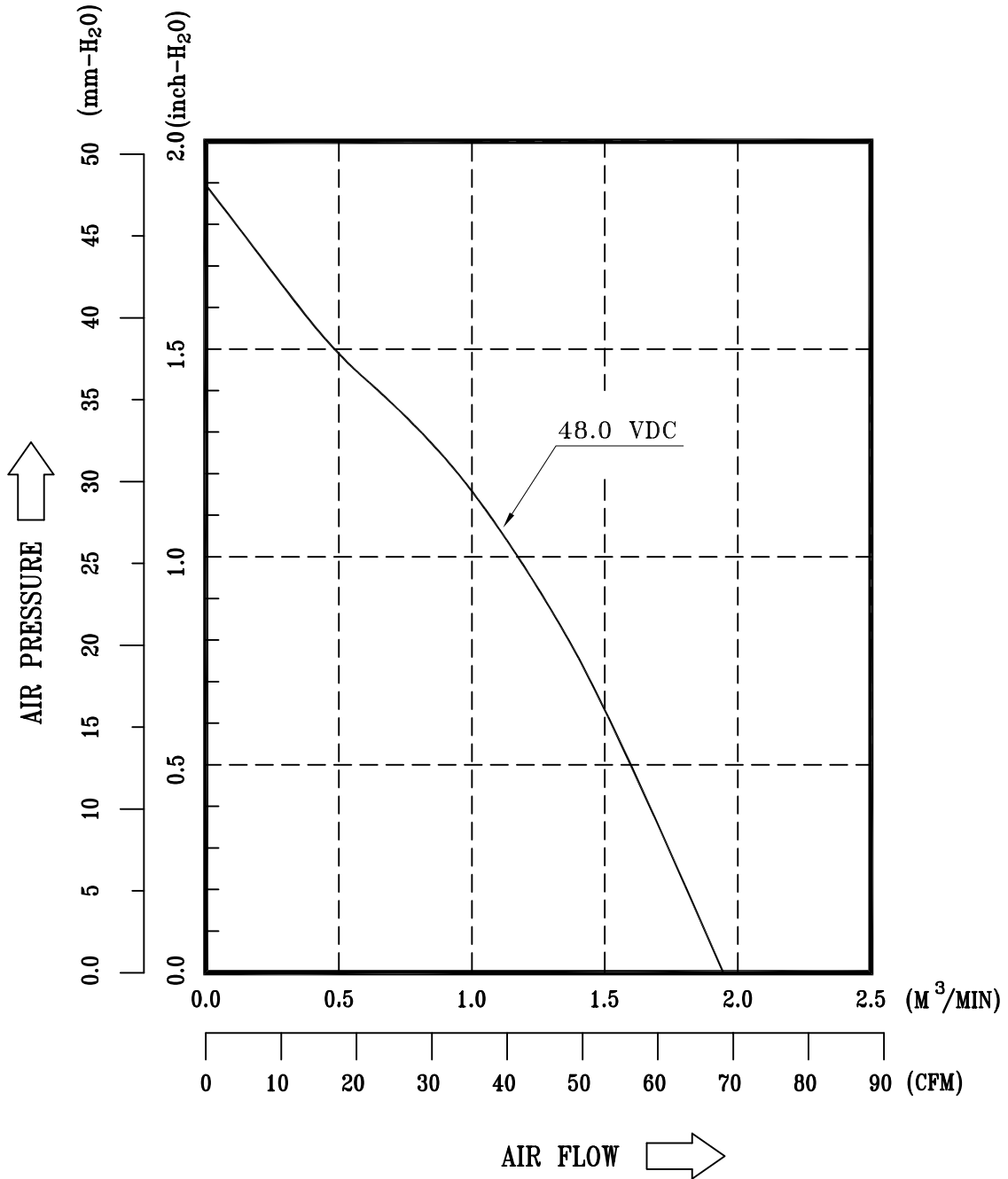
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



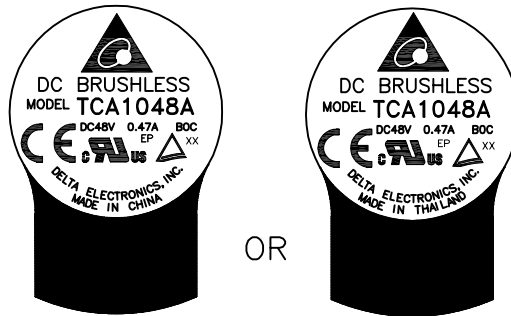
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

PART NO:

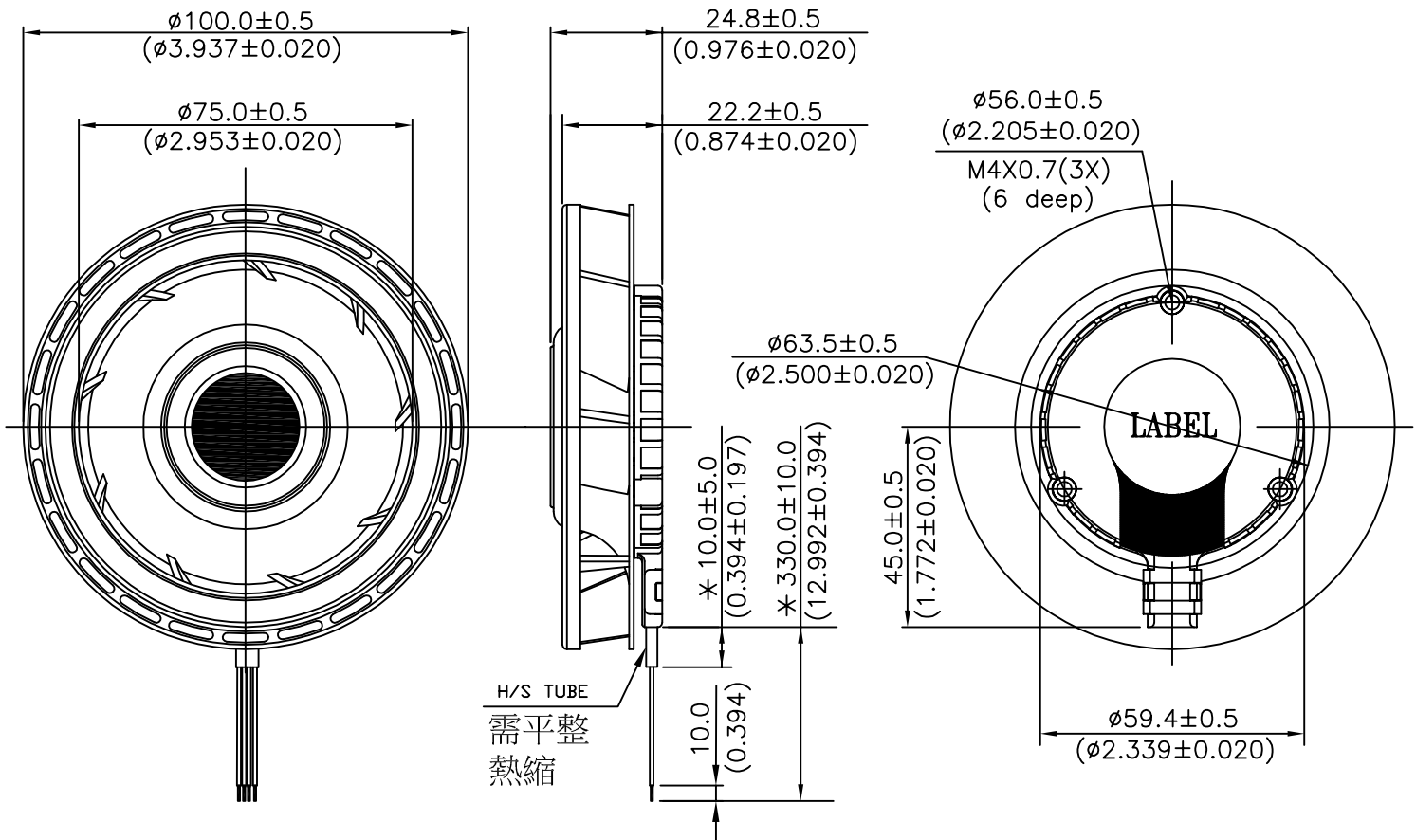
DELTA MODEL: TCA1048AB0C

9. DIMENSION DRAWING:

LABEL:



OR



UNIT: mm(INCH)

\* NOTES:

1. LEAD WIRE UL:1007 AWG#26  
RED WIRE ----(+)  
YELLOW WIRE ----(PWM)  
BLUE WIRE ----(F00)  
BLACK WIRE ----(-)
2. H/S TUBE: T4.0\*0.25 125°C 600V BLACK UL, CSA APPROVED.
3. THIS PRODUCT IS RoHS COMPLIANT
4. ADD LABEL P/N: 3266117400 STICK THE LABEL ON IMPELLER HUB SMOOTHLY,CASE CAN NOT EXPOSE OUTSIDE.

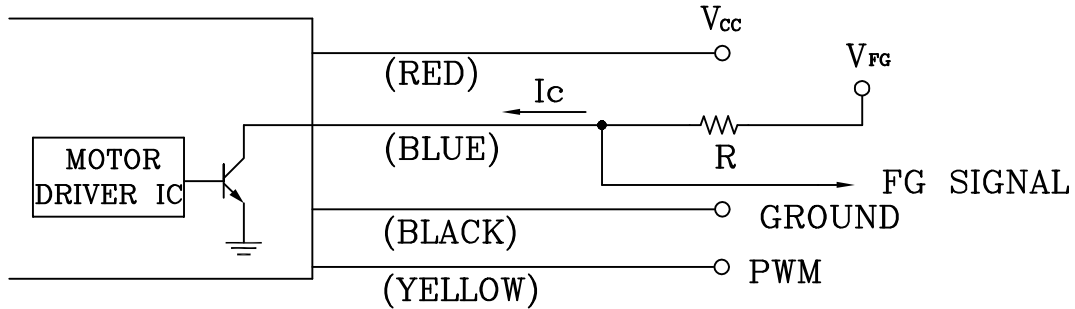


PART NO:

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### 10. 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:

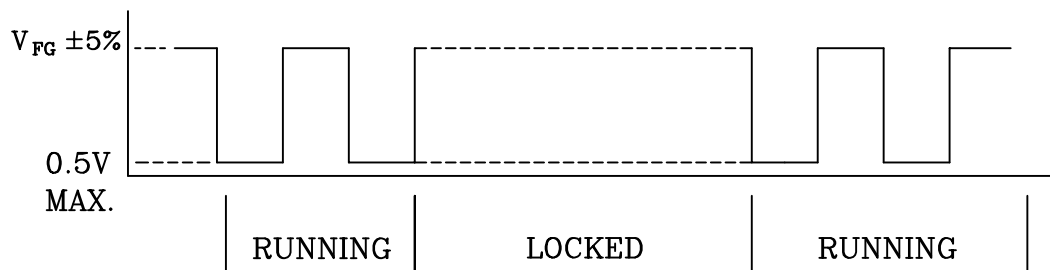
$$V_{CE}(\text{sat}) = 0.5V \text{ MAX.}$$

$$V_{FG} = 60.0VDC \text{ MAX.}$$

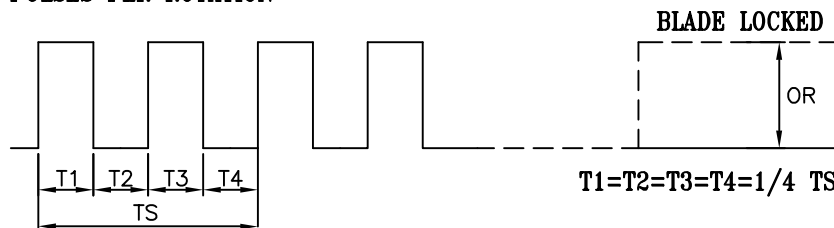
$$I_c = 5mA \text{ MAX.}$$

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

#### 3. FREQUENCY GENERATOR WAVEFORM:



2 PULSES PER ROTATION



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

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

\*VOLTAGE LEVEL AFTER BLADE LOCKED

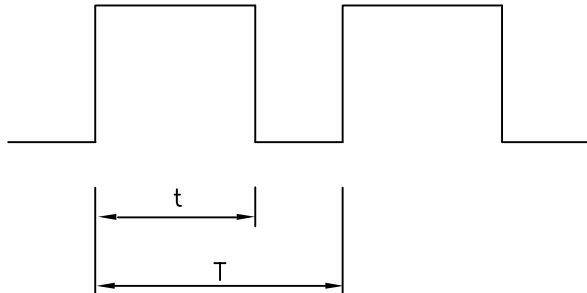
\*2 PULSES

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11. PWM CONTROL SIGNAL:(TEST AT RATED VOLTAGE ; 25 DEGREE C)

SIGNAL VOLTAGE RANGE: 0~10VDC



----- HIGH SIGNAL: 10.0 VDC MAX.  
3.3 VDC MIN.

----- LOW SIGNAL: 0.4 VDC MAX.  
0 VDC MIN.

$$\text{DUTY CYCLE} = \frac{t}{T} * 100(\%)$$

- THE FREQUENCY FOR CONTROL SIGNAL OF THE FAN SHALL BE ABLE TO ACCEPT A 600HZ~30K HZ. WITH DIFFERENT SPEED PERFORMANCE.
- THE PREFERRED OPERATING POINT FOR THE FAN IS 1 KHZ.
- AT 48V % 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 48V % 0% DUTY CYCLE,THE ROTOR WILL STOP.
- WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- AT DC 48V 1KHZ 25% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

12. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE ; 25 DEGREE C ; PWM SIGNAL WITH 5 VDC TTL OR CMOS LEVELS & 1 KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)	CURRENT (A) TYP.
100	6700±10%	0.39
0	0	0.02

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:

