

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  
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Customer:

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: AFB03512HA-A

Sample Rev: 01

Issue NO:

Sample Issue Date: JAN.03.2007

Quantity:

1. SCOPE:

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

2. CHARACTERS:

| ITEM                                       | DESCRIPTION                                                                        |
|--------------------------------------------|------------------------------------------------------------------------------------|
| RATED VOLTAGE                              | 12 VDC                                                                             |
| OPERATION VOLTAGE                          | 9.5 - 13.8 VDC                                                                     |
| INPUT CURRENT                              | 0.09 (MAX. 0.14) A                                                                 |
| INPUT POWER                                | 1.08 (MAX. 1.68) W                                                                 |
| SPEED (REF.)                               | 7000±15%                                                                           |
| MAX. AIR FLOW (AT ZERO<br>STATIC PRESSURE) | 0.156 (MIN. 0.133 ) M <sup>3</sup> /MIN.<br>5.50 (MIN. 4.69 ) CFM                  |
| MAX. AIR PRESSURE (AT ZERO<br>AIR FLOW)    | 2.70 (MIN. 1.95 ) mm H <sub>2</sub> O<br>0.106 (MIN. 0.077 ) Inch H <sub>2</sub> O |
| ACOUSTICAL NOISE (AVG.)                    | 22.0 (MAX. 28.0) dB A                                                              |
| INSULATION TYPE                            | UL: CLASS A                                                                        |

(continued)

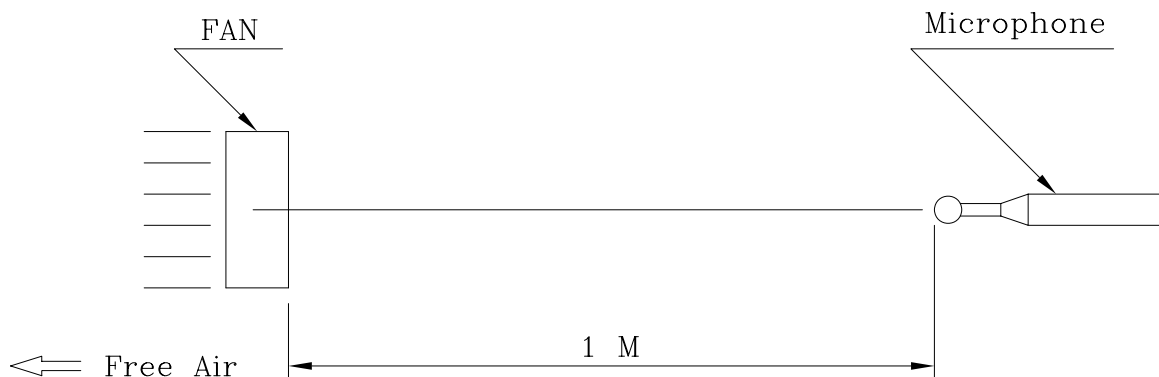
PART NO.:

DELTA MODEL: AFB03512HA-A

|                     |                                                                             |
|---------------------|-----------------------------------------------------------------------------|
| DIELECTRIC STRENGTH | 5mA MAX. AT 500 VAC 60Hz<br>ONE MINUTE, (BETWEEN FRAME AND<br>(+) TERMINAL) |
| INSULATION STRENGTH | 10MEG OHM MIN. AT 500 VDC<br>(BETWEEN FRAME AND (+) TERMINAL)               |
| LIFE EXPECTANCE     | 30,000 HOURS CONTINUOUS<br>OPERATION AT 40°C , 65% RH.                      |
| ROTATION            | CLOCKWISE VIEW FROM NAME PLATE<br>SIDE                                      |
| LEAD WIRE           | UL 1061 AWG 26    +: RED WIRE<br>-: BLACK WIRE                              |

NOTES:

1. ALL READINGS ARE MEASURED AFTER SATBLE WARMING UP (10 MINUTES AROUND)
2. THE VALUES WRITTEN IN PARENS , (    ) , ARE LIMITED SPEC.
3. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ACOUSTICAL CHAMBER WITH B & K SOUND LEVEL METER.

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3. MECHANICAL:

3-1. DIMENSIONS ----- SEE ATTACHMENT

3-2. FRAME ----- PLASTIC UL:94V-0

3-3. FAN BLADE ----- PLASTIC UL:94V-0

3-4. BEARING SYSTEM ----- TWO BALL BEARINGS

3-5. WEIGHT ----- 10 GRAMS

4. ENVIRONMENTAL:

4-1. OPERATING TEMPERATURE ----- -10 TO +70 DEGREE C

4-2. STORAGE TEMPERATURE ----- -40 TO +75 DEGREE C

5. PROTECTION:

5-1. LOCKED ROTOR PROTECTION

IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM FLAME 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. PRODUCTION LOCATION:

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

7. PRODUCTION LOCATION:

7-1. PRODUCTS WILL PRODUCE IN CHINA OR THAILAND OR TAIWAN.

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PART NO:  
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DELTA MODEL:     AFB03512HA-A  
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8.BASIC RELIABILITY REQUIREMENT:

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

8-2. HUMIDITY     TEMPERATURE: +25°C ~ +65°C  
     EXPOSURE     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  $g_{RMS}=3.2$

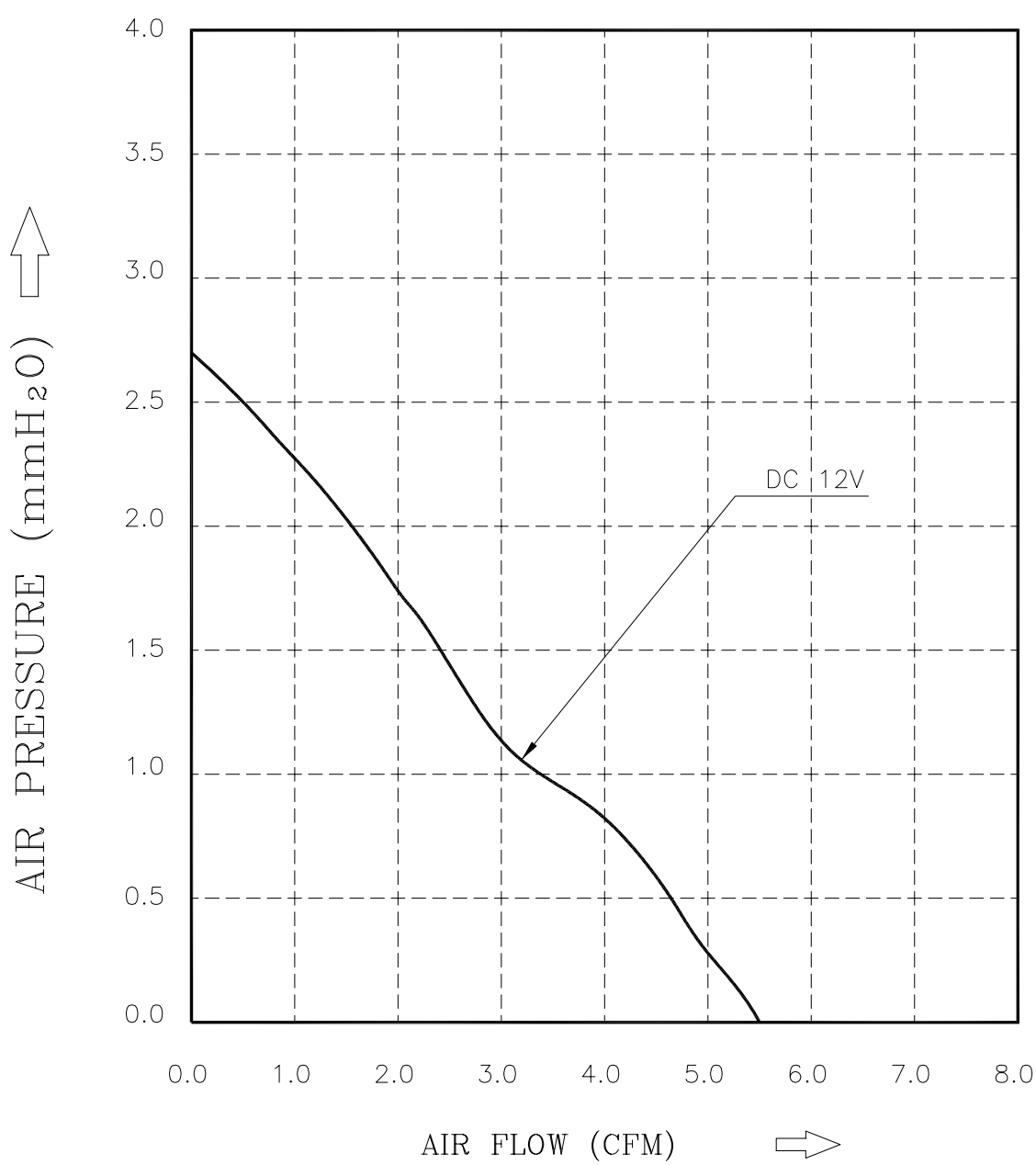
| FREQUENCY(Hz) | PSD( $G^2/Hz$ ) |
|---------------|-----------------|
| 10            | 0.040           |
| 20            | 0.100           |
| 40            | 0.100           |
| 800           | 0.002           |
| 1000          | 0.002           |

TEST TIME: 2 HOURS ON EACH ORIENTATION

8-4. MECHANICAL     TEMPERATURE: +20°C  
     SHOCK     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.

8.P & Q CURVE



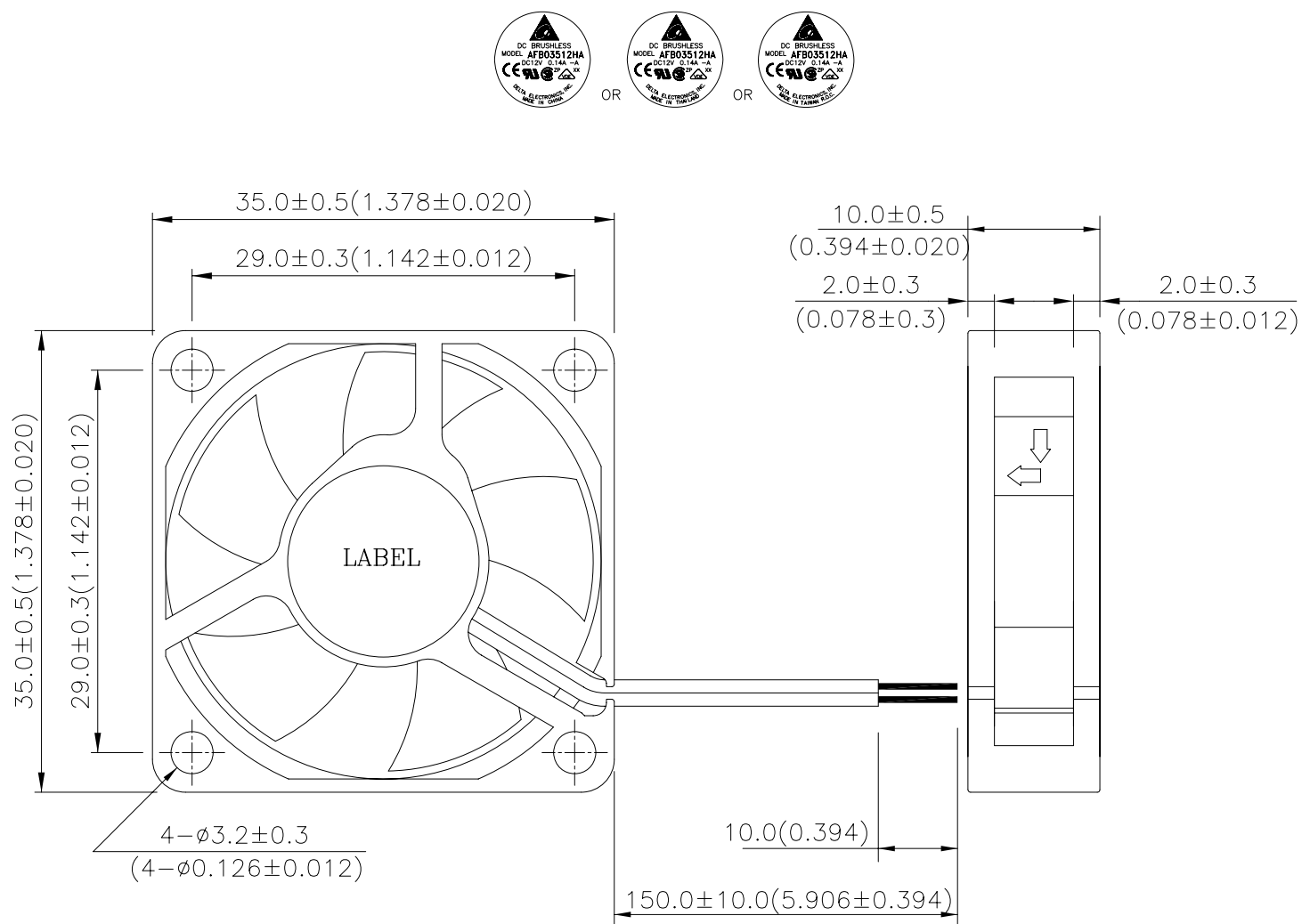
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

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9.Attach: DIMENSIONS DRAWING

LABEL:





## **Descriptions:**

- 1. Delta will not guarantee the performance of the products if the application condition falls outside the parameters set forth in the specification.**
- 2. A written request should be submitted to Delta prior to approval if deviation from this specification is required.**
- 3. Please exercise caution when handling fans. Damage may be caused when pressure is applied to the impeller, if the fans are handled by the lead wires, or if the fans are hard-dropped to the production floor.**
- 4. Except as pertains to some special designs, there is no guarantee that the products will be free from any such safety problems or failures as caused by the introduction of powder, droplets of water or encroachment of insect into the hub.**
- 5. The above-mentioned conditions are representative of some unique examples and viewed as the first point of reference prior to all other information.**
- 6. It is very important to establish the correct polarity before connecting the fan to the power source. Positive (+) and Negative (-). Damage may be caused to the fans if connection is with reverse polarity, as there is no foolproof method to protect against such error.**
- 7. Delta fans are not suitable where any corrosive fluids are introduced to their environment.**
- 8. Please ensure all fans are stored according to the storage temperature limits specified. Do not store fans in a high humidity environment. We highly recommend performance testing is conducted before shipping, if the fans have been stored over 6 months.**
- 9. Not all fans are provided with the Lock Rotor Protection feature. If you impair the rotation of the impeller for the fans that do not have this function, the performance of those fans will lead to failure.**
- 10. Please be cautious when mounting the fan. Incorrect mounting of fans may cause excess resonance, vibration and subsequent noise.**
- 11. It is important to consider safety when testing the fans. A suitable fan guard should be fitted to the fan to guard against any potential for personal injury.**
- 12. Except where specifically stated, all tests are carried out at relative (ambient) temperature and humidity conditions of 25°C, 65%. The test value is only for fan performance itself.**
- 13. Be certain to connect an “over 4.7µF” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)