



**客戶承認書**  
**SPECIFICATION FOR APPROVAL**

CUSTOMER: \_\_\_\_\_

DESCRIPTION: \_\_\_\_\_ DC FAN \_\_\_\_\_

CUSTOMER P/N: \_\_\_\_\_ REV: \_\_\_\_\_

DELTA MODEL: \_\_\_\_\_ FFB0412SHN7CA \_\_\_\_\_ REV: 01 \_\_\_\_\_

SAMPLE ISSUE DATE: \_\_\_\_\_ 12/15/2017 \_\_\_\_\_

QUANTITY: \_\_\_\_\_

**PLEASE SIGN BACK ONE COPY OF THIS SPECIFICATION  
AFTER COMPLETION OF APPROVAL**

**APPROVED BY:** \_\_\_\_\_

**DATE:** \_\_\_\_\_

DELTA ELECTRONICS COMPONENTS (WUJIANG) LTD.  
FAN/MOTOR PLANT

No.1688 Jiangxing East Road, WuJiang Economy Development Zone  
Wujiang City JiangSu Province, P. R. C.

TEL:86-512-63406008

FAX:86-512-63015608

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WuJiang Economy Development Zone  
Wujiang City Jiang Su Province,P.R.C.

TEL : 86-512-63406008  
FAX : 86-512-63015608

STATEMENT OF DEVIATION  
\*\*\*\*\*

NONE

DESCRIPTION :

DELTA DOC CENTER

No.1688 Jiangxing East Road  
 WuJiang Economy Development Zone  
 Wujiang City Jiang Su Province,P.R.C.

TEL : 86-512-63406008  
 FAX : 86-512-63015608

SPECIFICATION FOR APPROVAL  
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Customer:		
Description:	DC FAN	
Customer P/N:		REV:
Delta Model NO.:	FFB0412SHN7CA	Delta Safety Model NO: FFB0412SHN
Sample Rev:	01	Issue NO:
Sample Issue Date:	DEC-15-2017	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	12 VDC
OPERATION VOLTAGE	4.0 - 13.8 VDC
INPUT CURRENT	0.50 ( 0.60 MAX.) SAFETY CURRENT ON LABEL : 0.60A
INPUT POWER	6.00 ( 7.20 MAX. ) W
SPEED	13000 R.P.M. (REF.)
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.680 ( MIN. 0.578)M <sup>3</sup> /MIN 24.00 ( MIN. 20.40) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	27.30 ( MIN. 22.11 )mmH <sub>2</sub> O 1.075 ( MIN. 0.870 )inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	54.5 (MAX 58.5) dB-A
INSULATION TYPE	UL: CLASS A

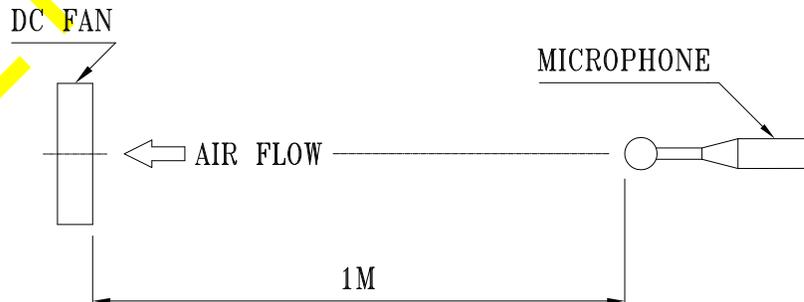
(continued)

PART NO:

DELTA MODEL: FFB0412SHN7CA

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 (AT LABEL VOLTAGE)	50,000 HOURS CONTINOUS 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(+)

- 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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DELTA MODEL:                    FFB0412SHN7CA  
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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 ----- 32 GRAMS

4. ENVIRONMENTAL:

- 4-1. OPERATING TEMPERATURE ----- -10 TO +60 DEGREE C
- 4-2. STORAGE TEMPERATURE ----- -40 TO +70 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.

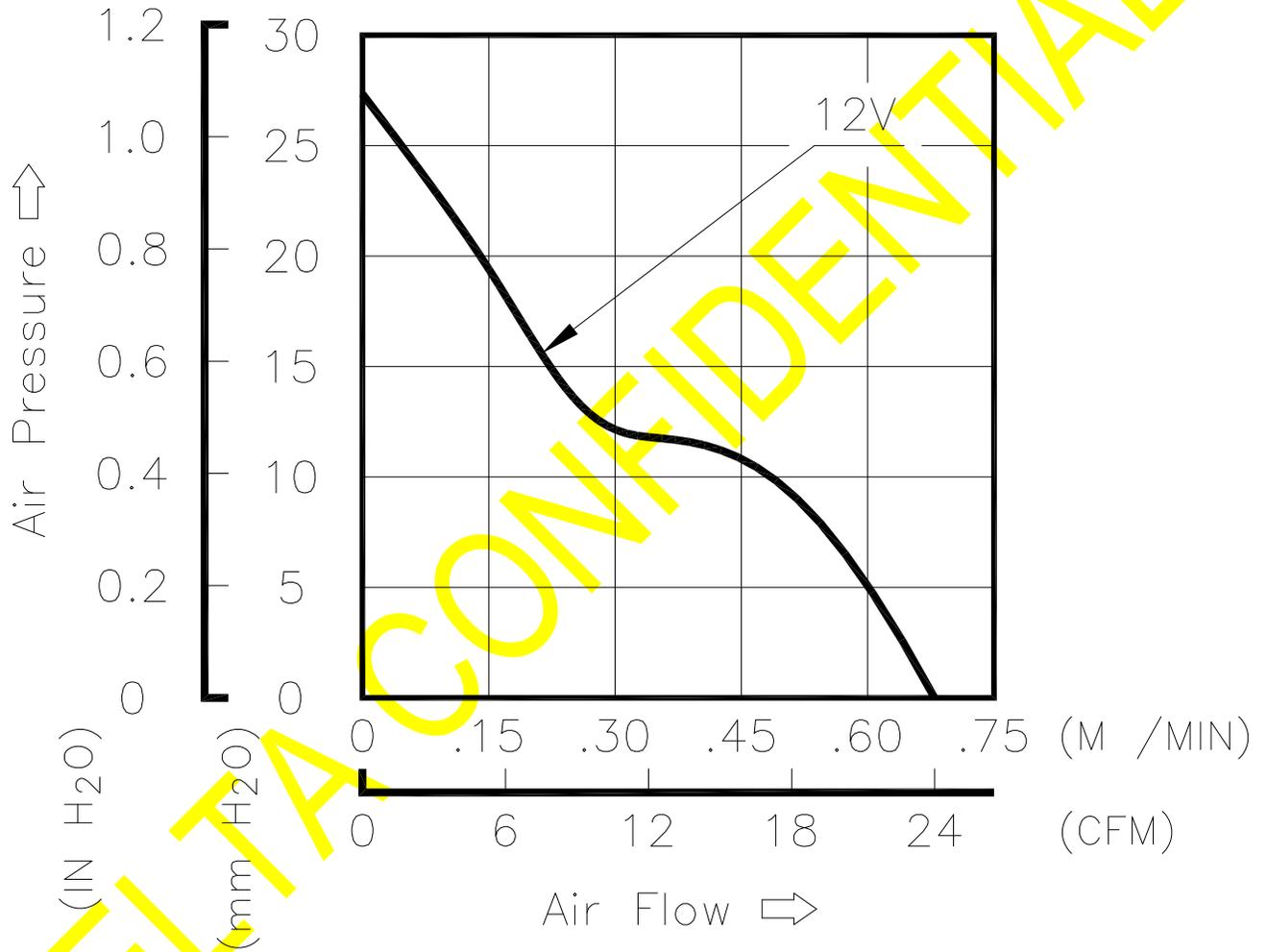
7. PRODUCTION LOCATION

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

PART NO:

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8. P & Q CURVE:



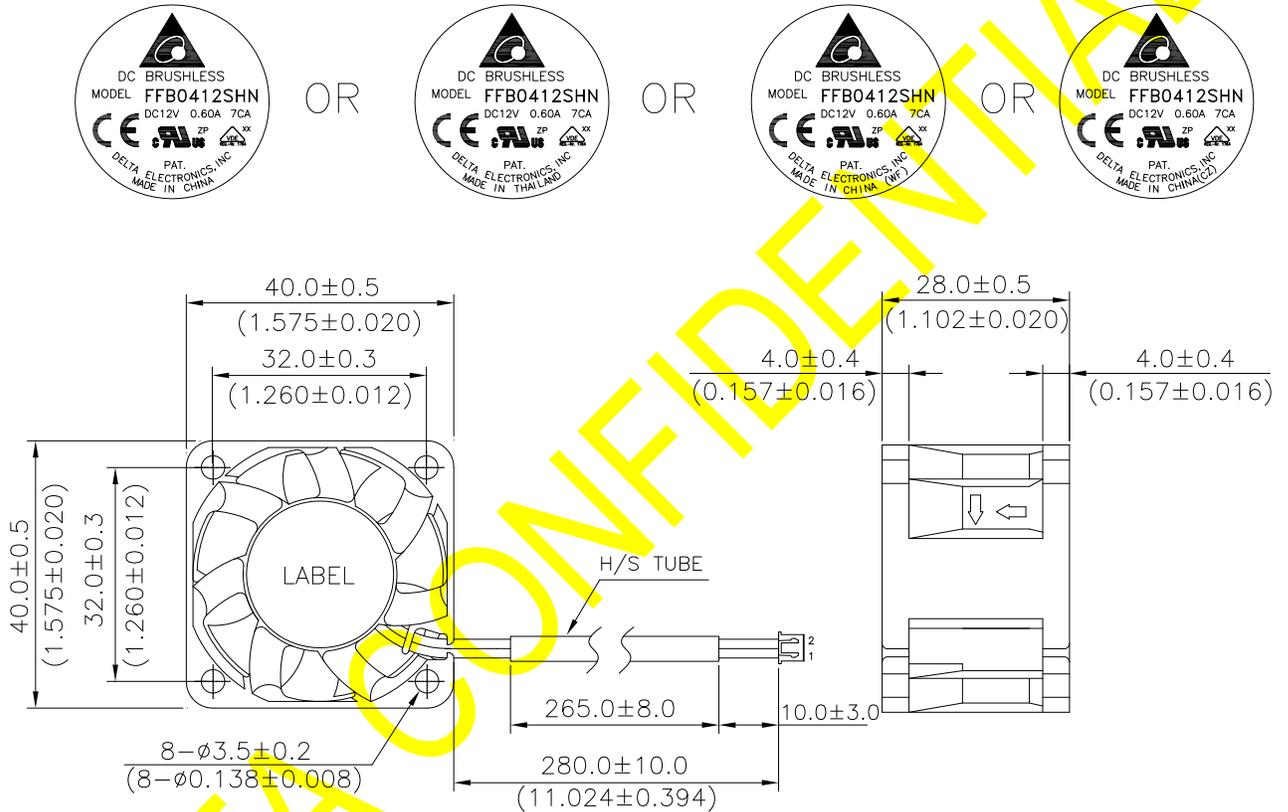
\* TEST CONDITION: INPUT VOLTAGE ——— OPERATION VOLTAGE  
TEMPERATURE ——— ROOM TEMPERATURE  
HUMIDITY ——— 65%RH

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9. Attach: DIMENSIONS DRAWING

LABEL:



NOTES:

1. LEAD WIRE UL1007 AWG#24  
PIN1: RED WIRE----(+)  
PIN2: BLACK WIRE----(-)
2. HOUSING: JWT A2501H02-2P OR EQUIVALENT
3. TERMINAL: JWT A2501TOP-2 OR EQUIVALENT
4. H/S TUBE:  $\phi 2.5$  T:0.25 COLOR BLACK 600V 125°C UL,CSA APPROVED.
5. THIS PRODUCT IS RoHS COMPLIANT



## ***Application Notice***

- 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 fan was 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, if there is no foolproof method to protect against such error specifically mentioned in this spec.**
- 7. Delta fans without special protection 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 room (ambient) temperature and relative humidity conditions of 25°C, 65% RH. The test value is only for fan performance itself.**
- 13. Be certain to connect an “ 4.7μF or greater” capacitor to the fan externally when the application calls for using multiple fans in parallel, to avoid any unstable power.**

File E132003  
Project 03CA15855

Issued: May 23, 2003  
Revised: **August 27, 2005**

REPORT

On

COMPONENT - FANS, ELECTRIC

Delta Electronics Inc.  
**Taoyuan** Hsien, Taiwan

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## DESCRIPTION

## PRODUCT COVERED:

USR, **CNR** Component - DC Fan, Models see "ELECTRICAL RATINGS" for details.

## ELECTRICAL RATINGS:

Model Nos.	V dc	mA
FFB0412SHN	12	600
FFB03812VHN(Y)	12	780
FFB03812HHN(Y)	12	570
FFB03812HN(Y)	12	410
FFB03812MN(Y)	12	300
FFB03812LN(Y)	12	240
FFB0412VHN-A(Y)	12	450
FFB0412SHN-A(Y)	12	600
AFB08512LD(Y)	12	140
AFB08512MD(Y)	12	200
AFB08512HD(Y)	12	270
AFB08512HHD(Y)	12	360
AFB08512VHD(Y)	12	600
AFC08512DD(Y)	12	600

Note: Above (Y) may be xxxxx, where x may be A through Z, 0 through 9, "-" or blank.

## ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

USR indicates investigation to U.S. Standard for Electric Fans, UL 507.

**CNR indicates investigation to the Canadian Standard for Fans and Ventilators, CSA C22.2 No. 113.**

Use - For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Acceptability - When installed in the end-use equipment, consideration shall be given to the following:

1. The suitability of the fan leads, connector and strain relief shall be determined for each application.
2. A suitable enclosure, either a fire enclosure (enclosure rated with suitable flammability rating) or mechanical enclosure (guard) shall be provided in accordance with the requirements of the end application.
3. This fan has not been evaluated for use in combination with any solid-state speed control.
4. This fan has only been investigated for connection to low voltage non-energy hazard isolated secondary circuit. Further considerations must be given for a non-isolated secondary circuit connection.
5. The unity is provided with Class A (105) insulation, the need for measuring fan coil temperature shall be determined during each end-use application.
6. All Models are provided with locked rotor protected circuit (controlled by the IC and other electronic components); the locked rotor current is greater than 50% of the normal input current and can not be considered as an electronic protected type motor.

# Übereinstimmungserklärung

## Statement of Compliance

**Ausgestellt für:** **Delta Electronics Inc.**  
*Issued to:* 186 Ruey Kuang Road Neihu, 114 Taipei , Taiwan

**Fertigungsstätte(n):** 1. Delta Electronics Yueyun Central Road, 523308 Dong Guan, China  
*Place(s) of manufacture:* 2. Delta Electronics Ltd. Wujiang City, China  
3. Delta Electronics (Thailand) , Amphur, Bangpakong 04, Thailand

**Erzeugnis:** **Fan for IT equipments ( building in )**  
*Product:* Type **FFB0412SHN**

**Prüfnorm(en):** DIN EN 60950 (VDE 0805):1997-11+A11:1998; EN 60950 :1992 + (am1-am11)  
*Standard(s) used:* IEC 60950(ed.2); am1-am4:1996

**Das betreffende Erzeugnis ist in Übereinstimmung mit der(den) genannten Norm(en). Das Erzeugnis kann deshalb unter Berücksichtigung des vorausgegangenen Schriftverkehrs mit dem(der)**

*The subject product complies with the referenced Standard(s). The product is therefore eligible to bear the*

### VDE-Zeichen

*VDE-Mark*



### VDE-GS-Zeichen

*VDE-GS-Mark*



### VDE Reg. Nr...

*VDE-Reg. No.*

### VDE-EMV-Zeichen

*VDE-EMC-Mark.*

gekennzeichnet werden. Diese Berechtigung gilt für 60 Tage ab Ausstellungsdatum. Die Zeichengenehmigung wird innerhalb der nächsten Wochen ausgestellt, vorbehaltlich der abschließenden Beurteilung des Prüfberichtes.

*In accordance with instructions contained in previous correspondence. This authorization is effective for 60 days only from the date of this notice. The VDE-Marks Licence will be issued and sent out in the next few weeks subject to the final check of the test report.*

**Ausgestellt durch:** VDE Prüf- und Zertifizierungsinstitut, Fachgebiet F13  
*Issued by department*

**Aktenzeichen:** 1164100-2611-0003/ 31124  
*Reference No.*

**Datum:** 23.05.2003  
*Date issued*

**Unterschrift:**  
*Signature*

**Klaus Dornieden**