SPECIFICATION FOR APPROVAL

Customer : STD
Description : DC FAN
Customer Part No. _____ REV. : _____
Delta Model No. : BFB0312HHA-CR00 REV. : 00
Sample Issue No. : _____
Sample Issue Date : AUG.27 2018

PLEASE SEND ONE COPY OF THIS SPECIFICAITON 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
FAX:886-(0)3-3591991

*** SAMPLE HISTORY***

CUSTOMER: STD
CUSTOMER P/N:
DELTA MODEL: BFB0312HHA-CR00

REV.	DESCRIPTION	DRAWN	CHECKED			APPROVED	ISSUE DATE
			ME	EE	CE		
00	ISSUE SPEC	李英珍 08/15'18	陳維晢 08/21'18	李英珍 08/15'18	---	沈柏輝 08/24'18	08/27'18

Delta Electronics, Inc.
No.252, Shanying Rd., Guishan Dist., TEL : 886-(0)3-3591968
Taoyuan City 333, Taiwan (R.O.C.) FAX : 886-(0)3-3591991

STATEMENT OF DEVIATION

■ NONE

□ DESCRIPTION:

Delta Electronics, Inc.
No.252, Shanying Rd., Guishan Dist.,
Taoyuan City 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. : BFB0312HHA-CR00 Delta Safety Model No.: BFB0312HHA-C

Sample revision. : 00 Issue no.:

Sample issue date : AUG.27 2018 Quanti BFB

1. SCOPE:
THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS BLOWER FAN.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12.0 VDC
OPERATION VOLTAGE	10.8 - 13.2 VDC
INPUT CURRENT(AVG.) #	0.09 (MAX. 0.14) A SAFETY CURRENT ON LABEL: 0.22A
INPUT POWER(AVG.)	1.08 (MAX. 1.68) W
SPEED	8500 +/-20% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.047 (MIN.0.038) M^3/MIN. 1.66 (MIN.1.34) CFM
MAX. AIR PRESSURE (AT ZERO AIRFLOW)	9.40 (MIN.6.02) mmH_2O 0.370 (MIN.0.237) inchH_2O
ACOUSTICAL NOISE (AVG.)	31.0 (MAX. 36.0) dB-A
INSULATION TYPE	UL : CLASS A
INSULATION STRENGT	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)

ǂ : THE MAX VALUE OF CONSUMING CURRENT DOES NOT REPRESENT THE PEAK VALUE, THE PEAK VALUE NEED MEASURE BY OSCILLOSCOPE.

(continued)

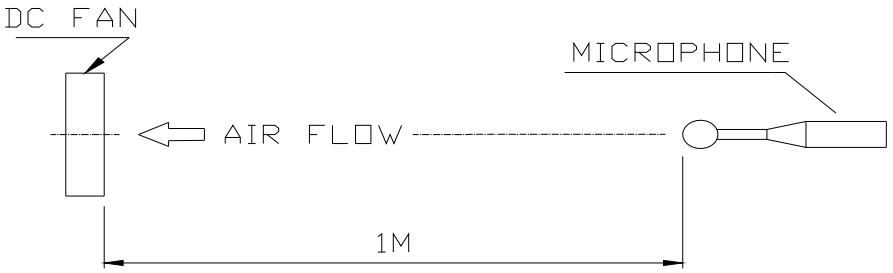
PART NO:

DELTA MODEL: BFB0312HHA-CR00

LIFE EXPECTANCE (L10) (AT LABEL VOLTAGE)	30,000 HOURS CONTINUOUS 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 ROTOR LOCKED AND FIXED.

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.

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---------- 10 GRAMS(REF.)

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 POSITIVEAND NEGATIVE LEADS.

6. RE OZONE DEPLETING SUBSTANCES:

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

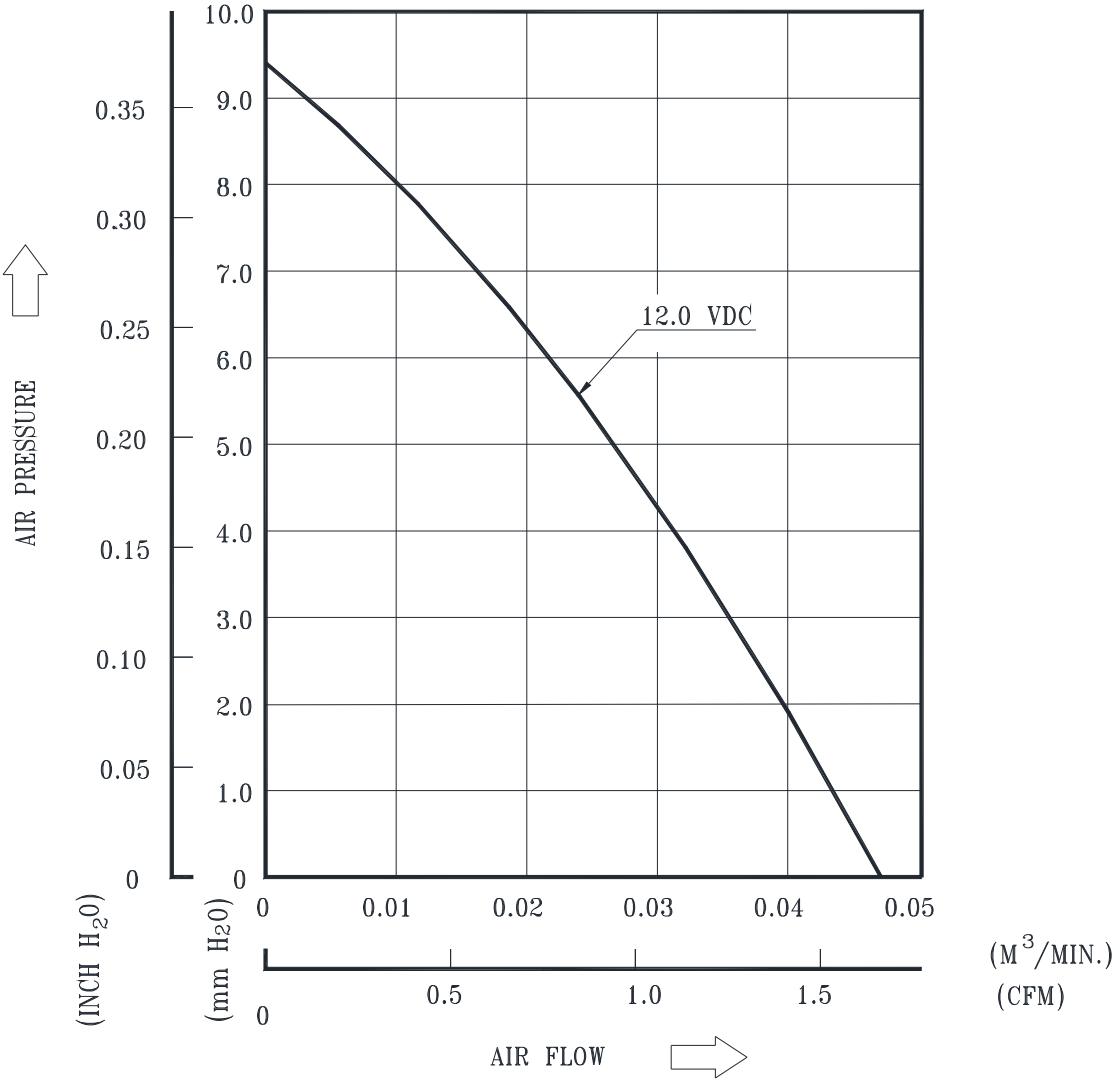
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: BFB03512HHA-CR00

8. P & Q CURVE:



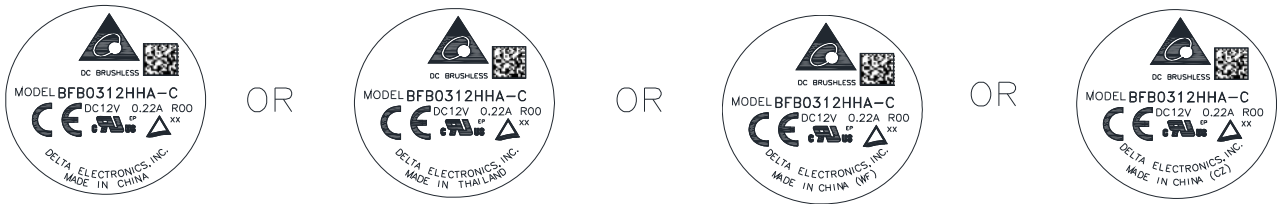
*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

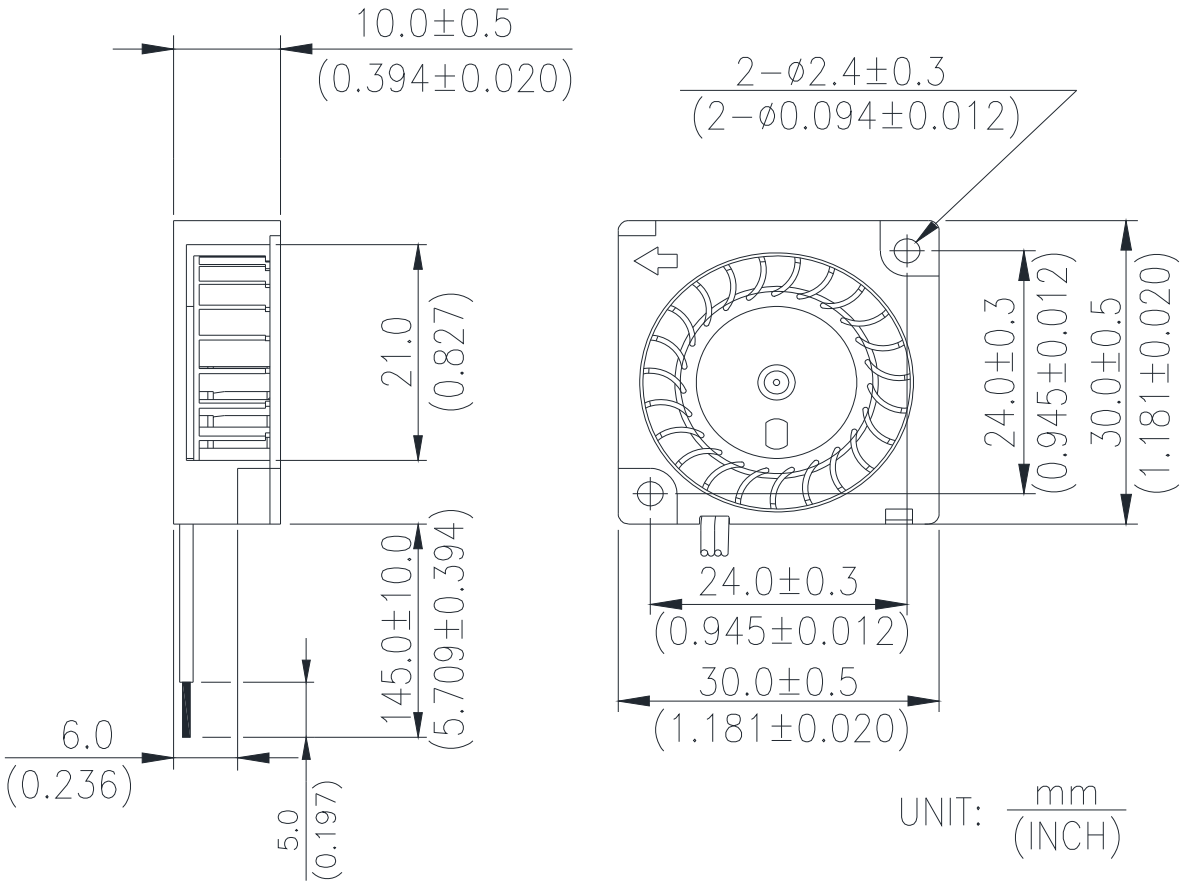
PART NO:

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9. DIMENSION DRAWING:

LABEL:



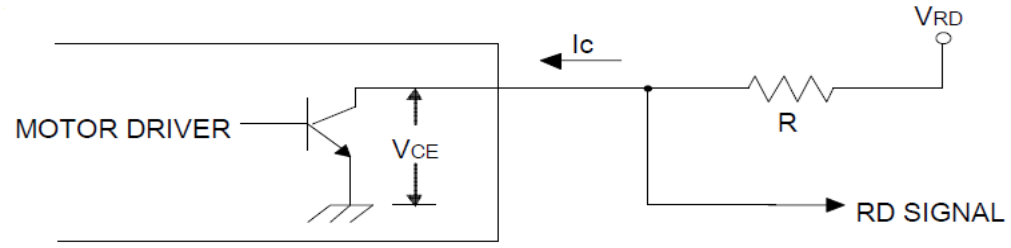


NOTES:

1. LEAD WIRE: UL 1571 AWG #30
   RED WIRE-----(+)
   BLACK WIRE-----(-)
   BLUE WIRE-----(R00)

10. ROTATION DETECTOR (RD) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



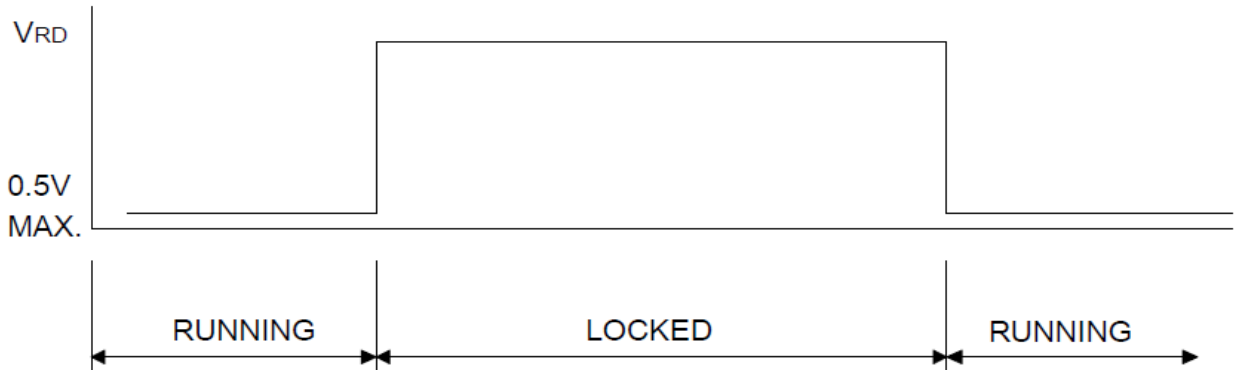
CAUTION:

THE LEAD WIRE OF RD SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

2. SPECIFICATION:

V_{RD}=5.0 TYP.(Vcc MAX.) Ic = 5mA MAX.
V_{CE}= 0.5V MAX. R ≧ V_{RD} /Ic

3. ROTATION DETECT WAVEFORM:



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.

Unikeyic Electronics

Global Electronic Components Distributor

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DELTA Electronics:

DSOL-1341-12 FFB0912HHE M55339/14-00306 02BEEG3H 06BEEG3G ACS3-CNTB0600 AFB0524HHD AFB0724VH-AF00 CTA4100A DTC1000C PFB1224UHEP0 03GEEG3E 30DPGS5C AFB0624VH-A PJT-12V40WBAA SK-1015-STD 15GENG3E ASB02505SHA-AY6B DSOL-0844-24 FFB0824SHE-F00 PMT-48V75W2BA FFB1224SHE PM05S050A PMC-24V075W1AA 06AN2 MDS-400APB24AA PL01S4805A S24SP05012PDFA AFL12AUHE-C BFB1248GH-A