



SPECIFICATION FOR APPROVAL

Customer.         DPC        

Description.         DC FAN        

Part No.                                  REV.                                 

Delta Model No.         PFM0812HE-01BFY         REV.                                 00        

Sample Issue No.                                 

Sample Issue Date.         DEC.01 2015        

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

APPROVED BY:

DATE               :

DELTA ELECTRONICS, INC.  
TAOYUAN PLANT  
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STATEMENT OF DEVIATION  
\*\*\*\*\*

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

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

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Customer: DPC

Description: DC FAN

Customer P/N:

REV:

Delta Model NO.: PFM0812HE-01BFY Delta safety model NO.: **PFM0812HE-01**

Sample Rev: 00

Issue NO:

Sample Issue Date: DEC.01 2015

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	10.8 - 12.6 VDC
INPUT CURRENT(AVG) (IN RATED VOLTAGE, FREE AIR)	4.30 ( 5.16 MAX.) A SAFETY CURRENT ON LABEL: 7.00 A
CURRENT AT BACK PRESSURE	MAX. 7.0 A
INPUT POWER (AVG) (IN RATED VOLTAGE, FREE AIR)	51.60 ( 62.0 MAX.) W
SPEED	16300 ±10% R.P.M.
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	3.665 (MIN. 3.299) M <sup>3</sup> /MIN 129.42 ( MIN. 116.48) CFM
MAX.AIR PRESSURE (AT ZERO AIR FLOW)	126.22 (MIN. 102.24) mmH <sub>2</sub> O 4.969 (MIN. 4.025) inchH <sub>2</sub> O
ACOUSTICAL NOISE (AVG.)	77.0 (MAX 81.0 ) dB-A
INSULATION TYPE	UL: CLASS A

(continued)

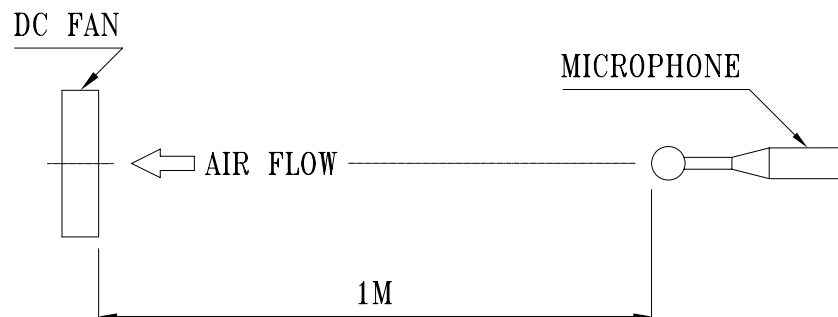
PART NO:

DELTA MODEL:

PFM0812HE-01BFY

INRUSH CURRENT	4.50A ( 7.00A MAX.)
START CURRENT	5.76A ( 6.90A MAX.)
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)
LIFE EXPECTANC (L10) (AT LABEL VOLTAGE)	70,000 HOURS CONTINUOUS OPERATION AT 40 °C WITH 15 ~ 65 %RH. AT LABEL VOLTAGE
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
OVER CURRENT PROTECTION	THE FAN WILL SHUT DOWN WHEN THE CURRENT IS ABNORMAL AND WILL RESTART AFTER 10 SECONDS

- 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: PFM0812HE-01BFY  
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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 ----- 200 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. INTERNAL FUSE IMPLEMENTED.

6. RE OZONE DEPLETING SUBSTANCES:

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

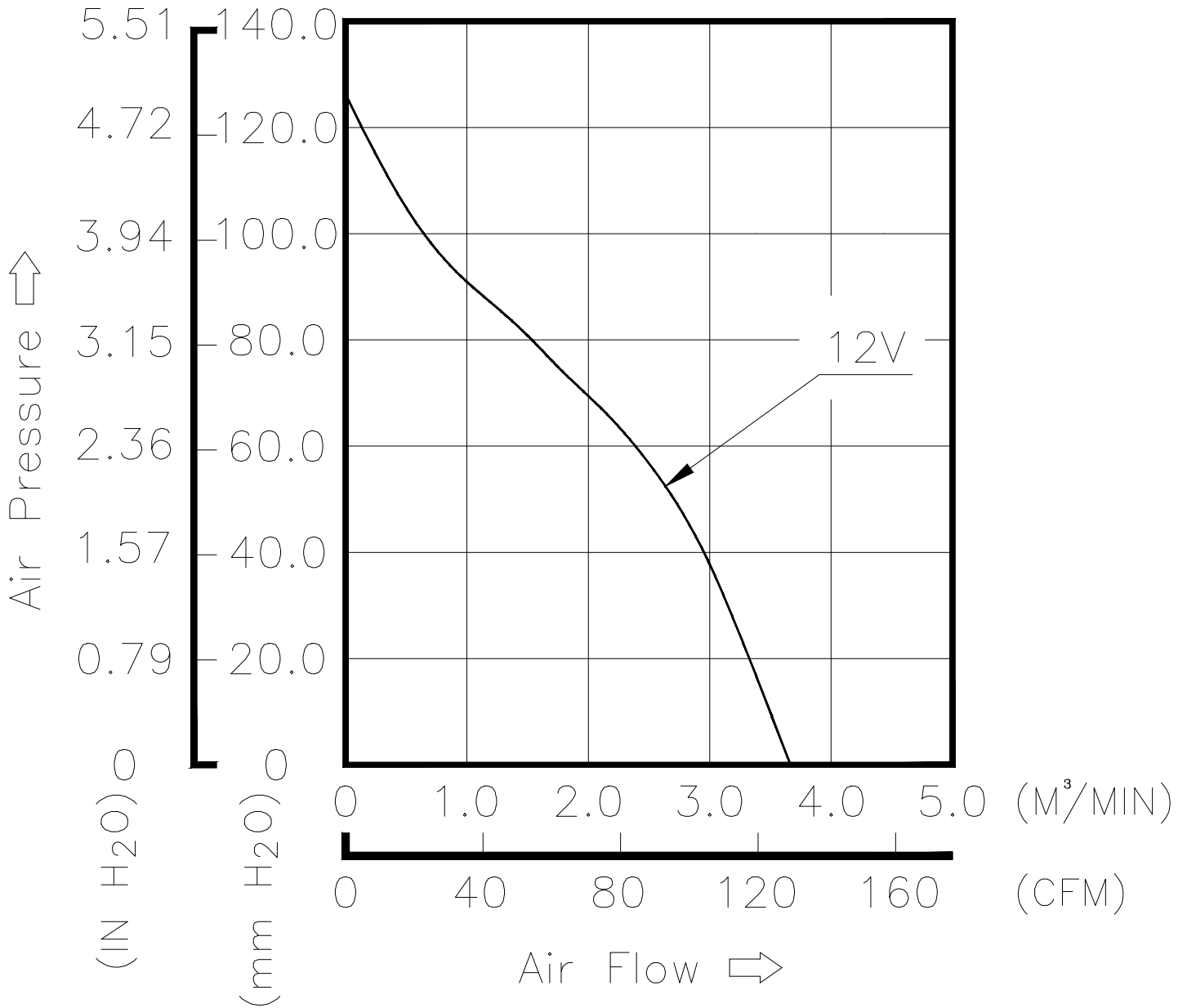
7. PRODUCTION LOCATION

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

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8. P & Q CURVE:



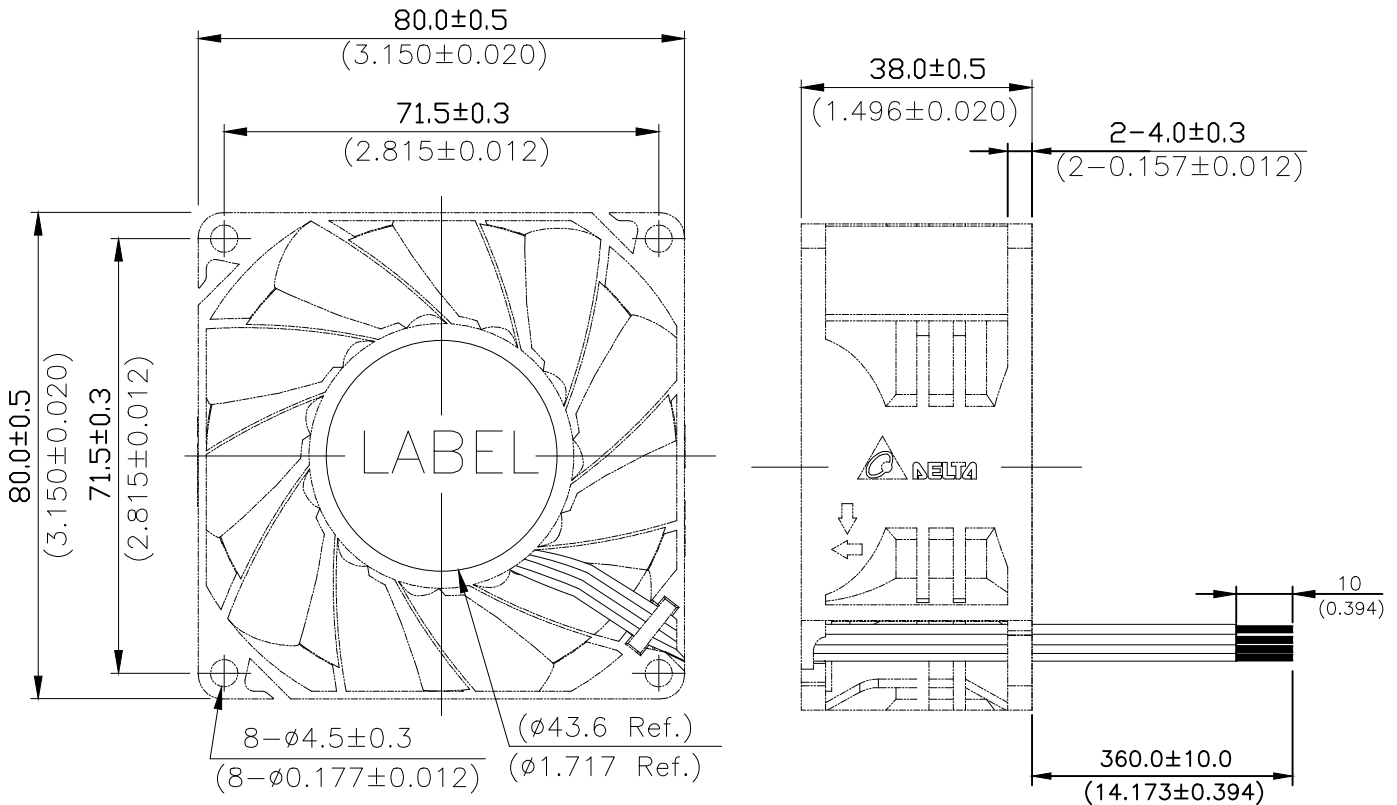
\* TEST CONDITION: INPUT VOLTAGE ----- OPERATION VOLTAGE  
TEMPERATURE ----- ROOM TEMPERATURE  
HUMIDITY ----- 65%RH

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### 9. DIMENSIONS DRAWING

LABEL:



UNIT: MM(INCH)

NOTE:

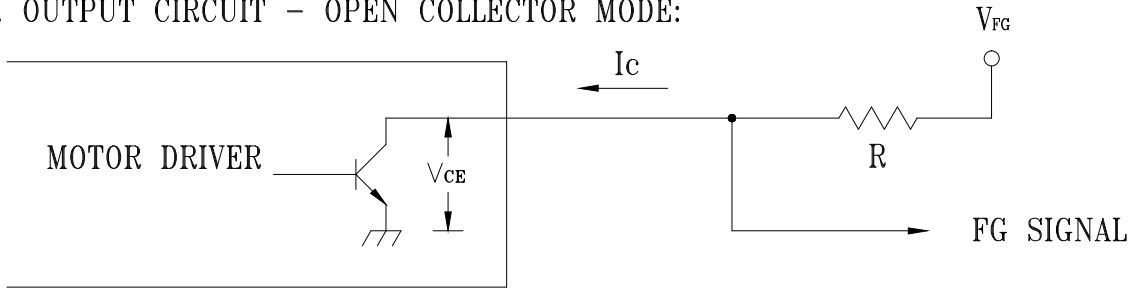
- A. LEAD WIRE: (UL:1061 -F- AWG#20 & AWG #28) MUST BE APPROVED BY DELTA
  - BLACK WIRE -----(-) (UL 1061 AWG #20)
  - RED WIRE -----(+) (UL 1061 AWG #20)
  - YELLOW WIRE -----(F00) (UL 1061 AWG #28)
  - BLUE WIRE -----(PWM) (UL 1061 AWG #28)
- B. THIS PRODUCT IS RoHS COMPLIANT

PART NO:

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10. FREQUENCY GENERATOR (FG) SIGNAL:

1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION:

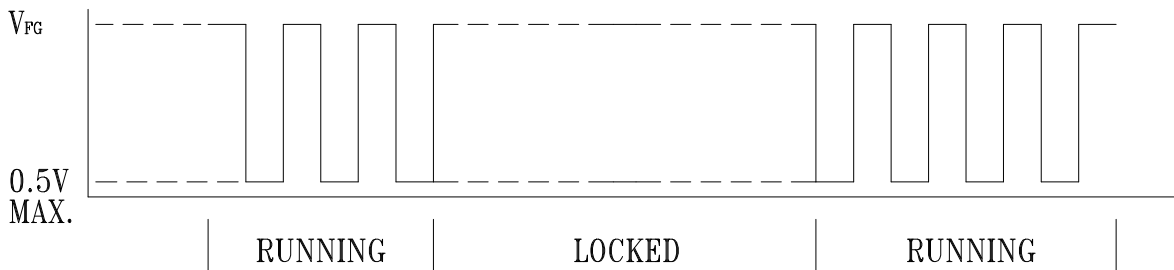
THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH  
THE LEAD WIRE OF POSITIVE OR NEGATIVE.

2. SPECIFICATION:

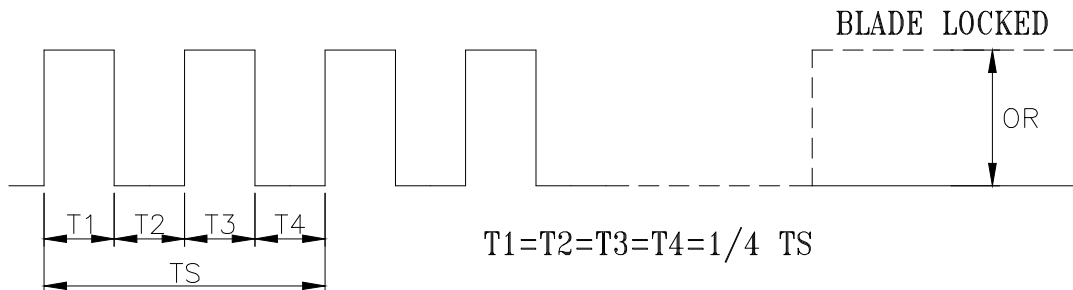
$V_{CE}(\text{sat}) = 0.5\text{V MAX.}$        $V_{FG} = 12.6\text{VDC MAX.}$

$I_c = 5\text{mA MAX.}$        $R \geq V_{FG} / I_c$

3. FREQUENCY GENERATOR WAVEFORM:



FAN RUNNING FOR 4 POLES



$$T1 = T2 = T3 = T4 = 1/4 TS$$

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

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

\*VOLTAGE LEVEL AFTER BLADE LOCKED

\*4 POLES

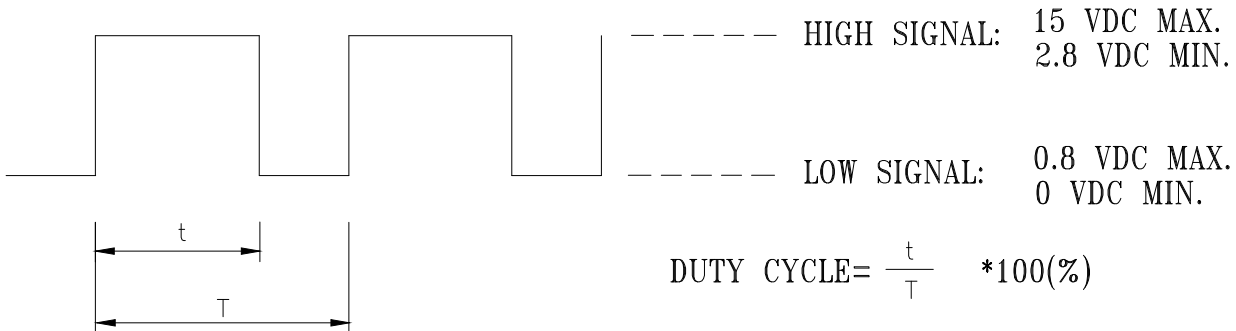


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11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0~15VDC

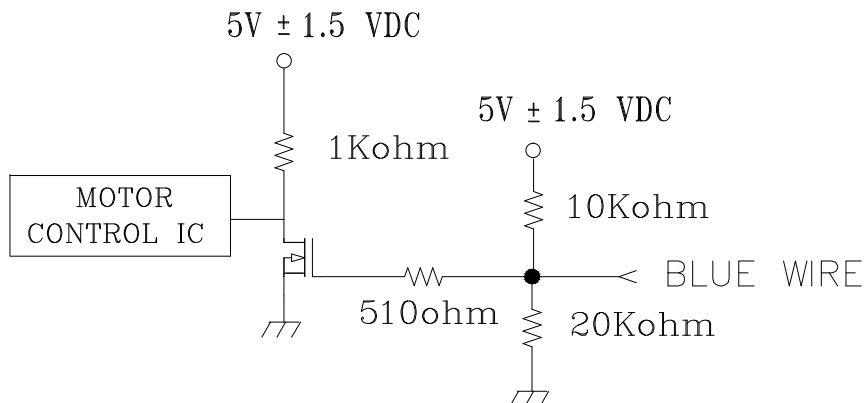


- THE PREFERRED OPERATING POINT FOR THE FAN IS 25K HZ.
- AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- AT 0% DUTY CYCLE,THE ROTOR WILL SPIN AT MINIMUM SPEED.
- WHEN CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.

12. SPEED VS PWM CONTROL SIGNAL: (AT RATED VOLTAGE & PWM FREQUENCY=25KHZ)

DUTY CYCLE (%)	SPEED R.P.M. (REF.)	CURRENT (A) TYP.
100	16300 ±10%	4.30A
0	3000 ±500	0.10A

13. PWM CONTROL LEAD WIRE INPUT IMPEDANCE:



13-1. THE FAN SPEED WILL DEFAULT TO MAXIMUM WHEN THE SPEED CONTROL INPUT IS LEFT UNCONNECTED.

13-2. ABSOLUTELY NO INTERNAL PULL-UP.

A00