



SPECIFICATION FOR APPROVAL

Customer : _____
Description : DC FAN _____
Customer Part No. _____ REV. : _____
Delta Model No. : BUB0712HD-SM _____ REV. : 00 _____
Sample Issue No. : _____
Sample Issue Date : May.26 2021 _____

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, GUEISHAN INDUSTRIAL ZONE
TAOYUAN CITY 33341, TAIWAN
TEL:886-(0)3-3591968
FAX:886-(0)3-3591991

DELTA ELECTRONICS, INC.
252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,
TAOYUAN CITY 33341, TAIWAN

TEL : 886-(0)3-3591968
FAX : 886-(0)3-3591991

STATEMENT OF DEVIATION

NONE

DESCRIPTION:

DELTA ELECTRONICS, INC.
 252, SHANGYING ROAD, GUISHAN INDUSTRIAL ZONE,
 TAOYUAN CITY 33341, TAIWAN

TEL : 886-(0)3-3591968
 FAX : 886-(0)3-3591991

SPECIFICATION FOR APPROVAL

Customer : Arcelik

Description : DC FAN

Customer P/N : 164900011

Rev. :

Delta model no. : BUB0712HD-SM

Delta Safety Model No.: BUB0712HD-SM

Sample revision. : 00

Issue no.:

Sample issue date : May.26 2021

Quantity :

1. SCOPE:

THIS SPECIFICATION DEFINES THE ELECTRICAL AND MECHANICAL CHARACTERISTICS OF THE DC BRUSHLESS BLOWER.

2. CHARACTERS:

ITEM	DESCRIPTION
RATED VOLTAGE	12 VDC
OPERATION VOLTAGE	10.8 ~ 12.6 VDC
OPERATION DUTY RANGE	40% - 100%, 25kHz
PWM MINIMUM START DUTY	≥ 45% , 25kHz
INPUT CURRENT(AVG.) ★ (TEST UNDER FREE AIR)	0.26 (MAX. 0.40) A
	SAFETY CURRENT ON LABEL : 0.40A
INPUT POWER(AVG.) ★ (TEST UNDER FREE AIR)	3.12 (MAX. 4.80) W
RATED SPEED	3800 ± 10% RPM
MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.289 (MIN. 0.260) M ³ /MIN.
	10.21 (MIN. 9.19) CFM
MAX. AIR PRESSURE (AT ZERO AIR FLOW)	21.10 (MIN. 15.97) mmH ₂ O
	0.831 (MIN. 0.629) inchH ₂ O
ACOUSTICAL NOISE (AVG.)	41.5 (MAX. 45.5) dB-A
INSULATION TYPE	UL: CLASS A

★AVG. IS THE AVERAGE VALUE DURING STEADY OPERATION, AND MAX. IS MAXIMUM AVERAGE VALUE INCLUDED PRODUCTION TOLERANCE. ABOUT THE PEAK VALUE, NEED TO USE OSCILLOSCOPE TO MEASURE.

(continued)

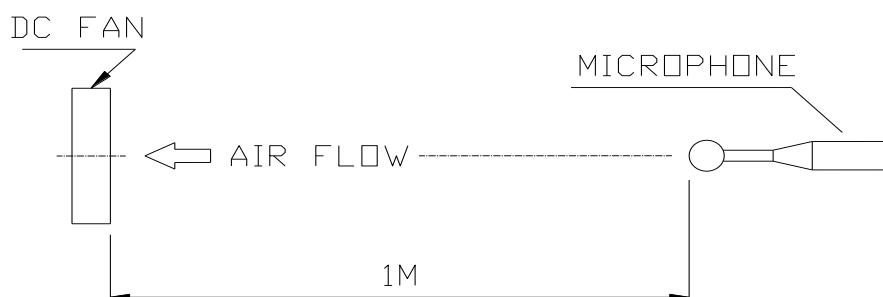
PART NO:

DELTA MODEL: BUB0712HD-SM

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 EXPECTANCE (L10) (AT LABEL VOLTAGE)	50,000 HOURS CONTINUOUS OPERATION AT 40° C WITH 15 ~ 65 %RH.
ROTATION	CLOCKWISE VIEW FROM NAME PLATE SIDE
LOCKED PROTECTION	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 SEMI-ANECHOIC CHAMBER WITH MICROPHONE AT A DISTANCE OF ONE METER FROM THE FAN INTAKE.

PART NO:

DELTA MODEL: BUB0712HD-SM

3. MECHANICAL:

- 3-1. DIMENSIONS ----- SEE DIMENSIONS DRAWING
- 3-2. COVER ----- SECC
- 3-3. PILLOW ----- PLASTIC UL: 94V-0
- 3-4. IMPELLER ----- PLASTIC UL: 94V-0
- 3-5. BEARING SYSTEM ----- SLEEVE BEARING
- 3-6. WEIGHT ----- 60.0 (REF.) 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.

6. RE OZONE DEPLETING SUBSTANCES:

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

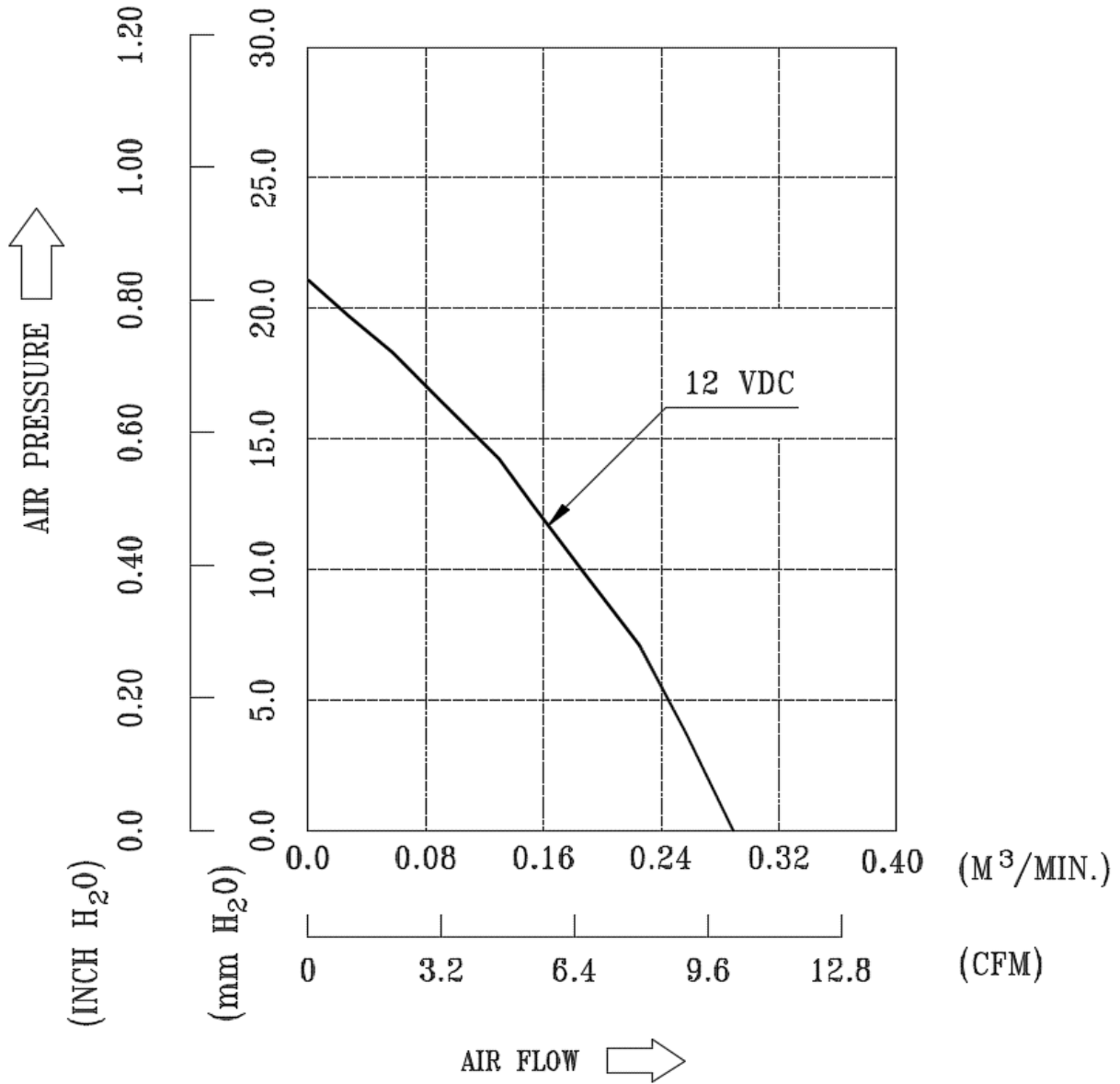
7. PRODUCTION LOCATION

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

PART NO:

DELTA MODEL: BUB0712HD-SM

8. P & Q CURVE:

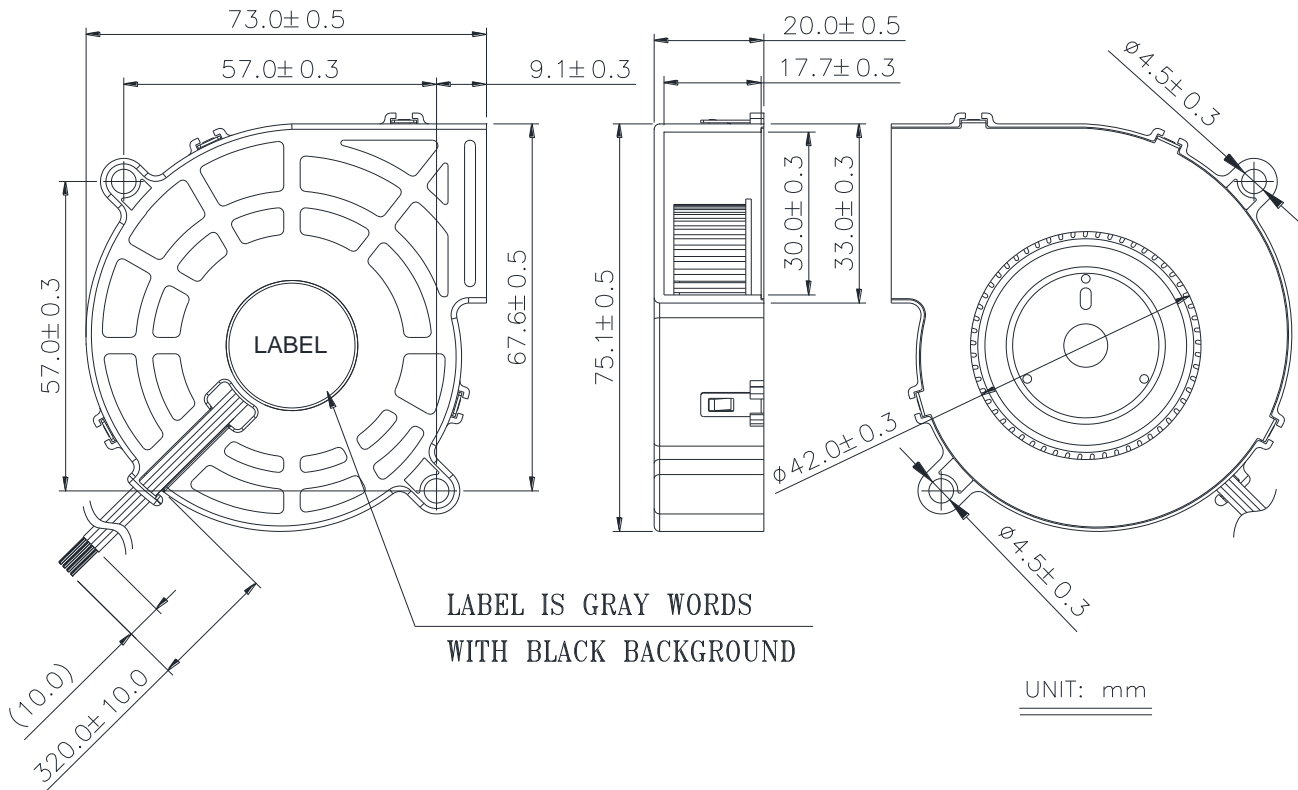


*TEST CONDITION: INPUT VOLTAGE-----OPERATION VOLTAGE
TEMPERATURE-----ROOM TEMPERATURE
HUMIDITY-----65%RH

PART NO:

DELTA MODEL: BUB0712HD-SM

9. DIMENSION DRAWING:



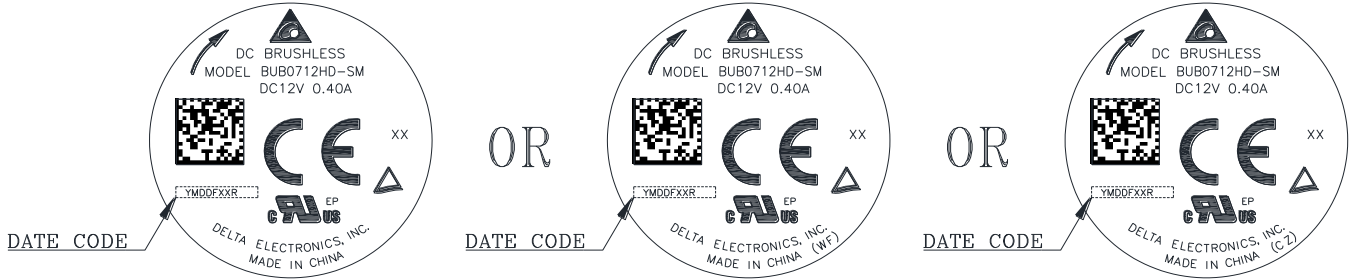
NOTES:

1. LEAD WIRE: UL1061 AWG #26
RED WIRE ----- (+)
BLUE WIRE ----- (F00)
YELLOW WIRE ----- (PWM)
BLACK WIRE ----- (-)
2. THE PRODUCT IS RoHS COMPLAINT

PART NO:

DELTA MODEL: BUB0712HD-SM

LABEL:



THE POSITION OF DATE CODE FOR REFERENCE , DATE CODE NUMBER REFER TO BELOW LIST:

THE FORMAT FOR DATE CODE		
Y	YEAR	"0" FOR 2010, "1" FOR 2011, ET AL.
M	MONTH	1-9 IS JAN-SEP, X IS OCT, Y IS NOV, Z IS DEC
DD	DAY	01-31 MEANS DATE OF MONTH
FXX	LINE	"F1" MEANS NO.1 PRODUCTION LINE, "F2" MEANS NO.2 PRODUCTION LINE, "FXX" MEANS NO.XX PRODUCTION LINE,ET AL.
R	PRODUCE CONDITION	"R": MEANS THE FAN CONFORM TO RoHS COMPLIANCE.

2D BARCODE



(DATA MATRIX)

BARCODE

SCAN

BUB0712HD-SMA0YYMDSSSSS

BARCODE INFORMATION REFER TO BELOW LIST:

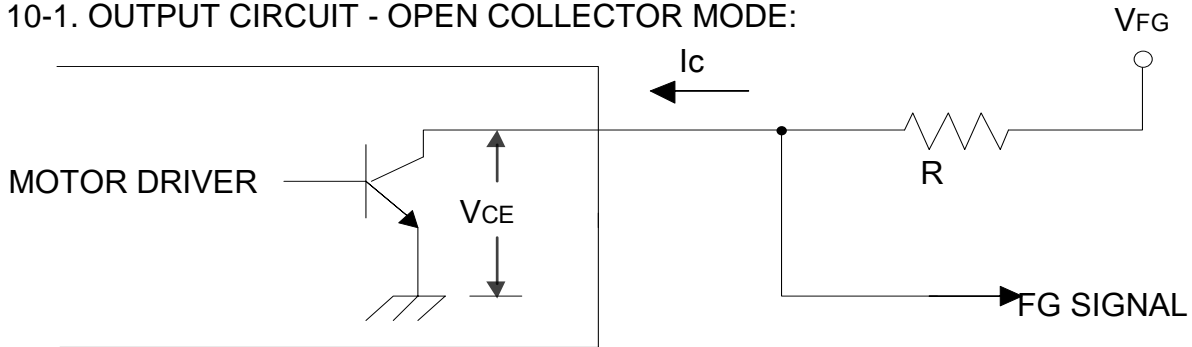
THE FORMAT FOR THE BARCODE		
BUB0712HD-SM	P/N	DELTA MODEL NAME.
A0	VENDOR	"A0" MEANS DELTA.
YY	YEAR	"10" FOR 2010, "11" FOR 2011, ET AL.
M	MONTH	1-9 IS JAN-SEP, A IS OCT, B IS NOV, C IS DEC.
D	DATE	1-9 IS 1st-9th, A IS 10th, B IS 11th, ET AL. (NOT INCLUDED I, J, O and Q.)
SSSSS	SERIAL NUMBER	FROM 00001 TO 99999.

PART NO:

DELTA MODEL: BUB0712HD-SM

10. FREQUENCY GENERATOR (FG) SIGNAL:

10-1. OUTPUT CIRCUIT - OPEN COLLECTOR MODE:



CAUTION:

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

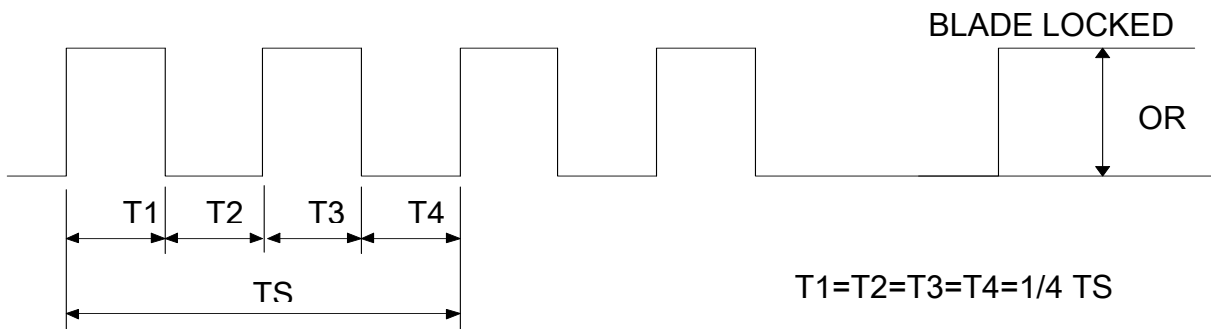
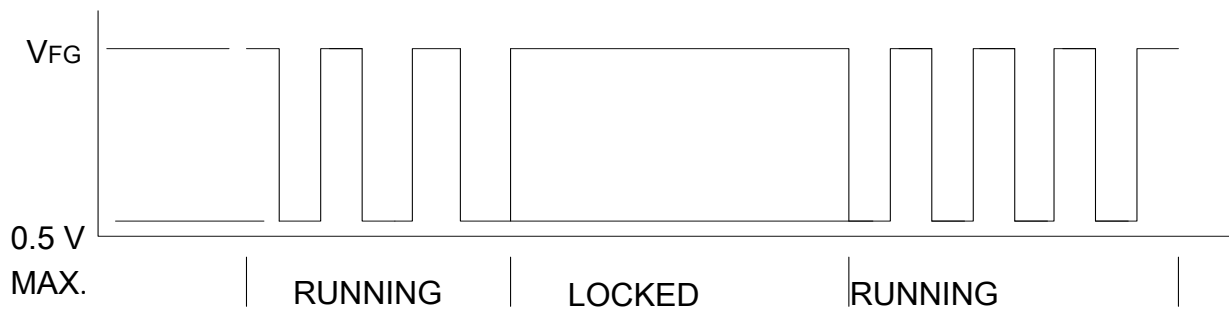
10-2. SPECIFICATION:

$V_{FG} = 5.0V$ TYP. (V_{CC} MAX.) $I_c = 5mA$ MAX.

$V_{CE} = 0.5V$ MAX.

$R \geq V_{FG} / I_c$

10-3. FREQUENCY GENERATOR WAVEFORM:



$N = R.P.M$

$TS = 60/N$ (SEC)

*VOLTAGE LEVEL AFTER BLADE LOCKED

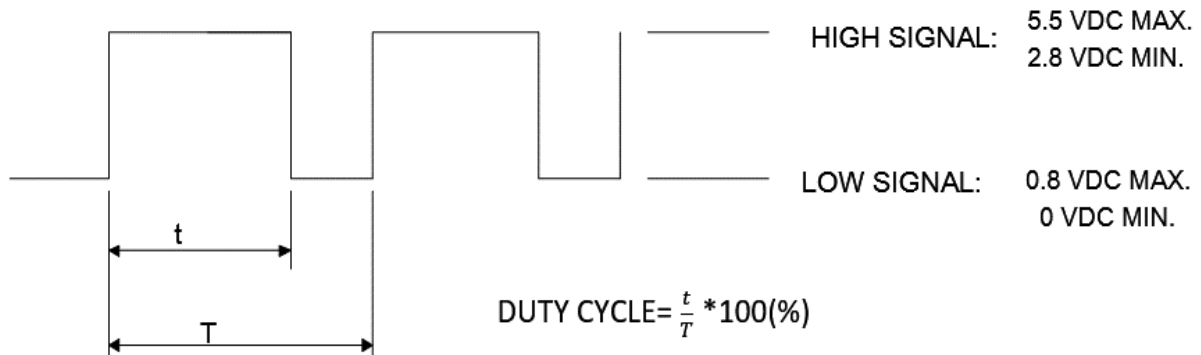
*4 POLES

PART NO:

DELTA MODEL: BUB0712HD-SM

11. PWM CONTROL SIGNAL:

SIGNAL VOLTAGE RANGE: 0 ~ 5.5 VDC



- *THE PREFERRED OPERATING POINT FOR THE FAN IS 25kHz.
- *AT 100% DUTY CYCLE,THE ROTOR WILL SPIN AT MAXIMUM SPEED.
- *AT 0% DUTY CYCLE,THE ROTOR WILL STOP.
- *WITH CONTROL SIGNAL LEAD DISCONNECTED,THE FAN WILL SPIN AT MAXIMUM SPEED.
- *AT 25kHz 45% DUTY CYCLE ,THE FAN WILL BE ABLE TO START FROM A DEAD STOP .

12. SPEED VS PWM CONTROL SIGNAL:

(AT 25°C, RATED VOLTAGE & PWM SIGNAL AS FOLLOW)

*PWM SIGNAL

PWM FREQUENCY = 25kHz

DUTY CYCLE (%)	SPEED (R.P.M.)	CURRENT (A)
100	3800±10%	0.26
0	0	0.01