



EVERFLOW

SPECIFICATION FOR APPROVAL

CUSTOMER: 尚太--S.C

DESCRIPTION: DC Fan

EVERFLOW No: R126015BUTC993aR

CUSTOMER No:

SAMPLE NO: S1202314

SERIAL NUMBER: 111031

DATE: 2012-4-11

RD REV: A

STANDARD REV: A

CUSTOMER APPROVED BY

APPROVED BY	CHECKED BY	DRAWING BY
 2012.04.13	 2012.04.13	JU HUI ZOU

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SPECIFICATION FOR APPROVAL

★ 1. SCOPE:

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

★ 2. CHARACTERS:

<u>NO</u>	<u>ITEM</u>	<u>SPECIFICATION</u>
2--1	Rated Voltage	<input type="checkbox"/> 5V <input checked="" type="checkbox"/> 12V <input type="checkbox"/> 24V <input type="checkbox"/> 48V
2--2	Starting Voltage	7V(25deg.C Power ON/OFF)
2--3	Operating Voltage Range	7V~13.2V
2--4	Rated Current	AT55°C 0.40Amp (MAX. 0.50Amp) AT20°C 0.10Amp (MAX. 0.10Amp)
2--5	Rated Power	AT55°C 4.80W (MAX. 6.0W) AT20°C 1.20W (MAX. 1.20 W)
2--6	Rated Speed	AT55°C 6000RPM ±10% AT20°C 1300RPM±300RPM (Testing Speed After Continuous 3Minute Operation At Ambient Temperature Of 45°C)
2--7	Air Flow	AT55°C 29.81CFM 0.84 m3/min AT20°C 6.46CFM 0.18m3/min
2--8	Static Pressure	AT55°C 6.42mmH2O AT20°C 0.30mmH2O
2--9	Sound Level	AT55°C (MAX. 46dB(A)) AT20°C (MAX. 21dB(A))
2--10	Product Type	<input checked="" type="checkbox"/> Rohs <input type="checkbox"/> HF <input type="checkbox"/> GP
2--11	Life Expectancy	<input type="checkbox"/> 40,000hours at 40°C <input checked="" type="checkbox"/> 50,000hours at 40°C
2--12	Bearing Type	<input checked="" type="checkbox"/> Two Ball <input type="checkbox"/> Ball And Sleeve <input type="checkbox"/> EBR <input type="checkbox"/> Ball Bearing <input type="checkbox"/> One Ball
2--13	Protection	<input type="checkbox"/> Impedance Protection <input checked="" type="checkbox"/> Auto-Restart <input type="checkbox"/> Current-Limit
2--14	Pole	<input type="checkbox"/> 2 Pole <input checked="" type="checkbox"/> 4Pole <input type="checkbox"/> 8Pole <input type="checkbox"/> Three Phase
2--15	IP Grade	N/A
2--16	Safety Approval	<input checked="" type="checkbox"/> TUV <input checked="" type="checkbox"/> UL <input checked="" type="checkbox"/> CE

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★ 3. MECHANICAL:

3--1	DIMENSIONS	SEE DIMENSIONS DRAWING
3--2	FRAME	<input checked="" type="checkbox"/> PBT(BLACK) PLASTIC {UL 94V-0} <input type="checkbox"/> PC PLASTIC {UL 94V-2}
3--3	IMPELLER	<input checked="" type="checkbox"/> PBT(BLACK) PLASTIC {UL 94V-0} <input type="checkbox"/> PC PLASTIC {UL 94V-2}
3--4	WEIGHT	GRAMS

★ 4. ENVIRONMENTAL:

4--1. OPERATING TEMPERATURE----- -10°C~70°C

4--2. STORAGE TEMPERATURE----- -20°C~75°C

4-3. OPERATING HUMIDITY----- 5 TO 90% RH

4-4. STORAGE HUMIDITY ----- 5 TO 95% RH

4-5. DIRECTION OF ROTATION----- CLOCKWISE
COUNTER-CLOCKWISE
 (VIEWED FROM LABEL SIDE)

4-6. DIELECTRIC STRENGTH ----- APPLIED AC 500V FOR ONE MINUTE OR
 AC 600V FOR SECONDS BETWEEN HOUIING
 AND LEAD WIRE(+)

4-7. INSULATION STRENGTH-----MORE THAN 500 M OHM INTERNAL STATOR
 AND LEAD WIRE(+) MEASURED AT DC 500V

4- 8. DROP TEST-----IN MINIMUM PACKAGING CONDITION, FAN WITHSTANDS
 EACH ONE DROP OF THREE FACES FROM 60cm DISTANCE
 HEIGHT ON TO 2cm THICKNESS OF SOLEPLATE.

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4--9. VIBRATION TEST----- ORIENTATION: X , Y , Z .
FREQUENCY(Hz) PSD (g²/Hz)
5 0.02
500 0.0001
TEST TIME:2HRS FOR EACH DIRECTION.

4--10. SHOCK TEST----- TEMPERATURE : +25°c.
ORIENTATION : X , Y , Z .
POWER : NON-OPERATING.,
ACCELERATION: 50G MAX.
PULSE: 11 MS HALF-SINE WAVE.
NUMBER OF SHOCKS:
5 SHOCKS FOR EACH DIRECTION.

4--11. NOISE TEST ----- MEASURED IN A SEMI-ANECHOIC CHAMBER
WITH BACKGROUND NOISE LEVEL BELOW
19DB(A). THE FAN IS RUNING IN FREE AIR
WITH THE MICROPHONE AT A DISTANCE OF
ONE METER FRAM THE FAN INTAKE

4--12. AIR PERFORMANCE ----- MEASURED BY A DOUBLE CHAMBER.THE
VALUES ARE RECORDED WHEN THE FAN SPEED
HAS STABILIZED AT RATED VOLTAGE.

★ 5. NOTES:

5--1. THE ABOVE STANDARD SHOULD BE THE SPECIFIED VALUE AT NORMAL
TEMPERATURE (25°C) AND NORMAL HUMIDITY (60~65%) UNLESS
OTHERWISE NOTICED.

5--2. SPECIFICATION CHANGE:
ANY CHANGES TO THE PARAMETERS SPECIFIED IN THIS DOCUMENT WILL BE
DETERMINED BY MUTUAL AGREEMENT ON BOTH PARTIES.

5--3. IT IS VERY IMPORTANT TO CHECK THE POLARITY CORRECTLY BEFORE CONNECTING
THE ANSTO THE POWER SOURCE. POSITIVE (+) AND NEGATIVE (-). DAMGE MAY
BECAUSED 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.

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5--4. PLEASE BE CAUTIOUS WHEN MOUNTING THE FAN THE FAN. INCORRECT MOUNTING OF FANS MAY CAUSE EXCESS RESONANCE, VIBRATION AND SUBSEQUENT NOISE, EVEN SCREW HOLE BROKEN.

5--5. PLEASE EXERCISE CAUTION WHEN HANDLING FANS. DAMAGE MAY BE CAUSED BY OUTSIDE ABNORMAL PRESSURE OR ENVIRONMENT STRESS DURING MOVING.

5--6. ALL THE FANS SHALL MEET THE QUALITY INSPECTION UNDER SAMPLING PLAN MIL-STD-105E AS FOLLOW, 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 CASSED BY THE INVADING OF POWDER, DROP LOTS OF WATER OR ENCROACHMENT OF INSECT INTO THE HUB.

CRITICAL	0.25%
MAJOR	1.00%
MINOR	2.50%

5--7. CUSTOMER SHALL CONFIRM THE MATCHING AND RELIABILITY OF FAN ON ACTUAL SET OR UNIT APPLICATION.THIS INCLUDE CONFIRMATION ON SET OR UNIT LIFE, ELECTRICAL NOISE, MECHANICAL NOISE, VIBRATION, STATIC ELECTRICITY, ELECTRIC POWER NOISE, DRIFT,ELECTRIC RESONANCE BETWEEN MOTOR AND CONTROL CIRCUIT, MECHANICAL RESONANCE BETWEEN MOTOR AND CHASSIS, IRREGULAR MOVEMENT OF SET DUE TO MOTOR NOISE, IRREGULAR MOVEMENT OF SET INSTRONG ELECTROMAGNETIC FIELD, DAMAGED BY LIGHTNING SURGE EARTHING METHOD ETC.

5--7. ANY REVISIONS ON THE SPECIFICATION SHALL BE DONE BASED ON MUTUAL DISCUSSION AND AGREEMENT.

5--8. IN ORDER TO IMPROVE THE PERFORMANCE WITHIN THE SCOPE OF SPECIFICATION, PARTS OR MATERIAL CHANGES ARE SUBJECT TO PRIOR NOTICE TO CUSTOMER.

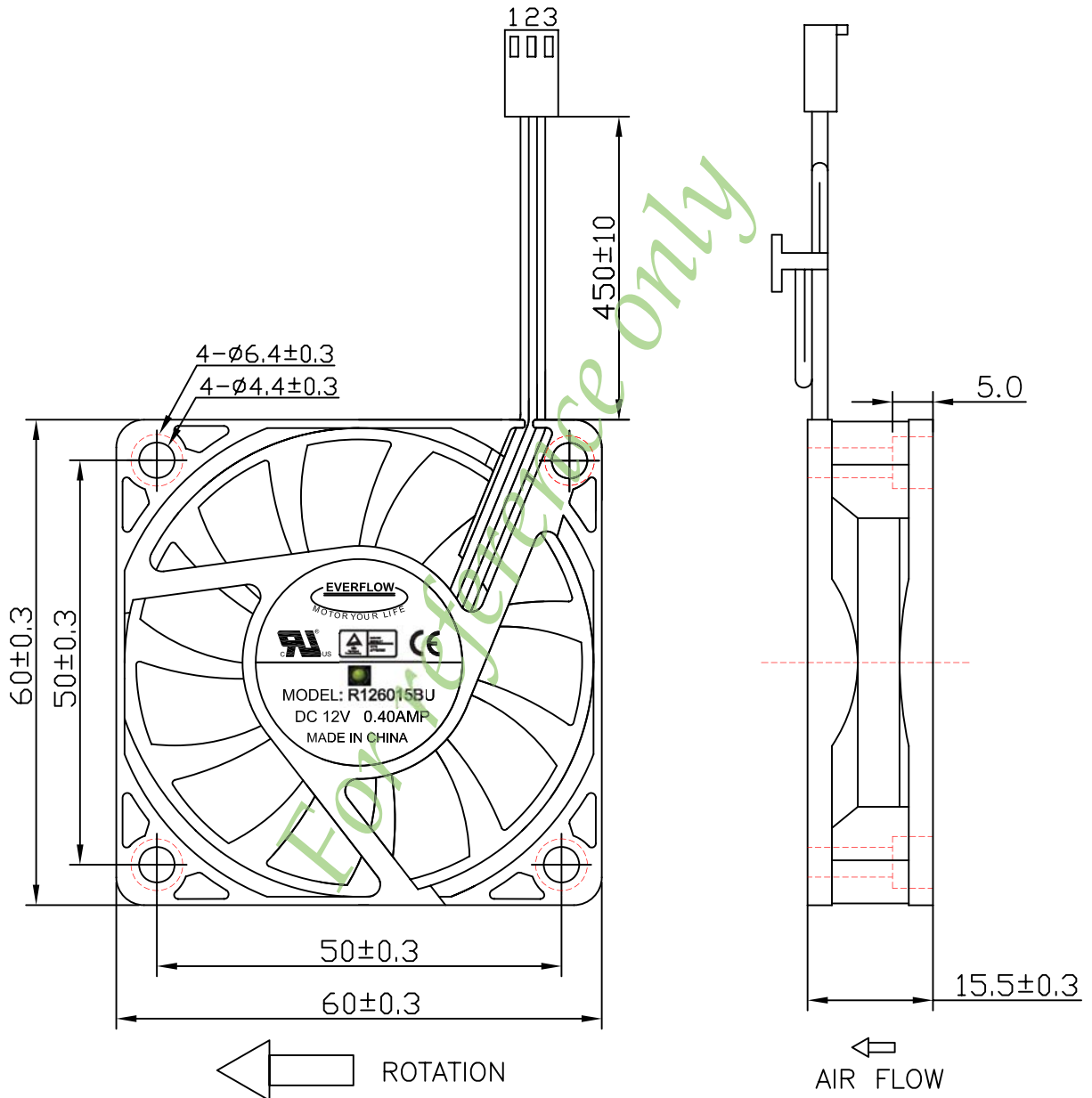
5--9. ANY ITEM WHICH IS NEEDED TO ADD INTO SPECIFICATION SHALL BE DETERMINED ON CUSTOMER'S PRIOR WRITTEN REQUEST. IF NO INFORMATION GIVEN, FAN WILL BE DELIVERED BASED ON OUR STANDARD JUDGMENT.

5--10. WHEN ANY TROUBLE OCCURS, BOTH PARTIES SHALL DISCUSS ON THIS SPECIFICATION TO SOLVE THE MATTERS. IN THIS CASE, OUR GUARANTEE IS ONLY LIMITED TO FANS.

REVISES
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R126015BUTC993aR

★ 6. DIMENSION DRAWING. UNIT: mm



NOTES:

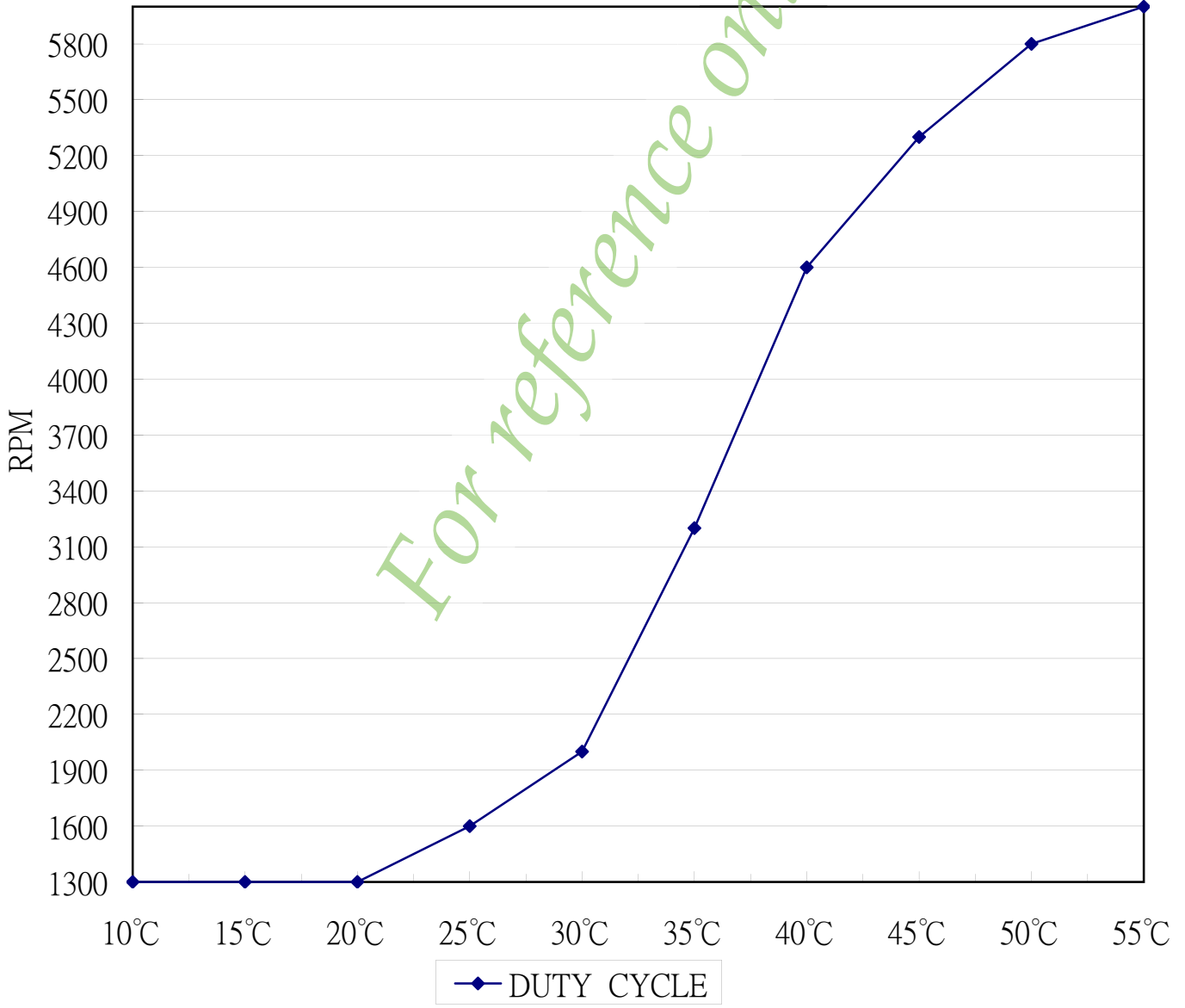
1. LEAD WIRE UL 1007 AWG#28
 PIN 1: BLACK WIRE---(-)
 PIN 2: RED WIRE---(+)
 PIN 3: YELLOW WIRE---(SIGNAL)
2. HOUSING: 2510-3P OR EQUIVALENT

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★ 7. DUTY CYCLE CURVE CHART

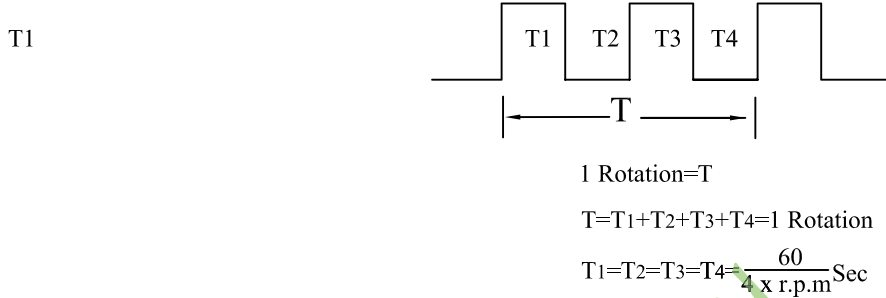
TEMPERATURE	SPEED (RPM)	RANGE	CURRENT (REF)
20°C	1300	±300	0.10A
55°C	6000	±10%	<0.40A

DUTY CYCLE CURVE CHART
(F = 25KHZ V = 5V (5.25max) Duty cycle : 0 ~ 100%)



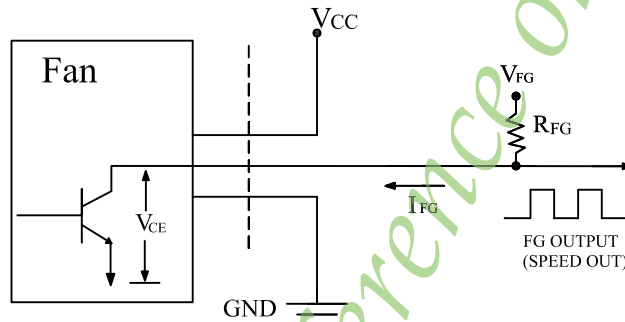
★ 7. CHARACTERISTICS & DEFINITION

- 4 Pole Motor: Fan with 4 pole motor.



- FG(Frequency Generator)Signal External Circuit:

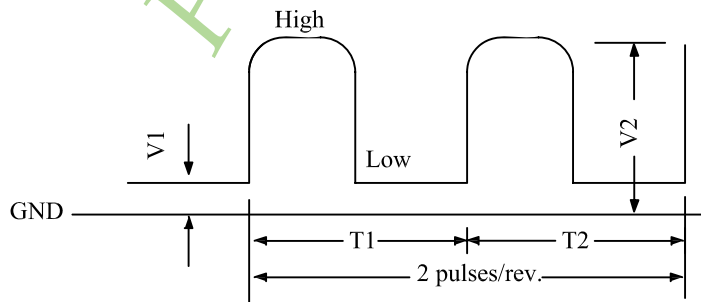
Open-collector output for rotation frequency detection



Note: Max. $V_{FG} = 13.2 \text{ VDC}$, Max. $I_{FG} = 5 \text{ mA}$, $\implies R_{FG} \geq V_{FG} / I_{FG}$
 We Recommend $R_{FG} = 10 \text{ K}\Omega$

- FG(Frequency Generator)Type Output Waveform:

1. Motor Rotating Condition (at 25°C , $V = 5 \text{ VDC}$)



V_1 : within 0.7V when I_{FG} less Than 3mA
 V_2 : V_{FG} , FG signal output voltage, maximum rating: 13.2VDC
 $\text{Duty} = T_1 / (T_1 + T_2) \times 100 = 50 \pm 20\%$ (measured between $0.3 \times V_2 \sim 0.7 \times V_2$)
 $V_1 \sim V_2$ rise time: less than 1.0ms
 $V_2 \sim V_1$ fall time: less than 1.0ms
 Rotation Speed (RPM) = $(60/2) \times f_{FG} = 30 \times f_{FG}$
 f_{FG} : frequency of FG output waveform(Hz)

2. Motor locked condition (at $V_{cc} = 12 \text{ VDC}$)

Output is fixed at low or high when motor is locked.