

Customer No.:

AVC Model: DS04020B12S-007

Rev.F.0

# SPECIFICATION FOR APPROVAL

## 1. SCOPE:

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

## 2. CHARACTERS:

	ITEM	SPEC.	
2-1.	RATED VOLTAGE	12	VDC
2-2.	OPERATION VOLTAGE	5.0~13.8	VDC
2-3.	INPUT CURRENT (IN FREE AIR)	0.20 ( 0.40 * MAX.)	A
2-4.	INPUT POWER (IN FREE AIR)	2.40 ( 4.80 * MAX.)	W
2-5.	SPEED (IN FREE AIR)	10500±10%	R.P.M
2-6.	SPEED CONTROL TYPE	-----	
2-7.	SIGNAL OUTPUT	ROTATION DETECTOR (RD)	
2-8.	MAX. AIR FLOW (AT ZERO STATIC PRESSURE)	0.348	M <sup>3</sup> /MIN
		12.28	CFM
2-9.	MAX. AIR PRESSURE (AT ZERO FLOW)	13.33	mm-H <sub>2</sub> O
		0.525	inch-H <sub>2</sub> O
2-10.	ACOUSTICAL NOISE	39.7 ( 42.7 MAX.)	dB-A

\* The current of fan products doesn't exceed 0.2A, and the power doesn't exceed 2.4 Watts.

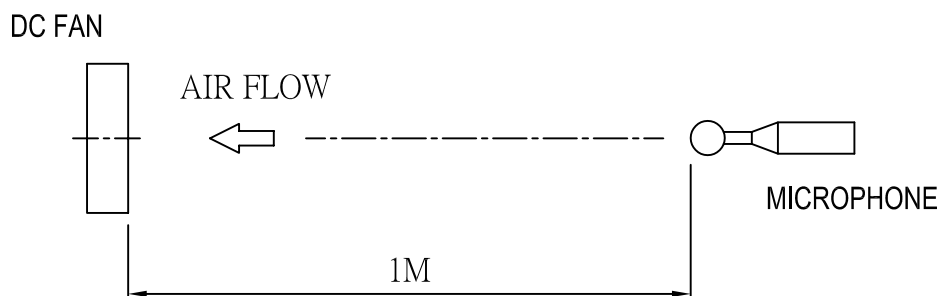
Customer No.:

AVC Model: DS04020B12S-007

- 2-11. INSULATION RESISTANCE — 10 MEGA OHM MIN. AT 500 VDC  
(BETWEEN FRAME AND (+) TERMINAL)
- 2-12. DIELECTRIC STRENGTH — 5 mA MAX. AT 500 VAC 60Hz ONE MINUTE,  
(BETWEEN FRAME AND (+) TERMINAL)
- 2-13. LIFE EXPECTANCE — 70,000 HOURS AT 40°C ROOM, AMBIENT 15%~65%RH
- 2-14. ROTATION — COUNTER-CLOCKWISE VIEWED FROM INLET
- 2-15. AIR FLOW DIRECTION — COUNTER-CLOCKWISE
- 2-16. INSULATION CLASS — UL: CLASS A
- 2-17. LEAD WIRE — UL 10368 AWG #24 , - : BLACK  
+ : RED  
RD: BLUE

NOTE:

- A. THE VALUES WRITTEN IN PARENTHESIS, ( ), ARE LIMITED SPEC.
- B. ACOUSTICAL NOISE MEASURING CONDITION:



NOISE IS MEASURED AT RATED VOLTAGE IN FREE AIR IN ACOUSTICAL CHAMBER WITH LARSON DAVIS TYPE 824S SOUND LEVEL METER.

- C. THE AIR FLOW AND AIR PRESSURE MEASURED AT RATED VOLTAGE IN DOUBLE CHAMBER IS MEASURED ACCORDING TO AMCA STANDARD 210-85.

Customer No.:

AVC Model: DS04020B12S-007

### 3. MECHANICAL

- 3-1. DIMENSION \_\_\_\_\_ SEE DIMENTION DRAWING
- 3-2. FRAME \_\_\_\_\_ THERMOPLASTIC PBT OF UL 94V-0
- 3-3. FAN BLADE \_\_\_\_\_ THERMOPLASTIC PBT OF UL 94V-0
- 3-4. BEARING SYSTEM \_\_\_\_\_ TWO BALL BEARINGS
- 3-5. WEIGHT \_\_\_\_\_ 35 g

### 4. ENVIRONMENTAL

- 4-1. OPERATING TEMPERATURE \_\_\_\_\_ -10 TO +70 °C
- 4-2. STORAGE TEMPERATURE \_\_\_\_\_ -40 TO +75 °C
- 4-3. OPERATING HUMIDITY \_\_\_\_\_ 5 TO 90 % RH
- 4-4. STORAGE HUMIDITY \_\_\_\_\_ 5 TO 95 % RH
- 4-5. DROP TEST \_\_\_\_\_  
IN MINIMUM PACKGING CONDITION FAN WITHSTAND EACH ONE  
DROP OF THREE FACES FROM 30cm DISTANCE HEIGHT ONTO 10mm  
THICKNESS OF WOODEN BOARD
- 4-6. VIBRATION TEST \_\_\_\_\_  
SINEWAVE  
DISPLACEMENT AMPLITUDE: 0.75 mm (EQUIVALENT 10G)  
FREQUENCY RANGE: 10Hz - 55 Hz / 30 SEC. 55Hz - 10 Hz / 30 SEC.  
LINEAR SCANNING 120 CYCLE  
ENDURANCE TIMER PER AXIS: 2 HOURS  
ORIENTATION: X,Y,Z
- 4-7. SHOCK TEST \_\_\_\_\_  
APPLY PEAK ACCELERATION 50 g AND KEEP DURATION OF THE  
PLUSES FOR 11MS (HALF SINE WAVE)
- 4-8. RoHS \_\_\_\_\_ SEE RoHS STANDARD

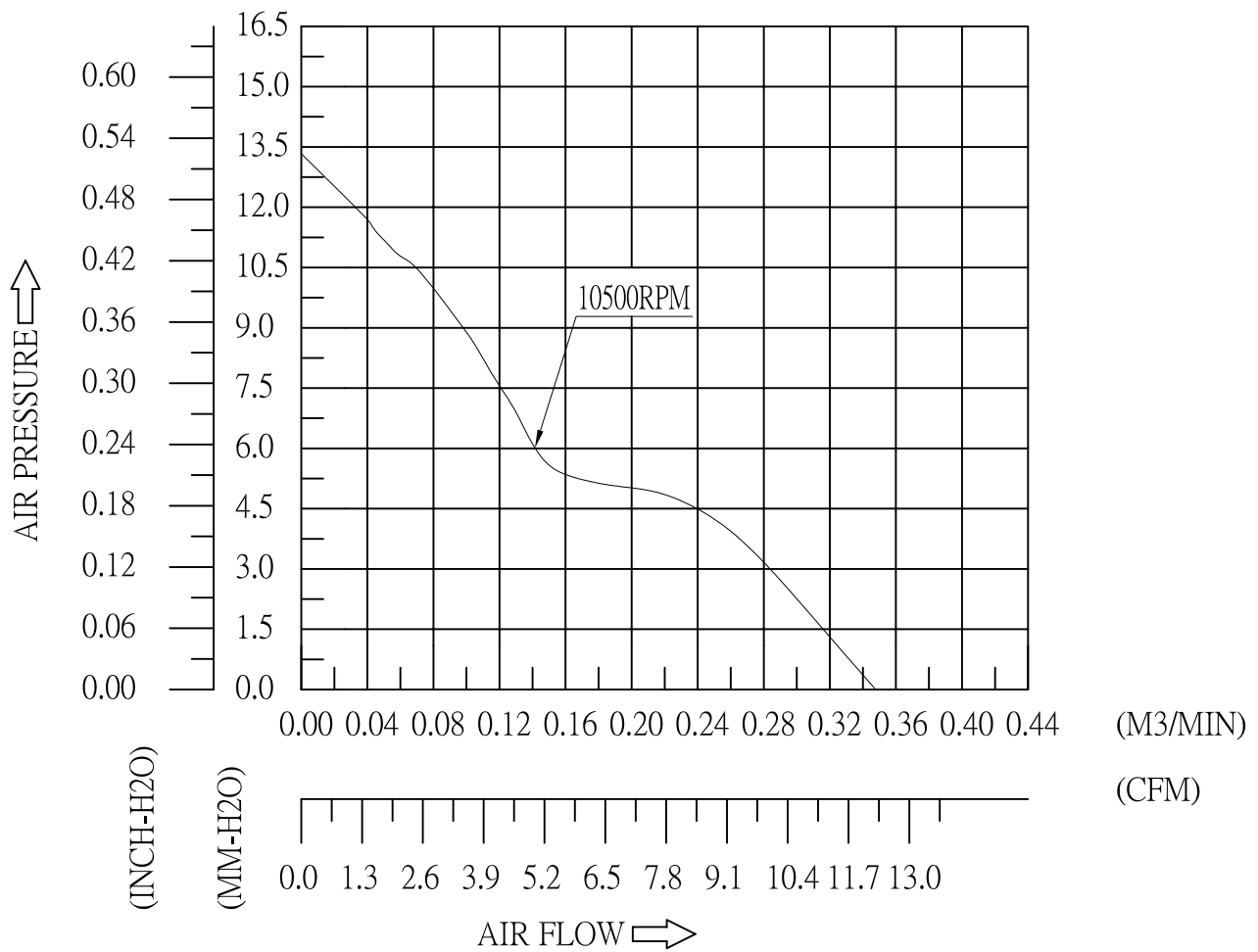
### 5. PROTECTION

- 5-1. LOCKED ROTOR PROTECTION \_\_\_\_\_  
IMPEDANCE OF MOTOR WINDING PROTECTS MOTOR FROM DAMAGE IN  
72 HOURS OF LOCKED ROTOR CONDITION AT THE REATED VOLTAGE
- 5-2. POLARITY PROTECTION \_\_\_\_\_  
BE CAPABLE OF WITHSTANDING IF REVERSE CONNECTION FOR  
POSITIVE AND NEGATIVE LEADS

Customer No.:

AVC Model: DS04020B12S-007

### 6. P & Q CURVE



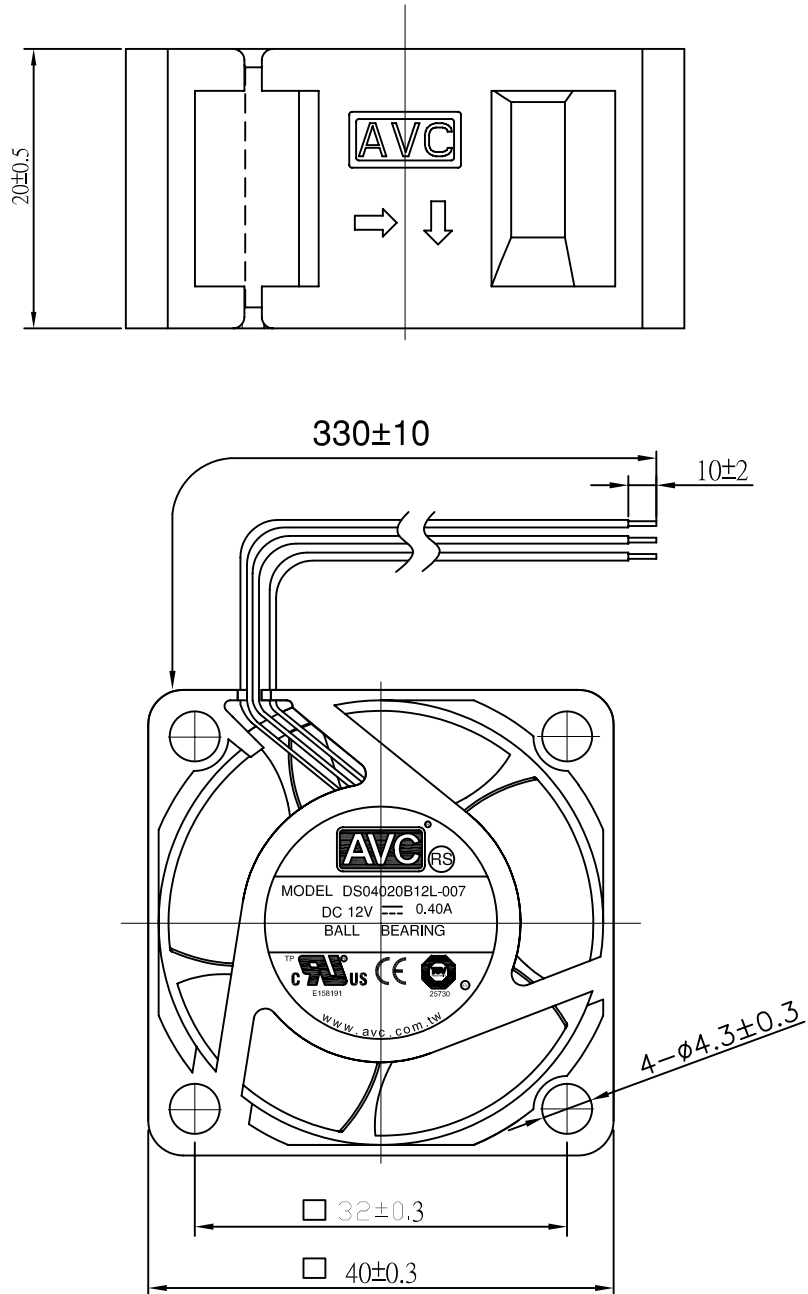
\* TEST CONDITION:

INPUT VOLTAGE      OPERATION VOLTAGE  
TEMPERATURE      ROOM TEMPERATURE  
HUMIDITY      65%RH

Customer No.:

AVC Model: DS04020B12S-007

## 7. DIMENSION DRAWING

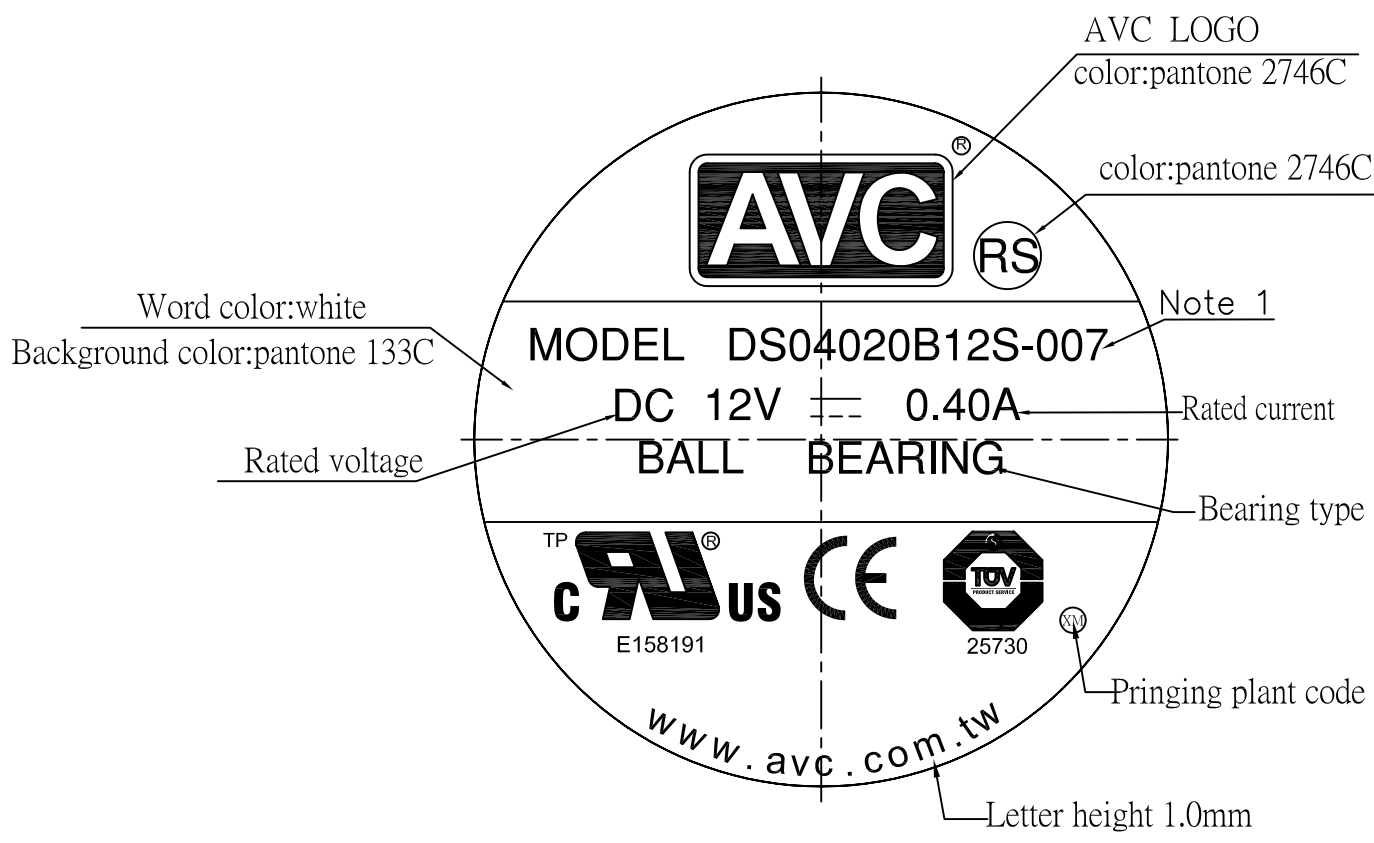


### NOTES:

- LEAD WIRES: PE WIRES UL10368 AWG#24  
PIN1: BLACK WIRE ..... (-)  
PIN2: RED WIRE ..... (+)  
PIN3: BLUE WIRE ..... (RD)

Customer No.:	
AVC Model:	DS04020B12S-007

7-1. LABEL



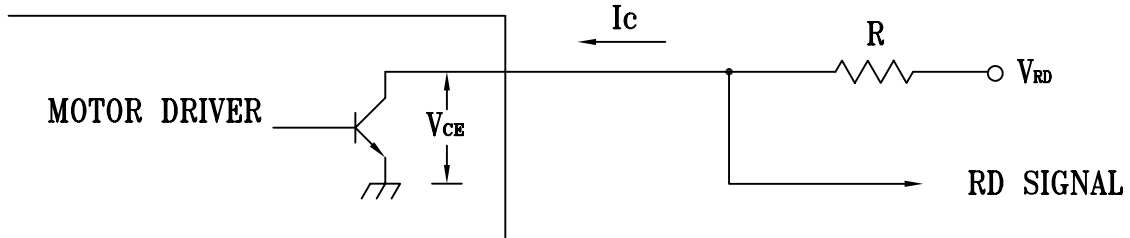
- Note1 .D : AXIAL FAN  
 S : SZ FAN  
 040 : DIMENSION:40\*40mm  
 20 : THICKNESS:20mm  
 B : BEARING TYPE:TWO BALL BEARING  
 12 : INPUT VOLTAGE:12V  
 S : ROTATING SPEED:ULTRA HIGH SPEED  
 - : GENERAL CONTROL  
 007 : SERIAL NO.

Customer No.:

AVC Model: DS04020B12S-007

## 8. ROTATION DETECTOR (RD) SIGNAL

### 8-1. SCHEMATIC:



### CAUTION:

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

### 8-2. SIGNAL SPECIFICATION:

OUTPUT TYPE: OPEN COLLECT

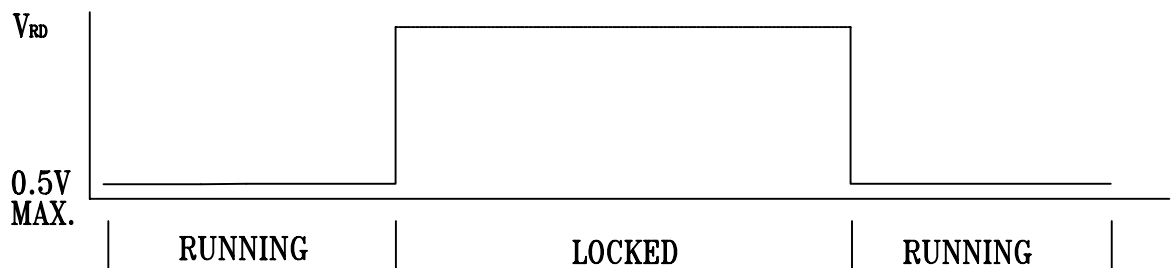
$V_{RD}$  MAXIMUM VOLTAGE = 13.8V

$I_c$  MAXIMUM CURRENT = 6mA

LOW LEVEL VOLTAGE = 0.5V MAX.

$R \geq V_{RD} / I_c$

### 8-3. THE WAVEFORM FOR ROTATION DETECTOR :



# RoHS STANDARD

HAZARDOUS SUBSTANCES		ALLOWABLE CONTENT (wt%)	REMARK
HEAVY METALS	CADMIUM (Cd) AND ITS COMPOUNDS	< 0.01 wt% ( < 100 ppm )	DIRECTIVE 2002/95/EC
	LEAD (Pb) AND ITS COMPOUNDS	< 0.1 wt% ( < 1000 ppm )	DIRECTIVE 2002/95/EC
	MERCURY (Hg) AND ITS COMPOUNDS	< 0.1 wt% ( < 1000 ppm )	DIRECTIVE 2002/95/EC
	HEXA VALENT CHROMIUM (CHROMIUM VI) (Cr <sup>6+</sup> ) AND ITS COMPOUNDS	< 0.1 wt% ( < 1000 ppm )	DIRECTIVE 2002/95/EC
BROMINATED FLAME RETARDANTS	POLYBROMINATED BIPHENYLS (PBBs)	< 0.1 wt% ( < 1000 ppm )	DIRECTIVE 2002/95/EC
	POLYBROMINATED DIPHENYL ETHERS (PBDEs)	< 0.1 wt% ( < 1000 ppm )	DIRECTIVE 2002/95/EC