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APPROVAL SHEET

Model : TFD-6010L12Z

Customer :

Revision No : A0

File No : 20110215007

Date : 2011/2/15

PROJECT ENGINEER	CHIEF ENGINEER	R&D MANAGER	SALES
Guoruihua	Xiongwei	Zhouhuifeng	

CUSTOMER APPROVAL SIGNATURE

PRODUCT SPECIFICATION

A.GENERAL SPECIFICATION

ITEM		SPECIFICATION/CONDITION
A-1	Part No.	TFD-6010L12Z
A-2	Outline Dimension	60*60*10MM
A-3	Start Voltage	7VDC
A-4	Rated Voltage	12VDC
A-5	Operating Voltage Range	7~13.8VDC
A-6	Rated Current	0.14A
A-7	Power Consumption	1.68W
A-8	Rated Speed	3600±10%RPM
A-9	Airflow	15.03CFM
A-10	Static Pressure	0.09InH ₂ O
A-11	Noise Level	<26dBA
A-12	No. of Pole	4 Pole
A-13	Rotation Direction	Counter-Clockwise

B.ELECTRICAL SPECIFICATION

ITEM		SPECIFICATION/CONDITION
B-1	Locked Motor Protection	a. No damage is made for a condition 72-hour rotation lock voltage
B-2	Insulation Resistance	10M Ω /b/w unshielded wire and frame at 500 VDC/min
B-3	Dielectric Strength	5Ma Max./Measured b/w lead wire and frame at 500VAC/min

C.MAIN MATERIAL/PARTS SPECIFICATION

ITEM	MAJOR COMPONENTS	MATERIAL OR TYPE	GRADE
C-1	FAN FRAME	PBT E202G OR CCP PBT 4830BK	94V-0
C-2	FAN BLADE		94V-0
C-3	PLASTIC MAGNET	STRONTIUM FERRITE (BOB14W)	
C-4	LEAD WIRES	POLYVINYL CHLORIDE ENAMELED COPPER WIRE(AWG#26)	94V-0

D.ENVIRONMENTAL SPECIFICATION

ITEM		SPECIFICATION/CONDITION
D-1	Operation Temperature	-10°C~+60°C /66%(RH), high / low temperature test for 24 hours, temperature change: 30°C/hours.
D-2	Storage Temperature	-40°C~+70°C /66%(RH), high / low temperature test for 24 hours, temperature change: 30°C/hours.
D-3	Packing Shock Proof Test	1 corner, 3 edges ,6 face natural drop 80cm high packing
D-4	Temperature Rise In Normal Operation	Temperature rise less than 35°C at external surface Temperature rise less than 65°C at coil surface
D-5	Insulation Resistance	Between fan frame and terminal wires at least 10MΩ at 500VDC
D-6	Dielectric Strength	Must withstand 500 VAC 1second 1m A between fan frame and both wires

E.LIFE TIME

BEARING TYPE	AMBIENT TEMP	EXPECTANCY
<input type="checkbox"/> SLEEVE BEARING	25°C	25,000HOURS
<input type="checkbox"/> 1B/1S BEARING	25°C	35,000HOURS
<input type="checkbox"/> TWO BALL BEARING	25°C	50,000HOURS
<input checked="" type="checkbox"/> Z-AXIS BEARING	25°C	60,000HOURS

F.SHOCK TEST

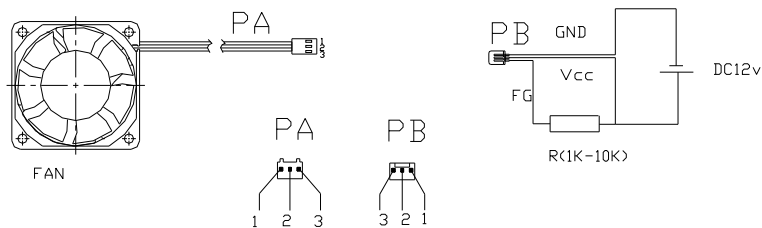
Gravitational acceleration of 50g_{peak}, duration of pulse, 11 mili seconds(half sine wave).

G.DROP TEST

Prepared in minimum packing condition, fan will withstand one drop each on three surfaces from a 30cm height onto a 10mm thick hard wooden board.

H.FG(WAVE) TEST

1. FG(WAVE) Test circuit figure:

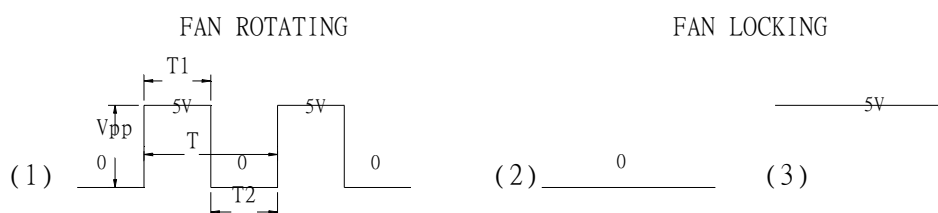


2.Pin assignments:

PA	PB
PIN1 BLACK	PIN1 GND
PIN2 RED	PIN2 VCC
PIN3 BLUE	PIN3 FG

3.FG(WAVE) Level & Time :

a. FG WAVE:(As fan in computer user)



(1) At fan rotor rotating output signal

(2) or (3) At fan rotor locking output signal

b.TIME: $T1/T \cong T2/T \cong 1/2$

c.FG LEVEL $V_{pp}=5V$

Figure 1 FAN Assembly

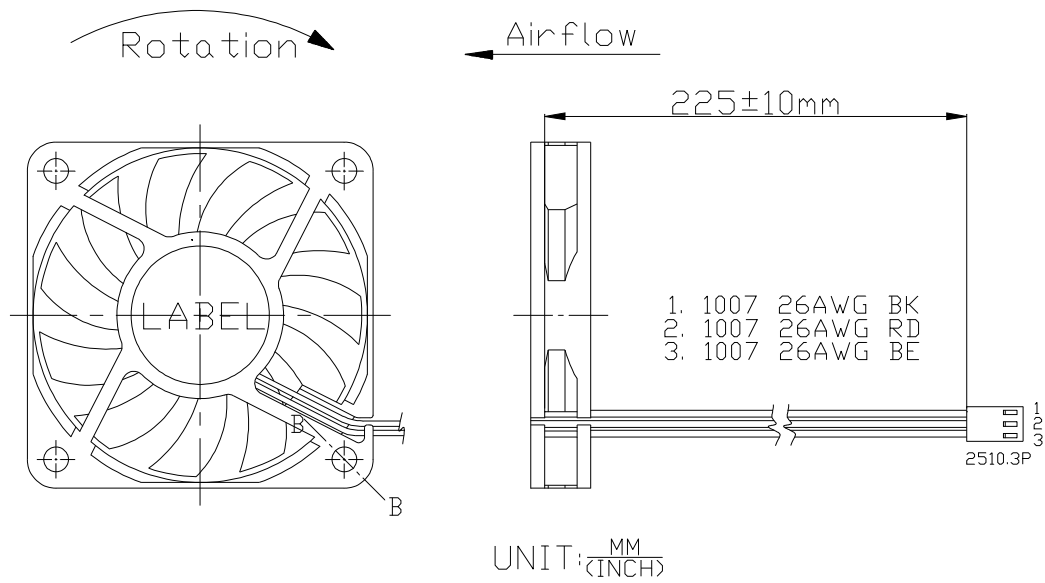
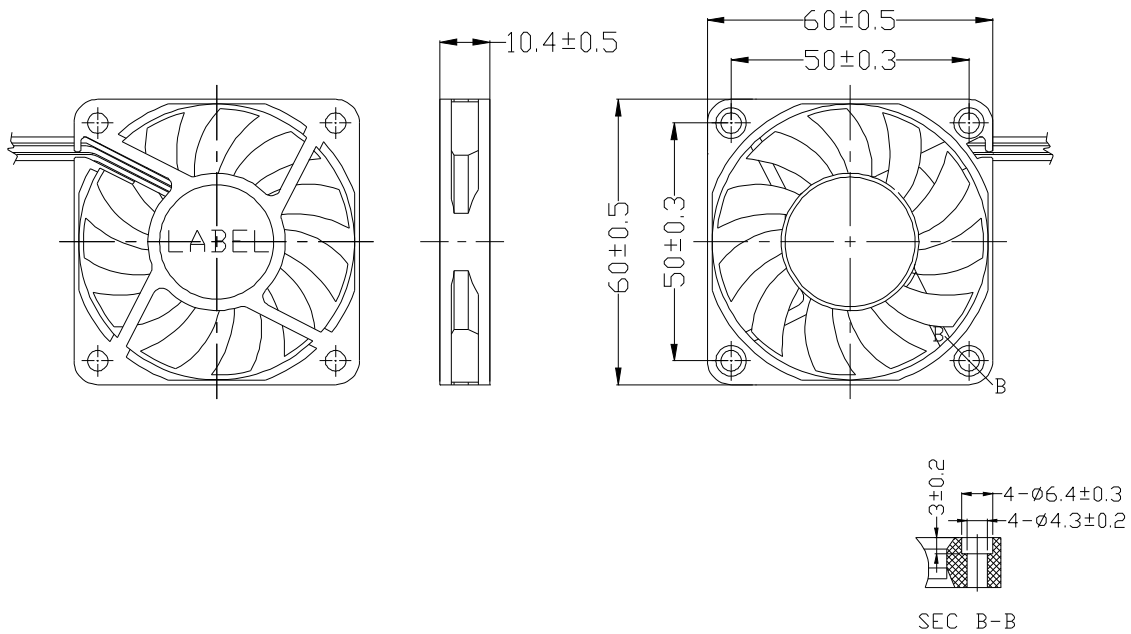


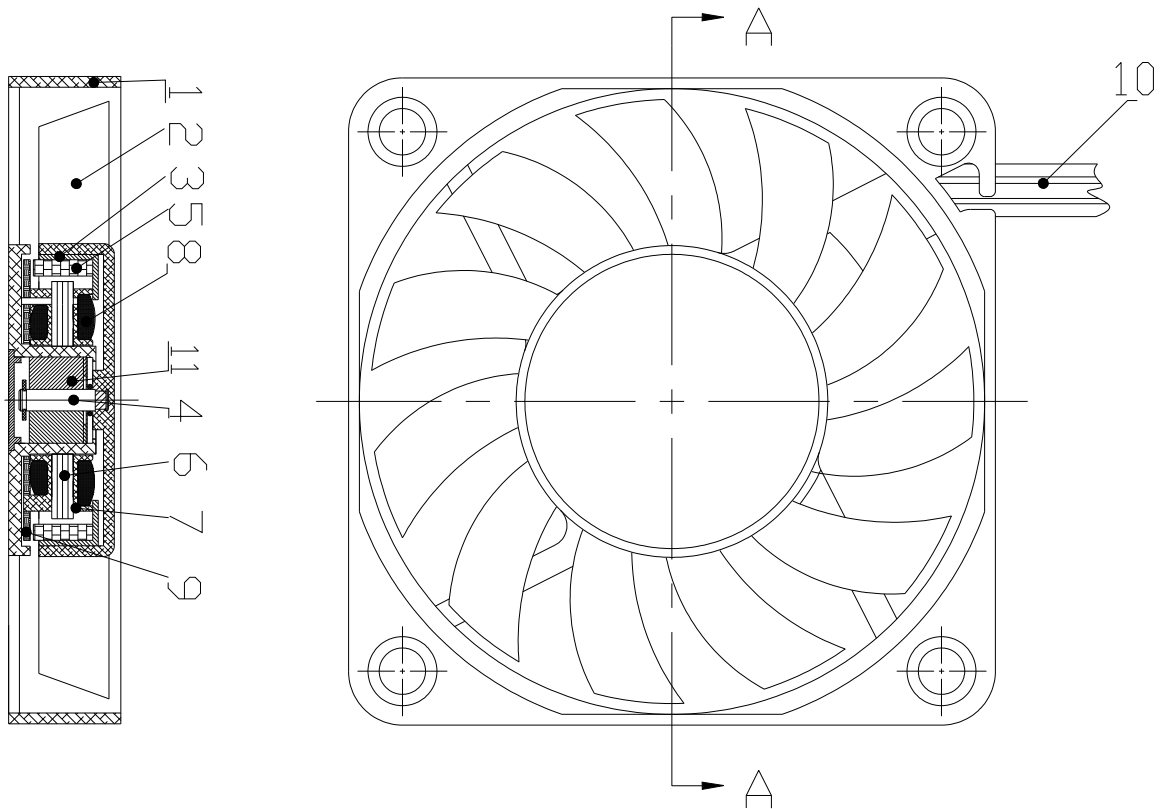
Figure 2 Mechanical Dimensions



Notes:

1. Tolerances: ± 0.2
2. Impeller must not protrude beyond front surface
3. Minimum 0.30 radius at all rib intersections
4. Unit: mm

Figure 3 Bill of Material

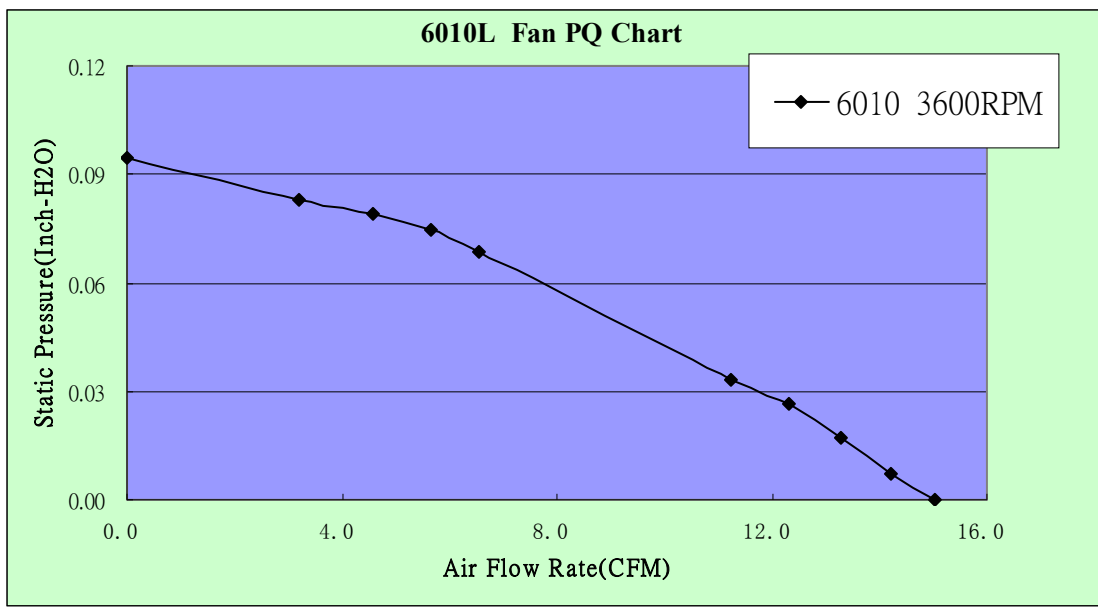


SEC A-A

No	Components	Material	Flame Class	Grade	Manufacturer	UL File No
1	Case	PBT	94-V0	---	SHINKONG SYNTHETIC FIBERS CORP International.CO.,LTD	E107536
2	Fan Blade	PBT	94-V0	---	SHINKONG SYNTHETIC FIBERS CORP International.CO.,LTD	E107536
3	Yoke	Steel	---	---	Kuo Chen metal ind co.,ltd	---
4	Shaft	Stainless Steel	---	---	Teng Mao precision on shaft factory.	---
5	Magnet	Rubber	---	---	Best result enter-prise co.,ltd	---
6	Core	Plated Steel Sheets	---	---	Chang yi industry co.,ltd	---
7	Slot Insulation	PBT	---	---	SHINKONG SYNTHETIC FIBERS CORP International.CO.,LTD	E107536
8	Winding	Polyurethane enameled copper	---	---	Chin Yih industry co.,ltd	E196473
9	Printed wiring board	Metal clad industrial lamination	94-V0	---	FangZhong electronics technology co.,ltd	E226490
10	Lead wire	UL 1007 AWG26	94-V0	---	Song Fa Electronric Factory	E327926
11	ZX bearing	Copper powdered	---	---	Zhuxiang co.,ltd	---

THE PRODUCTION ACCORD WITH EUROPE UNION ROHS STANDARD

Figure 4 Fan Performance Curve



6010 4800RPM

	Q(cfm)	Ps(InchH2o)
1	0.000	0.094
2	3.214	0.083
3	4.595	0.079
4	5.657	0.075
5	6.551	0.069
6	11.242	0.033
7	12.317	0.026
8	13.286	0.017
9	14.206	0.007
10	15.030	0.000