



SPECIFICATION FOR APPROVAL

CUSTOMER: RS

MODEL NO: 12025 (CreaDyna Fan)

PART NO: FD1212-A1051E2AL

DATE : January . 27 . 2003

CUSTOMER APPROVAL

Taiwan

ACT-RX.TECHNOLOGYCORPORATION
2F, No. 192, Lien Chen Road, Chug Ho,
Taipei, Taiwan, R.O.C.
TEL: 886-2-82421111
FAX: 886-2-82452200

Mainland China(F1)

Yang Mei Ling Chu Keng Village,
Dong Keng Town,Dong Guan City
Guang Dong Province, China
TEL: 0769-3380481 3380482
FAX: 0769-3389116

Approval by:	Mars 01/27'03	Checker:	馮俊 01/27'03	Engineer:	Junny
--------------	---------------	----------	-------------	-----------	-------



CONTENTS

Contents Clause :

1. <u>SCOPE</u>	3
2. <u>ELECTRICAL</u>	3
3. <u>MATERIAL</u>	4
4. <u>MECHANICAL</u>	4
5. <u>MTBF</u>	4
6. <u>ORDERING AND OPERATING REMARKS</u>	4
7. <u>NOISE</u>	5
8. <u>RELIABILITY</u>	6
9. <u>PRODUCT LABEL</u>	7
10. <u>PERFORMANCE CHART</u>	7
11. <u>ASSEMBLY DIAGRAM</u>	8
12. <u>FREQUENCY GENERATOR SIGNAL (FG)</u>	9
13. <u>NOTES</u>	10



1. SCOPE

This document is a specification defining the electrical and mechanical characteristics of the CeraDyna fan.

2.ELECTRICAL

	Item	Specification	Test Condition
1	Rated Voltage	12V	DC power supply
2	Rated Current	0.42 Amp (Typical)	DC power supply
3	Max. Current	0.45 Amp(Safety)	DC power supply
4	Auto restart cycle time	1 Sec. ON , 6 Sec. OFF	At rated voltage
5	Rated Power	5.04 W	Under at rated voltage and rated current
6	Starting Voltage	6 V (Max.)	Connect DC power supply
7	Insulation Resistance	10 M Ω (Min.)	Input 500V(DC) between Lead wire(+) and housing
8	Speed (H)	3000 RPM (typical) ± 10 %	Measured at 5 minutes after starting under 25°C 65%RH ambient
9	Acoustical Noise	51.00 dB(A)	Measured with an acoustic microphone standing 1m away from the running fan in a test chamber with background noise level below 20dB(A)
10	Static Pressure(H/M/L)	7.29 mm-H ₂ O (0.29 inch-H ₂ O)	At zero airflow ; rated voltage
11	Air Flow (H/M/L)	106.37 CFM (3.012 CMM)	At zero static pressure ; rated voltage
12	Direction of rotation	Clockwise view from Name plate side	N/A
13	Surge Voltage	N/A	
14	Operating Voltage	N/A	



3. MATERIAL

Impeller	PBT UL94-V0
Frame	PBT UL94-V0
Bobbin	PBT UL94-V0
Lead Wire ☒ + : Red ☒ - : Black ☒ O/P: ☒ White ☐ Yellow	24 ☒ UL 1007 AWG26 ☐ or Equivalent 28 ☐

4. MECHANICAL

Dimensions	L * W * H = 120*120*25 (mm)
Weight	200 grams
Operating temperature range	-10 °C ~ 75 °C
Storage temperature	-20 °C ~ 80 °C
Bearing system	☐ Two Ball Bearing ☐ One Ball One Sleeve Bearing ☐ Sleeve Bearing ☒ Alloy Sleeve with Ceramic Shaft

5. MEAN TIME BETWEEN FAILURE

At a common operating condition of +25°C, the expected reliability (expressed as Mean Time Between Failure) of fans are evaluated under the MIL-STD-781 Documentation Standard as below :

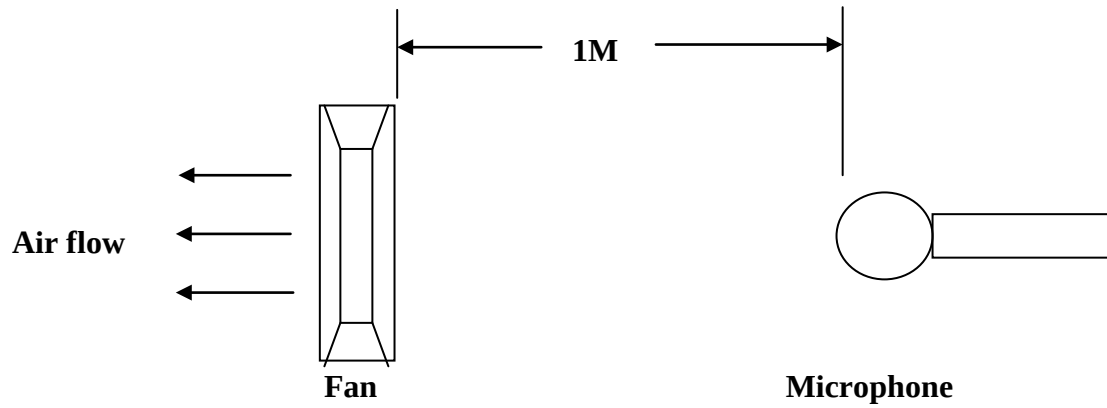
- ☐ Two Ball Bearing : 65000 hrs , Continuous operating under 25°C 65%RH
- ☐ One Ball One Sleeve Bearing : 65000 hrs , Continuous operating under 25°C 65%RH
- ☐ Sleeve Bearing : 50000 hrs , Continuous operating under 25°C 65%RH
- ☒ Alloy Sleeve with Ceramic Shaft : 300000 hrs , Continuous operating under 25°C 65%RH

6. ORDERING AND OPERATING REMARKS

- 6.1 For those not specified but vital to your requirement, ACT-RX is in full position to supply qualified substitutes.
- 6.2 Improper use may lead to malfunction. To ensure operation, avoid dipping into watery and oily liquid, or exposure to heat, etc.
- 6.3 All specification subject to change without prior notice.
- 6.4 Customized products on request.
- 6.5 ACT-RX does not guarantee the product if applications exceed specified limitations.



7. NOISE IS MEASURED AT RATED VOLTAGE IN ANECHOIC CHAMBER IN FREE AIR AS BELOW :



Noise is measured 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. The background noise is 20dBA max.

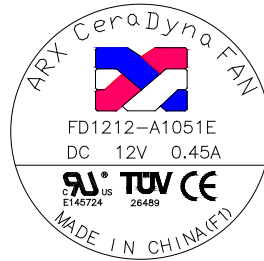


8.RELIABILITY

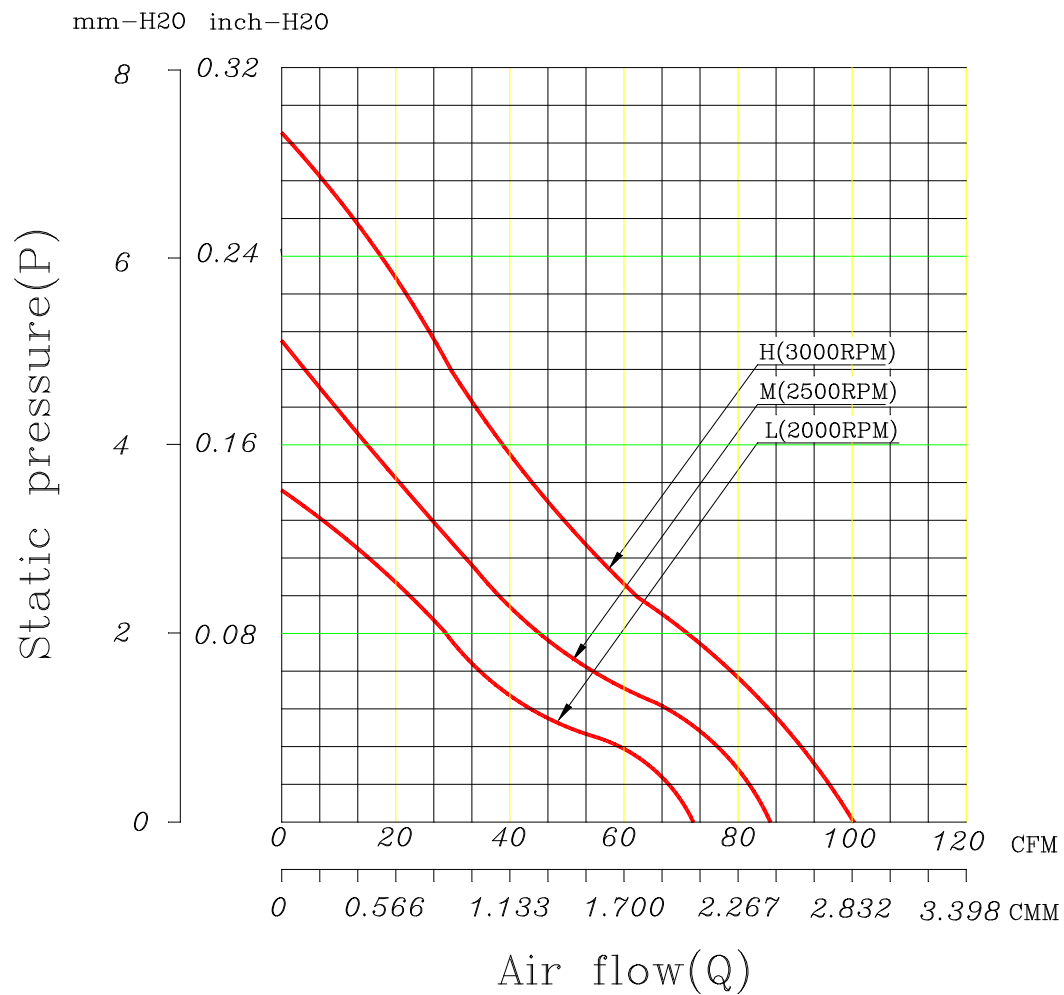
	Item	Specification	Test Condition
1	Locked Rotor Test	Flameproof and damage free	Rotor locked for 72 hrs with power on
2	Reverse Volt Protection	Yes	Reverse voltage with 12V
3	Balance Test	No protruding beyond the circle within 10 seconds	The fan runs in a circle, scaled by fan radius plus 10mm, on a perfectly smooth plate for 10 seconds
4	Drop Test	All specified characteristics remain unchanged	Free drop in minimum package to an oak board of 10mm thickness at 30cm below. Individual X, Y, Z face tested
5	Vibration Test	All specified characteristics remain unchanged	Ambient temp. : 25 °C±5 °C with 12V power supply Amplitude : 0.4-2.5 mm Acceleration : 14.7 m ² /s Frequency : 10HZ-60HZ Sweeping period : 1 min 10HZ-60HZ : 30 seconds 60HZ-10HZ : 30 seconds Total : 10 cycles
6	High/Low Temperature Cycling	All specified characteristics remain unchanged	20 minutes slew rate +75 °C (1 hr) , -20 °C (1 hr) Total : 36 cycles
7	Low Temp. Storage	All specified characteristics remain unchanged	Tested under -20 °C for 500 hrs without power supply
8	High Temp. Storage	All specified characteristics remain unchanged	Tested under +80 °C for 500 hrs without power supply
9	Dielectric Strength	Max 1mA of leakage current	Input 500V(AC) for 1 second between lead (+/-) and cabinet



9. PRODUCT LABEL

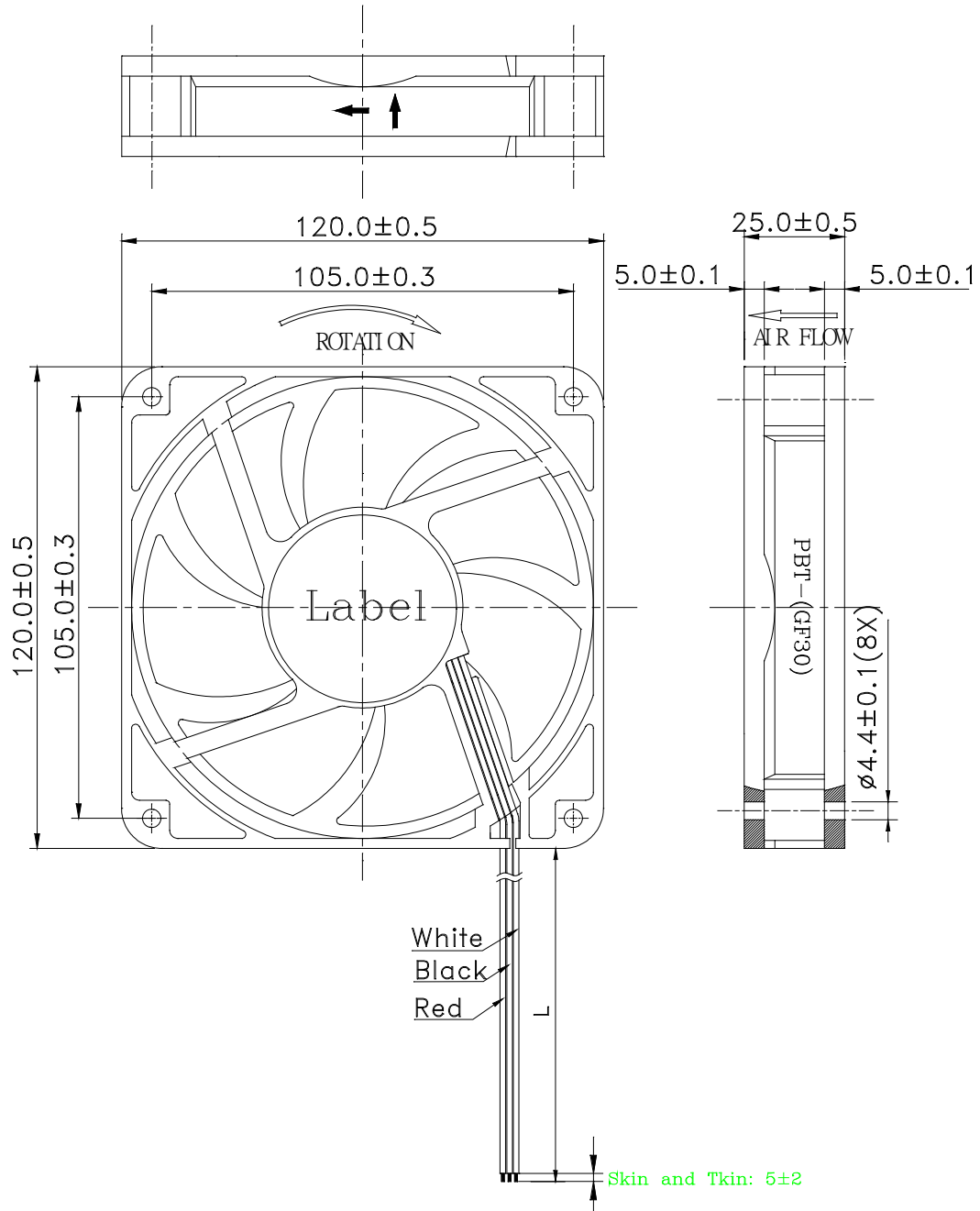


10. PERFORMANCE CHART



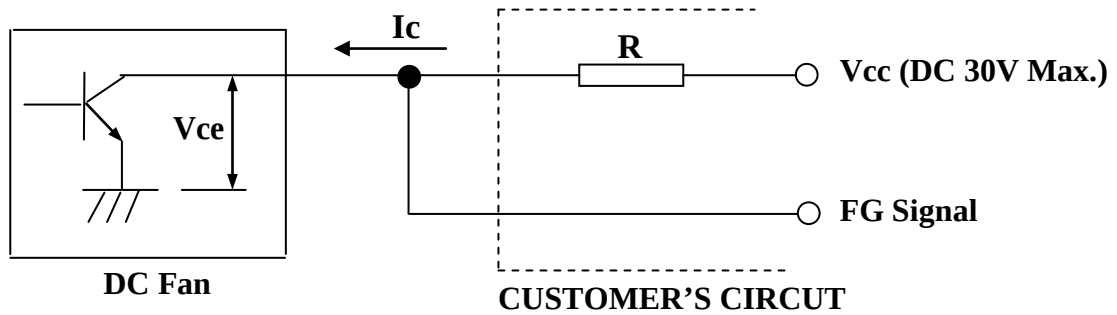


11. ASSEMBLY DIAGRAM





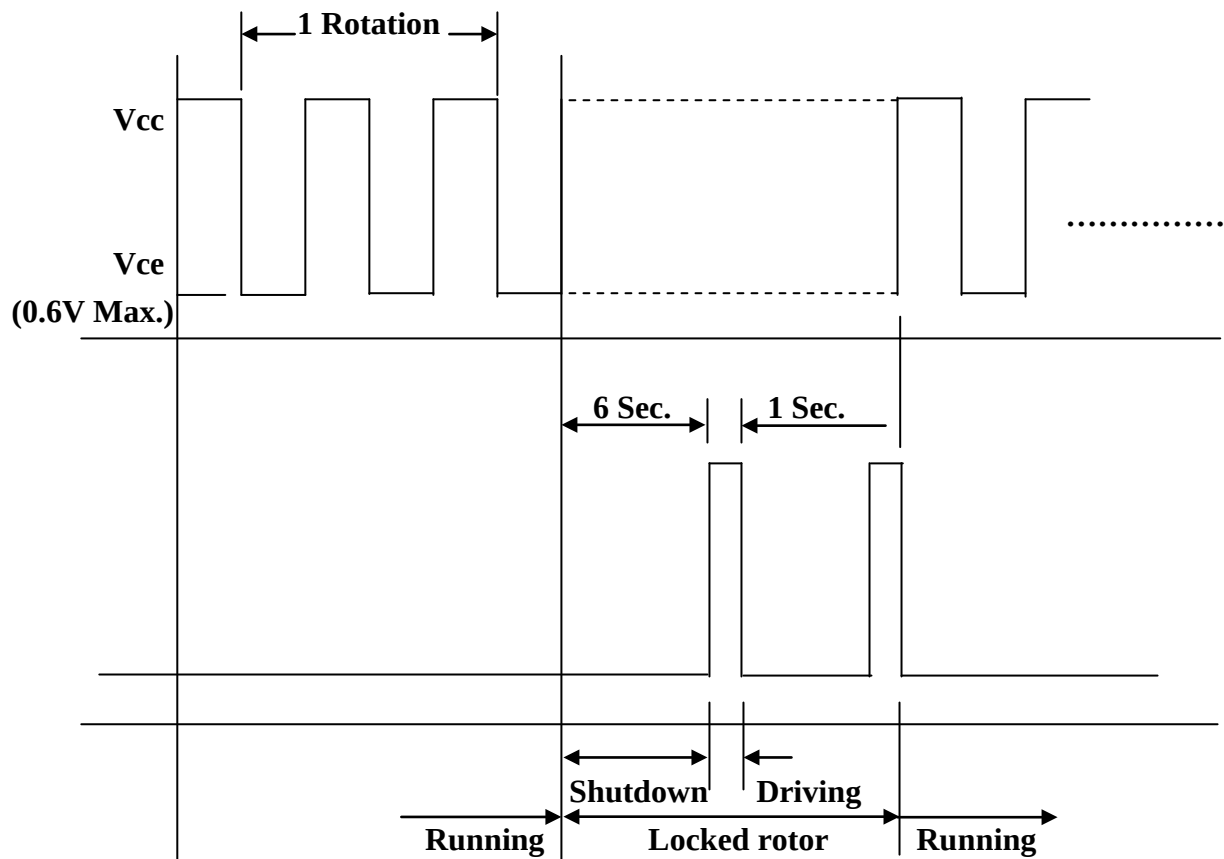
12. FREQUENCY GENERATOR(FG) SIGNAL :



12.1 $R = V/I$ (Out "R" value can be got by calculating)

12.2 Specification : $I_c = 10\text{mA}$ Max.

12.3 Frequency Generator Waveform :





13. NOTES

- 13.1 Please do not touch the impeller and never carry the fan the lead wires. The bearings and the lead wires may be damaged.
- 13.2 For the purpose of MIS, please specify the Part No. on every order.
- 13.3 For the purpose of MIS, please indicate Spec No. on every order.
- 13.4 Please do not use the fan in the environment of corrosive gas or liquid.
- 13.5 Please do not store the fan in the environment of high humidity. Please avoid storage of the fan over 6 months . For long term storage, please connect power to the fan shortly every 6 months even through the fan is stored in room temperature.
- 13.6 While the fan is in operation, please do not lock the fan intentionally for a long period of time to prevent over heating which may cause permanent damage.
- 13.7 Don't touch the blade.

