产品承认书

SPECIFICATION FOR APPROVAL

客　　户 CUSTOMER :

品　　名 PART NAME: 直流无刷冷却风扇

型　　号 TYPE NO : CY5008HS

送 样 数 量 QUANTITY:

送 样 日 期 DATE :

样 品 单 号 SAMPLE NO:

客户料号 CUSTOMER PART NUMBER :

客 户 确 认 CUSTOMER APPROVE	
承　　认 APPEOVED	日　　期 DATE
盖章 SIGNATURES	

深圳市驰羽科技有限公司 Shenzhen Micro Electronic Technology Co,Ltd		
审　　核 APPROVE	制　　作 DATE	日　　期 DATE
叶斌	王云华	20230422
盖章 SIGNATURES		

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1.这份文件定义直流无刷风机电器机械特性

This documentation defines the Electrical and Mechanical characteristics of DC Brushless Fans

2.环境条件标准（Standard Environmental Condition）

在标准温度25℃，相对湿度65%下，且允许在环境温度10-35℃，相对湿度25-80%中测试。

Temperature 25℃,relative humidity65% shall be standard if no doubt arises in the judgment.However it is permitted that test are conducted in the environment of temperature 10~35℃,relatives humidity 25~80%.

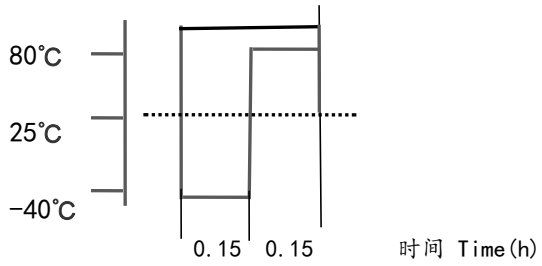
3.产品特性（Products Characters）

NO.	规格类型（Item）	规格参考值 Specification Conditions）	条件 Conditions/检测设备 Detection Device
3-1	外形尺寸(Size of outline)	50*50*8.5MM	游标卡尺 Vernier Calipers
3-2	产品重量（Mass）	约 17.0g About	精密电子称 Precision electronic scale
3-3	额定电压（RATED VOLTAGE）	DC 5V	稳压电源 Regulated power supply
3-4	电压范围 （Operating Voltage）	4.5-5.5V	稳压电源 Regulated power supply
3-5	启动电压（Starting Voltage）	≧3.0V	稳压电源 Regulated power supply
3-6	额定电流（Max.Rated Current）	≦0.25A	额定电压、在空气没有任何障碍的情况下 IN free air at Rated Voltage and room tamperature
3-7	额定功率（Max.Input Power）	≦1.25W	额定电压、在空气没有任何障碍的情况下 IN free air at Rated Voltage and room tamperature
3-8	额定转速（Max Rated Speed）	5300RPM±10%	额定电压、在空气没有任何障碍的情况下 IN free air at Rated Voltage and room tamperature
3-9	风量（Air Flow）	3.56CFM	额定电压、在空气没有任何障碍的情况下 IN free air at Rated Voltage and room tamperature
3-10	风压（Static pressure）	14.49mmH20	额定电压、在空气没有任何障碍的情况下 IN free air at Rated Voltage 9.8[Pa]=1[mmH20]
3-11	噪音值（Noise Value）	31.84dBA	测定位置距离风扇吸风面 50cm At 50cm away from the suction surface of the fan
3-12	输出信号（Output signal）	FG	示波器 oscillograph
3-13	极性保护功能(Polarity protection)	YES	稳压电源 Regulated power supply
3-14	自动启动保护功能(Auto Restart Protection)	YES	稳压电源 Regulated power supply
3-15	锁定保护功能(lock protection)	YES	稳压电源 Regulated power supply
3-16	极数(No. of Polar)	4	
3-17	轴承类型（Bearing Type）	液压轴承	
3-18	预计寿命常温 25℃（Expected life: normal temperature: 25 ℃）	30000 小时	
3-19	保质期（quality guarantee period）	1 年	常温 25℃ Normal temperature 25 ℃
3-20	连接器(Connector)	1.25/4P	
3-21	绝缘等级（Insulation Class）	Class-a	
3-22	运转相对温度 (Operating temperature)	-10℃to+50℃	在湿度为 65%+/-20%相对湿度时 At 65%+ /- 20%RH
3-23	储存相对温度(Storage temperature)	-15℃to+70℃	温度计 thermometer

4.特别检验（Special inspection）

4-1	锁定保护 (Locked rotor protection)	在额定电压工作锁定 72 小时不能产生燃烧现象 Locked rotor protection:The burning cannot be produced when restricted for 72 hours at The rated voltage.
4-2	落地测试 (Drop test)	马达能在最少包装情况下，分别 3 面于 60CM 高度自由跌落在 10CM 木板上，无断裂. Motor withstands one free body drop from 60cm in height onto 10cm thickness of wooden board for each of them three faces in minimum packaging condition. NO fracture.
4-3	绝缘强度 (INSULATION STRENGTH)	在通入 500V 直流电压条件下，外框与端子线间阻抗不低于 10 兆欧姆. Under the condition of ventilation with 500 v DC voltage, Between frame and terminal impedance is Not less than 10 meg ohm.
4-4	绝缘耐压强度 (Dielectric strength)	在通入 500V/60Hz 交流电压一分钟条件下，外框与端子线之间电流不超过 5mA. In going into 500 v / 60 Hz ac voltage under the condition of one minute, between frame and terminal current is not more than 5 mA.
4-5	预计寿命(Life expectancy)	在环境稳定为 25℃，相对湿度为 15-65%RH 的条件下，预期工作时间为 30000 小时。 In a stable environment for 25 ℃, relative humidity conditions for 15-65% RH, expected work time is 30000 hours.
4-6	电源线 (Lead wires)	UL 1571 32# Black cathode (-) Red positive pole(+) Yellow FG BLUE PWM
4-7	材质 (Material)	外框：PBT 防火料 UL94V-0 outline border: PBT fireproofing UL94V-0 上盖：电解板 loam cake;Electrolytic plat 扇叶：PBT 防火料 UL94V-0 blower flabellum: PBT fireproofing UL94V-0
4-8	尺寸规格 (Dimensions)	参照尺寸图纸 (See Dimensions Drawing)

5.可靠性试验Reliability testing

5-1	期待寿命 Life Expectancy	在给定温度和额定电压的连续工作寿命之后，90%的试验风扇仍应运行。 After the continuous working life of the given temperature and rated voltage and voltage,90% of the test fans should still be in operation.
5-2	耐热性 Dry heat	温度80±2℃中放置500小时、常温放置24个小时后再测定数据，其他符合JIS C0022 The DC.fan shall be stored at a temperature of 80±2℃ for 500 hours. The data were measured after 24 hours at room temperature, , Other JIS compliant C0022
5-3	耐寒性 Cold	温度-40±2℃中放置500小时、常温放置24个小时后再测定数据，其他符合JIS 00022 The DC.fan shall be stored at a temperature of -40±2℃ for 500 hours. The data were measured after 24 hours at room temperature, Other JIS compliant C0023
5-4	耐湿性 Moisture resistance	根据MIL- STD- 202F方法103B湿度试验， 96小时后，9S%RH， 40±2℃下， 绝缘电阻和介电强度的测量数据应符合规范要求。 After 96 hours. 95% RH, 40±2℃ per MIL-STD-202F. method 103B humidity test. the mcasured data on insulation resistance and diclctric strength sha1l meet the specifiaiton.
5-5	热冲击 Heat shock	下记温度重复500个循环、常温放置1~2个小时后再测定数据。 Write temperature was repeated for 500 cycles, at normal temperature for 1 or 2 hours after the determination. 温度(℃) temperatuer 1循环 1 Cycles 
5-6	自由落体冲击 Free Drop Shockt	在最小包装条件下，风机应能承受来自，高度为30cm.安装在10mm厚的木板上。 In minimum package condition, the fan should withstand drops on any three faces from a height of 30cm onto a wood board of 10mm thick
5-7	低温動作试验 Low temperature operation test	风马达放置在-10℃的试验箱内，额定电压5V，连续工作168H.常温放置1 -2H后测定数据。 The FAN motor is placed in the test chamber -10℃. rated voltage 5V, continuous working 168H, Data measured at room temperature after 1-2H placement.
5-8	高温動作耐久. High temperature operation durability	风马达放置在+70℃的试验箱内，额定电压5V，连续工作1000H常温放置1- 2H后测定数据。 The FAN motor is placed in the test chamber +70 ℃. rated voltage5V. continuous working 1000H, Data measured at room temperature after 1-2H placement .
5-9	ON/OFF开关试验	风马达放置在设定的试验环境中，额定电压5V,通电工作30秒， 停止30秒。 重复规定的周期，试验结束后，常温放置1-2H后测定数据 The wind motor is placod in the test environment set, rated voltage 5V, power 30 seconds.stop 30 seconds, The cycle is repeated provisions. after the test. measurement data at room temperature after 1-2H placement 试验条件:常温情况下，试验2000个循环 Testing conditions: Normal cases, 2000 cycle test .

6.特性定义 (Characteristics definition):

6.1 额定电流：在温度为 25℃.相对湿度 65%的条件下，连续以额定电压运转 3 分钟后测量出来的电流值.

Rated current:Rated current shall measured after 3 minutes of continuous rotation at rated voltage in clean air at 25℃,under 65%RH.

6.2 额定转速：在温度 25℃.相对湿度 65%的条件下，连续以额定电压运转 3 分钟后测量出来的转速值。

Rated speed:Rated speed shall be measured after3 minutes of rotation at rated voltage in clean air at 25℃,under 65%RH.

6.3 启动电压：当风扇通电启动时的电压值。

Start Voltage:The voltage that is able to start the fan to operate by suddenly witching on.

6.4 噪音值：在噪音测试房中，放置麦克风于进风口 1.0 米处，并参考 ISO-7779 规格测量出来。背景噪音：15dBA 最大

Noise level:In the noise test room,put the microphone in the inlet 1.0 meters,and refer

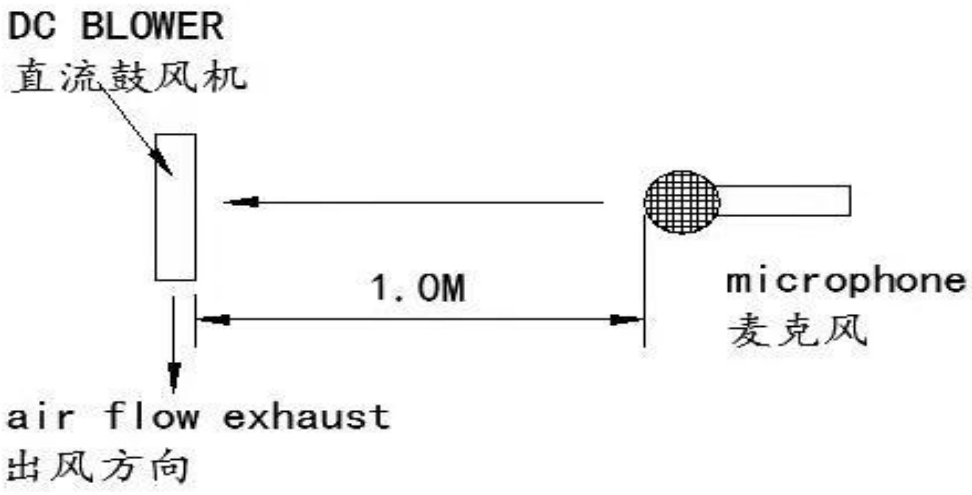
To the ISO -7779 specification is measured.background noise:15 dBA is the largest.

在无声室额定电压之噪音测试

Noise is Measured At Rated Voltage In Anechoic

在空气自由流动的测试室

Chamber in free air As Below



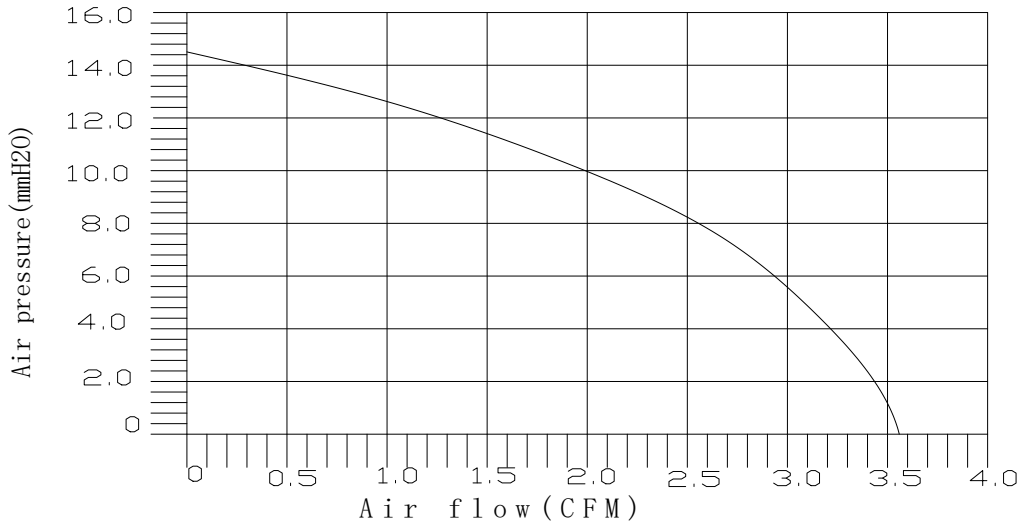
7 标签 Label:

8.风量/风压曲线 Air flow/Air pressure curve

测试条件 Test Condition:

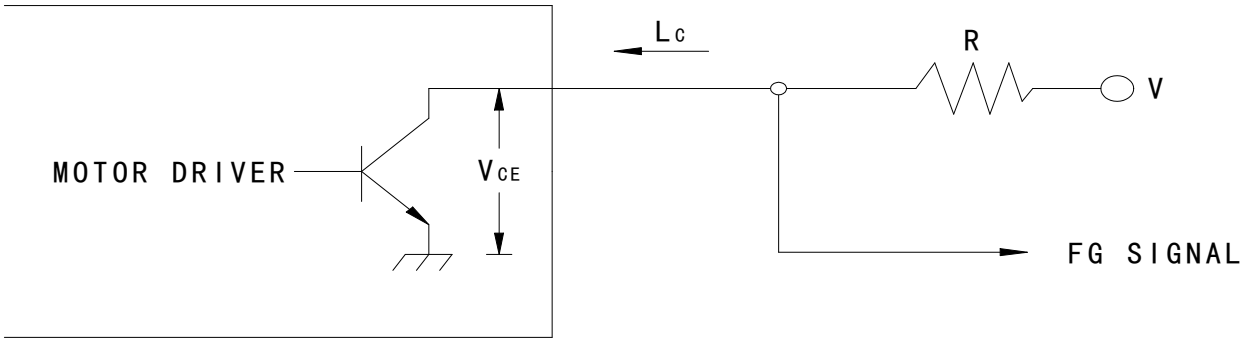
温度 Temperature:常规温度 Room temperature

湿度 Humidity:65%



9.FREQUENCY GENERATOR (FG) SIGNAL （频率发生器(FG)信号）

9-1.SCHEMATIC: （示意图）



CAUTION:

（注意安全） THE LEAD WIRE OF FG SIGNAL CAN NOT TOUCH
THE LEAD WIRE OF POSITIVE OR NEGATIVE.
(FG 信号线的引线不能接触正负级的引线)

9-2.SIGNAL SPECIFICATION:

（信号规格）

OUTPUT TYPE: OPEN COLLECTOR （输出类型：集电极开路）

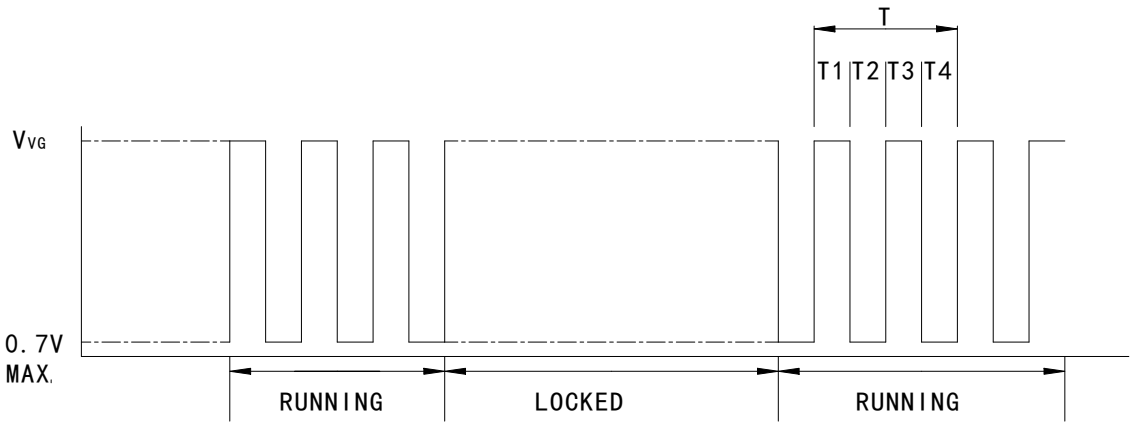
IC MAXIMUM CURRENT =250mA （IC 最大电流：250mA）

LOW LEVEL VOLTAGE = 0.7V MAX. （低电平电压：最大 0.7V）

R ≥ VFG / IC

9-3.FREQUENCY GENERATOR WAVEFORM:

（频率发生器波形）



T=T1+T2+T3+T4=60/N(Sec) N:SPEED(RPM)

10. PWM 信号描述 PWM signal description :

10.1 控制信号: PWM 控制 (PWM control)

10.2 信号电压范围:(The range of signal voltage)

H.a: 低电平: Max<0.7V (Low Level voltage:Max<0.7V)

H.b: 高电平: Min>2.5V,Max<5.5V (High Level voltage:Min>2.5V,Max<5.5V)

H.c: 脉宽调制信号频率为 25KHz(Pulse width modulation signal frequency for 25KHz)

10.3 风扇转速控制描述 (Fan speed control description)

10.3.1 测试风扇的频率为 25K/Hz

Testing the frequency of the fan is 25K/HZ

10.3.2 当占空比是 20%-100%时, 风扇转速为 1700-5300RPM.

When the duty ratio is 20-100%, fan speed of1700-5300 RPM.

10.3.3 当占空比是 0%时, 风扇停止运转。

When the duty ratio is 0%, the fan to stop running.

10.3.4 当占空比是 100%时, 风扇全速运转。

When the duty ratio is 100%, the fan running at full speed.

10.3.5 当 PWM 控制信号断开, 风扇全速运转。

When the PWM control signal disconnect, fan running at full speed.

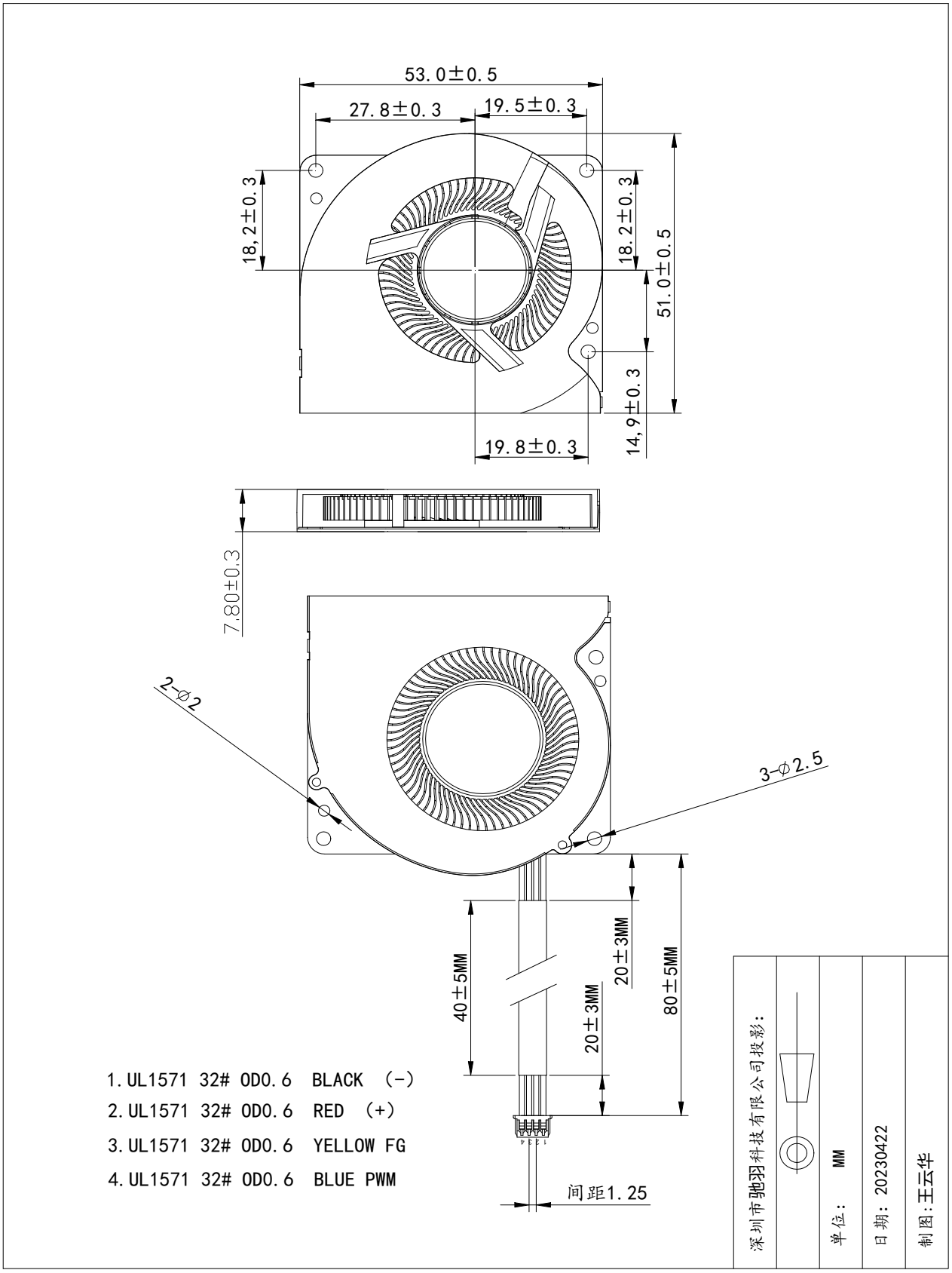
10.3.6 当占空比是 20%时候, 风扇从停止状态开始运转。

When the duty ratio is 20%, the fan from state stopped start running again.

10.3.7 占空比/转速曲线图 (duty cycle/rotate speed graph)

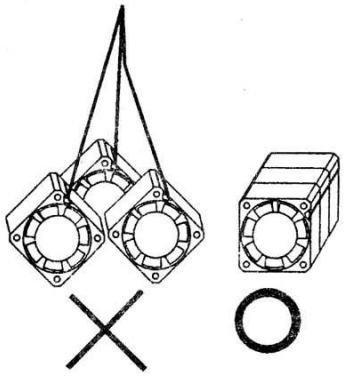
duty cycle (%)	speed RPM（转速范围±10%）
100%	5300RPM
90%	4950RPM
80%	4600RPM
70%	4150RPM
60%	3750RPM
50%	3350RPM
40%	2900RPM
30%	2300RPM
20%	1700RPM
10%	0

11. 外形尺寸 （outline dimensional drawing）

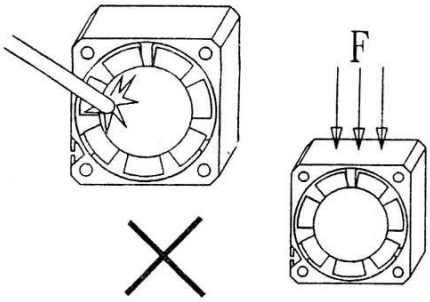


風扇使用注意事項

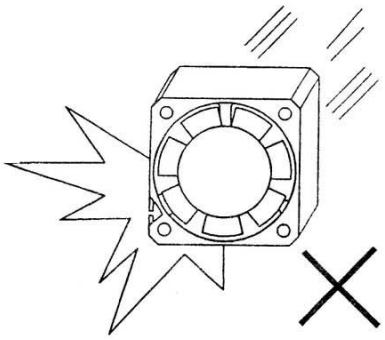
HOW TO HANDLE FAN PROPERLY?



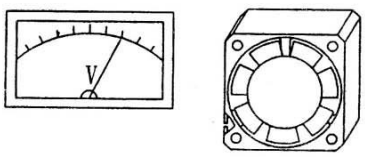
1. 取用風扇,輕取外框兩側,不可拉扯導線.
1. Hold the fan by frame side. Do not hold lead wires to support the fan.



2. 取用風扇,不可碰觸或擠壓扇葉與外框.
2. No touching or pressing on the impeller hub. Avoid crushing the frame side.



3. 風扇嚴禁掉落地面,或敲擊外框任何面.
3. Do not drop on the ground. Do not pound on the frame side.



4. 風扇電源需依照規格電壓安裝使用.
4. Connect leads priperly and applty voltage according to specification.