

## NVIDIA Jetson Nano Module Active Heat Sink

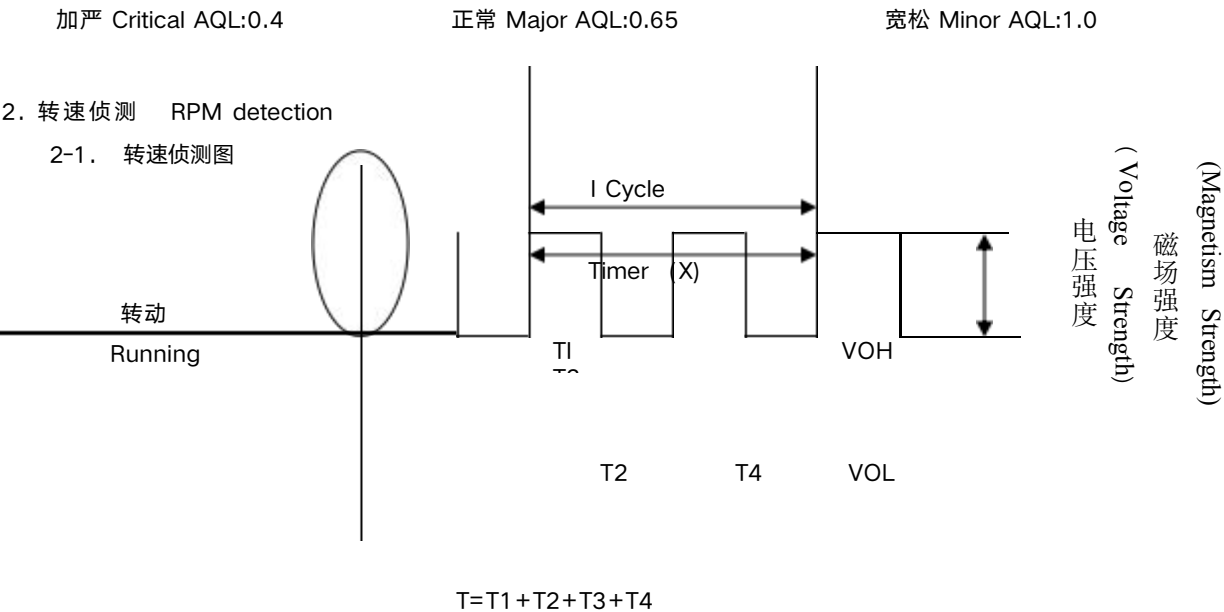


规格说明书 SPECIFICATION				(AT Ta= 25 Degree. )
项目 /ITEMS	单位 /UNIT	参 数 / PARAMETERS	备注 /NOTES	
尺 寸/Dimension	mm	40*40*15	Length* Width * Thickness	
外 框/Fan Frame	----	BLACK PBT (UL94V-0)	Glass Fiber Reinforced	
扇 叶/Fan Impeller	----	BLACK PBT (UL94V-0)	7 Blades	
轴承种类/Bearing System	<input type="checkbox"/> S:Sleeve Bearing <input checked="" type="checkbox"/> B: Dual Ball Bearing			
额定电压/Rated Voltage	VDC	5	N/A	
工作电压 Operating Voltage Range	VDC	4.5-5.5	At 25℃ /Relative Humidity 65 %	
起动电压/Start-up Voltage	VDC	2.5	At 25℃ /Relative Humidity 65 %	
额定电流/Rated Current	Amp	0.08 ± 0.02	At rated Voltage, Measured after 3 Mins.	
标签电流/Label Current	Amp	0.10	At rated Voltage, Measured after 3 Mins	
额定功率/Rated Power	Watt	0.40	At rated Voltage, Measured after 3 Mins.	
额定转速/Rated Speed	RPM	5500± 10%	At rated Voltage, Measured after 3 Mins.	
风 量/Air Flow	CFM	2.95	Maximum In Free Air, Refer to 4.2.	
风 压/Air Pressure	mmAq	2.95	Maximum When Air Flow = 0	
噪 音/Noise Level	BA	Ø3.71	At Rated Speed, Refer to 4.3.	
马达保护/Motor Protection	Polarity Protection	Yes	Refer to 8. 1.	
锁机保护/Locked Motor Protection	Auto Restart	No	Refer to 8.2.	
缓 启 动/Soft Start	----	No	N/A	
速度感应/FG Sensor	Tachometer Sensor	Yes	Refer to 2.1.	

锁机报警/RD Alarm	Locked Motor Alarm	No	Refer to 2.1.
调速控制/PWM Control	-----	Yes	Refer to 2.2.
防水等级/Waterproof Class	<input type="checkbox"/> IP44以下	Rotor or PCBa Coating by Insulating Paint	
	<input type="checkbox"/> IP55	Rotor NT Vacuum Coating or PCBa Coating by Waterproof Glue	
	<input type="checkbox"/> IP56以上	Rotor Coating by Epoxy Waterproof Glue or Injection by Mould	
环保要求/Conform to RoHS	-----	Yes	Refer to 6.
安规规格/Safety Approval	-----	<input type="checkbox"/> UL <input type="checkbox"/> CUL <input checked="" type="checkbox"/> CE	
导 线/Lead Wire	UL2468/28AWGx100mm 并线	<input checked="" type="checkbox"/> RED (+) <input checked="" type="checkbox"/> Black(-) <input checked="" type="checkbox"/> Yellow(FG) <input type="checkbox"/> White(RD) <input checked="" type="checkbox"/> Blue(PWM)	
端 子/Connector	1.25-4P	黑红黄蓝	Pin1:+,Pin2:-,
套 管/Tube	-----	No	-----
预估寿命/Life Expectancy	小时/Hours	50000	Refer to 7.
净 重/Net Weight	克/Gram	17	N/A
装 箱/Packing	件/箱/Pieces/Carton	600	N/A

出货检验程序 Product inspection procedure

- 出货检验程序均依照下列步骤实施 Inspection procedures below are extremely followed.
- 1-1.100%生产线上电性;死角,扇叶拉拨.  
100%Electric;rotating,dead spot,fan blade fasten, and primary noise test on production line.
  - 1-2.100%生产线上以示波器作正常电流波形筛检  
100% Current wave test with scope on production line.
  - 1-3.100%以手敲击测试及静音室异音过滤  
100% Strick test by hand and noise filter in quiet room.
  - 1-4.10cm 落地试验依 MIL-STD-105E 作抽样  
10cm drop test at random in accordance with MIL-STD- 105E standard
  - 1-5 出货抽样检验依 MIL-STD- 105E 作允退判定  
Random inspection in accordance with MIL-STD- 105E standard.
  - 1-6 允退标准如下 P



- 2-2. 转速侦测说明
- 2-2-1. 输出波形: 方波  
Output waveform: square wave.
  - 2-2-2. 当电压值愈高 (Voltage Y 值), 则输出波形愈高  
When the voltage value is higher (Voltage Y) then output waveform is higher
  - 2-2-3. 当风扇不转, 则输出波形为一水平线。  
When the fan is shutdown then output waveform is a horizontal line
  - 2-2-4. 循环距离越长 (Voltage Y 值), 则转速越慢  
The cyclic distance is longer then the RPM is slower.
  - 2-2-5. 转速计算公式如下:

RPM formula as follows:

$$\text{RPM} = \frac{60000}{X \text{ (ns)}}$$

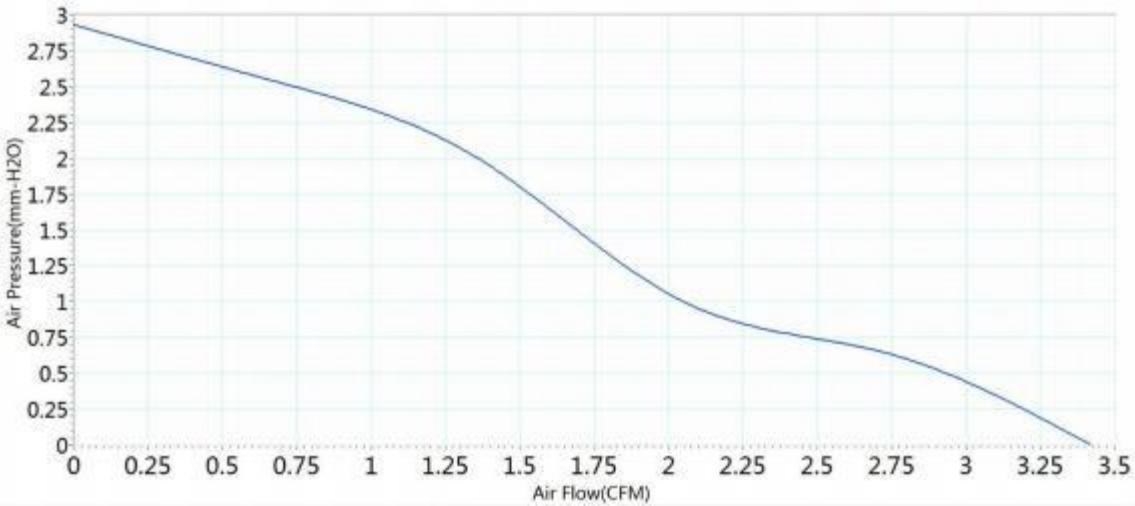
3. 机械特性 Mechanical Characteristics

3.1.旋转方向 Rotation

参见第 3 页图纸所示 Refer to Page 3 Rotation

3.2.风量风压曲线 Performance Curve

测试条件 Test Conditions: (1).Rated Voltage;(2).Room Temperature,65%Humidity;



4. 噪音 Noise Measure

4.3.1.参照标准 ISO3745/GB4214-84, 背景噪音 20±2dBa, 室内环境下测量;

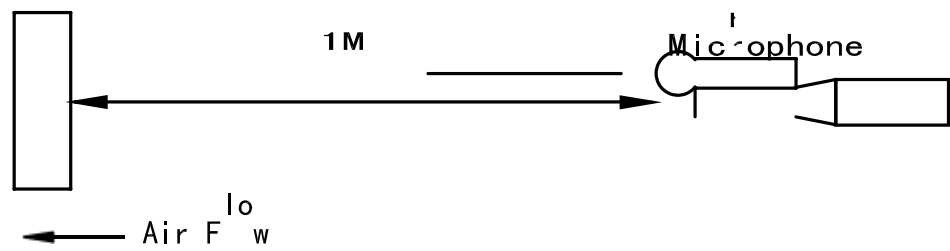
According to Standard ISO3745/GB4214-84,Back ground noise 20±2dBa with room condition;

4.3.2.测试方法 Measure Condition:

风扇悬吊在无响室内, 在额定电压下, 麦克风距风扇进风口 1 米距离测试;

Fan is hanged in anechoic chamber,measured at rated voltage,measure microphone at a distance of one meter from the fan air intake;

FAN



5. 环境适应 Environmental

5.1.运转温度 Operating Temperature	-----	-10 ~ +70
5.2.储存温度 Storage Temperature	-----	℃ -40 ~
5.3.运转湿度 Operating Humidity	-----	+75 ℃ 35% ~
5.4.储存湿度 Storage Humidity	-----	85%RH 35% ~
6. 环保要求 RoHS Compliance	-----	85%RH
	-----	
	-----	

产品有害物质的含量符合欧盟指令 2014/35/EU 的要求;  
Product is in compliance with RoHS 2014/35/EU requirement;

## 7. 预期寿命 Life Expectancy

7.1. Conditions: At Confidence Level 90%; Rated Voltage; 65% Humidity Environment

7.2. ☐ Sleeve Bearing System: 30000 Hours At 25°C Environment

☐ Hydro Bearing System: 30000 Hours At 40°C Environment

☒ C: CycleSeal Bearing System: 40000 Hours At 40°C Environment

☐ Dual Ball Bearing System: 50000 Hours At 40°C Environment

## 8. 马达保护 Motor Protection

### 8.1. 极性保护 Polarity Protection

如果产品的正负极电源线接反，产品能够承受 10 分钟不被损坏；

Be capable of withstanding 10 minutes will not cause damage if reverse connection for positive and negative lead wires;

### 8.2. 马达锁住保护 Locked Rotor Protection

在正常操作电压和温度范围内，当转子被锁住后，电路电流会被关闭或维持很小范围保护马达在 72 小时内不会损坏；

The current will be shut down or remain a little range to protect motor from damaged in 72 hours when locking rotor at operation voltage and temperature range;

## 9. 安全批准 Safety Approvals

参见第二页 Refer to page 2