

NVIDIA Jetson Nano Module Active Heat Sink



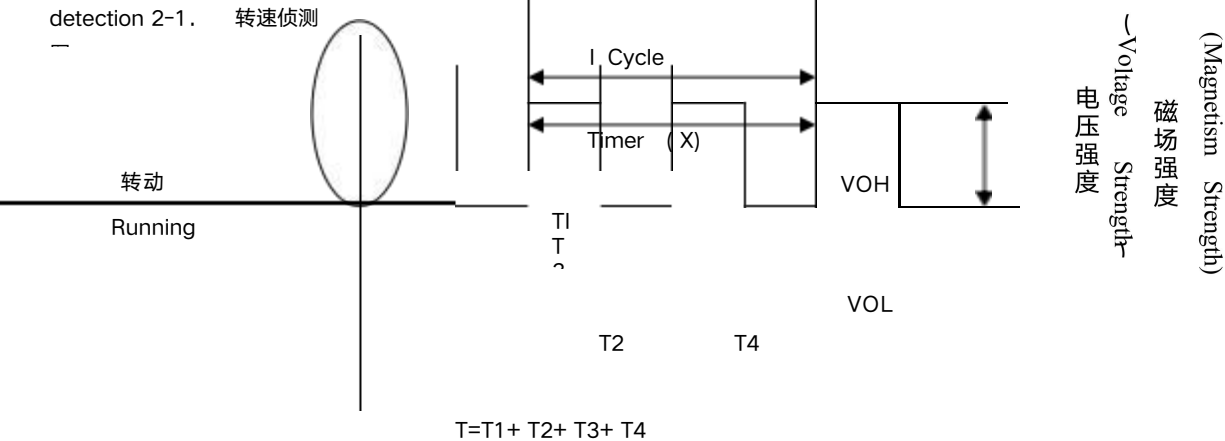
规格说明书 SPECIFICATION (AT Ta= 25 Degree.)			
项 目 / ITEMS	单 位 /UNIT	参 数 / PARAMETERS	备 注 /NOTES
尺 寸/Dimension	mm	40*40*15	Length* Width * Thickness
外 框/Fan Frame	-----	BLACK PBT (UL94V- 0)	Glass Fiber Reinforced
扇 叶/Fan Impeller	-----	BLACK PBT (UL94V- 0)	7 Blades
轴 承 种 类 / Bearing System	☐ S:Sleeve Bearing ☒ 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	A mp	0.08 ±0.02	At rated Voltage, Measured after 3 Mins.
标 签 电 流 / Label Current	A mp	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	37.1	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	☐ IP44以下	Rotor or PCBa Coating by Insulating Paint	
	☐ IP55	Rotor NT Vacuum Coating or PCBa Coating by Waterproof Glue	
	☐ 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	-----	☐ UL ☐ CUL ☒ CE	
导线/Lead Wire	UL2468/28AWGx100mm 并线	☒ RED (+) ☒ Black(-) ☒ Yellow(FG) ☐ White(RD) ☒ 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 .
1 0 0 % 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
1 00% 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
1 00% Strick test by hand and noise filter in quiet room.
- 1 -4 . 10cm 落地试验依 MIL-STD- 105E 作抽样
1 0 cm drop test at random in accordance with MIL- STD- 1 05E 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- 1 05E standard.
- 1 -6 允退标准如下 P
加严 Critical AQL:0 .4 正常 Major AQL:0.65 宽松 Minor AQL: 1.0

2 . 转速侦测 RPM



- 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:

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

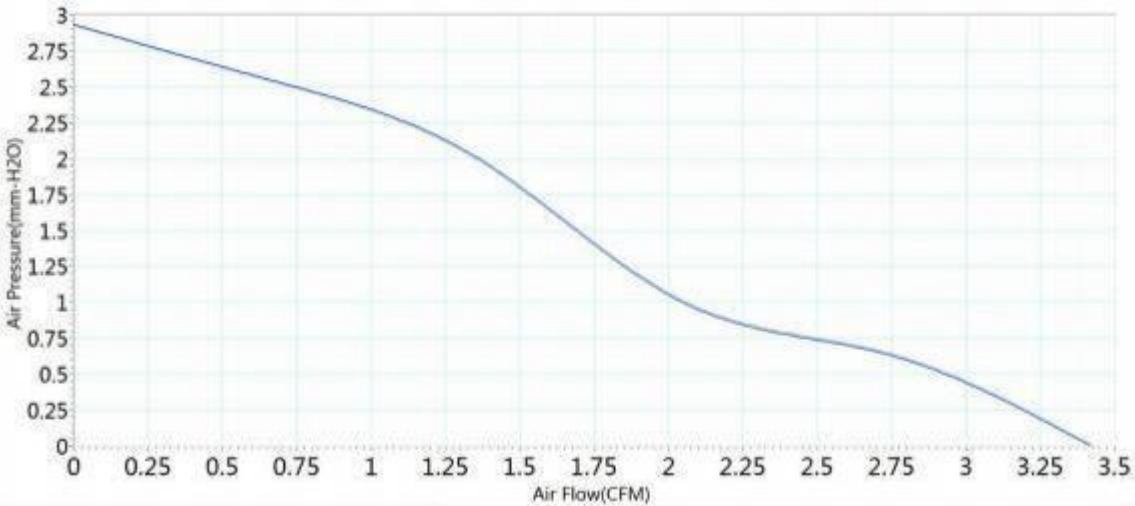
3. 机械特性 Mechanical Characteristics

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；

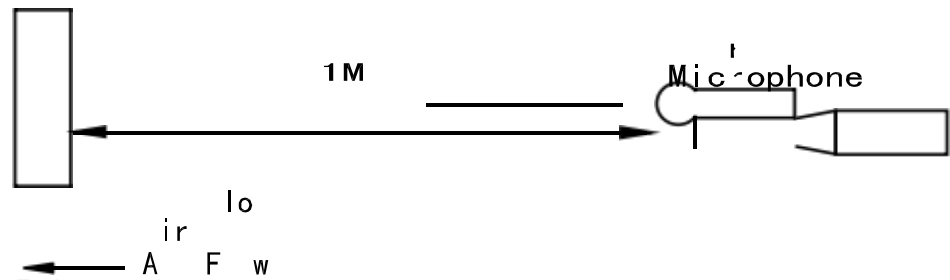
According to Standard ISO3745/ GB4214 - 84 , Back ground noise 20± 2 dBa with room

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

- 10 ~ +70

Temperature 5.2 .储存温度 Storage

°C

Temperature 5.3 .运转湿度

Operating Humidity

5.4 .储存湿度

-40 ~ +75 °C

Storage Humidity

35% ~ 85%RH

6. 环保要求 RoHS Compliance

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℃ Environment

☐ Hypro Bearing System:30000 Hours At 40℃ Environment

■ C: CycleSeal Bearing System:40000 Hours At 40℃ Environment

☐ Dual Ball Bearing System:50000 Hours At 40℃ 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下, 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