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MOTOR SPECIFICATION

马 达 规 格 书

CUSTOMER 客户 _____

MODEL 产品型号 15BYHJ25

DATE 日期 2011-12-29

No. 编号 _____

Please Return This File With Your Signature In Order To Make Quick Arrangement For Production.

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Prepared 制作	Checked 审核	Approved 批准

Approved by Customer 客户确认

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1.范围（SCOPE）

本规格书适用于永磁步进马达，型号为 15BYHJ25

This specification applies to the permanent Magnet Type STEPPING MOTOR,
Model name is 15BYHJ25

2.标准条件（STANDARD CONDITIONS）

2.1 测定条件（TESTING CONDITIONS）

温度/湿度

测定的环境要在标准的温度（ $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ ）和湿度（ $65\%\pm 5\%\text{RH}$ ）条件下.但是在测定结果不会产生疑议的情况下可以在正常的温度($5^{\circ}\text{C}\sim 35^{\circ}\text{C}$)和湿度($45\%\sim 85\%$)条件下进行。

Temperature / Humidity

The testing environment must be a standard temperature / humidity conditions(the temperature of $20^{\circ}\text{C}\pm 2^{\circ}\text{C}$ and humidity of $65\%\pm 5\%$).In case that a judgment would not bring about any doubts, tests can be done at normal temperature($5^{\circ}\text{C}\sim 35^{\circ}\text{C}$) and normal humidity($45\%\sim 85\%$).

2.2 基本姿势（BASIC PLACEMENT）

电机轴的基本状态为水平放置，否则的话需要双方协商后确定

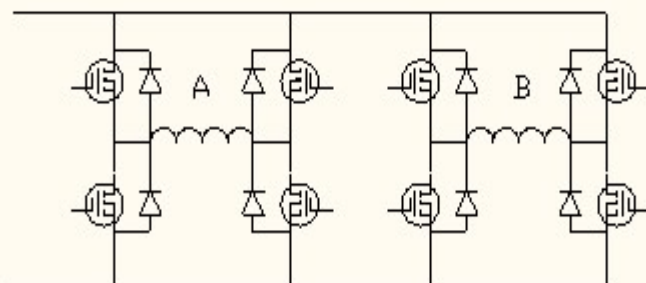
Lead screw must be horizontal, however placement except described above must be decided after discussion by each other.

2.3 测定回路（TESTING CIRCUIT）

所有性能的测定是在标准的驱动回路下测定的，参考以下回路图

Characteristics must be measured with the following standard circuit.

标准回路图（Standard circuit）



3. 技术要求 Technical requirements

3.1 标准工作条件 (STANDARD OPERATING CONDITIONS)

序号 No.	项目(ITEM)	规格 SPEC	单位 UNIT	备注(REMARKS)
1	驱动电压(Voltage)	3.3±10%	VDC	
2	相数 (Phage)	2	Phase	
3	励磁方法 Excitation method	2-2	Phase	
4	励磁模式 Excitation mode	Bipolar	-	
5	步距角 (Step angle)	0.36/50	deg	±7%
6	转动惯量 (inertia)	0.06	g.cm ²	REF
7	转向(Rotation)	CW/CCW	-	

4. 性能 (CHARACTERISTICS)

4.1 电气性能 (ELECTRICAL CHARACTERISTICS)

序号 No.	项目(ITEM)	规格 SPEC	单位 UNIT	测定条件 TEST CONDITON	REMARK
1	电阻 Resistance	5±7% REF	Ω	At 25℃	每相 (Each phase)
2	电感 Inductance		mH	At 25℃ 1kHz,1Vrms	每相 (参考) Each phase (Ref)
3	最大牵入频率 Max Pull in pulse rate	1000REF	Hz	标准操作条件 3.3VDC Standard operating Condition 3.3VDC	脉冲发 10Hz 连续上升 Continuo Driving, by 10 Hz increment
4	最大牵出频率 Max Pull out pulse rate	1200REF	Hz		
5	牵出转矩 Pull out torque	180~210 REF	gf.cm	1000 Hz 时 3.3VDC At 1000 Hz 3.3VDC	
6	保持转矩 Holding torque	300REF	gf.cm	0Hz 时 3.3VDC At 0Hz 3.3VDC	
7	绝缘耐压 Insulation compression	3 max	mA	交流 100 伏 1 秒 100VAC, 1min	生产测定时 150 伏, 1 秒 In process,150VAC 1sec

8	绝缘电阻 Insulation resistance	50 min	MΩ	100VDC	线圈和机壳间 Between Case and coil
9	绝缘等级 Insulation class	漆包线 F 级 Coil Class F			
10	温度升高 Temp rise	75 max	℃	电机安装在标准雪架上，常温、常湿，空载 800Hz 驱动，阻抗法测定 Motor is fix on a standard plank ,free load, normal Temperature/humidity,800Hz driving, resistance method	
4.2 机械性能（MECHAICAL CHARACTERISTICS）					
序号 NO.	项目 ITEM	规格 SPECIFICATION	测定条件 TEST CONDITON		备注 REMARKS
1	外观 Appearance	无影响马达性能的生锈和变形,如果必要的话,树立限度样板进行管理 No damage and discoloration which may cause failure at standard Operating conditions, if necessary, submit the limit sample which is accepted by each other			
2	重量 weight	13g(Ref)	电子天平称量 Electronic weigh weight		Ref
3	减速比 Gear than	1: 50			
4	输出机构 Out put device	输出轴 With a output shaft			
5	噪音 Noise	50dB 以下 50dBmax	5.0VDC 550Hz 驱动,无负载,离电机头部 10cm 测定 5.0VDC 550Hz driving, free load measured 10cm from the motor ***		
6	结构及尺寸 Construction	参考附件的外形图 Refer to the Outside drawing as a file attached			
7	输出轴轴向间隙 Out shaft thrust	0.5 以下 0.5max	输出轴顶端位置 At the tip of out shaft		
8	输出轴径向间隙 Out shaft deflection	0.05 以下 0.05 max	离输出轴顶端 4mm 位置 4mm from the tip of out shaft		
***噪音测定说明事项 仪器模式:A Filter fast mode 环境噪音小于 25dB					
***Noise Measuring explain Measurement mode : A filter, Fast mode Background noise : 25dB max.					
4.3 环境性能(ENVIRONMENTAL PERFORMANCE)					
序号 No.	项目(ITEM)	使用(OPERATING)		运输、储存 (Transport/Storage)	
1	温度（Temperature）	-10℃～50℃		-30℃～80℃	
2	湿度 (Humidity)	20～90%RH 不结露 20～90%RH Non-condensing		8～90%RH 不结露 20～90%RH Non-condensing	

5. 信赖性试验 (RELIABILITY TEST)

经过信赖性试验项目 5.1 5.2 5.3 的试验后, 马达性能应该满足电气性能 4.1 中第 3、4、5、6、7、8、9 项目和机械性能 4.2 中 1、2、6、8 项目的要求, 试验用的样品是同样的按照 5.1~5.3 的顺序进行。

After the following test 5.1, 5.2, 5.3, motor must satisfy the Electrical Characteristics 4.1(including items 3, 4, 5, 6, 7, 8, 9) and the Mechanical Characteristics 4.2(including items 1, 2, 6, 8), the specimen should be according to item test (following 5.1 to 5.3).

5.1 耐低温试验 (Test of cold endurance)

马达放置在在-40℃环境中 48 小时, 然后在常温、常湿的条件下放置 6 小时以上

Leave the motor at the temperature -40℃ for 48hours, and then leave it in normal temperature for 6 hours or more.

5.2 高温高湿试验 (Test of temperature and humidity)

马达放置在 80℃ 90~95%RH 环境中 48 小时, 然后在常温、常湿的条件下放置 6 小时以上

Leave the motor at the temperature of 80℃, 90~95%RH for 48hours, and then leave it in normal temperature for 6 hours or more .

5.3 热冲击试验 (Test of temperature cycle)

进行 2 个循环

一个循环是-40℃放置 4 小时, 取出自然冷却 4 小时, 再放置到 80℃的环境中 4 小时, 取出后放置 4 小时, 如此反复 2 个循环后常温常湿放置 4 小时以上

Give 2 cycle

1 cycle means the temperature of -40℃ for 4 hours, normal temperature for 4 hours, the temperature of 80℃ for 4 hours and normal temperature for 4 hours. After 2cycles, then leave the motor in normal temperature for 4hours or more.

6. 寿命试验 (LIFE TEST)

连续运转 3000 小时, 电机特性应满足电气和机械性能的要求。运转条件如下:

驱动电压 3.3 VDC、550HZ、2 相励磁、无负载、常温常湿、动转方式: CW

Continuous operating for 3000 hours for the test, all the motor electrical characteristics and mechanical characteristics should be satisfied. Operating condition as below:

Driving voltage is 3.0 VDC、550Hz、excitation method is 2phase, no load, In the environment of normal temperature and humidity; Method of driver: CW

7. 使用安全事项 (CAUTION FOR USE)

7.1 确保马达的线圈温度在产品使用过程中温度不超过 75℃, 除非特别要求

Ensure that motor coil temperature does not exceed 75℃ when mounted on your product, unless other specified

7.2 如果要在马达高温的状态下使用, 采取安全措施, 例如不让马达暴露到能接触人的方法设计,

或者粘贴标签起到警示作用等

In case of usage at high temperature, take safety measures, such as designing not to expose motor to touch human body or sticking a warning label

7.3 取马达时要拿住马达体，不要拿导线片或者导线等。

When handing the motor, you should hold the motor body, do not hold the FPC or lead wire.

7.4 注意不要有异常力施加到轴承，轴等部位，不要把胶水放到轴承等马达的动作部位。

Be careful not to apply abnormal force to bearing, shaft etc, and never put adhesive to the bearing and other moving parts.

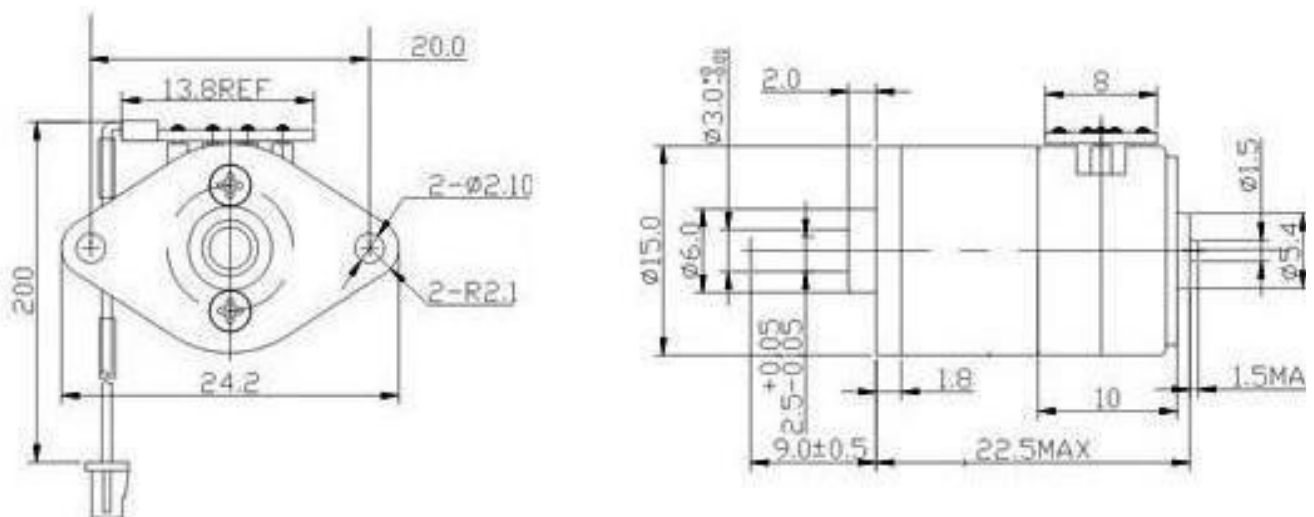
7.5 马达不小心摔落,注意不要再使用。

In case the motor were accidentally dropped, do not use it.

说明:

- 1、双极恒压驱动，
- 2、电压低，牵出频率低，建议客户提高驱动电压到 **4.0~5.0V**
- 3、本资料数据为理论推算数据，只做参考用，不能做为电机实际性能。

外形图纸:



UNIT : Millimeters WEIGHT : 15 g (APPR)