

# NEED FOR POWER MOTOR

## 产品规格书

### PRODUCT SPECIFICATON

客 户	客户名称/Customer	
	客户料号/part NO.	
	客户承认签章 Customer Approved Signatures	

N	文件编号/Spec NO.	NFP 245642.430B	
	品名 Description	扁平振动马达 Coin Vibration Motor	
F	型号/Model	NFP-FLAT-C0820L	
	送样日期/Date	2017年12月18日	
P	设计/Designed	审核 /checked	批准/Approved
	刘华	代小丽	杨勇

# 规格书内容

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## 1. 适用范围/General

本说明书适用于扁平式永磁直流电机 NFP-FLAT-C0820L 系列

This specification applies to coin permanent magnetic motors NFP-C0820L series使用条件/Operating condition

项目/ Item		规格/Specification
2-1	额定电压 Rated voltage	3.0V DC
2-2	使用电压范围 Operating voltage	2.3~4.0V DC
2-3	旋转方向 Rotation	CM(clockwise) or CCW(Contrary clockwise)
2-4	使用环境 Operating environment	-20~+60°C, Ordinary Humidity
2-5	保存环境 Storage environment	-30~+70°C, Ordinary Humidity

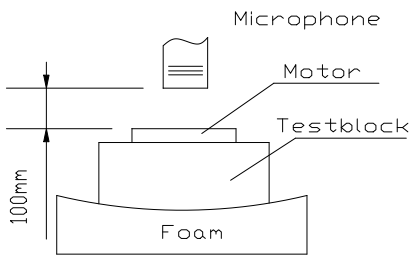
## 2. 测定条件/Measuring condition

项目/ Item		规格/ Specification
3-1	温度 Temperature	25±3°C
3-2	湿度 Humidity	62±20% RH
3-3	气压 Air pressure	1011±40 hPa
3-4	电流 Current	稳定直流电流 Stabilized current

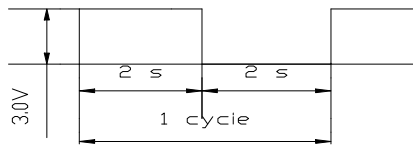
## 3. 初期电气性能/Electrical initial characteristics

项目/Item		规格/Specification	条件/Condition
4-1	额定转速 Rated speed	13000±2500rpm min	额定电压下 At rated voltage
4-2	额定电流 Rated current	80mA Max	
4-3	起动电流 Starting current	120mA Max	
4-4	起动电压 Starting voltage	2.3V DC Max	在最小起动电压下起动 Motor is rotating at min starting voltage
4-5	绝缘电阻 Insulation resistance	10MΩ Min	在 100V 直流下, 导线和机壳间 At DC 100V between lead wire and case.
4-6	端子阻抗 Terminal resistance	26Ω±15%(单相 sigle posture) 50Ω±15%(双相 double posture)	在 25°C 下 At 25°C

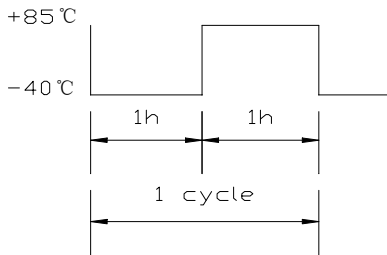
## 5. 机械性能/Mechanical characteristics

项目/ Item		规格/ Specification
5-1	底盖偏转强度 Bracket deflection strength	9. 8N 以上 9. 8N or more
5-2	机械噪音 Mechanical noise	小于 50 分贝. A 计权 50dB(A)Max
	在额定电压以下 At rated voltage 背景噪音: 不大 2dB. A 计权 Back ground noise 28dB(A)Max	

## 6. 耐久性能/Durability characteristics

项目/ Item	规格/ Specification	判定标准/Judgment
6-1	寿命 Life    试验循环/Test cycle: 50,000 cycles	试验后, 马达应符合项 7-1 的要求。 After the test, motors shall be approved as specified in item 7-1.

项目/ Item		规格/ Specification	判定标准/ Judgment
6-2	低温放置 Low temp exposure	温度 /Temperature :-30 时间 /Time :96h	在常温常湿下放置 4 小时后, 马达应符合项 7-2 的要求。 After 4 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item7-2.
6-3	高温放置 High temp Exposure	温度 /T Temperature :+70 时间 / Time :96h	
6-4	湿度放置 Humidity exposure	温度 / Temperature :+40 湿度 /Humidity :95%RH 放置时间 /Exposure time :96h 无水气凝结/NO condensation of moisture	
6-5	振动 Vibration	全振幅 /Displacement :1.5mm (p-p) 频率 /Frequency:10~54Hz 加速度 /Acceleration :22m/s 周期 /Period:10min 范围内(10~55~10Hz) /10 Minutes log sweep(10~55~10Hz) 条件 /Condition :在样机中, 在 3 个直的轴方向每个方向做 10 分钟的测试。 /This motion shall be applied for a period of 10 minutes in each of 3 mutuallyperpend axis	测试结果应符合项 7-2 的要求。 After the test motors shall be approved in item7-2.
6-6	自然跌落 Free fall	试验状态 /Test state:将马达固定在约 100 克(包括马达本身)的物体上, 落向水泥地面。 Set the motor to the approximately 100g(include the motor) Weight of block drop the motor on the concrete floor. 高度 /Height :1.5m 方向 /Direction :±x. ±y ±z. 次数 /Number of times:每个方向 3 次/Each 3 times 冲击 /Shock:29420m/s 相当/Equivalent(3000G)	测试结果应符合项 7-2 的要求 After the test motors shall be approved as specified in item7-2.

6-7	热冲击 Heat stock test	 <p>The diagram illustrates a thermal shock test cycle. It shows a temperature profile that alternates between +85°C and -40°C. Each temperature level is maintained for 1 hour. The total duration of one cycle is 1 hour. The y-axis is labeled with +85°C and -40°C. The x-axis is labeled with 1h for each temperature hold and 1 cycle for the entire duration.</p>	<p>测试结果应符合项 7-2 的要求。</p> <p>After the test motors shall be approved as specified in item7-2</p>
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## 7. 要求/

项目/ Item		判定基准确/ Judgment	
7-1	表 A Table A	1. 额定转速/Rated speed  2. 额定电流/Rated current  3. 起动电压/ Starting voltage:  4. 绝缘电阻/Insulation resistance  5. 端阻/Terminal resistance:	:不低于初始值 -30% :不高于初始值+50% : data+30% Initial Min : data+50% Initial Max  :不低于初始值 30% :不高于初始值+50% :data+30% Initial Min :data+50% Initial Max  :不大于 2.5V 直流电压 2.5V DC Max  :大于 10M Ω Min :10M Ω Min  : 不大于初始值±15% :Initial data±15% Max
7-2	表 B Table B	1. 额定转速/Rated speed  2. 额定电流/Rated current  2. 起动电压/Starting voltage:  3. 阻值/ Terminal resistance:	: :不大于初始值±20% /Initial data±20% Max  : 不高于初始值±20% Max /Initial data±20% Max  : 不在于 2.5V 直流电压 2.5V DC Max  :不大于初始值±15% Max /Initial data±15% Max

## 8. 使用时注意事项/Matters to be paid attention to when using motor

8-1 必须按照规格书标准使用，否则性能和寿命都将受到相当地减少，必须注意电压的使用范围。

Please apply motors in accordance with specifications , especially aware of ranges of operation voltage , or its performance and life durability may be consider ably reduced.

8-2 建议马达在六个月内使用，不要在以下环境中使用及保存：

1. 高温和高湿的场所：
2. 腐蚀性气体，如：H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, Cl<sub>2</sub>,
3. 生锈场所。

Advice use this motor within 6 month as avoiding as possible

Avoid use or save the motors in the following environment.

1. High temperature and high humidity area
2. Corrosive gas such as H<sub>2</sub>S, SO<sub>2</sub>, NO<sub>2</sub>, Cl<sub>2</sub>,
3. Dusty area

8-3 注意处理马达的工作环境，避免含铁质物体被马达吸住，否则马达将会产生噪声，性能会降低，从而减少产品可靠性。

Please pay much attention to the working environment to avoid iron sundries from being sucked in The motors , possible to trigger noise , reduce performance , and decrease reliability.

8-4 应确信本产品不会与相关标准，法规，政令相背。

Please confirm enough no problem of standards and laws and ordinances on your cellular.

8-5 拿马达时，要轻拿轻放。

TO handle the motor ,hold the motor case softly

8-6 钢板面边缘有少许锈斑是允许的。

Rust of plate (steel)ad similar edge should be OK.

