



众鑫达微电机有限公司

# 承 认 书

## SPECIFICATION FOR APPROVAL

|        |   |  |
|--------|---|--|
| 客<br>户 | 客户名称/Customer                             |  |
|        | 客户项目/Project                              |  |
|        | 客户承认签章<br>Customer Approved<br>Signatures |  |

|             |                |                             |                |
|-------------|----------------|-----------------------------|----------------|
| 众<br>鑫<br>达 | 文件编号/Spec NO.  | ZXD-1839                    |                |
|             | 品名/Description | 微型振动马达/Mini Vibration Motor |                |
|             | 型号/Model       | ZXD-1034                    |                |
|             | 送样日期/Date      |                             |                |
|             | 设计/Designed    | 审核/Checked                  | 批准/Approved    |
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**规格书内容**  
Contents of specifications

|   |            |
|---|------------|
| <b>1. 适用范围/Application</b>                          | <b>1/9</b> |
| <b>2. 使用条件/Operating Condition</b>                  | <b>1/9</b> |
| <b>3. 测试条件/Test Condition</b>                       | <b>1/9</b> |
| <b>4. 初期电气性能/Electrical initial characteristics</b> | <b>1/9</b> |
| <b>5. 机械性能/Mechanical characteristics</b>           | <b>2/9</b> |
| <b>6. 耐久性能/Durability characteristics</b>           | <b>3/9</b> |
| <b>7. 要求/Requirement</b>                            | <b>4/9</b> |
| <b>8. 标准测量方法Standard Measurement Method</b>         | <b>5/9</b> |
| <b>9. 测量方法及回路图 Measurement Method Circuit map</b>   | <b>5/9</b> |
| <b>10. 使用注意事项/Caution for use</b>                   | <b>6/9</b> |
| <b>11. 包装/Packing</b>                               | <b>7/9</b> |
| <b>12. 外形图/Drawing</b>                              | <b>8/9</b> |
| <b>13. 更改记录/Revised record</b>                      | <b>9/9</b> |

### 1. 适用范围/Application

本说明书适用于扁平式永磁直流电机ZXD-1034系列

This specification applies to coin permanent-magnetic motors DC model ZXD-1034 series.

### 2. 使用条件/Operating condition

| 项目/Item |                               | 规格/Specification                         |
|---------|-------------------------------|--|
| 2-1     | 额定电压<br>Rated voltage         | 3.0V DC                                  |
| 2-2     | 使用电压范围<br>Operating voltage   | 2.8 ~ 3.3V DC                            |
| 2-3     | 旋转方向<br>Rotation              | CW(clockwise) or CCW(contrary clockwise) |
| 2-4     | 使用环境<br>Operating environment | -20~+60°C, Ordinary Humidity             |
| 2-5     | 保存环境<br>Storage environment   | -30~+70°C, Ordinary Humidity             |

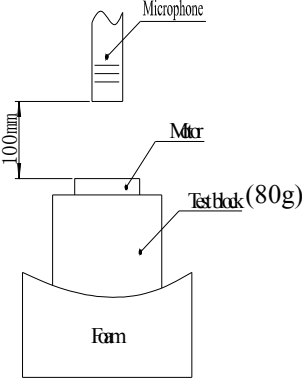
### 3. 测定条件/Test condition

| 项目/Item |                    | 规格/Specification                |
|---------|--------------------|---------------------------------|
| 3-1     | 温度<br>Temperature  | 25 ± 3 °C                       |
| 3-2     | 湿度<br>Humidity     | 62 ± 20% RH                     |
| 3-3     | 气压<br>Air pressure | 1011 ± 40 hPa                   |
| 3-4     | 电流<br>Current      | 稳压直流电流<br>Stabilized DC current |

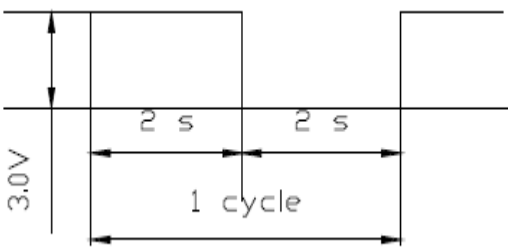
### 4. 初期电气性能/Electrical initial characteristics

| 项目/Item |                               | 规格/Specification                  | 条件/Condition  |
|---------|-------------------------------|-----------------------------------|---|
| 4-1     | 额定转速<br>Rated speed           | 10000±2000rpm Min                 | 额定电压下<br>At rated voltage                                 |
| 4-2     | 额定电流<br>Rated current         | 80mA Max                          |   |
| 4-3     | 起动电流<br>Starting current      | 120 mA Max                        |   |
| 4-4     | 起动电压<br>Starting voltage      | 2.3V DC Max                       | 在最小起动电压下起动<br>Motor is rotating at min starting voltage.  |
| 4-5     | 绝缘电阻<br>Insulation resistance | 10M Ω Min                         | 在100V直流下，导线和机壳间<br>At DC 100V between lead wire and case. |
| 4-6     | 端子阻抗<br>Terminal resistance   | 31 Ω ± 15% (单相)<br>59 Ω ± 15%(双相) | 在25°C下<br>At 25°C   |

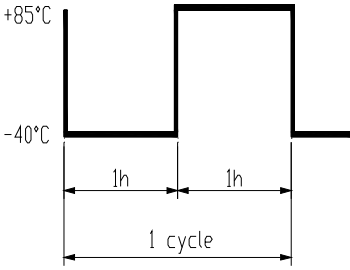
### 5.机械性能/Mechanical characteristics

| 项目/Item |  | 规格/Specification  |
|---------|--|---|
| 5-1     | 底盖偏转强度<br>Bracket deflection strength  | 9.8N以上<br>9.8N or more  |
| 5-2     | 机械噪音<br>Mechanical noise   | 小于50分贝.A计权50dB(A)Max  |
|         | 在额定电压下。<br>At rated voltage<br>背景噪音：不大于28dB.A计权<br>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     | <p>寿命<br/>Life</p>  <p>试验循环 /Test cycle: 50, 000 cycles</p> | <p>试验后，马达应符合项7-1的要求。<br/>After the test, motors shall be approved as specified in item 7-1.</p> |

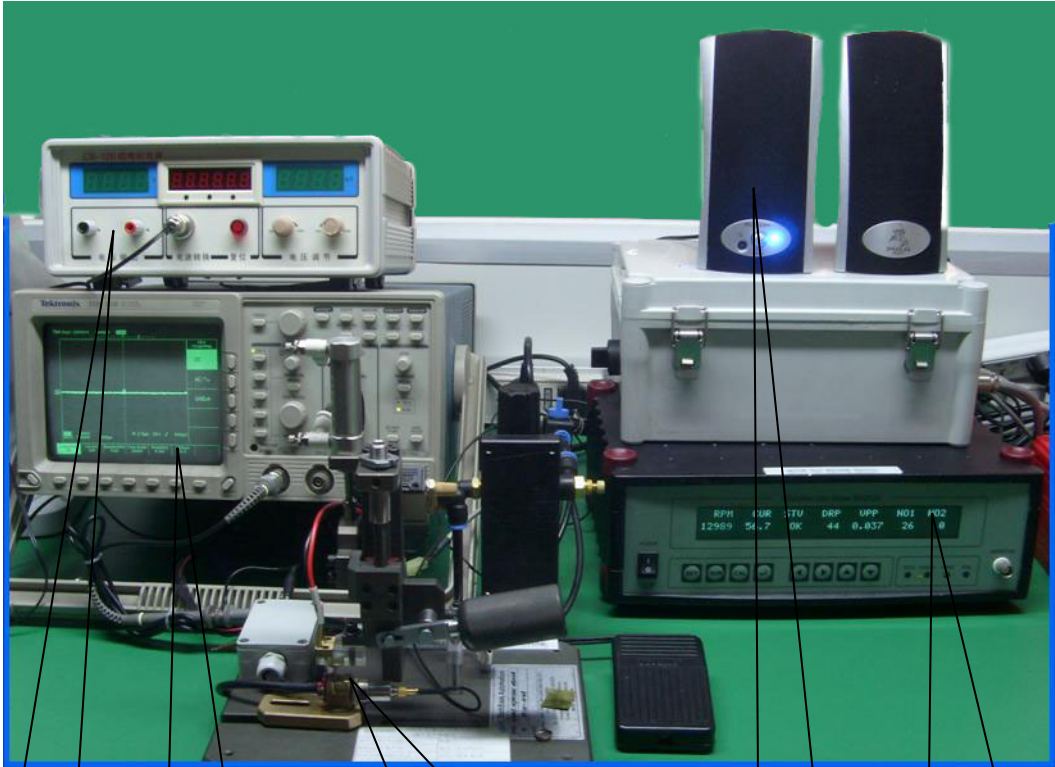
| 项目/Item |                             | 规格/Specification  | 判定标准/Judgment   |
|---------|-----------------------------|---|---|
| 6-2     | 低温放置<br>Low temp exposure   | 温度 /Temperature : -30℃<br>时间 /Time : 96h  | 在常温常湿下放置4h后, 马达应符合项7-2的要求。<br>After 4 hours exposure in ordinary temperature and humidity, Motors shall be approved as specified in item 7-2. |
| 6-3     | 高温放置<br>High temp. Exposure | 温度 /Temperature : +70℃<br>时间 /Time : 96h  |   |
| 6-4     | 湿度放置<br>Humidity exposure   | 温度 /Temperature : +40℃<br>湿度 /Humidity : 95%RH<br>放置时间 / Exposure time : 96h<br>无水气凝结/No condensation of moisture   |   |
| 6-5     | 振动<br>Vibration             | 全振幅 /Displacement : 1.5mm (p-p)<br>频率 /Frequency: 10~54Hz<br>加速度 /Acceleration : 22m/s<br>周期 /Period: 10min 范围内(10~55~10Hz)<br>/10 Minutes log sweep(10~55~10Hz)<br>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。<br>/This motion shall be applied for a period of 10 minutes in each of 3 mutually perpendicular axis                  | 测试结果应符合项7-2的要求。<br>After the test motors shall be approved as specified in item 7-2.  |
| 6-6     | 自然跌落<br>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。<br>Set the motor to the approximately 100g (include the motor) weight of block drop the motor on the concrete floor.<br>高度 /Height : 1.5m<br>方向 /Direction : ±x, ±y, ±z<br>次数 /Number of times: 每个方向3次<br>/Each 3 times<br>冲击 /Shock : 29420m/s <sup>2</sup> 相当 /Equivalent (3000G) | 测试结果应符合项7-2的要求。<br>After the test motors shall be approved as specified in item 7-2.  |

|     |                        |  |  |
|-----|------------------------|--|--|
| 6-7 | 热冲击<br>Heat stock test |  <p style="text-align: center;">试验循环 /Test cycle :15 cycles</p> | <p>测试结果应符合项7-2的要求。<br/>After the test motors shall be approved as specified in item 7-2.</p> |
|-----|------------------------|--|--|

### 7. 要求/Requirements

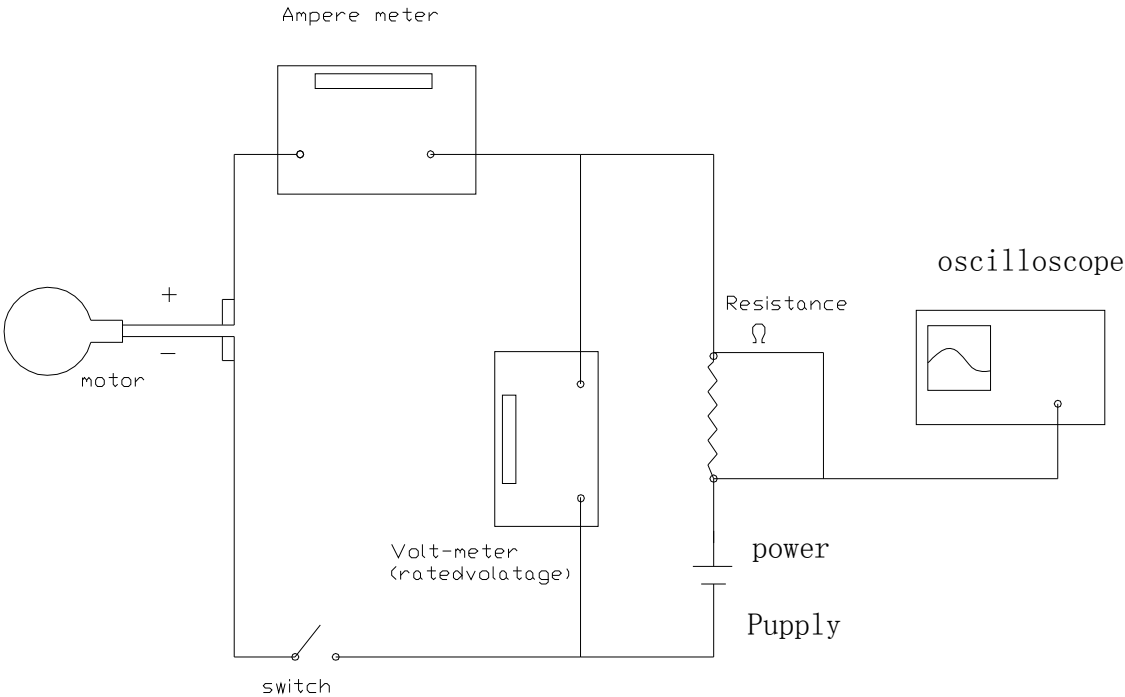
| 项目/Item |               | 判定基准 / Requirements  |
|---------|---------------|--|
| 7-1     | 表A<br>Table A | <ol style="list-style-type: none"> <li>1. 额定转速/Rated speed : 不低于初始值 -30%<br/>不高于初始值+50%<br/>data + 30% Initial Min<br/>data+50% Initial Max</li> <li>2. 额定电流/Rated current : 不低于初始值30%<br/>: 不高于初始值+50%<br/>:data+30% Initial Min<br/>:data+50% Initial Max</li> <li>3. 起动电压/ Starting voltage: : 不大于2.5V 直流电压<br/>2.5V DC Max</li> <li>4. 绝缘电阻/Insulation resistance : 大于10M Min<br/>:10M Min</li> <li>5. 端阻/Terminal resistance: : 不大于初始值±15%<br/>:Initial data ± 15% Max</li> </ol> |
| 7-2     | 表B<br>Table B | <ol style="list-style-type: none"> <li>1) 额定转速/Rated speed : 不大于初始值±20%<br/>/Initial data ± 20% Max</li> <li>2) 额定电流/Rated current : 不大于初始值±20%<br/>/Initial data ± 20% Max</li> <li>3) 起动电压/Starting voltage : 不大于2.5V直流电压<br/>2.5V DC Max</li> </ol>   |

8. 标准测量方法 Standard Measurement Method



|       |        |        |       |         |
|-------|--------|--------|-------|---------|
| 启动测试仪 | 波形脉冲显示 | 马达安放装置 | 噪音测试仪 | 马达综合测试仪 |
|-------|--------|--------|-------|---------|

9. 测量方法及回路图 Measurement Method Circuit map



## 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。

Unless it is used in accordance with specifications the performance and life may be considerably reduced. Due attention should be paid to voltage and range for use.

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 motor 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。

Due attention must be paid to the handling and working environments because such objects as iron powder if

Attracted by the motor magnet, will cause noise, characteristic deterioration thus reducing the 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

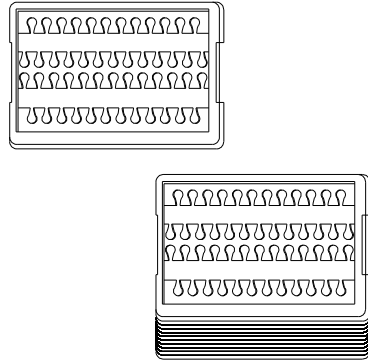
8-6 钢板面边缘有少许锈斑是允许的。

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

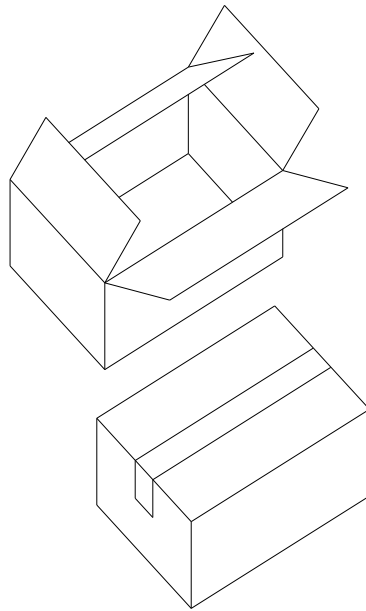


扁平系列马达包装  
Pack drawing of coin type

50PCS(1 tray) × 20



1000PCS(1 bundle)



Remarks:

200PCS/CTN: 41.5cm×27 cm×16 cm

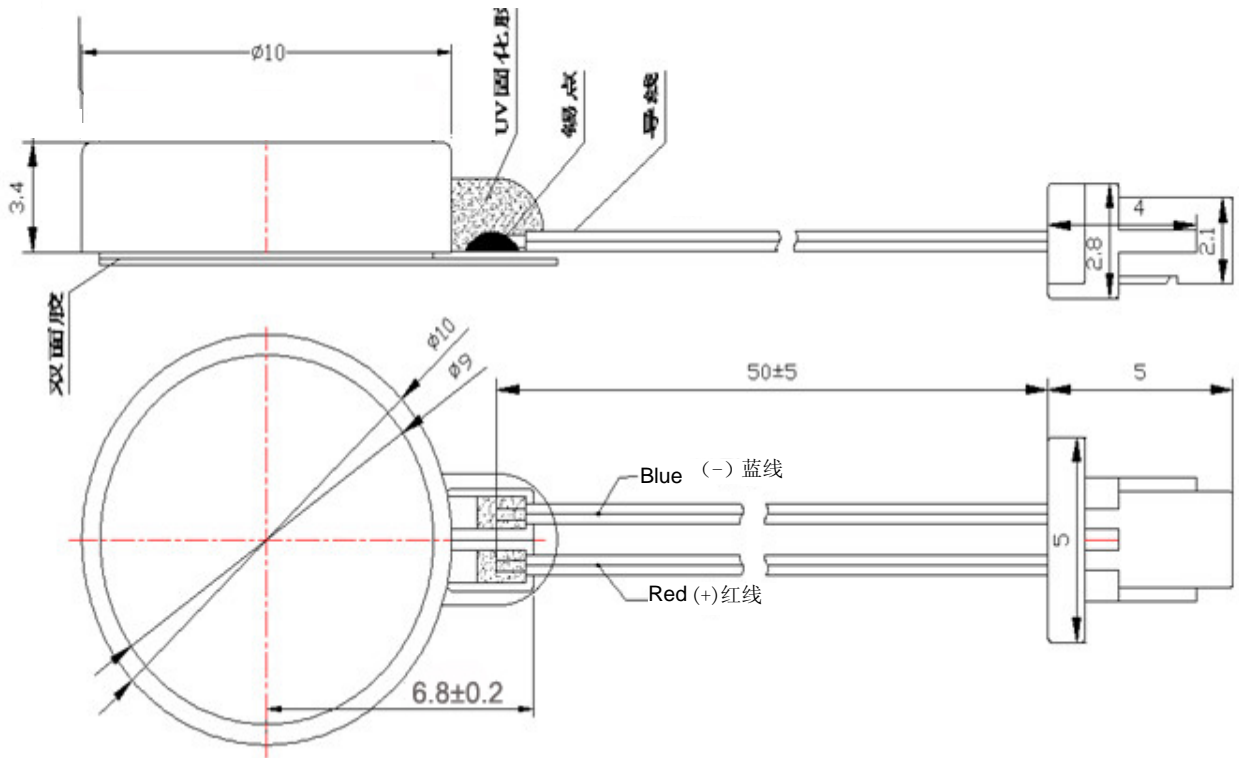
4000PCS/CTN: 41.5cm×27cm×31.5cm

包装试验要求:

沿外包装箱±X, ±Y 和±Z 方向, 距水泥在面 1.5M 高度, 各自由跌落 2 次, 马达应无机械损伤, 电气性能仍符合标准要求.

技术要求

1. 额定电压: 3.0V
2. 额定电流: 80mA max
3. 额定转速: 10000±2000rpm Min
4. 起动电压: 2.3V max
5. 端子阻抗: 31 Ω ±15% (单相) 59Ω ±15% (双相)
6. 在100V 直流下, 导线和机壳间绝缘电阻: 10MΩ
7. 导线规格: AWG32 UL1571



|                    |                   |                                  |                   |               |                  |
|--------------------|-------------------|----------------------------------|-------------------|---------------|------------------|
| HARDNESS           | ANGLE<br>3rd      | TOLERANCE<br>$\pm 0.1 / \pm 0.5$ | MATERIAL          | SCALE<br>10/1 | DATE<br>20140402 |
| DESIGNED BY<br>吴一彤 | CHECKED BY<br>杨爱权 | APPROVED BY<br>张辉瑞               | 众鑫达微电机<br>ZXD1034 |               |                  |

