

# INEED ELECTRONICS (HONGKONG) LIMITED

Company No.: 1653395 - Registered Office: Room 02, 21/F, Hip Kwan Commercial Building, 38 Pitt Street, Yau Ma Tei, Kowloon, HK  
China Office: Room 4-1904, Yuan Meng Ya Ju, Zongbu 3rd Road, Songshanhu North Hi-Tech Park, Dongguan, Guangdong 523808, China  
Tel: (+86) 769 2289 1073 Fax: (+86) 769 2289 1076 URL: <http://www.ineedmotors.com>

## 產品規格說明書

### Product Specification

|                        |                                 |                       |              |
|------------------------|---------------------------------|-----------------------|--------------|
| 客戶名稱 Buyer Name        |                                 | 客戶代碼 Buyer Code       |              |
| 產品名稱 Product Name      | Coin Type Micro Vibration Motor | 產品編碼 Product Part No. | C1234BLDCL27 |
| 規格書號 Specification No. | IND20230204S039C                | 發佈日期 Date of Release  | 2023-2-4     |

聲明：本產品符合歐盟 2005/618/EC 環保指令相關要求。

We declare that the product is compliant with EU 2005/618/EC directives.

貴司確認本產品樣品後，在決定採購本產品之前，請您仔細閱讀本產品規格說明書，並在客戶承認欄內簽名及蓋章並回傳此頁給我司相關人員備案。After you approve the product samples, please read this specification carefully and return this page to us with your signature and company chop in below *Customer Approval* table before you decide to purchase this product.

| 客戶承認欄 Customer Approval           |                |            |               |                |
|-----------------------------------|----------------|------------|---------------|----------------|
| 簽名及蓋章<br>Signature & Company Chop | 工程 Engineering | 品質 Quality | 生產 Production | 採購 Procurement |
|                                   |                |            |               |                |
| 日期 Date                           |                |            |               |                |

| 愛立德工廠承認欄 INEED Factory Approval   |                |               |                |
|-----------------------------------|----------------|---------------|----------------|
| 簽名及蓋章<br>Signature & Company Chop | 批准 Approved by | 審核 Checked by | 編制 Prepared by |
|                                   | 幹方飛 FF GAN     | 易紅婷 HT YI     | 周嫻靜 XJ ZHOU    |
| 日期 Date                           | 2023-2-4       | 2023-2-4      | 2023-2-4       |

# 规格书内容

## Contents of Specifications

|                                                 |       |
|-------------------------------------------------|-------|
| 1. 适用范围/ Applicable Scope                       | 1/10  |
| 2. 使用条件/ Operating Conditions                   | 1/10  |
| 3. 测试条件/ Test Conditions                        | 1/10  |
| 4. 初期电气性能/ Initial Electrical Characteristics   | 1/10  |
| 5. 机械性能/ Mechanical Characteristics             | 2/10  |
| 6. 耐久性能/ Reliability Characteristics            | 3/10  |
| 7. 标准测量方法/ Standard Measuring Method            | 5/10  |
| 8. 测量方法及回路图/ Measuring Method & Circuit Map     | 5/10  |
| 9. 使用注意事项/ Cautions in Use                      | 6/10  |
| 10. 环境管理物质/ Environmental Management Materials: | 7/10  |
| 11. 包装/ Packaging                               | 8/10  |
| 12. 外形图/ Mechanical Drawing                     | 9/10  |
| 13. 更改记录/ Revision Records                      | 10/10 |

|                   |                   |                  |      |
|-------------------|-------------------|------------------|------|
| 2023.02.04(REV,0) | 说明书/Specification | 编号/No.: IND-3462 | 1/10 |
|-------------------|-------------------|------------------|------|

1. 适用范围/ Applicable Scope

本说明书适用于无刷振动电机C1234BLDCL27系列.  
This specification applies to BLDC Vibrator Motor C1234BLDCL27series.

2. 使用条件/ Operating Conditions

| 项目/Item |                               | 规格/Specification                                                                                |
|---------|-------------------------------|-------------------------------------------------------------------------------------------------|
| 2-1     | 额定电压<br>Rated voltage         | 3.7V DC                                                                                         |
| 2-2     | 使用电压范围<br>Operating voltage   | 3.0~4.5V DC                                                                                     |
| 2-3     | 旋转方向<br>Rotation              | CW(clockwise)<br>Lead Wire Red(+),Blue(-)连接基准<br>Based on connecting lead wire Red(+), Black(-) |
| 2-4     | 使用环境<br>Operating environment | -20~+70°C, 10~90%RH                                                                             |
| 2-5     | 保存环境<br>Storage environment   | -20~+70°C, 10~90%RH                                                                             |

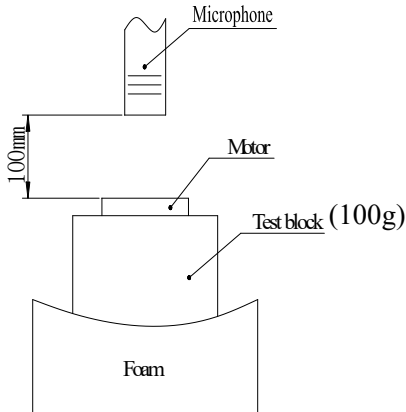
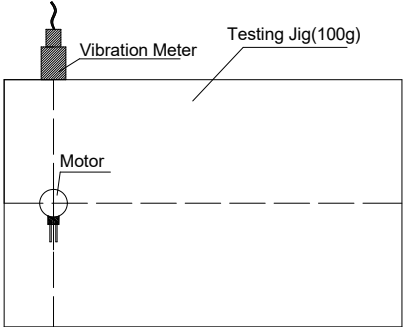
3. 测定条件/ Testing Conditions

| 项目/Item |                    | 规格/Specification              |
|---------|--------------------|-------------------------------|
| 3-1     | 温度<br>Temperature  | 20±3°C                        |
| 3-2     | 湿度<br>Humidity     | 65±20% RH                     |
| 3-3     | 气压<br>Air Pressure | 1013±40 hPa                   |
| 3-4     | 电源<br>Power        | 稳压直流电流<br>Constant DC Current |

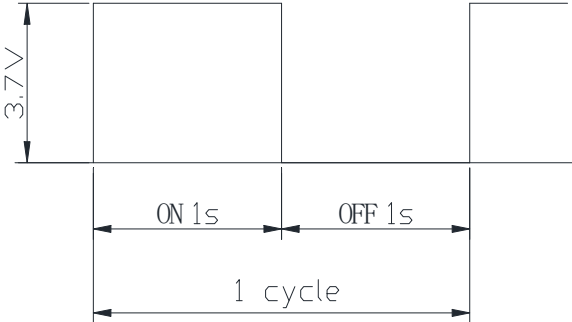
4. 初期电气性能/ Initial Electrical Characteristics

| 项目/Item |                               | 规格/Specification | 条件/Condition                                                |
|---------|-------------------------------|------------------|-------------------------------------------------------------|
| 4-1     | 额定转速<br>Rated Speed           | 8000 rpm Min     | 额定电压下和额定负载下。<br>At rated voltage and rated load.            |
| 4-2     | 额定电流<br>Rated Current         | 85mA Max         |                                                             |
| 4-3     | 起动电流<br>Starting Current      | 200 mA Max       | 在最小起动电压下起动<br>Motor is rotating at min starting voltage.    |
| 4-4     | 起动电压<br>Starting Voltage      | 2.5V DC Max      |                                                             |
| 4-5     | 绝缘电阻<br>Insulation Resistance | 10MΩ Min         | 在100V直流下，导线和机壳间测量<br>At DC 100V between lead wire and case. |

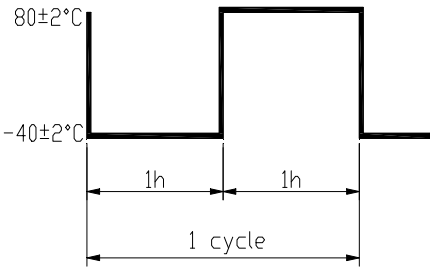
5. 机械性能/ Mechanical Characteristics

| 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                                                                                  |
| 5-2     | 机械噪音<br>Mechanical noise                                                                                                                                                                                                                                                                          | 小于50分贝. A计权<br>≤50dB (A)                                                                         |
|         | 在额定电压下。<br>背景噪音：不大于30dB.A计权<br>电机轴向水平固定在约100g测试夹具上，<br>拾音器沿轴向正对电机平面。<br>测试距离10cm<br>At rated voltage and scene noise as<br>30dB (A)Max,<br>the shaft is horizontally fastened to<br>the test jig (100g).<br>The Microphone faces the plane of<br>motor along The shaft .<br>The distance is 10cm. |                |
| 5-3     | Vibration Test<br>振动测定                                                                                                                                                                                                                                                                            | 2.0G Min<br> |

6. 耐久性能/ Reliability Characteristics

| 项目/Item |            | 规格/Specification                                                                                               | 判定标准/Judgment                                                                                                                                                                                                                                 |
|---------|------------|----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6-1     | 寿命<br>Life | <br>试验循环 /Test cycle: 1000H | 1) 额定转速/ Rated speed: 初始值/ Initial data<br>± 50%<br>2) 额定电流/Rated current: 初始值/Initial data<br>± 50%<br>3) 起动电压/Starting voltage : 2.5V DC MAX<br>4) 正常启动/ Should not fail in starting<br>5) 无异常噪音/ Should not be unusual<br>mechanical noise |

| 项目/Item |                                         | 规格/Specification                                                                                                                                                                                                                                                         | 判定标准/Judgment                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6-2     | 低温放置<br>Low<br>Temperature<br>Exposure  | 温度 /Temperature: $-30 \pm 2^{\circ}\text{C}$<br>时间 /Time: 96h                                                                                                                                                                                                            | <p>在常温常湿下放置4h后，电机性能应符合以下要求。</p> <p>1)额定转速:指标在初始值<math>\pm 30\%</math>以内。<br/>2)额定电流:指标在初始值<math>\pm 30\%</math>以内。<br/>3)起动电压:2.5V DC Max.</p> <p>After 4h exposure in the ordinary temperature and humidity, change rates of the motor's performance should accord with below requirements:</p> <p>1)Rated speed: within <math>\pm 30\%</math> of initial value.<br/>2)Rated current: within <math>\pm 30\%</math> of initial value.<br/>3)Starting voltage: 2.5V DC Max</p> |
| 6-3     | 高温放置<br>High<br>Temperature<br>Exposure | 温度 /Temperature: $+ 80 \pm 2^{\circ}\text{C}$<br>时间 /Time: 96h                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6-4     | 湿度放置<br>Humidity<br>Exposure            | 温度 /Temperature : $+ 65 \pm 2^{\circ}\text{C}$<br>湿度 /Humidity: 90 ~ 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(P-P): 1.5mm<br>频率/ Frequency: 10~55~10Hz/min<br>方向/ Direction: x-y-z<br>时间/Time: 30min/Each                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 6-6     | 自然跌落<br>Free fall                       | 试验状态: 将马达固定在约150克(包括马达本身)的物体上，落向水泥地面。<br>Test state: Set the motor to a block of an approx. 150g weight (including the motor) and drop it onto the concrete floor.<br>Height: 1.5m<br>Direction : $\pm x$ , $\pm y$ , $\pm z$<br>Number of times: 3 times each direction |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

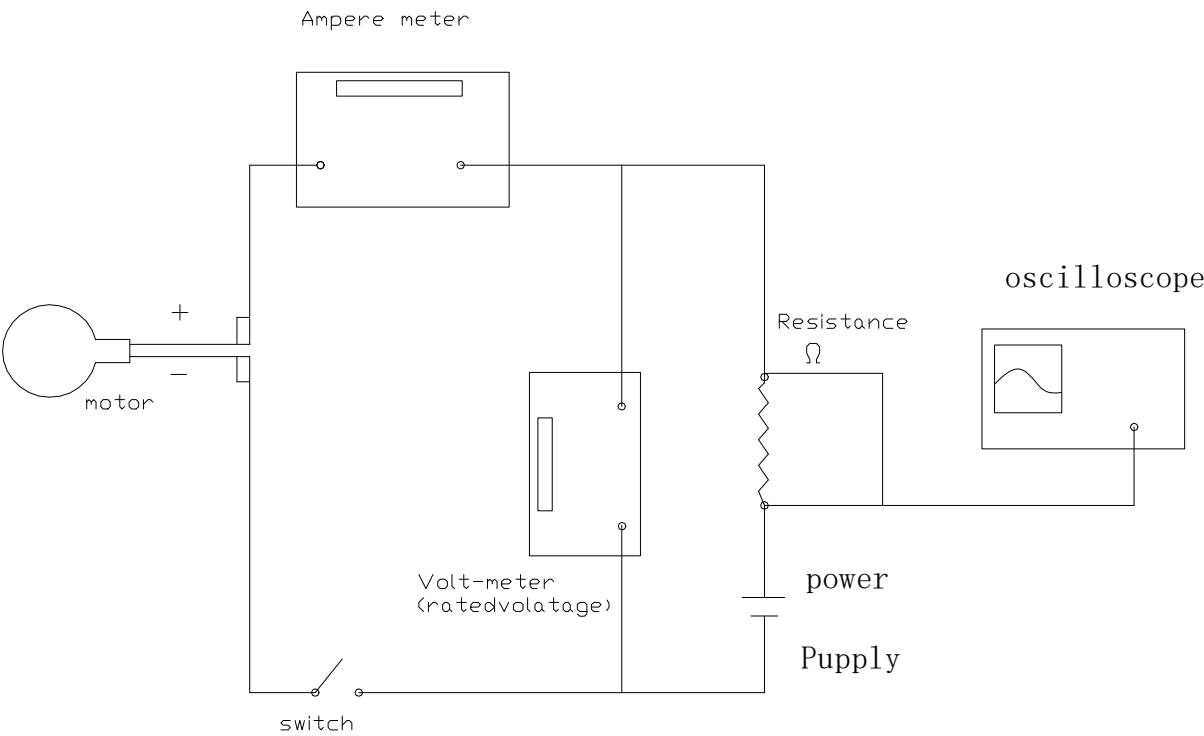
|     |                                    |                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6-7 | 温度循环/<br>Temperature<br>Cycle test | <div><p>温度/Temperature: -40°C~80°C<br/>时间/Time: 2h<br/>循环周期数/Circle cycle: 10 cycles</p></div> | <p>在常温常湿下放置4h后，电机性能应符合以下要求。</p> <p>1)额定转速:指标在初始值±30%以内。<br/>2)额定电流:指标在初始值±30%以内。<br/>3)起动电压:2.5V DC Max.</p> <p>After 4h exposure in the ordinary temperature and humidity, change rates of the motor's performance should accord with below requirements:</p> <p>1)Rated speed: within ±30% of initial value.<br/>2)Rated current: within ±30% of initial value.<br/>3)Starting voltage: 2.5V DC Max</p> |
|-----|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

7. 标准测量方法/ Standard Measuring Method



|                           |                                                           |                                          |                        |                           |
|---------------------------|-----------------------------------------------------------|------------------------------------------|------------------------|---------------------------|
| 振动量测试仪<br>Vibration meter | 马达安放装置<br>Test Jig (for<br>Clamping<br>he Motor in Place) | 马达综合测试仪<br>Multi-functional<br>Test Mete | 波形脉冲显示<br>Oscilloscope | 噪音测试仪<br>Noise Test Meter |
|---------------------------|-----------------------------------------------------------|------------------------------------------|------------------------|---------------------------|

8. 测量方法及回路图/ Measuring Method & Circuit Map



|                   |                   |                  |      |
|-------------------|-------------------|------------------|------|
| 2023.02.04(REV,0) | 说明书/Specification | 编号/No.: IND-3462 | 6/10 |
|-------------------|-------------------|------------------|------|

## 9. 使用时注意事项/ Caution in Use

9-1.与规格不同使用的情况下,性能和寿命会发生问题.希望注意电压使用范围.

You might encounter functional and life problems if you use it different from the standard . Please be careful of the range of use, like voltage etc.

9-2. MOTOR使用时,一定要把图纸上的lead wire (+极)端子连接在供电电源的 (+极), (-极) 端子连接在供电电源的(-极)后使用, 否则电机会烧坏。

Motor use, be sure to draw on the lead wire (+ Pole) terminal connected to the power supply (+ Pole) , (- pole) terminal connected to the power supply (- pole) after use, otherwise the MOTOR will burn out

9-3. 在有害GAS及高温高湿的场所保管对马达造成不良因素所以请注意保管.

Please be careful of that the storage in high temperature and humidity and noxious gas might cause hindrances to motors.

9-4.为了减少马达旋转时因检查失误电源端子短路时 导致 Drive IC 损伤。为了防止损伤 Drive I C 电源端子间(+, -) 把 2 $\mu$ F以上的电容器并列链接 在 Motor 后实施检查是安全措施

Drive IC can be damaged by power plug short due to careless test. In order to prevent damage of Driver IC, please connect 2 $\mu$ F condenser to motor in a row(parallel connection) with power plug(+/-).

9-5.拿取马达时,尽可能的轻拿Case部分. Please hold the case part lightly as much as you can when you use motors.

9-6.为保护Drive IC, 请不要施加DC 4.5V以上.

Please do not use above DC4.5V for preventing Driver IC.

9-7.马达接近磁性物质或接触时会降低马达性能, 因此避免接近强磁场.

Please avoid being near and contacting magnetic materials like magnet which might encounter functional problems.

9-8.能够自我吸附的物质 (铁, 粉末) 及灰尘等与马达混放时会出现转动不良, 异常音等, 会使马达的性能下降及信赖性受影响,因此取用及作业时应注意环境清洁.

If some materials(metal, powder) and dust become mixing condition in the motor it might cause feature declines by occurring rotation faulty and abnormal sound so please be clean the working environment and careful when you deal with the motor.

9-9.注意请不要浸泡在液态物质如 : 水或酒精中.

Please be careful of not soaking in liquid like water or alcohol.

9-10.包装方法 : (参照包装图) 只有在客户要求下变更可能.

Packing method :Refer to packing drawing. But, it could be changed on user' s demand.

9-11.无法保证满足本式样范围以外使用的情况.

It can' t guarantee if the motors are used out of the range of fulfilling this specification.

9-12.本式样书内容的变更及追加是在双方协议下实施.

Any further conditions or change of this APPROVAL REQUEST take effect by mutual consent.

9-13若电机或电机应用产品存放时间超过6个月, 使用前必须采取措施激发启动电机若干次, 以保证电机后续工作正常。

If the motor or motor application products are stored for more than 6 months, measures must be taken to activate the motor several times before use to ensure the subsequent normal operation of the motor.



|                   |                   |                  |      |
|-------------------|-------------------|------------------|------|
| 2023.02.04(REV,0) | 说明书/Specification | 编号/No.: IND-3462 | 7/10 |
|-------------------|-------------------|------------------|------|

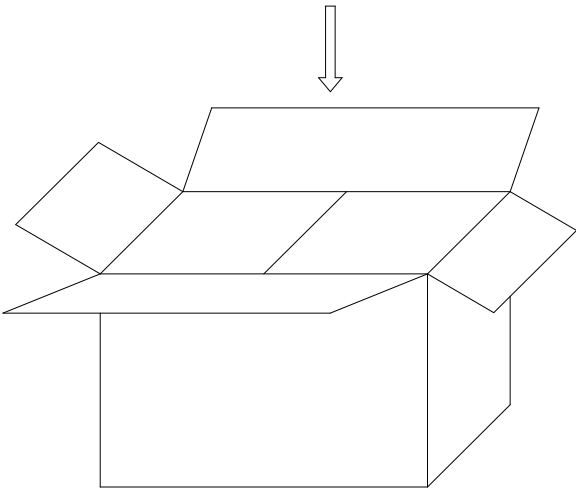
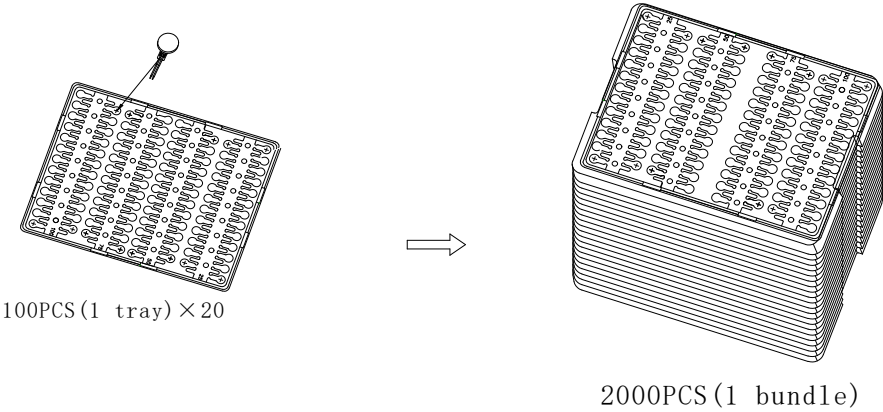
**10. 环境管理物质/ Environmental Management Materials:**

本产品应符合RoHS 指令要求和无卤素要求。  
The product should be in compliance with RoHS/ REACH requirements:

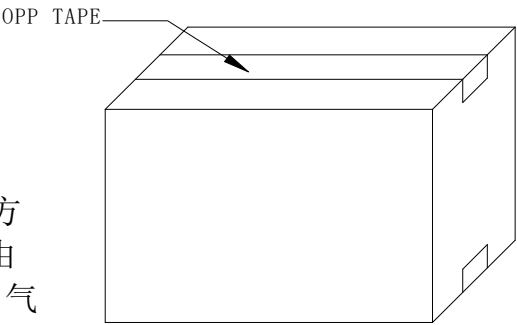
- ★ 镉及其化合物最大允许含量为100PPM  
Cadmium and Compound: ≤100PPM
- ★ 铅及其化合物最大允许含量为1000PPM  
Lead and Compound: ≤ 1000PPM
- ★ 汞及其化合物最大允许含量为1000PPM  
Hydrargyrum and Compound: ≤ 1000PPM
- ★ 六价铬及其化合物最大允许含量为1000PPM  
+6 Chromium and Compound: ≤ 1000PPM
- ★ 多溴联苯及其化合物最大允许含量为1000PPM  
PBB and Compound: ≤ 1000PPM
- ★ 多溴二苯醚及其化合物最大允许含量为1000PPM  
PBDE and Compound: ≤ 1000PPM
- ★ 氯溴两种卤素之和最大允许含量为1500PPM  
The allowed content of Cl and Br is 1500PPM Max for total.
- ★ 氯卤素最大允许含量为900PPM  
The allowed content of Cl is 900PPM Max.
- ★ 溴卤素最大允许含量为900PPM  
The allowed content of Br is 900PPM Max.

11. 包装/ Packaging:

扁平系列马达包装  
Pack drawing of coin type

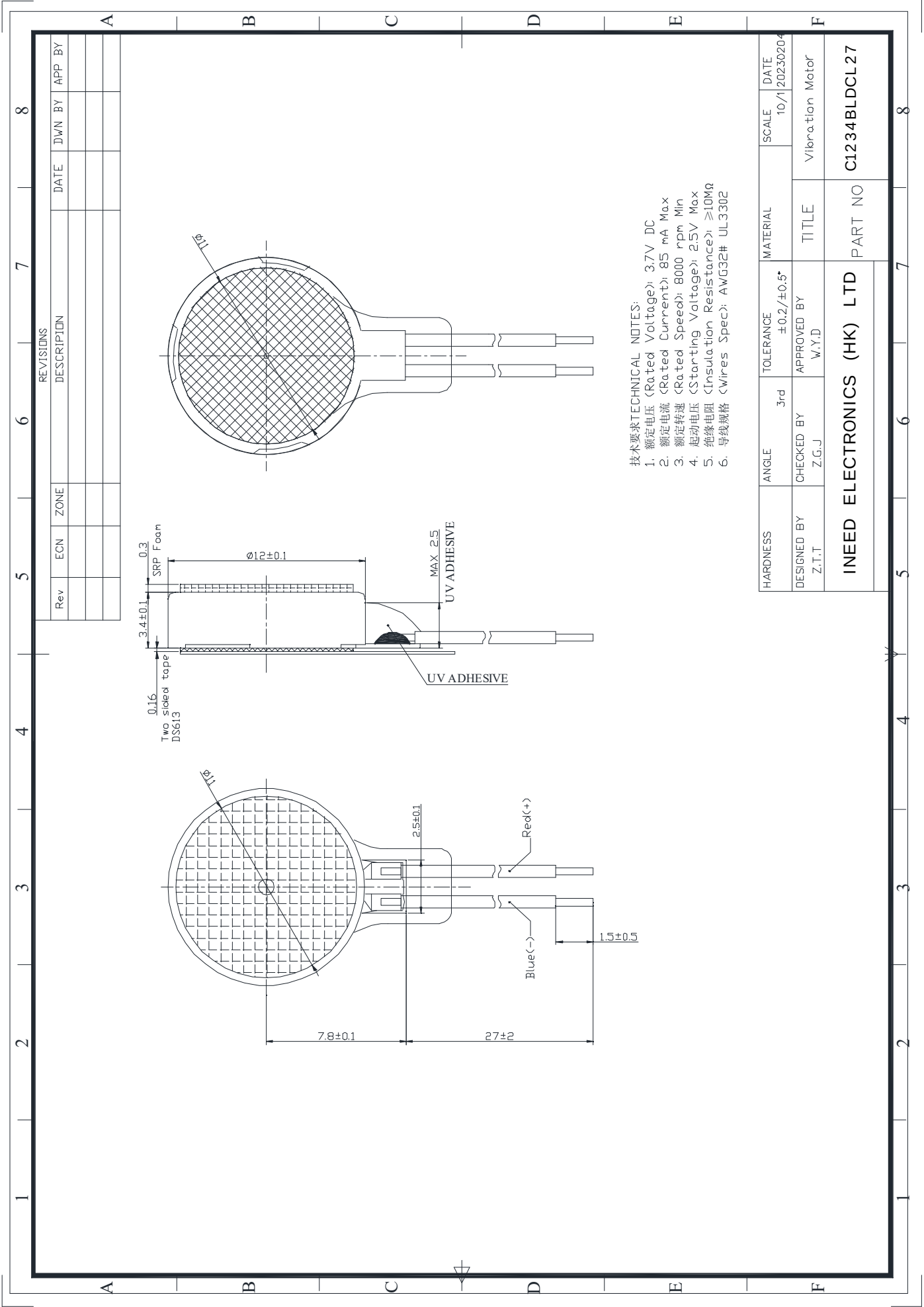


Remarks:  
2000PCS/CTN: 35cm × 25.5cm × 16cm



包装试验要求：  
沿外包装箱±x, ±y和±z方向, 距水泥地面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。

12.外形图/ Mechanical Drawing:



|                   |                   |                  |       |
|-------------------|-------------------|------------------|-------|
| 2023.02.04(REV,0) | 说明书/Specification | 编号/No.: IND-3462 | 10/10 |
|-------------------|-------------------|------------------|-------|

### 13. 更改记录/ Revision Records:

|                          |              |                 |                     |
|--------------------------|--------------|-----------------|---------------------|
| CUSTOMER<br>顾客           |              | SPEC NO<br>规格书号 | 编号/No.: leader-3462 |
| PRODUCT<br>MODEL<br>产品型号 | C1234BLDCL27 | DATE<br>日期      | 2023.02.04          |

## REVISION RECORDS

### 修改记录表

[illegible]