



立得微电子（惠州）有限公司
Leader Micro Electronics (huizhou) Co., Ltd

产品规格书

PRODUCT SPECIFICATION

客户	客户名称/Customer		
	客户料号/Part No.		
	客户承认签章 Customer Approved Signatures		
敝 司	文件编号/Spec No.	LEADER-Z-04084521-B1	
	品名 Description	圆柱直流马达 Cylindrical DC Motor	
	型号/Model	LCM04084521-B1	
	送样日期/Date		
	作成/Designed	检讨/checked	承认/Approved
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1. OPERATING SCOPE/适用范围

1. OPERATING SCOPE/适用范围 THIS SPECIFICATION APPLIY TO LCM0408 STANDARD VIBRATOR MOTOR.

本产品说明书适用于 LCM0408 标准振动马达。

2. OPERATING CONDITIONS/使用条件

No. 序号	Items 项目	Specification 规格
2-1	Rated voltage 额定电压	3.0V DC
2-2	Rated speed 额定转速	14500±2500rpm
2-3	Rated cureent 额定电流	80mA MAX
2-4	Rotating direction 回转方向	CW / CCW all directions 顺，逆时针方向皆可
2-5	Motor posture 摆放位置	Any posture is available 任何位置都可以
2-6	Voltage range for use 使用电压范围	2.4V-3.3V DC
2-7	使用环境 Operating environment	-20~+60°C, 10~90%RH
2-8	保存环境 Storage environment	-30~+70°C, 10~90%RH
2-9	Appearance 外观	Should be free of crack, rust, stain and dents. 外观上没有刮伤，生锈及凹痕等不良现象



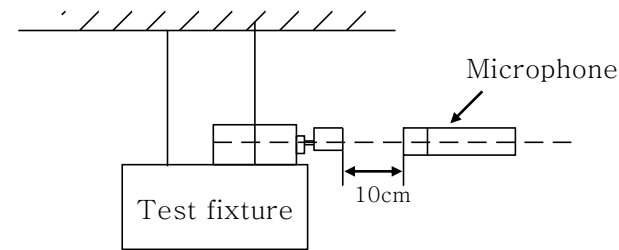
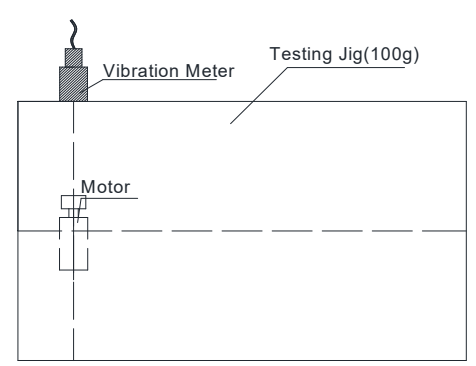
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3. MEASURING CONDITIONS/测试条件

No. 序号	Items 项目	Measuring condition 测试条件	Specification 规格
3-1	Rated load 额定电流	Measure at rated voltage 在额定电压下测定	80mA max.
3-2	Rated speed 额定转速	Measure at rated voltage 在额定电压下测	14500±2500rpm
3-3	Starting current 启动电流	Measure current at locked weight in rated voltage 在额定电压及锁定电机振子条件下测试	100max
3-4	Starting voltage 起动电压	Minimum voltage for starting (On / Off Test) 起动的最小电压条件作通断测试	2.3V max.
3-5	Terminal resistance 电枢电阻	Measure between terminals 在端子间测试	37±20%
3-6	Measuring condition 测试条件	Measure at normal temperature and humidity If there is any doubt about judgement, measurements shall be made within 20±2°C, 65±5%RH. 常温常湿下测定，监测应当在20±2°C, 65±5 %RH.条件下进行	

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4. MECHANICAL PERFORMANCE AND CHARACTERISTICS/机械性能和特性

No. 序号	Items 项目	Measuring condition 测试条件	Specification 规格
4-1	Insulation resistance 绝缘电压	Supply with DC 100V between the lead wire (shrapnel or PIN) and the vibration weight 在导线(弹片或者PIN)与振动子之间提供 DC 100V 电压	10MΩ MIN.
4-2	Mechanical Noise、 机械噪音	At rated voltage and rated load back ground noise: 30dB(A) max. 额定电压及负荷下测试 背景噪音不超过30分贝	50dB(A) MAX.
			
4-3	Vibration Test 振动测定	Grms 0.8 Min	



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No. 序号	Items 项目	Measuring condition 测试条件	Specification 规格
4-4	Shaft end play 轴向间隙	Distance of axial play on shaft 轴向间隙	0.05-0.3 mm

5. Life test/寿命试验

Should be satisfied with the evaluation items of table 1. after 100,000 cycles as following operating condition.

按照下面测试条件100,000 回实施后，应当满足5.表1里5-1评价项目

- 1) Test voltage/测试电压 : DC 3.0 V
- 2) 1 cycle test condition/1回试验条件 :1sec. on, 1sec. off

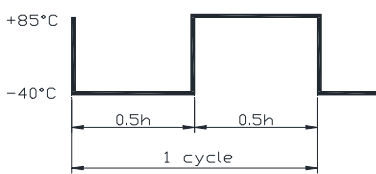
Requirements/判定基准

NO. /序号	Item/项目	Requirements/判定基准
5-1	TABLE A	Rated speed/额定转速：变化率在初始值+60%~-30%以内 Rated current/额定电流：变化率在初始值+60%~-30%以内 Starting voltage/起动电压：2.3V DC Max 电机能正常启动，无异常机械噪音。The motor can start normally without abnormal mechanical noise
5-2	TABLE B	1)Rated speed/额定转速：变化率在初始值+50%~-30%以内 2)Rated current/额定电流：变化率在初始值+50%~-30%以内 Starting voltage/起动电压：2.3V DC Max
5-3	TABLE C	1)端子阻抗/Terminal resistance:变化率在初始值±20%以内 2)外形结构无异常/No abnormal appearance and structure

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6. Reliability test/信赖性测试

After the test, the evaluation items of 5-2 & 5-3 in Table 1 should be met
试验后,要满足 5.表1里5-2&5-3的评价项目

No. 序号	Items 项目	Specification 规格
6-1	High temperature storage test 高温试验	Expose to 80°C ±2 for 96hours and then return to normal temperature and humidity for 2hours before test. 温度80°C ±2 条件下放置96小时后,在常温常湿下放置2小时评价
6-2	Low temperature storage test 低温试验	Expose to -30°C ±2 for 96hours and then return to normal temperature and humidity for 2hours before test. 温度-30°C ±2 条件下放置96小时后,在常温常湿下放置2小时评价
6-3	Humidity test 湿度试验	Expose to 50°C ±2, 90±5%RH for 96hours and then return to normal temperature and humidity for 24hours before test. 温度50°C ±2, 90±5%RH 条件下放置96小时后,在常温常湿下放置2小时评价
6-4	Heat cycle test 热循环试验	 <p style="text-align: center;">试验循环 /Test cycle:10cycles</p>
6-5	Vibration test 振动试验	Displacement (P-P) 全振幅: 1.5mm Frequency 频率: 10-55-10Hz Minutely sweep 连续 Direction/方向: X, Y, Z Time 时间: Each 30min 每一方向
6-6	Drop test 跌落试验	将电机放在100g的盒子里, 1.5mm高度自由落到混凝土地面上 Direction/方向: X, Y, Z; High/高度: 1.5m; Times/次数 : each 2times



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7. Cautions/注意事项

(1) Allowable range for use/工作范围

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

注意电压及电流的使用范围,如果没有根据本标准使用的话,将会降低马达的寿命和性能

(2) Storage/储存

Avoid storing in high temperature, high humidity or corrosive gas environment.

避免储存在高温高湿或者腐蚀性气体的环境当中

(3) Handling of motor/使用马达

- To handle the motor, hold the motor case softly.

拿取马达时,要轻轻拿取机壳部位

- Do not bring a magnetized object near or into contact with the surface because there is a fear of performance being deteriorated.

避免放置在磁性物体附近或接触其表面,这将影响其功效

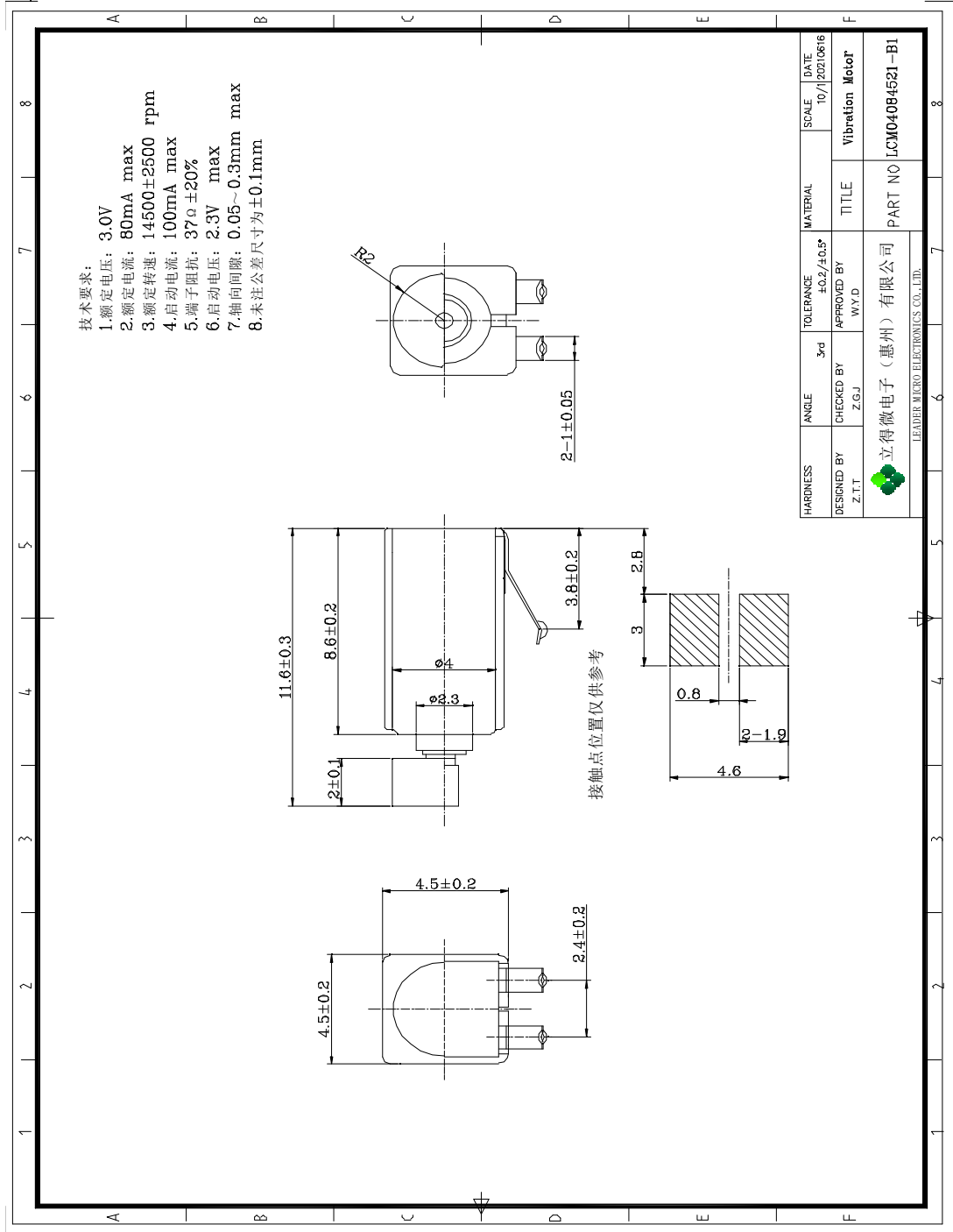
- Due attention must be paid to the handling and working environments because such

objects as iron powder if attracted by the motor magnet, will cause noise, characteristic deterioration, thus reducing the reliability.

注意操作环境,尤其注意若铁粉被磁铁吸附,将出现噪音问题,降低使用寿命

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8. MECHANICAL DRAWING/机械图



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9. Packing Specification /包装规范

9-1 每个塑料盒里放 100 个马达。
100 motors in each tray

9-2 每 10 个塑料盒上盖一个塑料盖板，用胶带捆成一捆。
Put a plastic cover on every 10 plastic boxes and tie them with tape to make a bundle.

9-3 捆好后装入塑料袋内用胶带绑好。
Tie it up and put it in a plastic bag and tie it up with tape

9-4 依出货批量选用适当的外包装箱大小：

大纸箱： 530mm*360mm*230mm；

中纸箱： 450mm*280mm*230mm；

小纸箱： 380mm*250mm*220mm

Choose the appropriate outer packing box size according to the shipment batch

Big carton: 530mm*360mm*230mm；

Medium carton: 450mm*280mm*230mm；

Small carton: 380mm*250mm*220mm.

