



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-0308033828	
	品名 Description	圆柱振动马达 Cylindrical Vibrator Motor	
	型号/Model	LCM0308033828	
	送样日期/Date		
	作成/Designed	检讨/checked	承认/Approved
	张亭亭 2019.07.06	张冠军 2019.07.06	王远东 2019.07.06

立得微电子（惠州）有限公司

Leader Micro Electronics (Huizhou) Co., Ltd.

Tiger Industrial Park, Baigang, Xiaojinkou, Huizhui, Guangdong 516000, China

Tel: +86-752-5853255, Fax: +86-752-5839222, Website: www.leader-cn.cn

生产地址：中国广东省惠州市小金口老虎岭工业园，邮政编码：516000



VIBRATION MOTOR	MODEL: 编号	REV. NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:1/10

Contents/目录

Items/项目	Page/页码	Drawing number/图纸编号
1. OPERATING SCOPE/适用范围	2/10	
2. OPERATING CONDITIONS/使用条件	2/10	
3. MEASURING CONDITIONS/测试条件	3/10	
4. MECHANICAL PERFORMANCE AND CHARACTERISTICS/机械性能和特性	4/10	
5. Requirements/判定基准	4/10	
6. Reliability test/信赖性测试	5/10	
7. Cautions/注意事项	6/10	
8. MECHANICAL DRAWING/机械图	7/10	
9. 电机结构图/ Motor Structure	8/10	
10. Packing Specification /包装规范	9/10	
11. REVISION RECORDS 修改记录	10/10	



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VIBRATION MOTOR	MODEL: 编号	REV. NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:2/10

1. OPERATING SCOPE/适用范围

THIS SPECIFICATION APPLIY TO LCM0308STANDARD VIBRATOR MOTOR.

本产品说明书适用于 LCM0308 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 LOAD / 额定负荷	Counterweight (according to specification of motor housing configuration) / 摆轮 (按电机外型结构图规定)
2-3	Rotating direction 回转方向	CW / CCW all directions 顺, 逆时针方向皆可
2-4	Motor posture 摆放位置	Any posture is available 任何位置都可以
2-5	Voltage range for use 使用电压范围	2.5V-3.6V DC
2-6	Allowable temperature range 可用温度范围	1) 工作温度/Working temperature:-30℃~70℃ Humidity/湿度: 65%~90% RH 2) 储藏温度/Storage temperature:-40℃~80℃ Humidity/湿度:65% RH
2-7	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



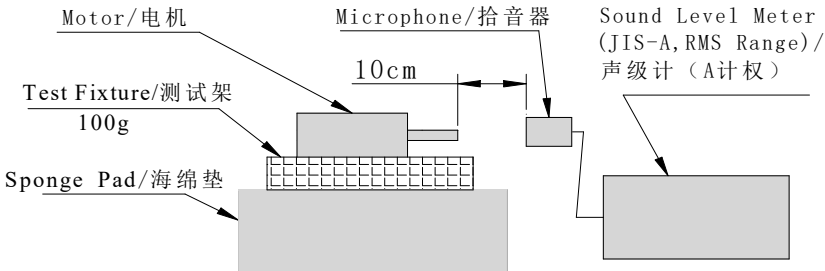
VIBRATION MOTOR	MODEL: 编号	REV. NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:3/10

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	100mA max
3-2	Rated speed 额定转速	Measure at rated voltage 在额定电压下测	13000±3000rpm
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转子条件下测试	120max
3-4	Starting voltage 起动机电压	Minimum voltage for starting (On / Off Test) 起动的最小电压条件作通断测试	2.4V DC max
3-5	Terminal resistance 电枢电阻	Measure between terminals 在端子间测试	30±20%Ω
3-6	Shaft and play/轴 间隙	轴沿着轴向可以移动的距离/ distance of axial play on shaft	0.03~0.3mm
3-7	WEIGHT/重量	0.6±0.2g (APPROX)	
3-8	Measuring condition 测试条件	Temperature/温度: 25±2°C Relative humidity/相对湿度: 45~85%RH	

VIBRATION MOTOR	MODEL: 编号	REV.NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:4/10

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

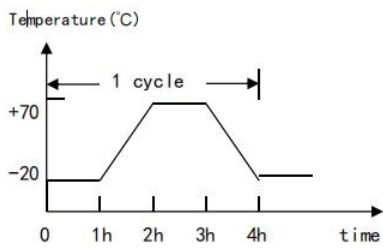
No. 序号	Items 项目	Measuring condition 测试条件	Specification 规格
4-1	Insulation resistance 绝缘电压	Supply with DC 100V between the lead wire(shrapnel or PIN) and the vibration weight在导线(弹片或者PIN)与振动子之间提供 DC 100V 电压	10MΩ MIN
4-2	Mechanical Noise 机械噪音	At rated voltage and rated load back ground noise: 30dB(A) max. 额定电压及负荷下测试 背景噪音不超过30分贝	50dB(A) MAX
	 <p>Motor/电机 Microphone/拾音器 Sound Level Meter (JIS-A, RMS Range)/声级计 (A计权)</p> <p>Test Fixture/测试架 100g</p> <p>Sponge Pad/海绵垫</p> <p>10cm</p>		

5. 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: Initial data/初始值±50%Max Rated current/额定电流: Initial data/初始值±50%Max Starting voltage/起动电压: 2.4V DC Max
5-2	TABLE B	1)Rated speed/额定转速: Initial data/初始值±30%Max 2)Rated current/额定电流: Initial data/初始值±30%Max
5-3	TABLE C	1)Rated speed/额定转速: Initial data/初始值±35%Max 2)Rated current/额定电流: Initial data/初始值±35%Max

VIBRATION MOTOR	MODEL: 编号	REV.NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:5/10

6. Reliability test/信赖性测试

NO./序号	Item/项目	Test condition/试验件	Requirements/判定基准
6-1	Life 寿命	Voltage/电压: 3.0V DC Load/负荷: Counterweight (摆轮重) Temperature/温度: 25°C ± 2°C Humidity/湿度: 65 ± 2%RH Test form/试验形式: 0.5S (C.W.) ON 0.5S OFF Test time/试验时间: 200,000cycles	After the test ,motors shall be approved as specified in item 5-1试验后, 马达能满足5-1的规定
6-2	Low temp exposure 低温放置	Temperature/温度: -40 ± 2°C Time/时间: 96hours	After 2 hours exposure in ordinary temperature and humidity ,motors shall be approved as specified in item 5-2常温常湿条件下放置2小时后, 马达满足5-2的规定
6-3	High temp exposure 高温放置	Temperature/温度: 80 ± 2°C Time/时间: 96hours	
6-4	Humidity exposure 湿度放置	Temperature/温度: 40 ± 2°C Humidity/湿度: 90 ± 5%Rh Time/时间: 96hours	
6-5	Thermal shock 热冲击	 <p style="text-align: center;">Temperature (°C)</p> <p style="text-align: center;">time</p> Test cycle/试验循环周期数:15cycles	After 2hours exposure in ordinary temperature and humidity ,motors shall be approved as specified in item 5-3常温常湿条件下放置2小时后, 马达满足5-3的规定
6-6	Free fall 自由跌落	Set the motor to the approximately 100g(include the motor)weight of blockDrop the motor on the concrete floor 将马达放在一个重100g的盒子里跌落至混凝土地面上 Height/高度: 1.5m Direction/方向: ±X, ±Y, ±Z Number of times /次数: 每一平面下落 3次, 共 18 次。	After the test , motors shall be approved as specified in item 5-1试验终止后, 马达能满足5-1项的判定基准



VIBRATION MOTOR	MODEL: 编号	REV. NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:6/10

6-7	Vibration test 振动试验	1. Displacement/全振幅: 1.5mm(p-p) 2. Frequency/频率: 10~55Hz 3. Period/周期: 1min 范围内 (10~55~10Hz) 4. Direction/方向: x、y、z Time/时间:2h/ 方向	After the test , motors shall be approved as specified in item 5-1 试验终止后, 马达能满足5-1项的判定基准
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7. Cautions/注意事项

7-1 Tests related to rated rpm and to rated current are to be measured holding the motor in a horizontal posture./额定数据的测试应在马达水平放置且被固定的状态下进行。

7-2 Soldering/焊接

To avoid damaging terminals or lead wires, soldering time should be completed within 1-2 seconds./焊接应在1-2秒内完成,以免损坏端子或导线。

7-3 Storage/储存

Avoid storing in high temperature, high humidity and corrosive gas environment. Not to be stored without running./应避免存放在高温,高湿腐蚀性气体的环境中,连续存放不应超过6个月。

Remark/备注

7-1-1.Important when sample approved, Please sign and returned by Fax before place order in order to fulfill our ISO requirement.

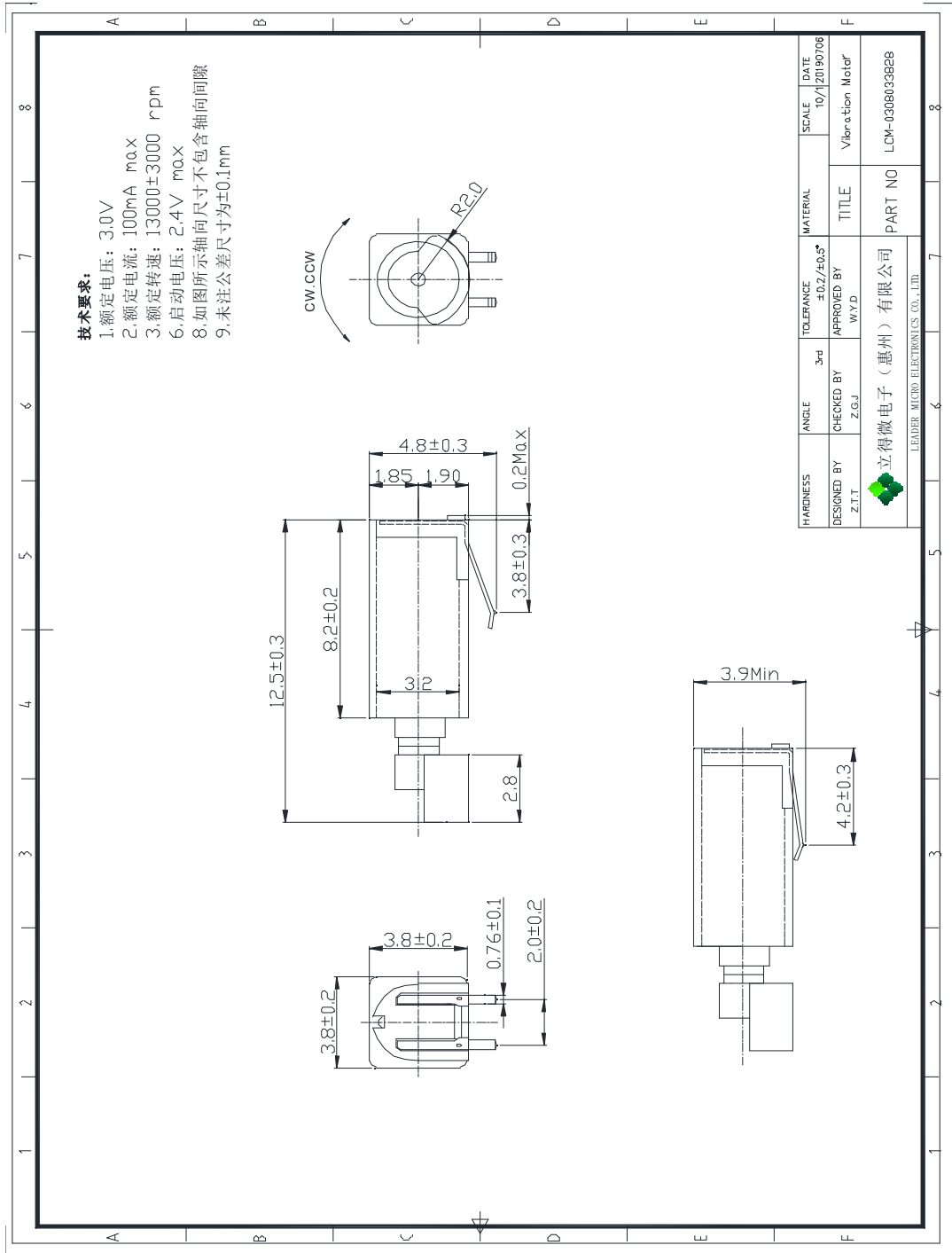
为本公司ISO程序的执行, 样品确认后, 请务必签章回传。

7-2-2. In event of no sign back, We will undertake P.O as acceptance to sample approval.

如样品确认后未签章回传, 则以用户下订单为样品通过确认。

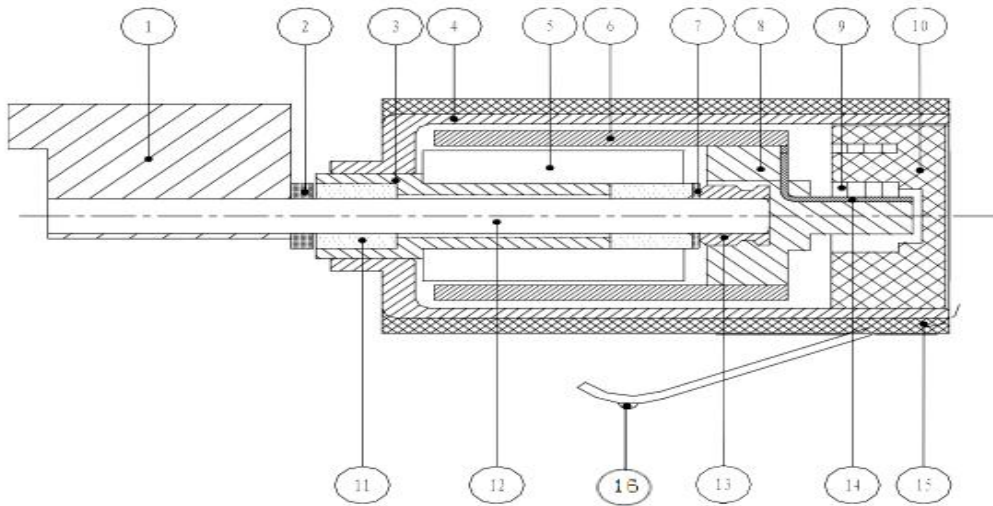
VIBRATION MOTOR	MODEL: 编号	REV. NO:A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE:7/10

8. MECHANICAL DRAWING/机械图



VIBRATION MOTOR	MODEL: 编号	REV. NO: A0
DATE: 2019.07.06	MODEL NAME: LCM0308033828	PAGE: 8/10

9. 电机结构图/ Motor Structure:



N0	名称/Name	材质名称/Material name	N0	名称/Name	材质名称/Material name
1	振动子/Vibration weight	钨合金 Tungsten alloy	9	塑料/Plastic	PBT
2	止拔垫片/S-Washer	聚酯薄膜/Polyester film	10	电刷/Brush	AGPD50/MX215
3	轴承套/B housing	SUM24L	11	端盖/ B base	PBT
4	机壳/Housing	SPCC 或 SPV	12	轴/Shaft	SUS420J2
5	磁铁/Magnet	钕、铁、硼/Nd 、Fe、 B	13	换向片/segment	Cu、Ni、 Ag
6	线圈/coil	铜/Copper	14	胶套/Rubber	硅胶/Silicon rubber
7	垫片/T-washer	聚酯薄膜/Polyester film	15	弹片/Spring	不锈钢
8	含油轴承/Bearing	铜基粉末/Copper powder			

VIBRATION MOTOR	MODEL: 编号	REV. NO: A0
DATE: 2019. 07. 06	MODEL NAME: LCM0308033828	PAGE: 9/10

10. PACKAGE REQUIRE/包装要求

CONTENT AND PROCESS/工作内容和程序

- (1) 50 motors in each box.
每个包装盒里放 50 个马达。
- (2) .Cover every 20 boxes with an empty box and tie them with tape to make a bundle.
每 20 个包装盒上盖一个空包装盒，用胶带捆做一捆。
- (3) .Pack it in the inner packing box.
捆好后装入内包装箱。
- (4) .Every 8 bags of packing boxes are placed in an outer packing box according to the stacking method shown in the figure..
每 8 袋包装盒，按图中的叠放方式放入一个外包装箱。
- (5) .The quantity and production batch number are written on the outer packing box.
数量、生产批号均写在外包装箱上。

