	SPECIFICATION	PRODUCT	LINEAR VIBRATOR
		MODEL	LD0815AA
		REVISION NO.	REV.00

立得微电子（惠州）有限公司

Leader Micro Electronics (Huizhou) Co., Ltd.

产品规格书

PRODUCT SPECIFICATION

客户信息 Customer Information	客户名称/Customer	
	客户料号/Part No.	
	客户承认签/Customer Approved Signatures	

产品信息 Product Information	文件编号/Spec No.	LEADER-AA0134F	
	品名/Description	线性振动马达 Linear Vibrator Motor	
	规格型号/Model	8×15×3.0T,170Hz,0.9Vrms AC	
	日期/Date	2021.03.15	
	编制/Designed	审核/checked	批准/Approved
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规格书目录

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1、适用范围/General

本规格书适用于线性振动马达 LD0815AA 系列。

This specification applies to linear type motor LD0815AA series.



2、使用条件/Operating conditions

项目/Item		规格/Specification
2-1	额定电压/Rated Voltage	0.9 Vrms AC, Sinewave
2-2	使用电压范围/Operating Voltage	0.1 ~0.95 Vrms AC
2-3	输入频率/Input Frequency	170±8 Hz
2-4	使用环境/Operating Environment	-20℃~+70℃无水气凝结
2-5	保存条件/Storage Conditions	-40℃~+85℃无水气凝结

3、测定条件/Determination Conditions



一般情况下，马达可以在 22~28℃，相对湿度 45~85%RH 的环境中测试。为保证一致性，测试应在下表规定内进行 Normally, the motor could be tested under 22~28℃, 45~85%RH. To ensure the coherence, it must be tested under below environment requirements:

项目/Item		规格/Specification
3-1	温度/Temperature	25℃±3℃
3-2	湿度/Humidity	65±20%RH
3-3	气压/Air Pressure	1011±40 hpa

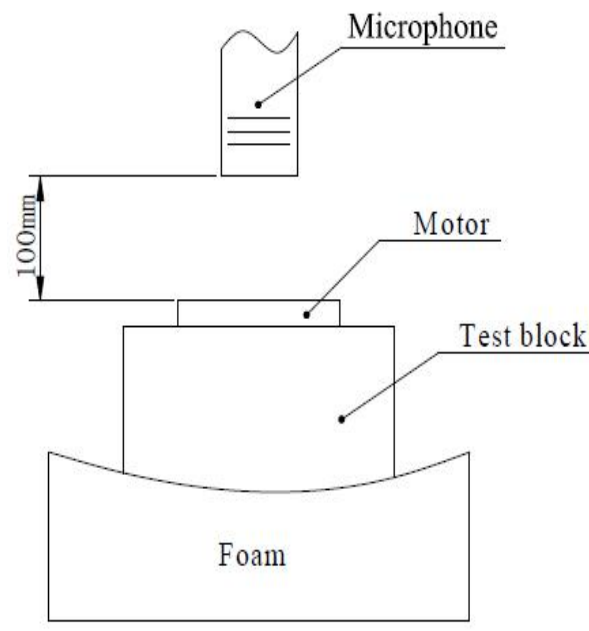
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4、性能标准/ characteristics Standard

项目 Item		规格 Specification	测试条件 Test Condition
4-1	额定电压 Rated Voltage	0.9VrmsAC, Sine wave	0.9VrmsAC, Sine wave
4-2	额定频率 Rated Frequency	170 Hz	170Hz, 0.9VrmsAC, sine wave
4-3	额定电流 Rated Current	Max 130mArms	
4-4	Acceleration F0 点振动量	0.9±0.2Grms	
4-5	Rising Time 上升时间	Max. 50 msec	From 0 to 50% of normal vibration @ 0.9Vrms, F0
4-6	Falling time 下降时间	Max. 50 msec	From 100% to 50% of normal vibration @ 0.9Vrms, F0
4-7	绝缘电阻 Insulation Resistance	10MΩ Min (100V)	在 100V 直流电压下机壳与导线 /At DC 100V Between wire and case
4-8	阻抗 Resistance	9.0±1.0 Ω	在 25℃ 下 /Below 25℃
4-9	瞬态振动量 Transient vibration acceleration	1.05±0.2Gp	7Vp+1cycle sine wave@F0

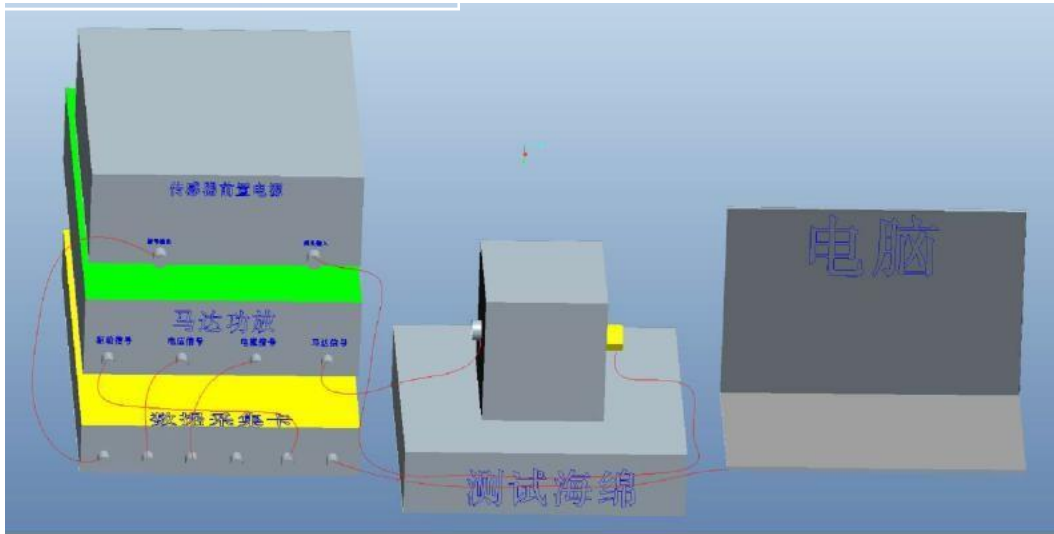
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5、机械性能/Mechanical characteristics

项目 Item		规格 Specification	测试条件 Test Conditions
5-1	噪音/Noise	45分贝最大/45dB Max. (10cm distance from microphone/ 距离麦 克风10 cm 的位置	<p>170Hz, 0.9VrmsAC, sinewave) 在额定电压下。 At rated voltage 背景噪音：不大于28dB. A计权 Back ground noise 28dB(A) Max</p> 
5-2	马达尺寸 Vibrator Size	L15*W8.0*H3.0 mm	micrometer calipers

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6、测试方法/Test Method



Linear Vibrator Test Method/线性马达测试方法

- 测试工装尺寸及重量：40mm*40mm*40mm，100g。
The dimension and weight of test jig: 40mm*40mm*40mm, weight:100g.
- 马达必须放置必须穿过测试工装的质心。
The motor should be fixed by cross the center of test jig.
- 加速度探头必须放置在马达的正对面。
The acceleration sensor should be fixed on the opposite of motor.

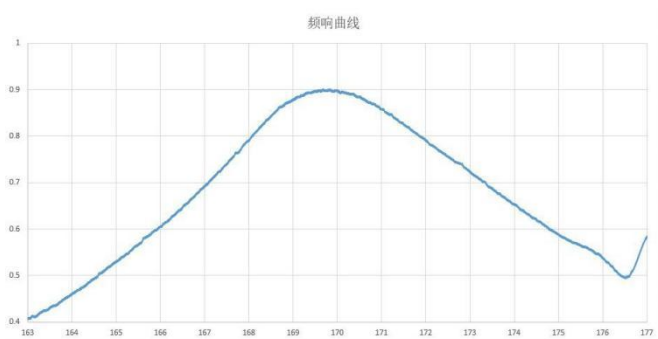


Figure 1. Linear Vibrator Frequency Characteristics/频率特性

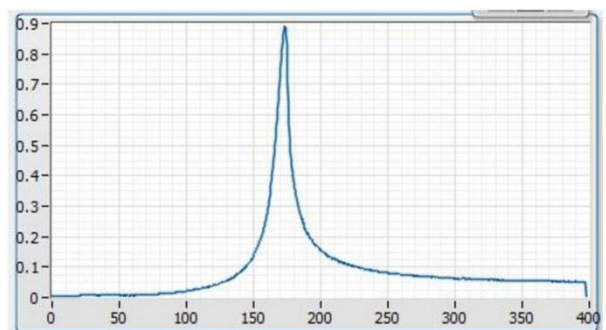






Figure 2. Acceleration-over-frequency chart from 0 ~ 400Hz

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7. 可靠性实验/Reliability Test

项目/Item		测试条件/Test Condition	判定标准/Judgment
7-1	自然跌落 Drop test	1. 重量约 180g (包括马达本身)落向花岗岩地面 2. 高度: 1.5m 3. 方向: 6 个面 4. 次数: 3 Cycles 180g ± 5g test jig (the motor contained), drop from 1.5m, the contact surface is onto granite base, six faces with three cycles.	试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.
7-2	低温放置 Low temperature storage test	温度/Temperature: $-40 \pm 2^{\circ}\text{C}$ 时间/Time :96H	试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.
7-3	高温放置 High temperature storage test	温度/Temperature: $80 \pm 2^{\circ}\text{C}$ 时间/Time :96H	
7-4	湿度放置 Humidity storage test	温度/Temperature: $55 \pm 2^{\circ}\text{C}$ 湿度/Humidity:95%RH 时间/Time :96H 无水气凝结/No condensation of moisture	
7-5	温度冲击试验 Temperature shock test	低温: -40°C 30 分钟 高温: 70°C 30 分钟 温度转换时间小于 3 min, 共 24 个循环。 -40°C @ 30 minutes and 70°C @ 30 minutes, the exchange time within 3 min, 24 cycles.	试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.

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7-6	寿命/Lifetime test	1、试验循环/Test cycle:1,000,000 cycle (1cycle: 2sec on/1sec off)		试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.	
7-7	盐雾试验/Salt spray test	喷雾环境温度:35℃, 盐雾浓度: 5%NaCl溶液 在35℃条件连续喷雾24小时		试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.	
7-8	滚筒试验 /Tumbling test	180g±5g 跌落工装, 常规: 高度 1 米, 次数为 200 次, 跌落的接触面为钢板; 推荐 10-12 次/分钟 180g ± 5g test jig (the motor contained), height 1 meter, 200 times, the contact surface is steel base, 10-12 per minute recommended.		试验后马达性能满足 8.0 判定要求 After the test, the 8.0 pass criteria must be satisfied.	

8、判断特性/Requirements after reliable test

试验后应满足下列条件/Test pass criteria



-After reliability tests, all test samples must be meet the following conditions, otherwise they will be regarded as NG.

-The fluctuation of acceleration and rated current is not over $\pm 30\%$ of its initial value after the test.

-试验后加速度和额定电流的波动不超过其初始值的 $\pm 30\%$ 。

-Noise is not over 55 dB, other parameters must be within specification defined.

-噪音不超过 55 dB, 其他参数必须在规定的规格范围内。

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9、使用注意事项/ Points for Attentions

9-1. 必须安装规格书标准使用, 否则性能与寿命都将受到相当的减少, 必须注意电压的使用范畴.

Make sure to use the motor in accordance with the specifications, if not, the lifetime might be reduced accordingly, pay high attention to the range of the voltage.

9-2. 建议马达在 6 个月内使用, 不要在以下环境中使用及保存.

10-2-1. 高温与高湿的场所.

10-2-2. 腐蚀性气体, 如:H₂S, SO₂, NO₂, CL₂;

10-2-3. 生锈场所;

The motor is suggested using within 6 months. Do not use or store the motor under below environments:

10-2-1. High temperature and high humidity area;

10-2-2. Corrosive gas such as H₂S, SO₂, NO₂, CL₂;

10-2-3. Dusty area;

9-3. 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音, 性能会降低, 从而降低产品的可靠性.

Pay attention to the working environment of the motor, avoid any iron material sucked by the motor, or the motor might cause noise and the performance will be degraded, meanwhile, the reliability might be reduced.

9-4. 应确信本产品不会违背相关的标准, 以及法律法规与行政令.

Make sure the product will not violate any local relevant standards, as well as laws and regulations.

9-5. 拿马达时, 要轻拿轻放.

Handle with care.



9-6. 钢板面边缘有少许锈斑是允许的.

A little rusty spot at the steel plate surface is allowed.

9-7. 我司遵循持续发展的策略, 在不预先通知的情况下, 有对产品(部品)进行修改和改进的权利,

当然这些都不会影响马达的特性及使用功能.

Our company follow the sustainable developing strategy, and have the right to make change and improvements to our product without giving notice in advance . of course , these changes and improvements will not affect the characteristics and function of the motor.

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10、包装/Packing

10-1 单个 Tray 放置产品 80pcs，产品盖板朝下放置。

Put 80pcs of products in a single Tray with the cover plate facing down.

10-2 单个内箱放置 20Tray，最上 1pcs Tray 不放产品，80pcs*19tray=1520pcs 产品。

Place 20 trays in a single inner box and not put products in the top 1pcs Tray. 80pcs*19tray=1520pcs products.

10-3 单个外箱放置 2 个内箱体，1520pcs*2=3040pcs 产品。

Single outer box to place 2 inner boxes. 1520pcs*2=3040pcs products.

10-4 内箱尺寸：340*260*180，外箱尺寸：530*350*200，单位：mm。

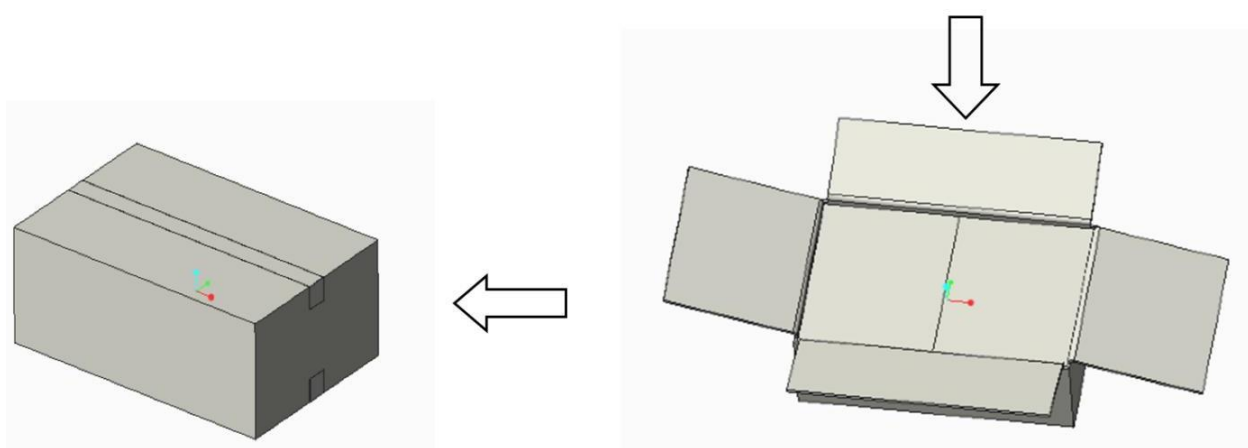
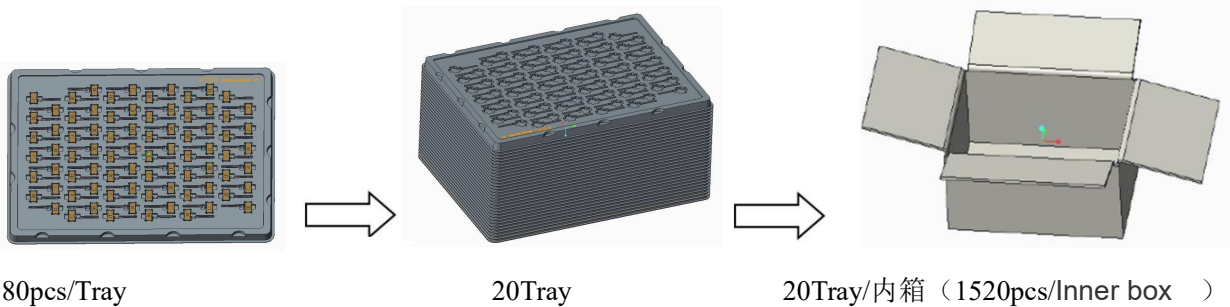
Inner box size: 340*260*180, outer box size: 530*350*200, unit: mm.

10-5 内箱上下放置纸垫板。

Paper plate put up and down the inner box.

10-6 外箱体外侧标示产品品名，型号，厂名。



The name of product, model and manufacturer shall be marked on the outside of the outer box.



最终包装 (The final packaging)

2pcs 内箱/外箱 (3040pcs/outer box)

包装信息/Packing information

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11. 马达外形图/Motor outline drawin

