产品规格书

PRODUCT SPECIFICATION

客户名称 Buyer Name	
客户料号 Buyer Part No.	
客户承认签章 Buyers Approval & Signatures	

文件编号 Spec No.		版本	A/0
品名 Product Description	线性振动马达 LINEAR VIBRATION MOTOR		
号Part No.	VLV152564W-80H		
Date			
Designed by	Checked by	Approved by	
陳满			
2024.10.24	2024.10.24	2024.10.24	

www.vybronics.com
sales@vybronics.com

REVISED RECORD

Rev. No.	Rev. Date	Page No.	Revised Item	Reason
A/0	2024.10.24	/	Preliminary spec	

Content

1. Applications

This specification provided by Vybronics is applied to model VLV152564W-80H 15×25×6.4mmT AC linear resonant actuator, which is used for cellular phone and other handy communication tools.

2. Storage, Operating Temperature/Humidity Conditions

No.	Item	Condition
2-1	Operating Temperature Range	-20 ℃ ~ +70 ℃
2-2	Storage Temperature Range	-40 ℃ ~ +85 ℃

3. Measurement Conditions, Input Voltage

No.	Item	Condition
3-1	Temperature	25 ± 3 ℃
3-2	Humidity	65 ± 20%RH
3-3	Rated Input Voltage	1.4± 0.05 Vrms AC, Sinewave
3-4	Input Voltage Range	1.4± 0.05 Vrms AC
3-5	Operating Attitude	Refer to Figure

Refer to figure：

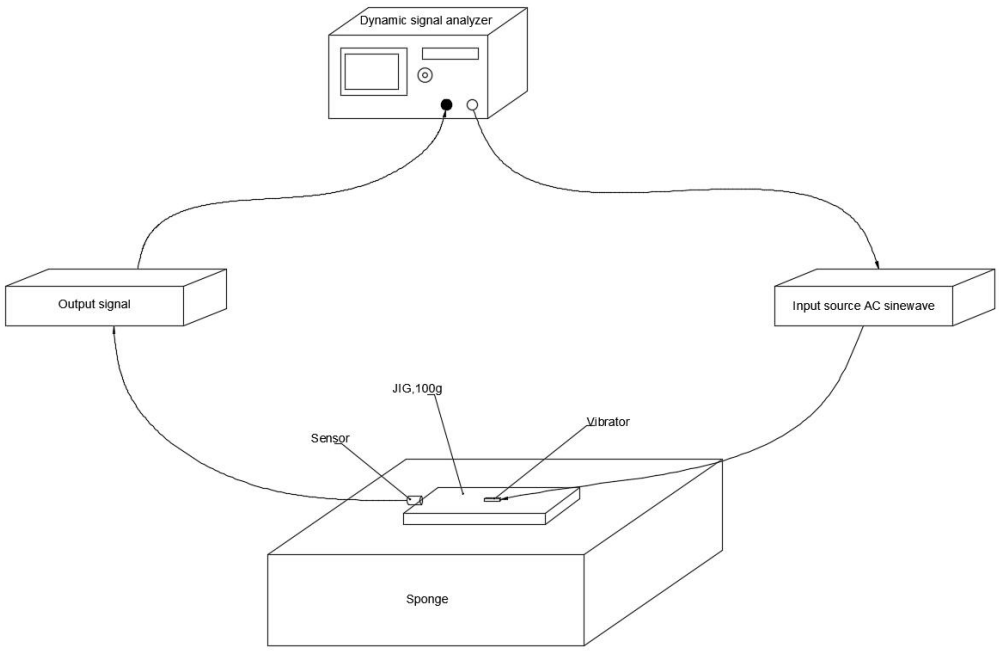
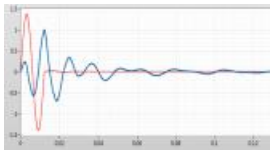
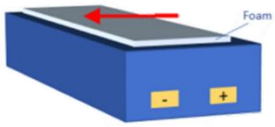


Figure1：An example of measurement method of linear vibrator

Note：

- Dummy Jig (100 Gram) should be put it on the sponge before measurement.

4. Characteristics

No.	Item	RFP				Meta Comment
		MIN	TYP	MAX	Unit	
1	DC Impedance	7.6	8.6	9.6	ohm	Assume DC impedance as the impedance @500Hz
2	Resonant Frequency F0	70	80	90	Hz	@Rated voltage 1.4Vrms AC, identifying F0 as the frequency associated with max acceleration.
3	Vibration at F0	0.78	0.93	1.08	Grms	As measured on a 100g jig via symmetrical testing where the motor engages the entire 100-gram mass. The mass Center of Gravity, motor line of actuation, and accelerometer must all be aligned on the same axis. @Rated voltage 1.4Vrms AC
4	Vibration at 170 Hz	0.38	0.5	0.62	Grms	
5	Vibration at 500 Hz	0.25	0.36	0.47	Grms	
6	Acceleration Vibration Distortion (THD + N)	/	/	<5 @F0, 170, 500Hz	%	Using the IEEE standard to calculate THD + N is acceptable. Measured at 60 Hz, 80Hz, 170 Hz, 500 Hz. Accelerometer BW > 1kHz Duration of acquisition : 1 seconds Window width : >20 cycles f_drive at rated voltage. Labview SVT (Sound and Vibration Toolkit) THD+N analyzer can be used to calculate
7	Vibration Polarity				/	“When positive voltage is applied to the [+] terminal, the internal moving part should travel in the direction of the arrow as shown.” 
8	Mechanical Touch Noise	/	/	/	/	Measured by accelerometer @1.56Vrms, F0 Replace 100% human subjective listening
9	HOHD	/	/	/	/	
10	0 - 90% Rise Time (F0)	0	20	40	ms	
11	100% - 10% Fall Time (F0)	0	20	40	ms	100%-10%, NOT 100%-20%

12	Weight	9.5	11	12.5	Gram	Motor Assy
13	Motor Length	24.65	24.8	24.95	mm	See appendix 1
14	Motor Width	14.45	14.6	14.75	mm	See appendix 1
15	Motor Height	6.3	6.4	6.5	mm	See appendix 1(without adhesive)
16	Insulation Resistance	10	/	/	MΩ	100V DC input, between Case and Lead Wire

5. Reliability Test

No	Item	Minimum Requirement	Qty	Test Criteria
1	Temperature Cycle	-40~85℃, 500 cycles, 30mins at low and high temp The temperature cycle ramp rate can be as fast as vendor like, there is no requirement for ramp rate for module (Measure after 4 hours room temperature storage)	20	• Audible Noise: Meeting same spec as Pre-REL (Using PRM Tester to check) • F0: change within ± 8Hz (Marginal), ± 5Hz (PASS) • Vibration acceleration: <=20%change from normal across multiple frequencies (F0, 170, 500Hz) • Response time: meet spec and change within +/-8ms • DC Impedance: <=5% change from normal • Other 100% inline/OQC test parameters must meet same spec as Pre-REL • No abnormalities in cosmetic/ structure. • No corrosion was found except in laser welding points after salt mist test
2	High Temp Storage	80℃ for 3 hours (Measure after 4 hours room temperature storage)	20	
3	Low Temp Storage	-30℃ for 168 hours (Measure after 4 hours room temperature storage.)	20	
4	Static Humidity	65℃,90%RH 504 hours (Measure after 4 hours room temperature storage)	20	
5	Life Test - Fres	Operating at rated input voltage (1.4Vrms AC, Sine Wave), at resonant frequency, for 360,000 cycles of ON (9 seconds) / OFF (1 second). 1000 hours at room temperature.	20	
6	Life Test - Nominal	Operating at rated input voltage (1.4Vrms AC, Sine Wave), input frequency (170 Hz), for 360,000 cycles of ON (9 seconds) / OFF (1 second). 1000 hours at room temperature.	20	
7	Low Temperature Operational Test	-10℃, Operating at rated input voltage (1.4Vrms AC, Sine Wave), at resonant frequency, ON (2 seconds) / OFF (2 minutes) for 96 hours.	20	
8	Drop Test	1.8m height onto granite when placed in controller outline drop fixture.13 drop orientation, 1 drop per each orientation, 13 drops in 1 cycle	20	
9	Harsh Removal (Micro-drop test)	150g cuboid drop fixture, 10cm steel floor, 6 surfaces, 1000 times in each surface, total 6000 times;	20	
10	Random Vibration-Non-op	Frequency Range: 5-500Hz using vertical vibration table 10h/axis, 6 axes (+/- X, +/-Y, +/-Z) (Note, +/- indicates which face of actuator is pointing down) 5 Hz: 0.10 (m/s^2)^2/Hz 12 Hz: 2.20 (m/s^2)^2/Hz 20 Hz: 2.20 (m/s^2)^2/Hz 200 Hz: 0.04 (m/s^2)^2/Hz 500 Hz: 0.04 (m/s^2)^2/Hz	20	
11	Salt Mist Test	DUT power off. Test condition:+35 ℃, 5%Nacl, 24 hours	20	
12	High Temperature and High Humidity Operational Test	Temperature: (65±2)℃, Humidity: 90±5%RH Voltage 1.4Vrms, AC, sine wave; at resonant frequency, 1 cycle: 2 sec on/ 3 min off, Time: 500 hours;	20	
13	Static Humidity + 1.8m drop (Margin test)	65C,90%RH 18 hours -> 4 hours room temperature storage -> 1.8m drop	15	

6. Packing

TBD

7. Cautions & Handling

(1) Do not press the product with more than 2 kgf or drop it.
It can cause the transformation of performance or external appearance.

(2) Don't use under the following conditions. It may cause a decline in performance.
- Do not drop into fluid (such as: water, alcohol, etc.)
- Do not keep at high temperature or high humidity for extended periods of times
- Do not use near gases which cause erosion
- Please refrain from operating the vibrator near magnetic devices.

(3) The vibrator has a strong magnet, so please be aware that it has a magnetic force on the surface of the bracket.

(4) To optimize the vibration force, rated frequency and voltage could be changed as to assemble condition.

(5) If any problems occur, both the user and Vybronics shall try to solve the problem by mutual agreement and on reflection of the specification sheet.

Appendix 1 (Outline drawing)