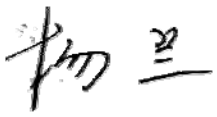
产品规格书

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/1
品名描述 Product Description	线性振动马达 LINEAR VIBRATION MOTOR		
型号Part No.	VLV061228B-L65-A		
送样日期Date			
设计Designed by	审核Checked by	批准Approved by	
			
2020.07.01	2020.07.01	2020.07.01	

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Records of Revision

Rev. No.	Rev. Date	Page No.	Revised Item	Reason
A/0	2016.07.07	/	Release for Production	
A/1	2020.07.01	/	changed company name from JINLONG MACHINERY to VYBRONICS, changed part # from LV061228B-L65-A to VLV061228B-L65-A	Rebranding

1. Scope

This document contains required environmental, electrical, vibratory, mechanical, package and reliability test requirements.

2. Environmental Requirement

The vibration including all components and solder joints must be free from lead (Pb) and other banned or restricted substances according to customer's requirements.

3. Description And Application

This is a FPC contact vibrator which is applied with an AC signal (sine wave or square wave) around the resonant frequency. This device is recommended to be used for haptic feedback device, ex. Mobile phone.

4. Standard Operation Condition.

4.1 Rated voltage	2.0Vrms (square wave or sine wave)
4.2 Operating voltage range	0~2.1Vrms

4.3 Operating temperature range
-20℃to +70℃Cordinary humidity (No condensation of moisture)

4.4 Storage temperature range
0℃to +40℃Cordinary humidity at normal atmospheric pressure (No condensation of moisture)

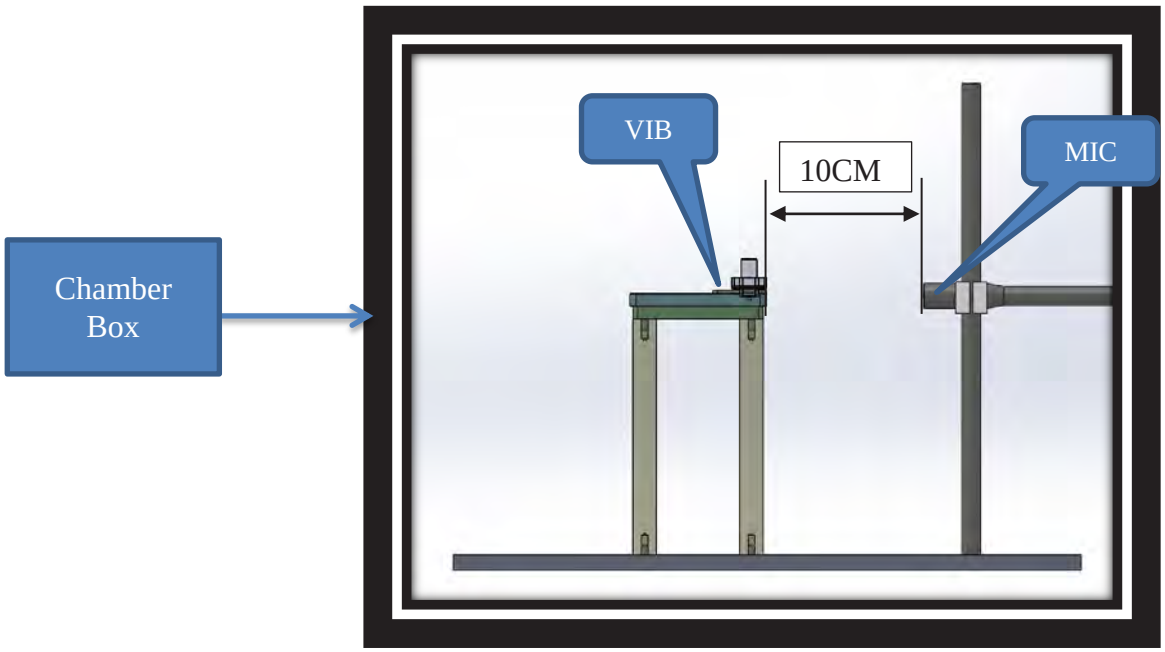
5. Characteristics

5.1 Coil resistance	15±15%Ω
5.2 Rated current	Max 135mA @ rated voltage
5.3 Insulation resistance	Min 10MΩ @ 100VDC Between terminal and housing.

6. Performance

6.1 Acceleration	Min 0.65 Grms at F0 @100g fixture in the middle @ 2Vrms sine wave(Refer to standard test condition)

6.2 Resonant frequency	200±10 Hz 220-180hz sweep down(Refer to standard test condition)
6.3 Rise time	100ms Max (from 0 to 90% nominal acceleration) (Refer to standard test condition)
6.4 Fall time	120ms Max (free fall from 100% to 10% nominal acceleration) (Refer to standard test condition)
6.5 Noise	≤45 dBA @ 10 cm @ 100g test jig @ F0 @ 2Vrms, DRV2604 (10cm distance from microphone)



7. Standard Test Condition

7.1 Climatic condition

The measurement at 25℃±3℃& 65%RH±20%RH is standard. If the judgment is not questionable, recognize measurement at 5℃ to 35℃ & relative humidity 45%RH to 85%RH.

7.2 Input Frequency sine wave/F0
(input F0 from frequency response curve)

7.3 Input voltage 2Vrms

7.4 Suspending method

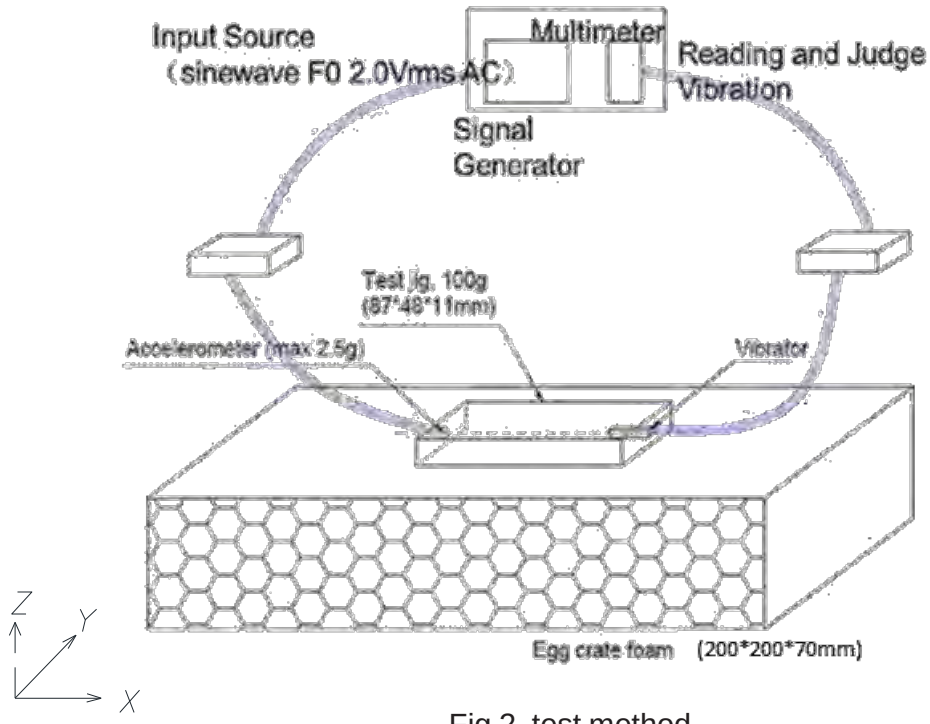


Fig 2. test method

1.Placed a 100g test jig in the center of the soft foam, 87*48 mm plane must be located on foam.

2. Attached the vibrator and accelerometer to the x axis face of the block, both vibrate and measure direction should be mounted to x axis.

7.5 Drawing of test jig

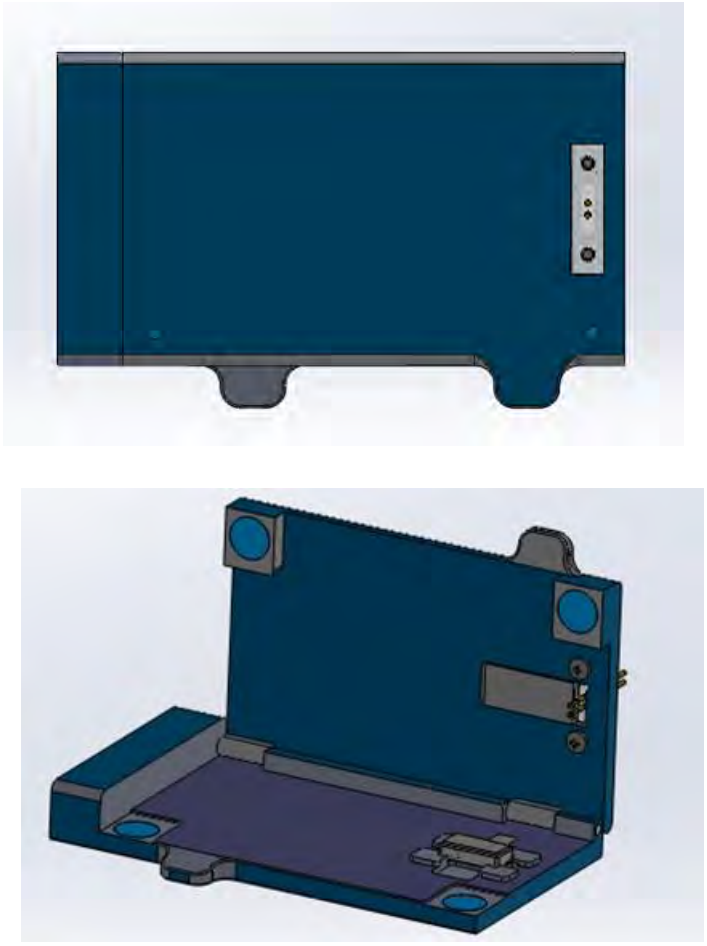


Fig 3. test jig

Caution:

Be sure the attached both accelerometer and vibrator tightly to get precise test result. Or may get wrong acceleration data or noise.

7.6 Measure method

7.6.1 Reading the vibration for 0.5~2.0S.

7.6.2 For more precision measurement, average of 3 times measure data is required.

8. Recommended Stimulus

Auto resonance driver is strongly recommended. Vibration can be adjusted by changing voltage.

9. Reliability Tests

Immediately after reliability test, the samples shall be stored under climatic conditions such as normally exist in ordinary rooms or laboratories. Unless otherwise noted, the recovery period shall be 4 hours at least before performance testing.

After reliability test, all samples must be meet the requirements as follow:

1 Resonant frequency: within ±5% of original

2 Noise: Max 55dBA

3 Acceleration: Min 0.50Grms

4 Rise time: Max 150ms

5 Fall time: Max 170ms

9.1 Free Fall Test: 10 samples

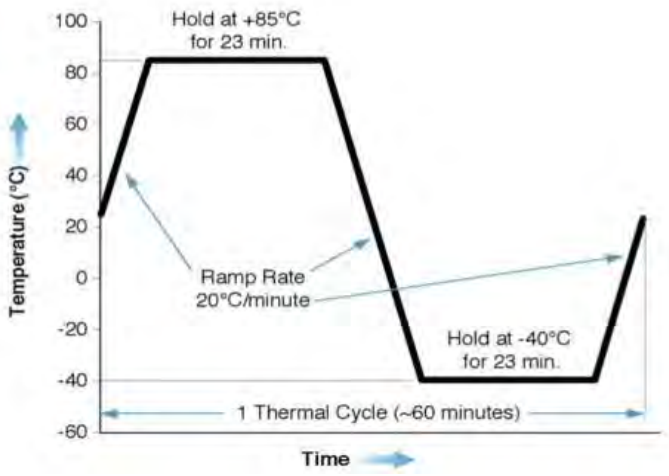
The samples should be mounted in a 150 gram fixture, drop to the granite floor, 1.5 meters 18 times, 1 time every face and 1 time every edge;

9.2 Life Test: 20 samples

sample should be operated on standard condition(100g jig on foam @ 2Vrms sinewave F0) ON(2s)/OFF(1S) for 120hours

9.3 Temperature shock: 10 samples

-40℃/+85℃in each of 60min, total 10 cycles. 7 min transition time;



9.4 High temperature storage: 10 samples

+85℃, 168 hours

9.5 Low temperature storage: 10 samples

-40℃, 168 hours

9.6 Salt Mist Test: 10 samples

+35℃, 5%Nacl,24 hours

10. Caution for use

10.1 Do not press vibrator with force more than 12N. It may lead to transformation of appearance or performance.

10.2 Do not use vibrator in follow environment. It may cause decline of performance or damage to vibrator.

10.2.1 Do not keep vibrator at high humidity or high temperature for extended too long time.

10.2.2 Do not use vibrator near magnetic device or magnetizer.

10.2.3 Do not use vibrator near erosion gas.

10.2.4 Do not drop vibrator into liquid.

10.3 There is strong magnetic on the surface of vibrator. Do not set components sensitive to magnetic within 3 mm in Z-direction of vibrator surface.

10.4 To use vibrator reliable, vibrator should be fixed to house firmly in vibrate direction. Or it may be cause bad noise.

10.5 Soft material (such as poron or foam etc.) is not adequate to fix vibrator in vibration direction. it can only be used as a auxiliary to reinforce reliability. Or it may be cause lower vibration.

11. Mechanical Drawing:

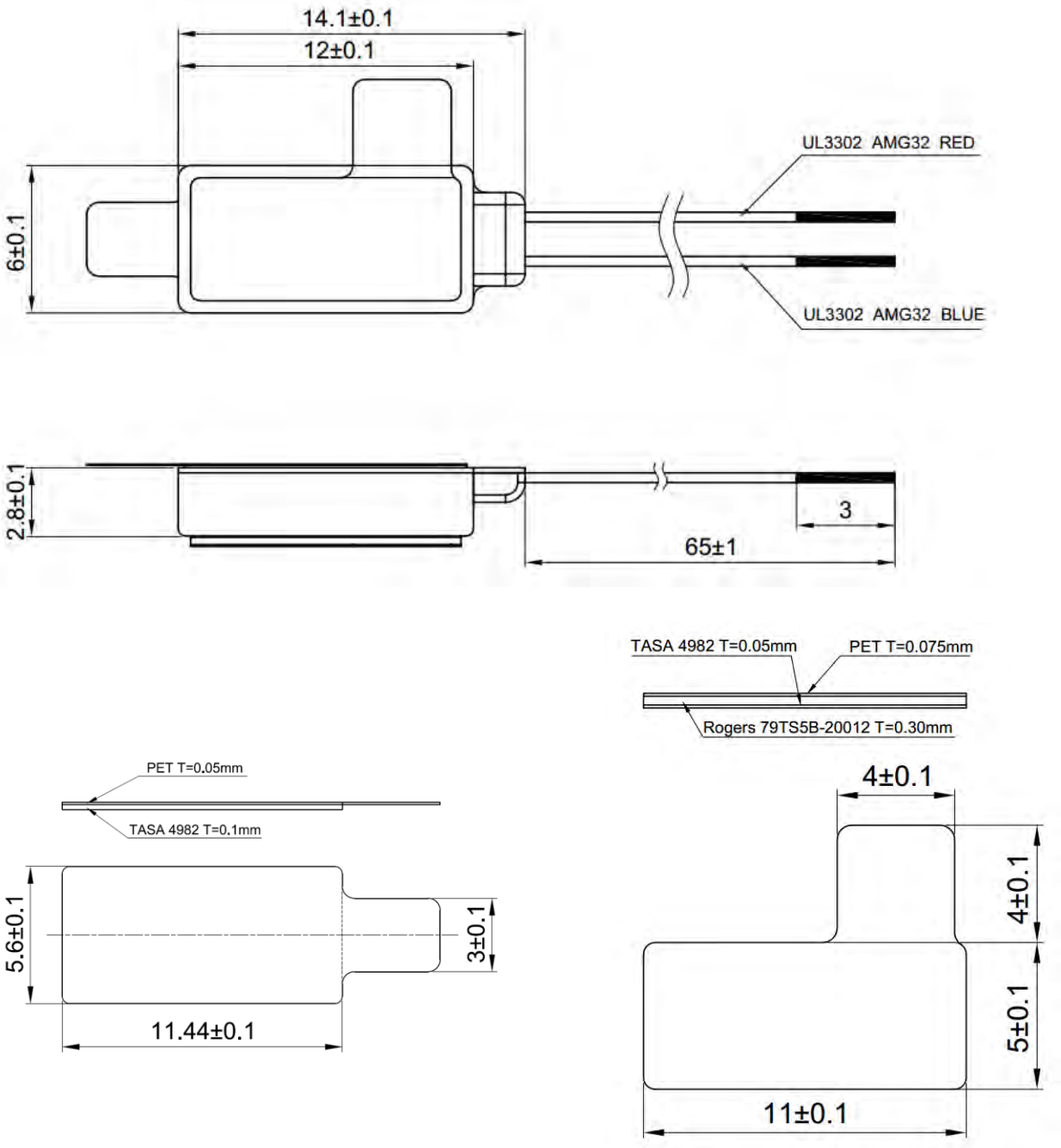
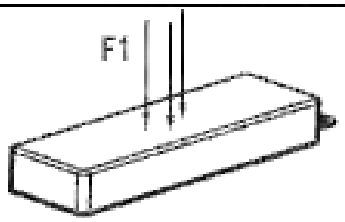
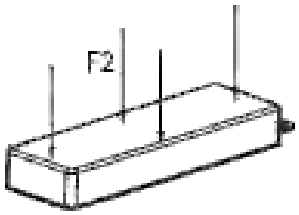
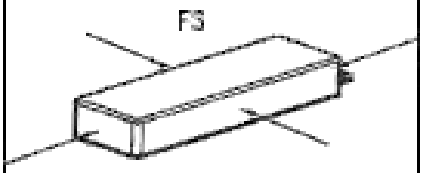
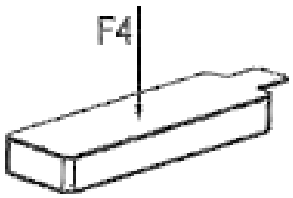
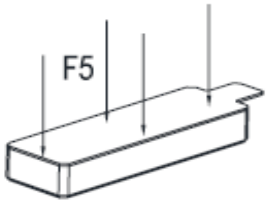
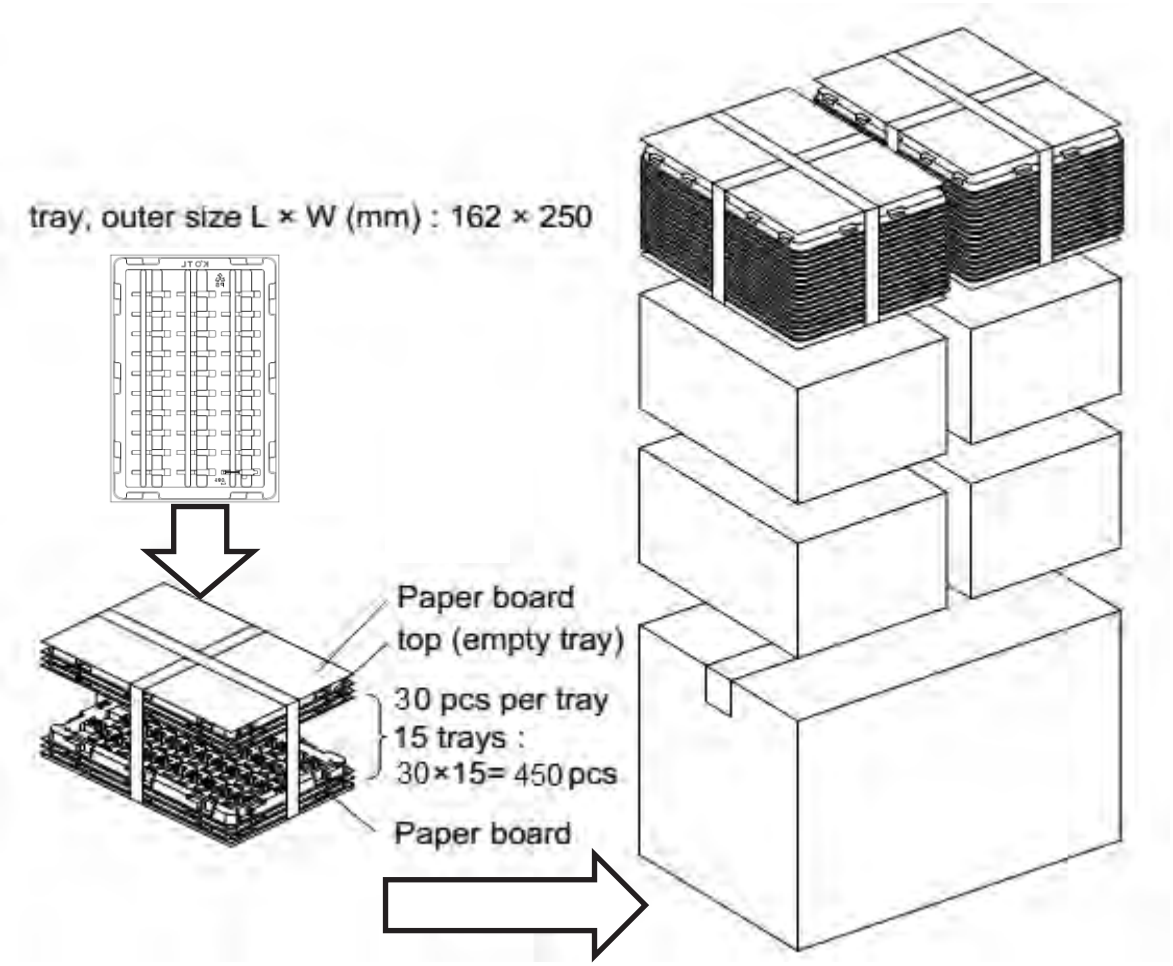


Fig 4. mechanical layout

12. Permitted force to vibrator

No.	Meaning of the force		Magnitude(N)
1		Handling force on center of crust	Max.12
2		Handling force on sidewise of crust	Max.12
3		Handling force on sideface of crust	Max.5
4		Handling force on center of cover	Max.12
5		Handling force on sidewise of cover	Max.12
6		Handling force pull out the wire	Max.15N

13. Package


tray, outer size L × W (mm) : 162 × 250
Paper board
top (empty tray)
30 pcs per tray
15 trays :
30×15= 450 pcs
Paper board