NEED-FOR-POWER MOTOR™

Model No.

NFP-ELV061228A

SPECIFICATIONS

1. Applications

This specification provided by NFP-Motor is applied to model NFP-ELV061228A, 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 °C ~ +70 °C
2-2	Storage Temperature Range	-40 °C ~ +85 °C
2-3	Storage Humidity Range	≤70%RH

3. Measurement Conditions, Input Voltage

NO.	Item	Condition
3-1	Temperature	25 ±3 °C
3-2	Humidity	65 ±20%RH
3-3	Rated Input Voltage	2.0 ± 0.05 Vrms AC, Sinewave
3-4	Input Voltage Range	0.1 ~ 2.05 Vrms AC
3-5	Operating Attitude	Refer to Figure

Refer to the following figure:

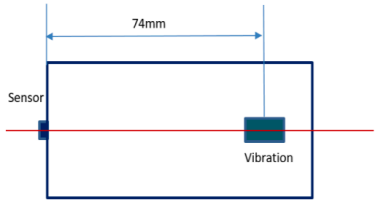


Figure1: Dummy JIG

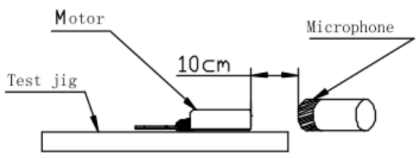
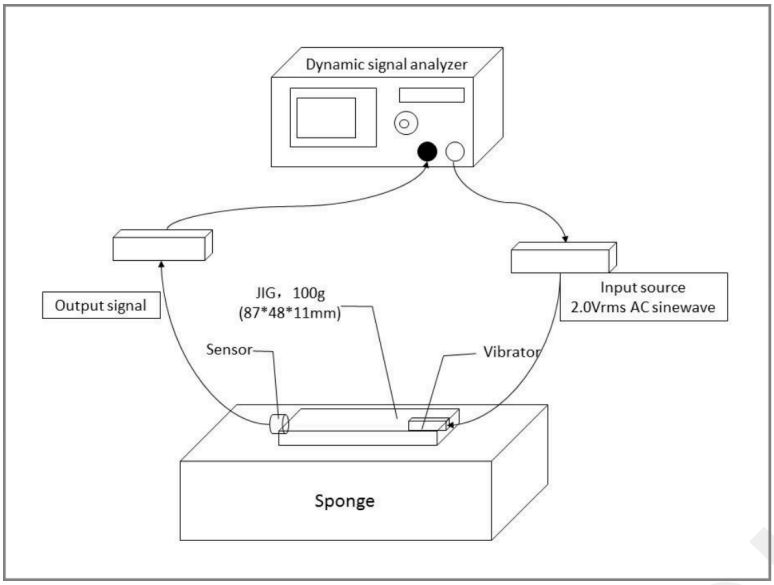


Figure2: Noise measurement condition



Note:
- Dummy Jig (87mm x 48mm x 11mm, 100 Gram) should be put it on the sponge before measurement.

4. Characteristics

NO.	Item	Specifications	Conditions & Remarks
4-1	Motor Length	12±0.1 mm	See appendix 1
4-2	Motor Width	6±0.1 mm	See appendix 1
4-3	Motor Height	2.8±0.1 mm	See appendix 1
4-4	Weight	1.36±0.1 Gram	Motor Ass'y
4-5	Resistance	16±2 Ω	Normal temperature
4-6	Rated Current	Max. 135 mA	Input Source: F0, 2.0Vrms AC, sine wave
4-7	Vibration Acceleration	Min0.65Grms	Input Source: F0, 2.0Vrms AC, sine wave, 100g dummy JIG
4-8	Operating Frequency	200±10 Hz	
4-9	Rising Time	Max. 50 msec	From 0 to 50% of nominal vibration @ 2.0Vrms, F0
4-10	Falling Time	Max. 60 msec	From 100% to 50% of nominal vibration @ 2.0Vrms, F0
4-11	Mechanical Noise	Max. 50 dB(A)	10cm distance from microphone, Input Source: F0, 2.0Vrms AC, sine wave
4-12	Insulation Resistance	Min. 10 MΩ	100V DC input, between Case and Lead Wire

5. Reliability test

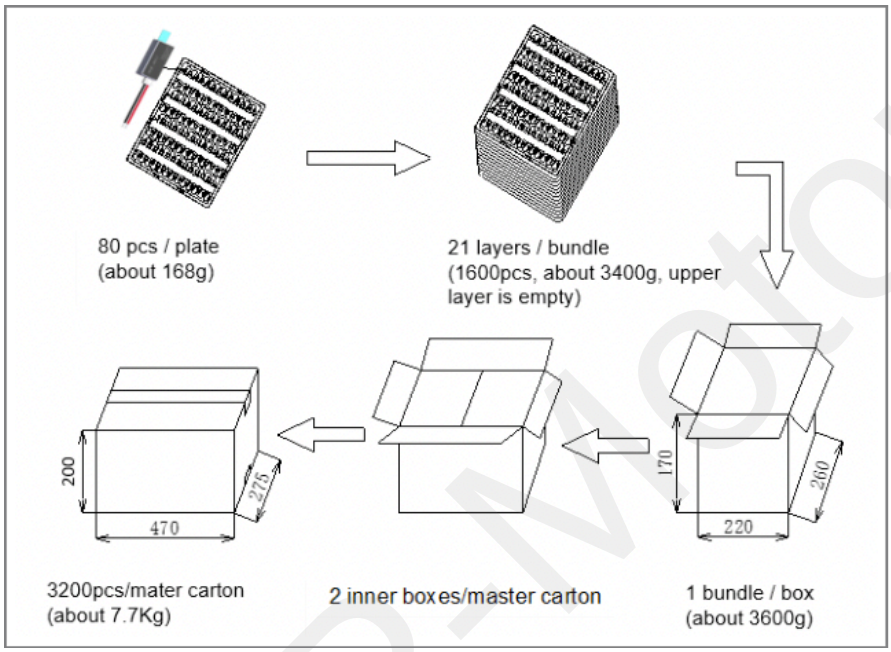
NO.	Test item		Specifications
	Type	Name	
5-1	Mechanical Tests	Repeat random drop test (Tumbler)	Sample quantity: 10 pcs. DUT power off Test condition: Drop from 100cm height with a 180g jig to a steel plate. Random drop for 200 times, Rotation speed 10-12 times / min Reference: IEC60068-2-32
5-2		Free fall drop test	Sample quantity: 10 pcs. DUT power off Test condition: Drop from 150cm height with a 180g jig to a steel or concrete surface. Each surface three times (3 x 6), total 18 drops. Reference: IEC60068-2-32
5-3		Micro-drop test	Sample quantity: 10 pcs. DUT power off Test condition: The samples should be mounted in a 180 gram fixture, drop 0.1 meter @ 2000 times for two large face, drop 0.1m @ 500 times for the other four faces
5-4	Environmental Tests	High temperature storage test	Sample quantity: 10 pcs. DUT power off. Test condition: +85±2°C, 168hours Reference: IEC60068–2–2 Bb
5-5		Low temperature storage test	Sample quantity: 10 pcs. DUT power off. Test condition: -40±2°C, 168hours Reference: IEC60068–2–1 Ab
5-6		Thermal shock test	Sample quantity: 10 pcs. DUT power off. Test condition: -40°C/30 min<---> +85°C/ 30 min, transition time less than 30 seconds, total 10 cycles Reference: IEC60068-2-14 Na
5-7		Static humidity test	Sample quantity: 10 pcs. DUT power off. Test condition: +55±2°C, 95%RH, 96hours Reference: IEC 60068-2-78
5-8		Salt mist test	Sample quantity: 10 pcs. DUT power off. +35°C, 5%Nacl, 24 hours
5-9	Accelerated Life	Life test 1 (Alarm mode)	Sample quantity: 20 pcs. DUT power on (Under 2Vrms AC, Sinewave, 200Hz). Test condition: 2s on / 1s off, normal temperature & humidity, total 1000,000 cycles

MEASUREMENT: The measurement is conducted after 2 hours of recovery after climatic test.

JUDGEMENT: After test, following specifications must be satisfied.

- The fluctuation of acceleration and rated current is not over ±30% of its initial value after the test.
- Noise is not over 55 dB, other parameters must be within specification defined.

6. Package



7. Cautions & Handling

NO.	Item
7-1	Do not press the product with more than 0.5 kgf or drop it. It can cause the transformation of performance or external appearance.
7-2	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.
7-3	The vibrator has a strong magnet, so please be aware that it has a magnetic force on the surface of the bracket.
7-4	To optimize the vibration force, rated frequency and voltage could be changed as to assemble condition.
7-5	If any problems occur, both the user and Need-For-Power Motor Co., Ltd .shall try to solve the problem by mutual agreement and on reflection of the specification sheet.

8. Appendix 1 (Outline drawing)