



Model No.
NFP-3A-03208B

1. Application

This article regulates the relevant technical requirements and test methods of model NFP-3A-03208B standard coreless dc motor.

2. Operating Condition

NO.	Item	Specification
2-1	Rated voltage	3.0V DC
2-2	Operating voltage	2.4~3.6V DC
2-3	Rated load	CounterWeight (According to specification of motor housing configuration)
2-4	Rotation	CW
2-5	Motor position	All position
2-6	Operating environment	Temperature: -30 ~ 70°C Humidity: 65% ~ 90% Rh
2-7	Storage environment	Temperature: -40 ~ 80°C Humidity: 65% Rh

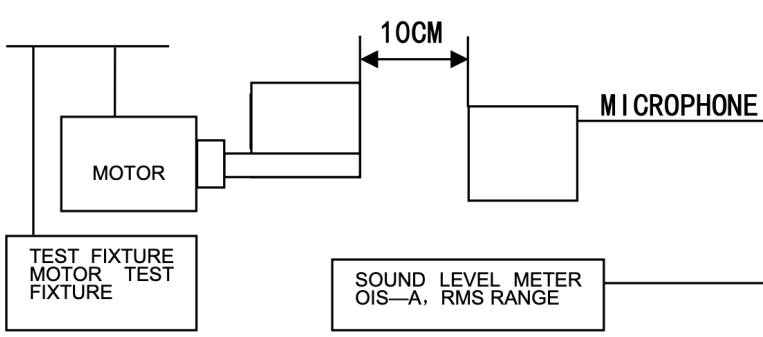
3. Measuring Condition

NO.	Item	Specification
3-1	Temperature	25±2°C
3-2	Relative humidity	45% ~ 85% Rh
3-3	Motor position	Motor shaft horizontal (lock the motor in a test fixture)
All data are based on the measuring conditions: temperature, 20°C; humidity, 65% RH. If any disagreement occurs, such test conditions are available: temperature, 5~35°C; humidity, 45~85% RH.		

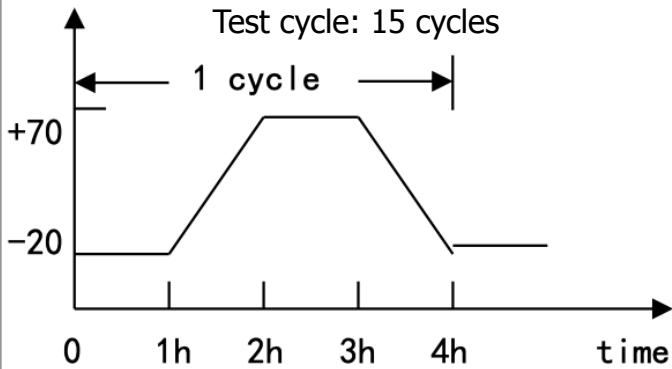
4. Appearance Specification

NO.	Item	Specification	Condition/Remark
4-1	Configuration	As specified in outline drawing	
4-2	Appearance	There shall be no evidence of mechanical damage, and shall be no inadequate corrosion, and so on.	Visual examination (allowable extent in based on boundary sample)
4-3	Weight	0.7±0.2g (approx.)	

5. Mechanical Performance and Characteristics(at item 3 measuring condition)

NO.	Item	Specification	Condition/Remark
5-1	Rated speed	30000±5000rpm	At rated voltage and rated load (counterweight)
5-2	Rated current	90mA (max)	
5-3	Shaft lock current	120mA (max)	At rated voltage and shaft lock
5-4	Starting voltage	2.4V DC	At rated voltage (counterweight) any position of rotor
5-5	Insulation resistance	10MΩ (min)	At DC 100V between the lead wires or reed and motor housing
5-6	Armature resistance	30±20% Ω	At 20°C
5-7	Mechanical noise	50db(A) max	
		Measured at rated voltage and rated load (counterweight); Background noise 30 db-A (max); Lock the motor in a test fixture (shaft horizontal); Suspensory method 	

6. Reliability Test

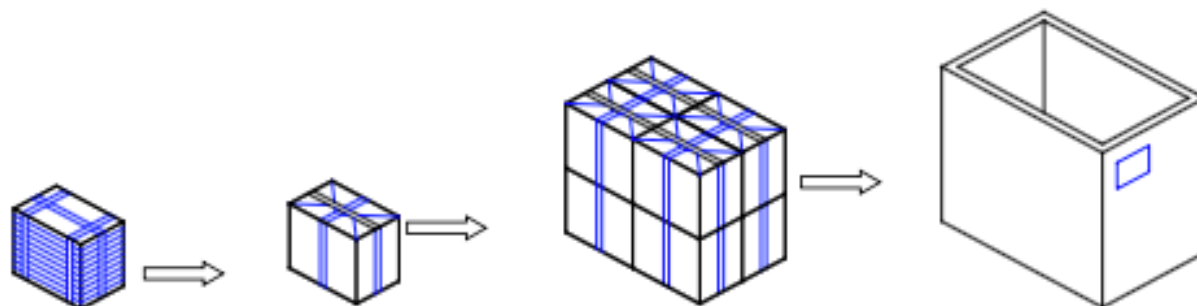
NO.	Item	Test condition	Requirements
6-1	Life test	Voltage: 3.0V DC Load: Counterweight Temperature: 25°C±2°C Humidity: 65±5%Rh Test model: 0.5S ON(C.W)\0.5S OFF Test time: 30,000cycles	After the test, motor shall be approved as specified in item 7-1.
6-2	Shock test	Displacement: 1.5mm(p-p) Frequency: 10~55Hz Period:1min (10~55~10Hz) Direction: x、y、z Time:2h /direction	After the test motors shall be approved as specified in item 7-1.
6-3	Low temp exposure test	Temperature: -40°C±2°C Time: 96hours	After 2hours exposure in ordinary temperature and humidity , motors shall be approved as specified in item 7-1.
6-4	High temp exposure test	Temperature: 80°C±2°C Time: 96hours	
6-5	Humidity exposure test	Temperature: 40°C±2°C Humidity: 90~95%Rh Time: 96hours	
6-6	Thermal shock	Temperature (°C)  Test cycle: 15 cycles 1 cycle +70 -20 0 1h 2h 3h 4h time	After 24 hours exposure in ordinary temperature and humidity , motors shall be approved as specified in item 7-1.
6-7	Drop test	Set the motor on the heavy block about 100g weight(include the motor)and drop the motor on the concrete floor. Height: 1.5m Direction: ±X, ±Y, ±Z Times: Three drops per plane for a total of 18 drops.	After the test motors shall be approved as specified in item 7-1.

7. Requirements

NO.	Item	Requirements
7-1	Table A	1. Load speed varies within $\pm 50\%$ from initial. 2. Load current varies within $\pm 30\%$ from initial. 3. Terminal resistance varies within $\pm 30\%$ from initial. 4. Starting voltage is 2.4V max.

8. Package Require

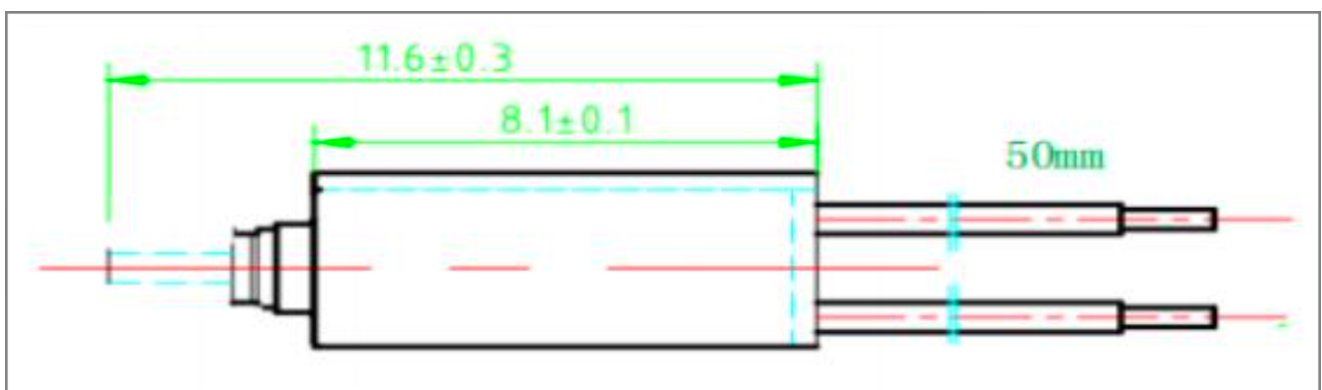
NO.	Content and Process
9-1	50 vibrators in each ps tray
9-2	Every 20 capsules as a group, put a plastic cover on the group and wrap it in tape
9-3	Put the wrapped group into a inbox
9-4	Every 8 inboxes are put into an outer case by the ways stipulated as the drawing
9-5	Quantity and batch number are written on the surface of the outer case



9. Matters to Be Paid Attention to When Using Motor

NO.	Item
10-1	Please lay the motors carefully in transportation to avoid any serious damage to the motor body or its electric function because of collision.
10-2	Please use the motor according to the instruction of this product specification, or else, it will be bad for motor's life.
10-3	Make arrangement to limit the storage period to 6 months or less. Please do not store motor in high temperature, low temperature, high humidity environment. Condensation of atmosphere must be avoided in motor usage or opening the packaging of the motor.
10-4	For proper operation, storage and operating environment must not contain corrosive gases. For example H_2S . SO_2 . NO_2 . CL_2 . etc. In addition storage environment must not have materials that emit corrosive gases especially from silicon, cyanic. Formalin and phenol group. In the mechanism or the set. Existence of corrosive gases may cause no rotation in motor.
10-5	Please don't stall the shaft for a long time after powering, and not to touch the weight when motor is rotating.
10-6	There should be no sundries (such as grain, fibre, hair, small tape, glue etc.) in the shaft end play.

10. Mechanical Drawing



Technical Requirements:

- Rated voltage: DC 3.0V
- Rated current: 90 Am max
- Rated speed: 30000 ± 5000 rpm max
- Starting voltage: DC 2.4V max
- Terminal Resistance: $30\Omega \pm 20\%$
- Rotation of direction: CW
- Tolerance: $\pm 0.2\text{mm}$