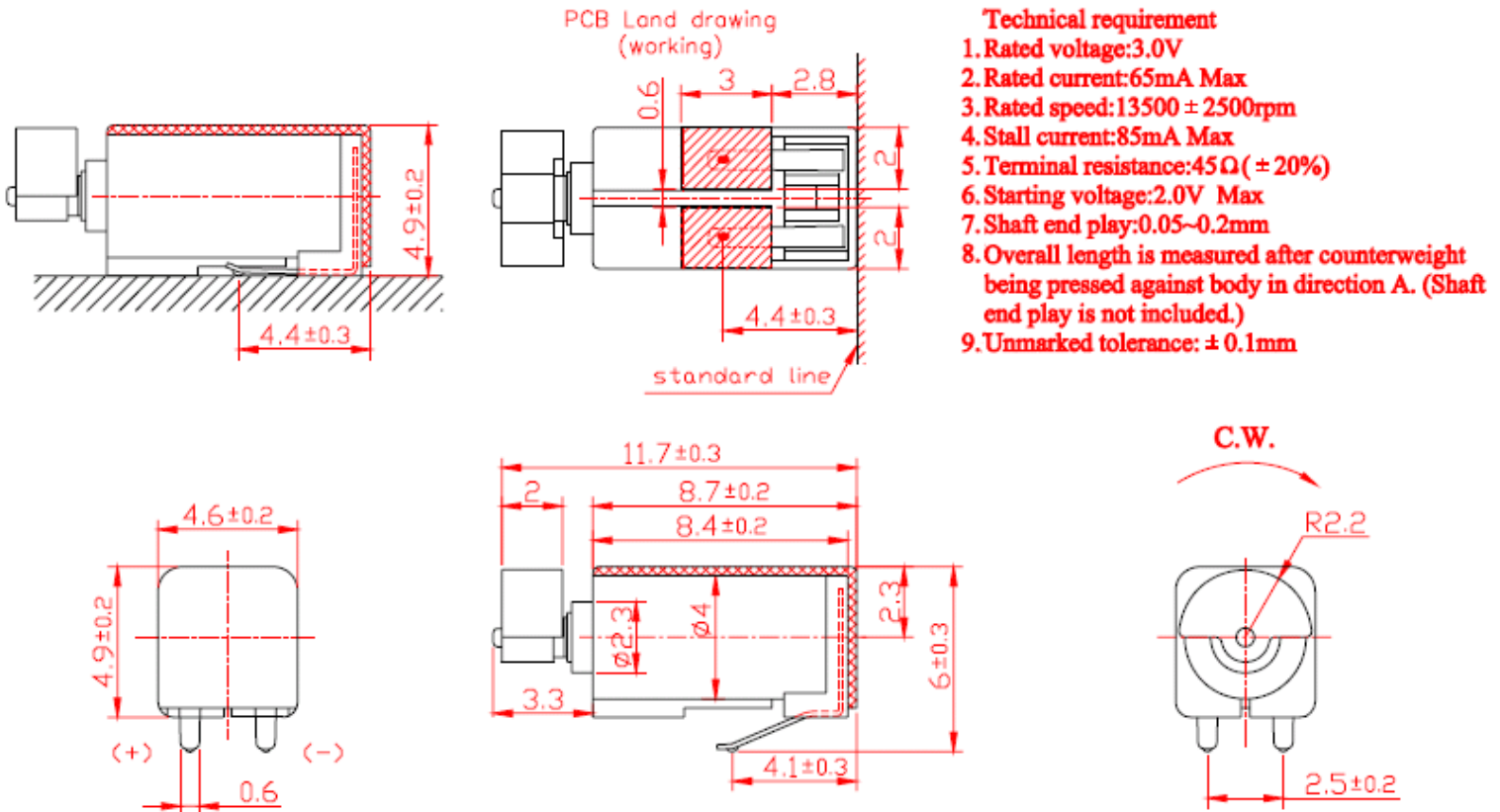




Part No. Z4TH5B1241992



- Technical requirement**
1. Rated voltage: 3.0V
 2. Rated current: 65mA Max
 3. Rated speed: 13500 ± 2500rpm
 4. Stall current: 85mA Max
 5. Terminal resistance: 45Ω (± 20%)
 6. Starting voltage: 2.0V Max
 7. Shaft end play: 0.05~0.2mm
 8. Overall length is measured after counterweight being pressed against body in direction A. (Shaft end play is not included.)
 9. Unmarked tolerance: ± 0.1mm

1. General scope

1-1 This specification applies to cylindrical permanent-magnetic motors DC model **Z4TH5B1241992**.

2. Operating conditions

Items	Specifications	Condition & Remarks
2-1	Rated voltage	3.0V DC
2-2	Rated load	Counter weight
2-3	Rated speed	10,500 rpm Min
2-4	Rotation	C.W/C.CW (clockwise or counter clockwise)
2-5	Motor position	All positions
2-6	Operating voltage	2.2~3.6V DC

2-7	Operating conditions	Humidity : 65±20%RH	No condensation of moisture.
2-8	Storage conditions	Humidity : 65±20%RH	No condensation of moisture.

3. Measuring conditions

Items	Specifications	Condition & Remarks
3-1	Temperature	20±2°C
3-2	Humidity	(63% ~ 67%) RH
3-3	Motor position	Motor shaft horizontal Lock the motor in a test fixture.

The measurement at 20°C & 65%RH is standard. If the judgment is not questionable, recognize measurement at 5°C to 35°C & relative humidity 45% to 85%. Direction of motor is shaft horizontal.

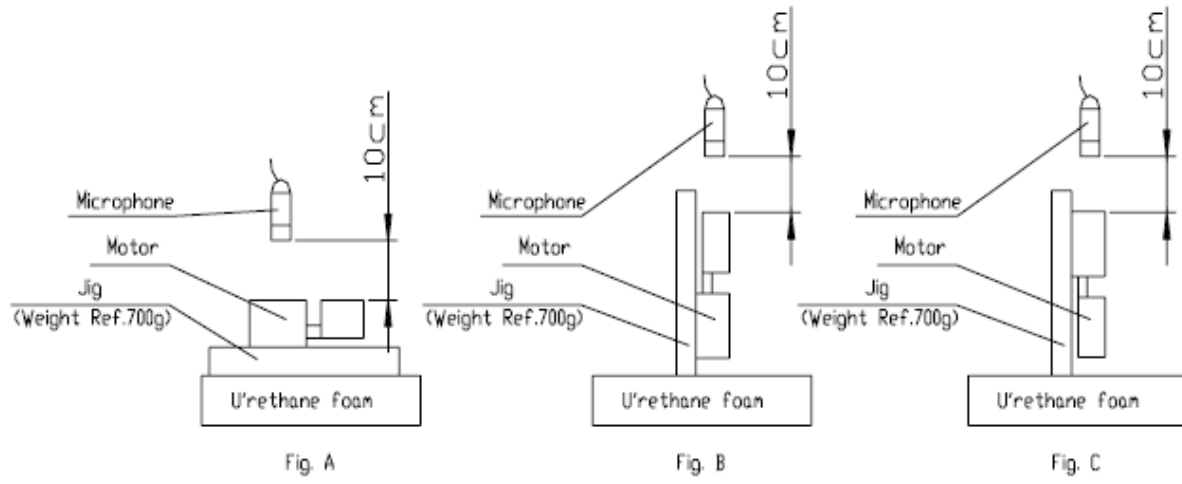
4. Mechanical specifications

Items	Specifications	Condition & Remarks
4-1	Configuration	As specified in 10. outline drawing Outline drawing No: Z4TH5B1241992.
4-2	Appearance	There shall be no evidence of mechanical damage and shall not have inadequate corrosion, etc. Visual examination: Inspection carried out on samples.
4-3	Shaft end play	0.3 Max
4-4	Weight of motor	0.05mm•0.2mm
4-5	Holding strength of vibration weight	30N (5kgf) Min

5. Performance and characteristics

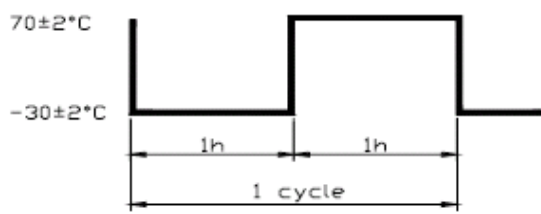
Items	Specifications	Condition & Remarks
5-1	Rated speed	13,500rpm±2500rpm At rated voltage and rated load (Counterweight).
5-2	Rated current	65 mA Max
5-3	Stall current	85 mA Max At rated voltage.
5-4	Starting voltage	2.0V DC max At rated load (Counterweight) any position of rotor.
5-5	Insulation resistance	1M• min At DC 100V between Terminal and case.
5-6	Terminal resistance	45• (±20%) At 20°C.
	Mechanical noise	50db (A) max At rated voltage and rated load (Counterweight). Background noise: 28db (A) Max Measuring instruments: B & K. Weight of jig: 700g.

5-7



6. Reliability Test

Items	Standard test conditions	Condition & Remarks											
6-1 Life time		After 2 hours exposure in ordinary Motors shall be approved as specified in item 7-1.											
	<table border="1"> <thead> <tr> <th>Position</th> <th>Voltage</th> <th>Load</th> <th>Temperature</th> <th>Humidity</th> <th>Life</th> </tr> </thead> <tbody> <tr> <td>Horizontal</td> <td>Rated</td> <td>Counter weight</td> <td>20 °C</td> <td>65 %</td> <td>200,000 cycles</td> </tr> </tbody> </table>		Position	Voltage	Load	Temperature	Humidity	Life	Horizontal	Rated	Counter weight	20 °C	65 %
Position	Voltage	Load	Temperature	Humidity	Life								
Horizontal	Rated	Counter weight	20 °C	65 %	200,000 cycles								
6-2 Low temperature exposure test	Temperature: $-40 \pm 2^{\circ}\text{C}$ Time: 96hrs	After the test motors shall be approved as specified in item 7-2.											
6-3 High temperature exposure test	Temperature: $80 \pm 2^{\circ}\text{C}$ Time: 96hrs												
6-4 High humidity exposure test	Temperature: $40 \pm 2^{\circ}\text{C}$ Humidity: 90~95%RH Exposure time: 96hrs No condensation of moisture												
6-5 Vibration	Frequency: 10~55~10Hz Displacement: 1.5mm (p-p) Period: 20 Minutes log sweep 10~55~10Hz Direction: x, y, z Time: Each 2 hours	After the test motors shall be approved as specified in item 7-2.											

6-6	Free Fall	<p>Set the motor to the approximately 100g (include the motor) weight of block drop the motor on the concrete floor.</p> <p>Height: 1.5 meters</p> <p>Direction: 6 faces</p> <p>Number of times: Twice 2 each</p>	<p>After the test motors shall be approved as specified in item 7-2.</p>
6-7	Heat stock	<p>Test cycle : 20 cycles</p> 	<p>After the test motors shall be approved as specified in item 7-2.</p>

7. Requirements

Items	Requirements
7-1 Table A	<p>1) Rated speed: Initial data -30% min, Initial data +60% max.</p> <p>2) Rated current: Initial data ± 30% max</p> <p>3) Starting voltage: 3.0V DC max</p>
7-2 Table B	<p>1) Rated speed: Initial data ± 30% max.</p> <p>2) Rated current: Initial data ± 30% max.</p> <p>3) Starting voltage: 2.4V DC max</p>

8. Matters to be paid attention to when using motor

- 8-1 Please lay the motors carefully in transportation to avoid any serious damage to the motor body or its electric function because of collision.
- 8-2 Please use and storage motors according to N0.2 item (Operating Conditions) in specification, or else motor characteristics would be affected.
- 8-3 Make arrangement to limit the storage period to 6 months or less. Condensation of atmosphere must be avoided in motor usage or opening the packaging of the motor.
- 8-4 For proper operation. storage and operating environment must not contain corrosive gases. For example H2S. SO2. NO2. CL2. 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.
- 8-5 Please don't stall the shaft for a long time after powering, and not to touch the weight when motor is rotating.
- 8-6 There should be no sundries (such as grain, fibre, hair, small tape, glue etc.) in the shaft end play.