



維盟科技有限公司
Evowave Technology Co., Ltd.

規格書 / Specification

Description:	BLDC Vibration Motor
Part No.:	VG082544WXX
Date:	2015/04/16

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Product Number	VG082544WXX	Customer		Doc. No.	S-0825-S002-B
				Date	2014. 12. 06.
Standard	0	Product Name	BLDC Vibration Motor	Rev. Date	

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2. Application

This specification applies to VG082544WXX brushless type vibration motor.

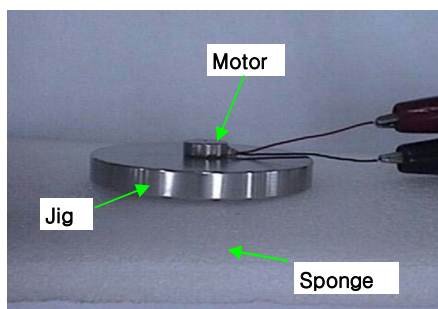
3. Standard Operating Condition

No.	Item	Specification
3-1	Operating Voltage Range	DC 2.5V ~ 3.6V
3-2	Storage Temperature Range	-40~+85°C
3-3	Operating Temperature Range	-20~+60°C However, there is decrease of rated load speed of the section 7-3 at -20°C compared to +25°C.
3-4	Operating Position	All Direction VG0825W44XX

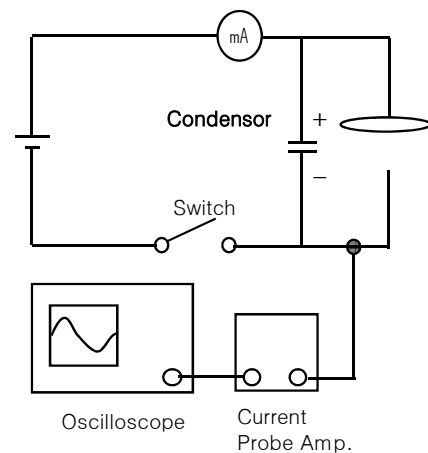
4. Standard Measurement Condition

No.	Item	Specification
4-1	Temperature	20±5°C
4-2	Humidity	65%±15% RH
4-3	Measurement Voltage	DC3.0V

4-4 Measuring Method



Standard Measurement State



Inspection Circuit Diagram

- Jig : $\Phi 50 \times t6.5$ [Steel; SUS303 or SUS304 etc.]
- Weight : 100g
- Motor shall be fixed on Jig by adhesive tape(3M 9448HK).

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5. Judgment Environmental Condition

No.	Item	Specification
5-1	Temperature	20±5°C
5-2	Humidity	65%±15%RH

6. Test Tolerance

Test set-ups and equipment shall be capable of maintaining following condition, unless otherwise specified.

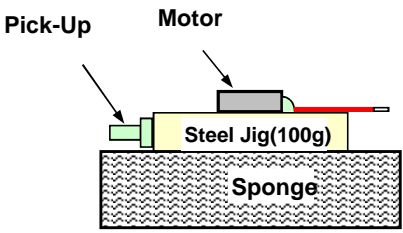
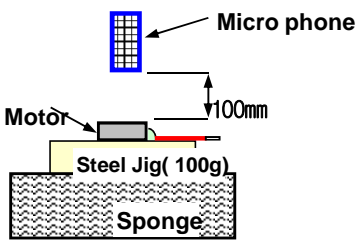
No.	Item	Specification
6-1	Room Temperature & Humidity	20±15°C /65±20%RH
6-2	Test Chamber Temperature	Limits ±3°C
6-3	Voltage	Limits ±0.15V

7. Electrical Characteristics

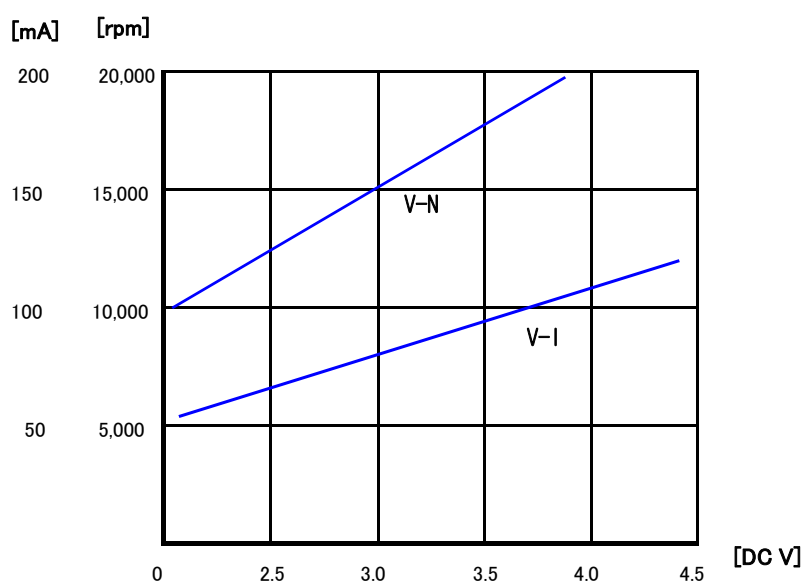
No.	Item	Test Condition	Specification
7-1	Rated Voltage		DC 3.0V
7-2	Rotating Direction	[Red Wire (+), Black Wire(-)] Refer to Specification Draw	CW
7-3	Rated Load Speed	It is based on the standard measurement condition of the section 4.	15,000 ± 3,500 rpm
7-4	Rated Load Current	It is based on the standard measurement condition of the section 4.	70 mA max
7-5	Starting Current	It is based on the standard measurement condition of the section 4.	90 mA max
7-6	Starting Voltage	Motor On/Off test based on the standard measurement condition of the section 4-1, 4-2, and 4-4.	DC 2.6 V max
7-7	Insulation Voltage	Measured between terminal and case with DC100V Megger.	10 MΩ min

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8. Mechanical Characteristics

No.	Item	Test Condition	Specification
8-1	Vibration Force	 <p>- Motor shall be fixed on Jig by adhesive tape.</p>	$(3.0 \text{ m/s}^2 \text{ MIN})$ It is referred to the rated load speed of the section 7-3 (reference) $(3.0 \text{ m/s}^2 \text{ MIN})$
8-2	Mechanical Noise	 <p>- Background Noise : 24dB MAX - Motor shall be fixed on Jig by adhesive tape.</p>	50dB MAX
8-3	Weight		about 0.95g

9. Characteristic Graph



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10. Reliability Test

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No.	Item	Test Condition	Specification												
10-1	Room Temperature & Humidity Life Test	<table><tr><td>Item</td><td>Room Temp. & Humi. L/T</td></tr><tr><td>Voltage</td><td>DC 3.0V</td></tr><tr><td>Temperature</td><td>25±5℃</td></tr><tr><td>Humidity</td><td>65±15% RH</td></tr><tr><td>Life cycles</td><td>175,000 cycles</td></tr><tr><td>Duty Cycle</td><td>1.0 sec ON /1.0 sec OFF</td></tr></table>	Item	Room Temp. & Humi. L/T	Voltage	DC 3.0V	Temperature	25±5℃	Humidity	65±15% RH	Life cycles	175,000 cycles	Duty Cycle	1.0 sec ON /1.0 sec OFF	<p>-Rated Load Speed: Initial value +40, -20%</p> <p>-Rated Load Current: Initial value±30%</p> <p>-The others: Conform to the section 7-6 and 7-7.</p>
		Item	Room Temp. & Humi. L/T												
		Voltage	DC 3.0V												
		Temperature	25±5℃												
		Humidity	65±15% RH												
		Life cycles	175,000 cycles												
		Duty Cycle	1.0 sec ON /1.0 sec OFF												
10-2	Low Temperature Storage Performance	Exposed to -40℃ for 96 hours and then room temperature for 4 hours.	<p>-Rated Load Speed: Initial value ±30%</p>												
10-3	High Temperature Storage Performance	Exposed to +85℃ for 96 hours and then room temperature for 4 hours.	<p>-Rated Load Current: Initial value ±30%</p> <p>-The others: Conform to the section 7-6 and 7-7.</p>												
10-4	High Temperature and Humidity Storage Performance	Exposed to +60℃, 95%RH for 96 hours and then room temperature for 4 hours.	<p>-No scar, rust, stain, or deformation by visual inspection.</p>												
10-5	Thermal Shock Test	Total 100cycles at -40℃ and +85℃ for 30 minutes each (1cycle=1 H) Temperature Change Time < 5min Motor shall be measured after exposure at room temperature for 4 hours.													

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10. Reliability Test

No.	Item	Test Condition	Specification
10-6	Low Temperature Life Test Condition	- Sample Quantity : 10EA - Test Condition : Use the rated voltage to driving the vibrator motor and setting the period time to 1.0sec on/off. -Test Environmental : -20℃ - Test Cycle : 31,000Cycles -Check Cycles : Before, after test and every 20,000 cycles to measure the all electrical characteristic.	After 53,000 Cycles : The fluctuation of rated speed and rated current is not over $\pm 35\%$ of its initial value after the test.
10-7	High Temperature Humidity Life Test Condition	- Sample Quantity : 10EA - Test Condition : Use the rated voltage to driving the vibrator motor and setting the period time to 1.0sec on/off. -Test Environmental : 65℃, Humidity 95%RH - Test Cycle : 31,000Cycles -Check Cycles : Before, after test and every 20,000 cycles to measure the all electrical characteristic.	Other parameters must be within specification defined. The measurement is conducted after 4hours of recovery after climatic test.
10-8	Drop Test	Dummy set (about 150g) motor shall be dropped onto concrete plate . 3 times each side of 6 directions from a height of 150 cm, total 18 times.	-Rated Load Speed: Initial value $\pm 30\%$
10-9	Vibration Test	1) Dummy set motor shall be subjected to sine wave of 10Hz~500Hz each of 2 hours. acceleration : $1 \cdot 5 \text{ mm}$ or $1 \cdot 4 \cdot 7 \text{ m/s}^2$ Direction : x,y,z (each 15 minutes) 2) Dummy set motor shall be subjected to sine wave of 33.2Hz Direction : x,y,z (each 15 minutes)	-Rated Load Speed: Initial value $\pm 30\%$ -Rated Load Current: Initial value $\pm 30\%$ -The others: Conform to the section 7-6 and 7-7. -No scar, rust, stain, or deformation by visual inspection.

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11. Caution

No.	Item	Specification
11-1	Operating Range	- When using on the operating condition different from a standard, a problem can be generated to the performance and the life of a product.
11-2	Storage	- Temperature 5~30°C, Humidity 60% Max.
11-3	Motor Handling	<ul style="list-style-type: none"> - To handle the motor, hold the case softly. - Do not bring a magnetized object or attracted object by the magnet of motor, or such VG0825W44XX - At the time of power input short to the motor due to mis-operating, Drive IC of the motor inside can be damaged. To avoid this problem, please add capacitor of 2uF or more between the power line in parallel with the motor. - Supplying voltage more than DC4.5V can make IC out of function.
11-4	Others	It is made to a rule make specifications into a basis at the time of problem generating.

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12. Specificification Change

Even when there is any change to this specification, change application report which has the information of details of the change, lot of product, and etc shall be presented to customer before that change being carried out. And mutal discussion may be necessary before the change being corried out.

Revision history shall be recorded on to the specification sheet when the change record and approval may be required.

13. Safety standard

Not applicable

