



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/0
品名描述 Product Description	LRA 扁平振动马达 LRA Coin vibration motor		
型号Part No.	VG1040003D1		
送样日期Date			
设计Designed by	审核Checked by	批准Approved by	
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2. Application

This specification provides structure, function and usage condition of Linear Vibrator used in mobile communication devices for silent alert.

3. Operating , Storage Temperature /Humidity Conditions

No	Item	Condition
3-1	Operating Temperature Range	- 20℃ ~ + 70℃
3-2	Storage Temperature Range	- 40℃ ~ + 85℃
3-3	Operating Humidity Range	Max 65% RH
3-4	Storage Humidity Range	Max 65% RH

4. Measurement Conditions

No	Item	Condition
4-1	Temperature	20 ± 5℃
4-2	Humidity	65 ± 20%RH
4-3	Rated Input Voltage	2.5Vrms AC, Sinewave
4-4	Input Voltage Range	0.1 ~ 2.5 Vrms AC
4-5	Input Frequency	150 ~ 200Hz F0 : 170±10 Hz
4-6	Operating Attitude	Refer to Figure 1

※ Measurement Method

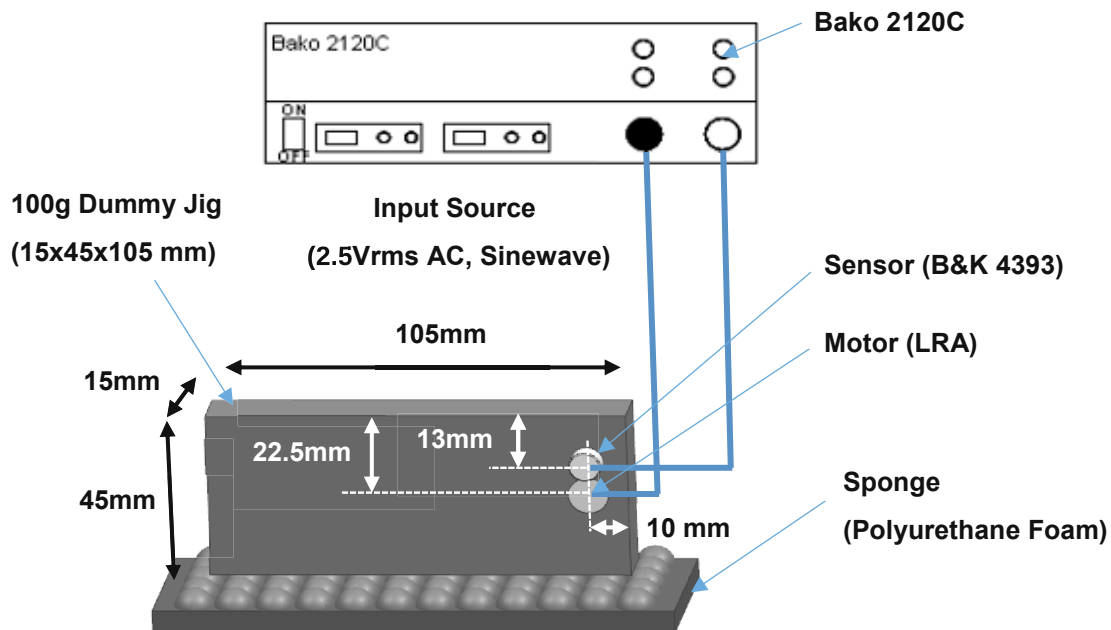


Figure 1. An Example of Measurement Method of Linear Vibrator

☐ Position of Linear Vibrator and Accelerometer (Refer to Figure 1)

- Linear Vibrator should be mounted to vibrate 15mm direction (y-direction) of Jig.
- Accelerometer also should be installed to measure y-direction vibration of Jig

☐ Position of Dummy Jig

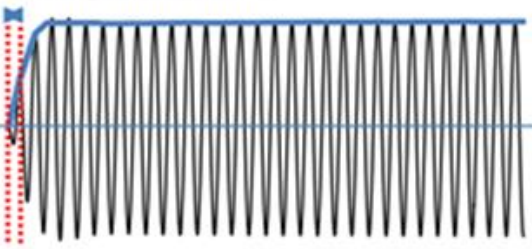
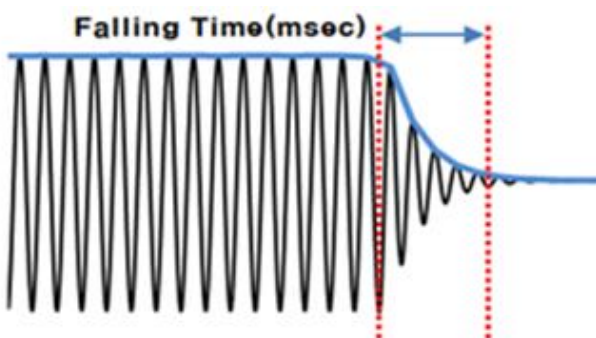
- 15mm*105mm plane of Dummy Jig should be located on Sponge
- At measurement of acceleration, Dummy Jig should be stabilized

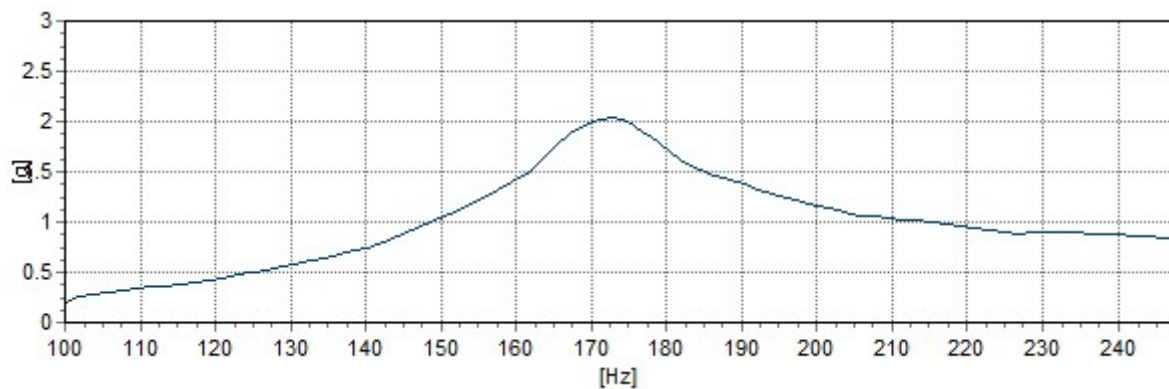
☐ Measurement of Acceleration

- Acceleration should be measured 2~3 second later after input source is applied
- For the precise measurement, Acceleration should be measured 3 times and adopted average value on each Linear Vibrator

5. Specifications

No	Item	
5-1	Resistance	13.5 $\Omega \pm 20\%$
5-2	Rated Current	Max 170 mArms (150Hz, 2.5Vrms sine wave)
5-3	Acceleration	Min 0.8 Grms @ 150Hz Min 0.8 Grms @ 200Hz Min 1.6 Grms @ f0
5-4	Frequency Characteristics	Refer to Graph 1
5-5	Motor Height	4.05 $\pm$ 0.1mm - Put the Case of the motor on Jig after zero setting and measure center point of bracket by Height Gauge.
5-7	Noise by mechanical touch (Noise_T)	Max 35dB (Input Source : 2.5Vrms AC, Sinewave) - This is full inspection method in the mass production instead of measurement of 5-6 Noise - Measurement method · Equipment : Bako 2120C · It measures Noise touch(Mechanical touch) through vibration signal by acceleration sensor
5-8	Insulation Resistance	Min 10 MΩ (Input 100V DC, the insulation resistance between the vibrator case and terminal)

No	Item	Specification
5-9	Rising Time	Max 10msec - The time reaching to 50% of normal acceleration from power on Rising Time(msec) 
5-10	Falling Time	Max 50msec - The time reaching to 10% of normal acceleration from power off Falling Time(msec) 



Graph 1. Frequency Characteristics

6. Reliability Test Condition

No	Item	Condition
6-1	Life test	Operating at rated input voltage and input frequency for 1,000,000 cycles. 1 cycle is 2 Sec On, 1 Sec Off.
6-2	Thermal shock test	- 40°C ~ 85°C in each of 2Hrs(1cycle), Total 15 cycles. Transition time is 5 minutes max. After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-3	High temperature storage test	+70°C, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-4	Low temperature storage test	-30°C, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-5	Static humidity test	+50°C, 95%RH, 120Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-6	Mechanical shock test	The Vibrator that is attached to a 160g dummy jig is dropped to a steel floor 30 times(6 face, 5 times in each of X,Y,Z axis) from 1.5m in height.

□Judgement

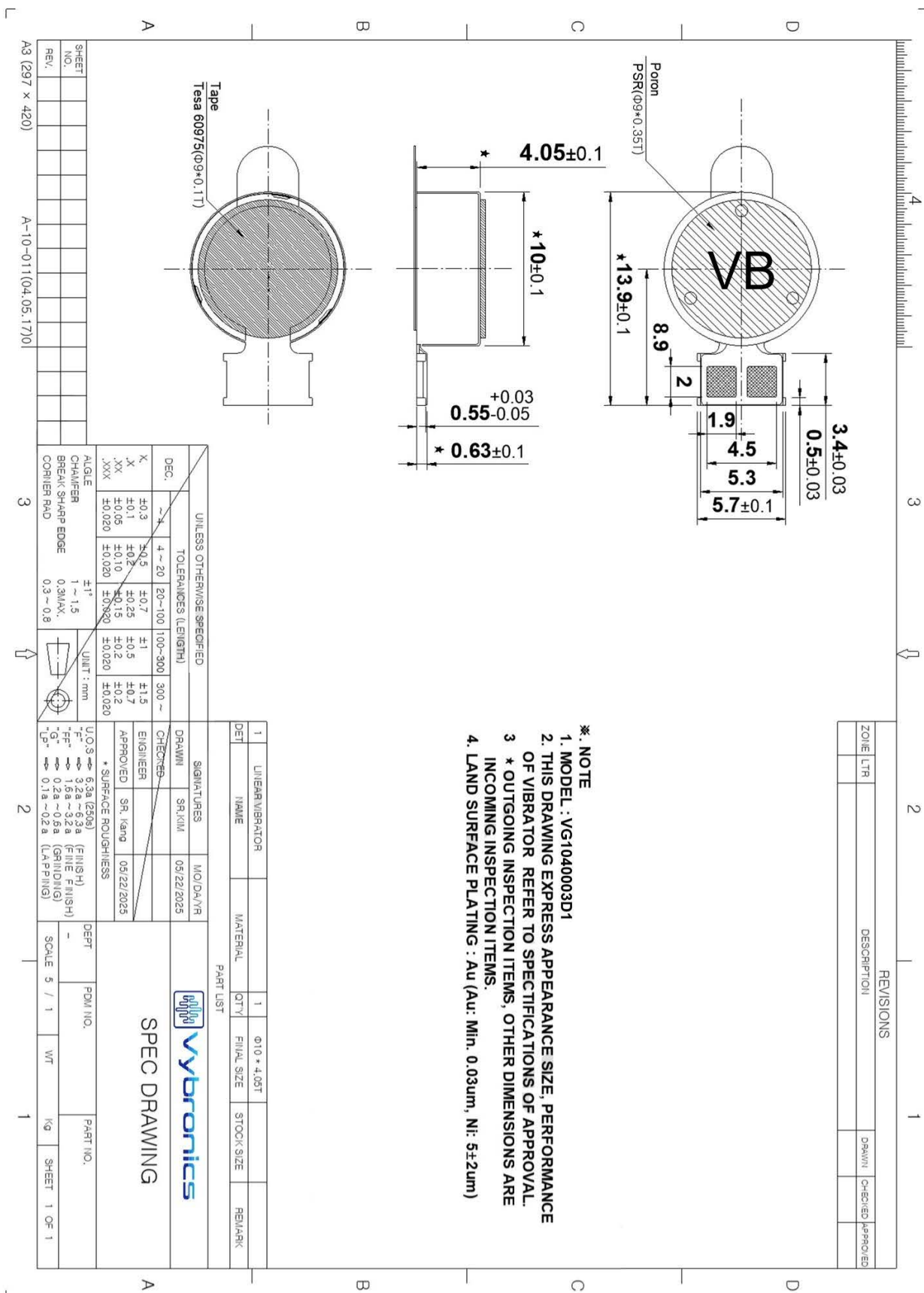
After test, The following specifications must be satisfied.

- Acceleration : Within initial Value $\pm 30\%$

7. Cautions for Use

- (1) Do not press the product with more than 0.3Kgf or drop it.
It can cause the transformation of performance or external appearance.
- (2) Do not use under the following conditions. It may cause a decline in performance
 - Do not drop into fluid (such as water, alcohol etc.)
- (3) Do not keep at high temperature or high humidity for extended periods of times
- (4) Do not use near gases which cause erosion
 - Please refrain from operating the vibrator near magnetic devices.
- (5) The vibrator has a strong magnet. So please be aware that it has a magnetic force on the surface of the bracket.
- (6) To optimize the vibration force, Rated frequency and voltage could be changed as to assemble condition.
- (7) Please refer to the packaging drawing. It can be modified by the request of the user.
- (8) If any problems are occurred, Both the user and Vybronic shall try to solve the problem by mutual agreement and on reflection of the specification sheet.
- (9) The storage condition is 5°C~35°C, 15%~65% RH, 1year about packing.

8. Drawing

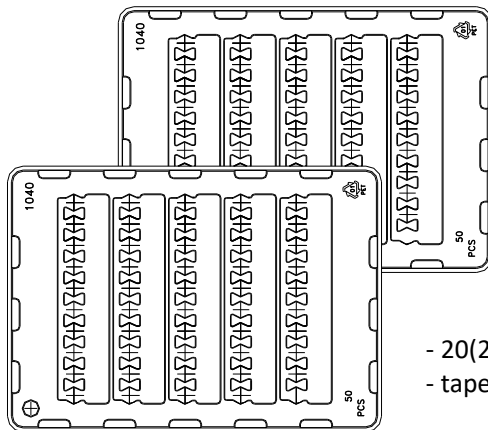


9. Packing

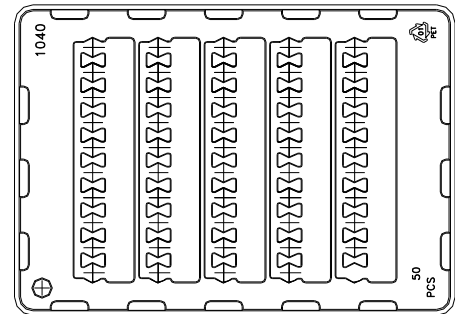
9-1. Paking q'ty : 4,000 PCS / Box

9-2. Out box size : 520 mm × 350 mm × 175 mm

9-3. Load max 6boxes



- 20(21) Tray x 2 = 4,000ea
- tape packing



1 Tray : 50ea

