



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/3
品名描述 Product Description	LRA 扁平振动马达 LRA Coin vibration motor		
型号Part No.	VG0840001D		
送样日期Date			
设计Designed by	审核Checked by	批准Approved by	
陳满	陈满	陈满	
2022.08.23	2022.08.23	2022.08.23	

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1. Revision History

修改号 Re.. No.	日期 Rev. Date	页码 Page No.	修改项目 Revised Item	更改原因 Reason
A/0	2021.05.27	/	产品颁布/ Release for Production	
A/1	2021.07.01	/	changed company name from JINLONG MACHINERY to VYBRONICS, changed part # from G0840001D to VG0840001D	Rebranding
A/2	2022.01.05	/	added wire to LRA	Engineering Update
A/3	2022.08.23	/	Update temperature range	

2. Application

This specification provided structure, function and usage condition of Linear Vibrator used in mobile communication devices for silence call.

3. Operating , Storage Temperature /Humidity Conditions

No	Item	Condition
3-1	Operating Temperature Range	- 20°C ~ + 70°C
3-2	Storage Temperature Range	- 40°C ~ + 80°C

4. Measurement Conditions

No	Item	Condition
4-1	Temperature	20 ± 5 °C
4-2	Humidity	65 ± 20%RH
4-3	Rated Input Voltage	2.0Vrms AC, Sinewave
4-4	Input Voltage Range	0.1 ~ 2.0 Vrms AC
4-5	Input Frequency	170Hz (Alert) Refer to Graph 1
4-6	Operating Attitude	Refer to Figure 1

※ Measurement Method

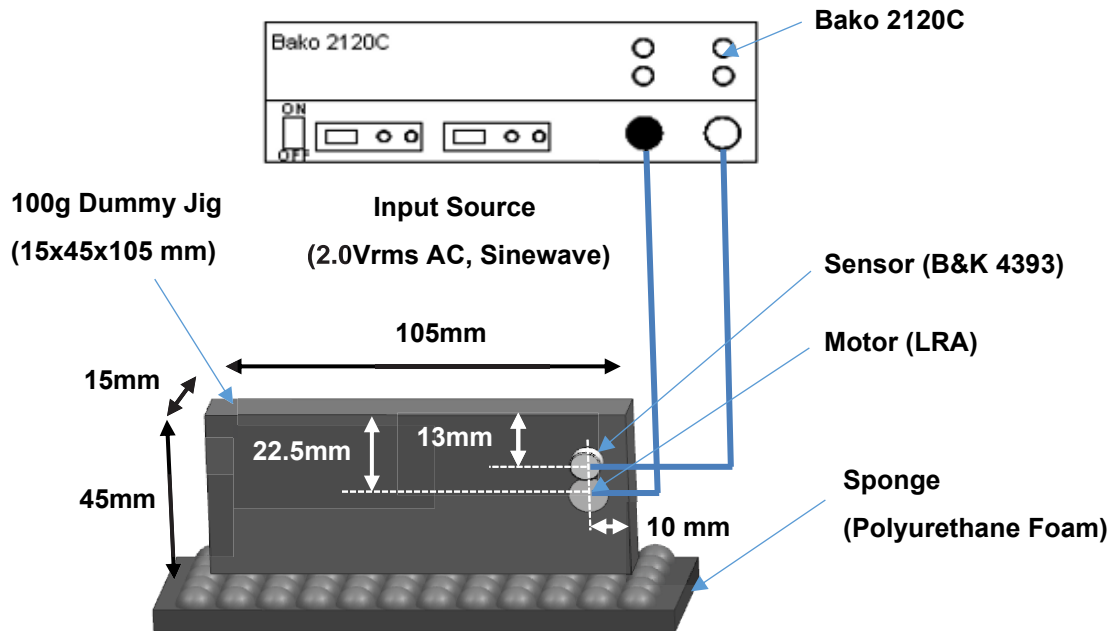


Figure 1. An Example of Measurement Method of Linear Vibrator

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

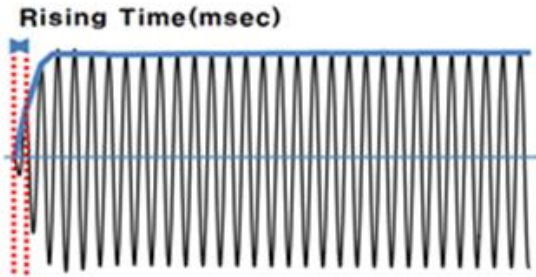
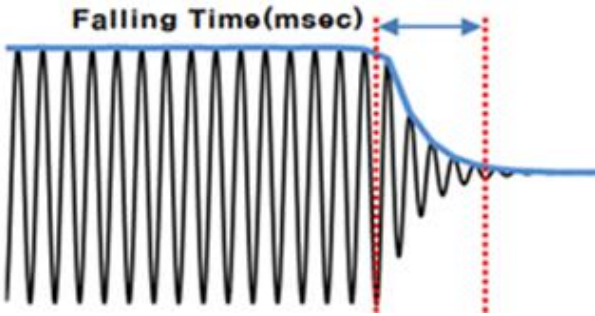
- 15mm*105mm plane of Dummy Jig should be located on Sponge
- At measurement of acceleration, Dummy Jig should be stabilized

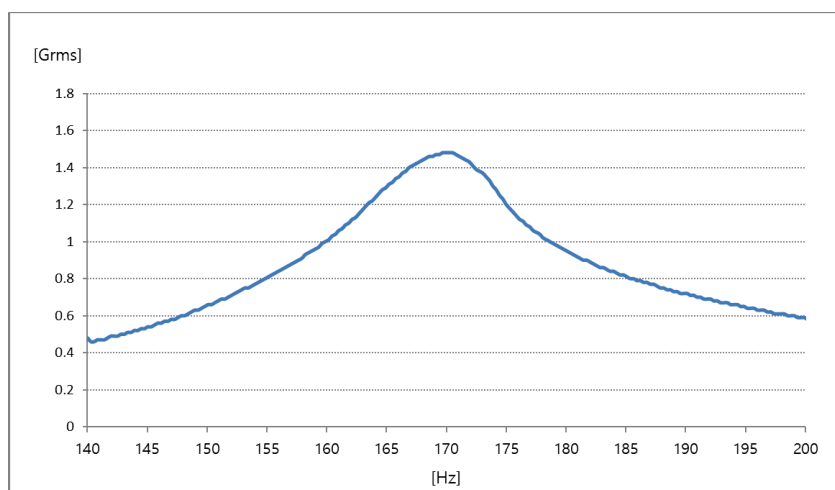
Measurement of Acceleration

- Acceleration should be measured 2~3 second later when source inputed.
- For the precise measurement, Acceleration should be measured 3 times and adopted average value on each Linear Vibrator

5. Specifications

No	Item	Specification
5-1	Resistance	22.5 ~ 27.5 Ohm
5-2	Rated Current	Max 90 mArms (Input Source : 170Hz, 2.0Vrms AC, sinewave)
5-3	Acceleration	1.0~1.8 Grms (Input Source : 170Hz, 2.0Vrms AC, sinewave)
5-4	Mass	Mass of Motor : 1.27gr
5-5	Frequency Characteristics	Refer to Graph 1
5-6	Motor Height	4.05 ± 0.05mm - 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 : 170Hz, 2.0Vrms AC, sinewave)
5-8	Insulation Resistance	Min 10 MΩ (100V DC input, between case and terminal)

No	Item	Specification
5-9	Rising Time	<p>Max 12msec (@170Hz)</p> <p>- The time reaching to 50% of normal acceleration from power on</p> 
5-10	Falling Time	<p>Max 55msec (@170Hz)</p> <p>- The time reaching to 10% of normal acceleration from power off</p> 



Graph 1. Linear Vibrator Frequency Characteristics

6. Reliability Test Condition

No	Item	Condition
6-1	Life test	Operating at rated input voltage(2.0Vrms AC, Sinewave), input frequency(170Hz) for 500,000 cycles. (2 sec On, 1sec Off)
6-2	Thermal shock test	- 40℃ ~ 85℃ 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℃, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-4	Low temperature storage test	-30℃, 168Hrs, After the test, the Vibrator should be measured after room-temperature storage for 4Hrs.
6-5	Static humidity test	+50℃, 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 300g dummy jig is dropped to a steel floor 24 times(6 face, 4 times in each of X,Y,Z axis) from 1.5m in height.

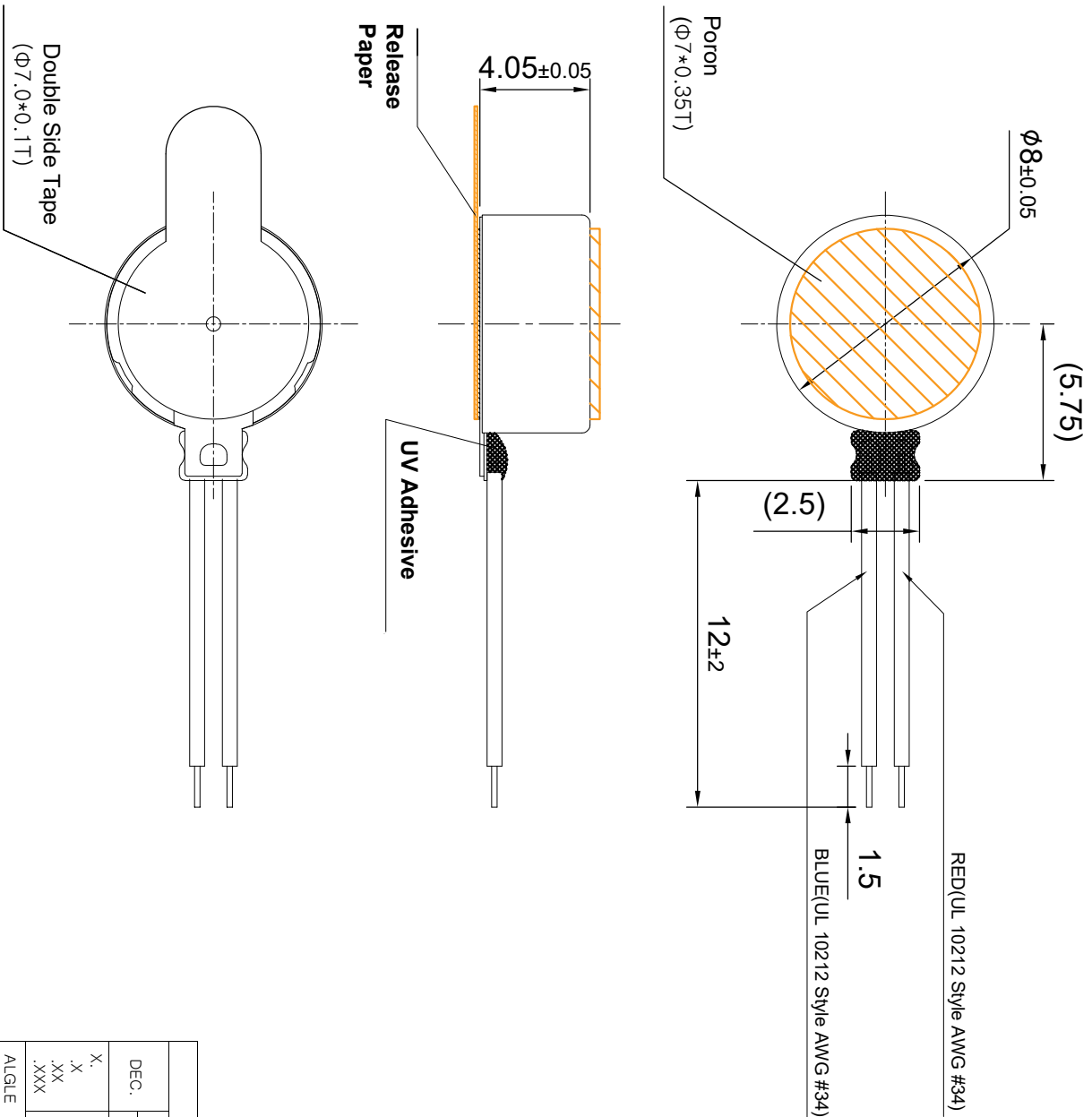
Judgement

- ① After test, The following specifications must be satisfied.
 - Acceleration : Within initial Value \pm 30%
 - Rated Current : Max 90 mA rms
- ② There should be no abnormalities in appearance and structure.

7. Cautions for Use

- (1) Do not press the product with more than 0.5Kgf 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.).
 - 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.
- (3) The vibrator has a strong magnet. So please be aware that it has a magnetic force on the surface of the bracket.
- (4) To optimize the vibration force, Rated frequency and voltage could be changed as to assemble condition.
- (5) Please refer to the packaging drawing. It can be modified by the request of the user.
- (6) The storage condition is 5°C~35°C, 15%~65% RH, 1year about packing.

8. SPEC Drawing



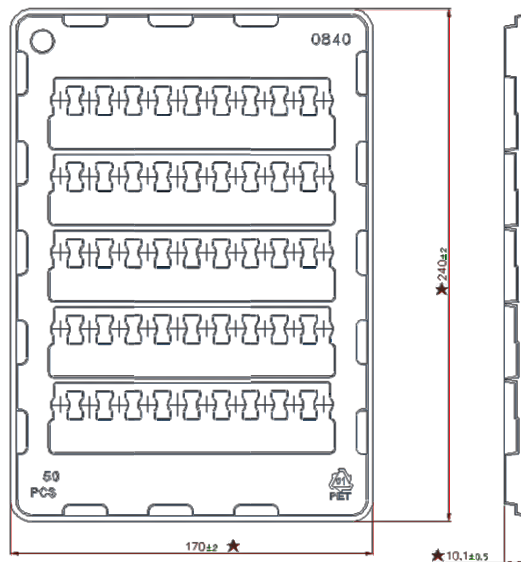
UNLESS OTHERWISE SPECIFIED

DEC.	TOLERANCES (LENGTH)			
	~ 4	4 ~ 20	20 ~ 100	100 ~ 300
X.	± 0.3	± 0.5	± 0.7	± 1
XX	± 0.1	± 0.2	± 0.25	± 0.5
.XXX	± 0.05	± 0.10	± 0.15	± 0.7
	± 0.020	± 0.020	± 0.020	± 0.2
ALGLE	$\pm 1^\circ$			
CHAMFER	1 ~ 1.5			
BREAK SHARP EDGE	0.3MAX.			
CORNER RAD	0.3 ~ 0.8			

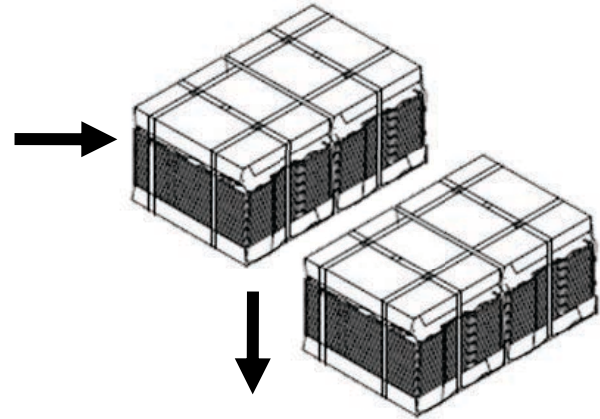
UNIT : mm

9. Packing

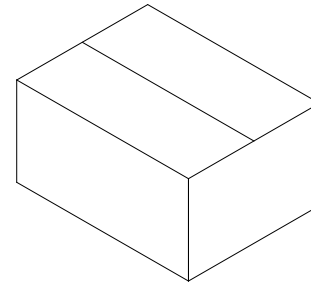
[Pet Tray]



20(21) Trays
+ 2 Pads



[Carton Box]



[Packing quantity]

- 50ea/ Tray
- 1 Carton box
 - 80(84) trays with a dummy tray on the top
 - 4000ea/ carton box

No	Material	Size	Q'ty/Lot	How to Pack
1	PET Tray	240x170x10.1	80(84)	● 80(84) trays are packed with packing vinyl.
2	Carton Box	510x350x175	1	● The trays are bound with pad and pp band
3	Pad		8	● One bound trays are put to a carton.
4	Packing vinyl		4	● Lot Numbering
5	PP-band		-	● Delivery
				● Loading Capacity : 12