



SPECIFICATION

PRODUCT

LINEAR VIBRATOR

MODEL / SIZE

DMJBRN0832AF (Φ8*3.2T)

REVISION NO.

REV.00

Preliminary Specifications

- Customer : Standard
- Item : Linear Vibrator (Φ8x3.2t)
- SEMCO Model : DMJBRN0832AF
- Date : Oct. 18. 2013

Date	Designed	Checked	Approved
OCT-18-2013	S.J.PARK	Y.J.JEON	J.H.KIM



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1. Revision History / 개정이력

Revision No. / 개정차수	Revision History / 개정이력	Revision Content / 개정내용	Approval / 승 인	
			Draft	Approval
REV.00	2013/10/18	● 1st Submit : Preliminary Specifications	S.J.PARK	J.H.KIM



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2. Applications / 적용범위

These specifications provide structure,function and usage condition of Linear Vibrator used in mobile communication devices for silence call. Linear Vibrator is designed and manufactured by SAMSUNG ELECTRO- MECHANICS CO., LTD.

본 사양서는 무음착신을 위하여 모바일통신기기에 사용되어지는 Linear Vibrator의 구조,기능,사용조건을 제공한다. Linear Vibrator는 (주)삼성전기가 설계하고 제조한다.

3. Storage, Operating Temperature Conditions / 보존,동작 온도조건

No	Item / 항목	Condition / 조건
3- 1	Operating Temperature Range 동작온도범위	- 25 Celsius ~ +70 Celsius
3- 2	Storage Temperature Range 보존온도범위	- 40 Celsius ~ +85 Celsius

4. Measurement Conditions, Input Voltage / 측정조건, 입력전압

No	Item / 항목	Condition / 조건
4- 1	Temperature / 온도	20 Celsius +/- 5 Celsius
4- 2	Humidity / 습도	65%RH +/- 20%RH
4- 3	Rated Input Voltage / 정격입력전압	2.0Vrms AC, Sinewave
4- 4	Input Voltage Range / 입력전압범위	0.1~ 2.05Vrms AC, Sinewave
4- 5	Input Frequency / 입력주파수	235± 0.1Hz
4- 6	Operating Attitude / 동작자세	Refer to Figure 1 / Figure 1 참조



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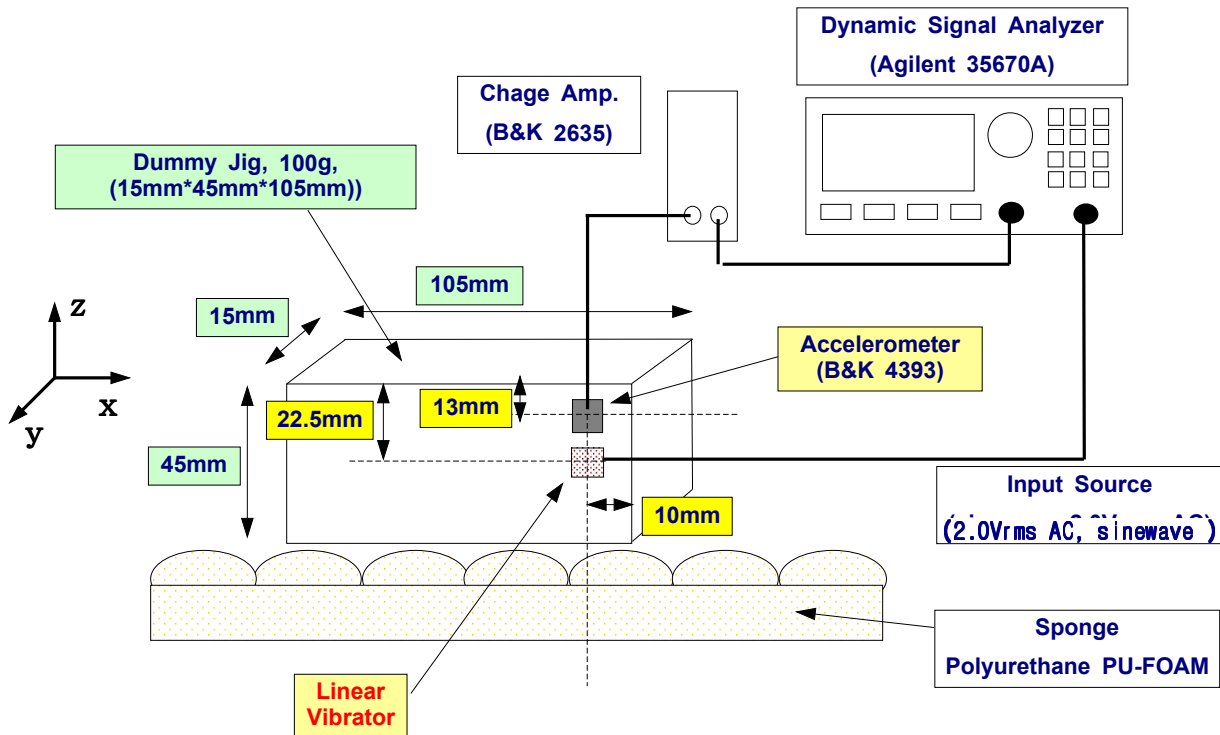


Figure 1. Linear Vibrator Method of Measurement / Linear Vibrator 측정방법

■ Linear Vibrator/ Accelerometer mounting position (refer to Figure 1)

Linear Vibrator / Accelerometer 장착위치 (그림 1 참고)

- Linear Vibrator는 Dummy Jig의 15mm 방향(y 방향)으로 진동하도록 장착한다.
- Linear Vibrator should be mounted to vibrate 15mm direction (y-direction) on Dummy Jig
- Accelerometer도 'y방향' 진동을 측정할 수 있도록 Jig에 부착시킨다.
- Also, Accelerometer should be mounted to measure y-direction vibration on Dummy Jig

■ Dummy Jig position / Dummy Jig 장착상태

- Dummy Jig는 15mm*105mm 면이 Sponge면에 접하도록 올려 놓는다.
- 15mm*105mm plane of Dummy Jig should be located on Sponge
- Dummy Jig의 진동발생방향(y 방향)으로 외부간섭이 최소화되도록 하여 진동가속도 값을 측정한다.
- At measurement of acceleration, Dummy Jig should be stabilized.

■ Measurement of Acceleration / 진동가속도 측정

- Input Source(2.0Vrms AC, sine wave) 인가후 2~3초 경과시점에 진동가속도를 측정한다
- Acceleration of Linear Vibrator should be measured 2~3 second later when source inputed (2.0Vrms AC, sine wave)
- 정밀측정을 위해서는 측정시료 1EA에 대하여 진동가속도를 3회 측정하여 평균값을 진동가속도 값으로 취한다.
- For the precise measurement, Acceleration of Linear Vibrator is average data (repeat 3 times each Linear Vibrator)



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5. Specifications / 사양

▲ **Measurement Standard** : Refer to No. 5 Measurement Conditions, Input Voltage

/ ▲ **측정기준** : 4항의 측정조건, 입력전압 참고

No	Item / 항목	Specification / 사양
5- 1	Resistance / 저항	24 Ohm +/- 10%
5- 2	Rated Current / 정격전류	Max 90mArms (Input voltage : 2.0Vrms AC, sinewave)
5- 3	Acceleration / 진동가속도	Minimum 1.0 Grms (Input voltage : 2.0Vrms AC, sinewave)
5- 4	Frequency Characteristics 주파수 특성	Refer to Graph 1 / Graph 1 참조
5- 5	Dimension / 치수	Refer to 8. SPEC drawing / 8. SPEC drawing 참조
5- 6	Weight / 무게	0.96 +/- 0.1gram
5-7	Noise / 소음	Max 50 dBA (10cm distance from microphone, Input voltage : 2.0Vrms AC, sinewave)
5-7-1	Touch Noise / 기계적 소음	In the mass production, we can use special measuring machine to inspect noise(5- 7) of all goods. (Example of measuring machine) * Model of measuring machine : Bako 2120C or Bako 2020A * Measuring principle : It can be happened noise by mechanical touch of inner parts. At this case, we can check abnormal vibration and measure touch noise by using acceleration sensor. * Measuring SPEC : Max 35dB (Input voltage : 2.0Vrms AC, sinewave)
5-8	Insulation Resistance / 절연저항	Min 10 Mega Ohm (100V DC input, between Case and L/Wire)



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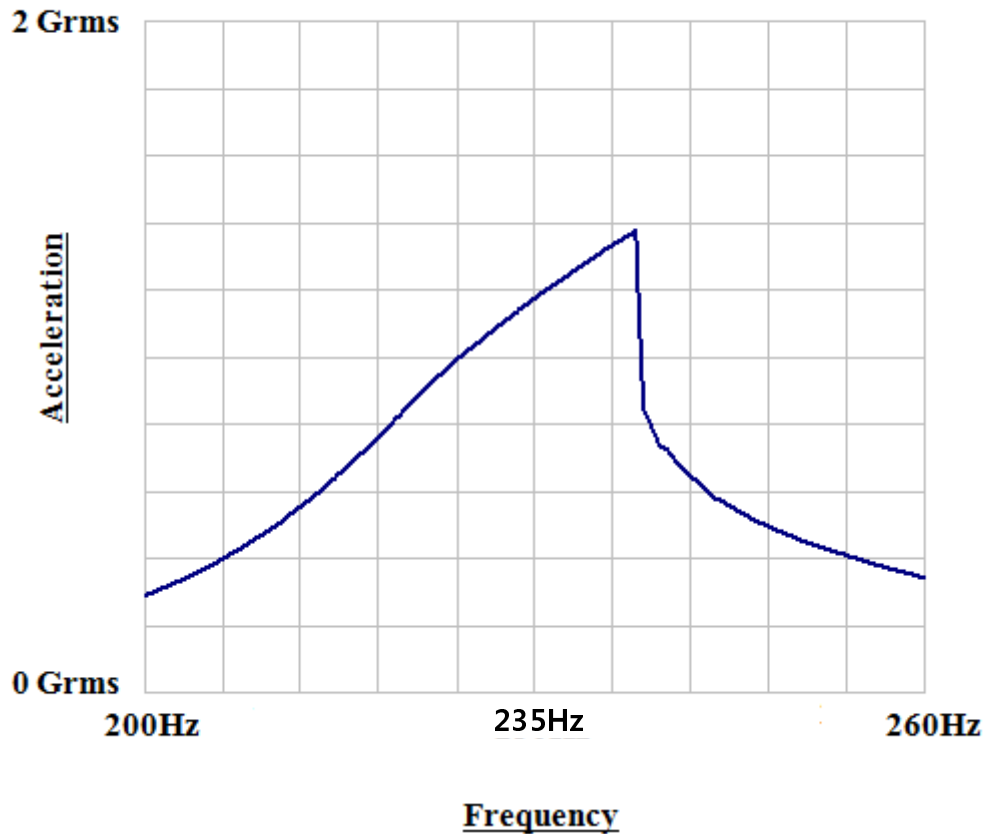
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Acceleration Characteristics



Graph 1. Linear Vibrator Frequency Characteristics
/ Linear Vibrator 주파수 특성



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6. Reliability Test / 신뢰성시험

	Item / 항목	Conditions / 조건
6- 1	Life test 수명시험	Operating at rated input voltage (2.0Vrms AC, Sinewave), input frequency (235Hz) for 200,000cycle, on(2sec)/off(1sec). 정격입력전압 (2.0Vrms AC, Sinewave), 입력주파수(235Hz)에서 2초on/1초off, 200,000cycle 동작
6- 2	Thermal shock test 열충격시험	- 40 Celsius ~ 85 Celsius in each of 2Hrs(1cycle), Total 15cycles. Transition time is 5 minutes max. After the test, the Vibrator should be measured after room- temperature storage for 4Hrs. - 40 Celsius 2시간, +85 Celsius 2시간(1cycle), 총15cycle. 변화시간은 5분이하. 시험후 상온에서 4시간 보존후 측정
6- 3	High temperature storage test 고온보존시험	+70 Celsius, 168Hrs, After the test, the Vibrator should be measured after room- temperature storage for 4Hrs. +70 Celsius, 168시간, 시험후 상온에서 4시간 보존후 측정
6- 4	Low temperature storage test 저온보존시험	- 30 Celsius, 168Hrs, After the test, the Vibrator should be measured after room- temperature storage for 4Hrs. - 30 Celsius, 168시간, 시험후 상온에서 4시간 보존후 측정
6- 5	Static humidity test 내습보존시험	+50℃, 95%RH, 120Hrs, After the test, the Vibrator should be measured after room- temperature storage for 4Hrs. +50 Celsius, 95%RH, 120시간, 시험후 상온에서 4시간 보존후 측정
6- 6	Mechanical shock test 낙하시험	The Vibrator that is attached to a 100 gram dummy jig is dropped to a concrete floor from 1.52meters in height. Drop two times in each of the six planes. Total 12 times. Vibrator는 100g dummy jig 안에 장착되고, 1.52m 높이에서 콘크리트 바닥면에 떨어뜨린다. 6면 2회씩 총 12회 시행한다.
6- 7	Vibration test 진동시험	Vibrator that is attached to a 100 gram dummy jig is vibrated with 2.2G, 10~55Hz/min for 10minutes in each of X,Y,Z axis. Vibrator는 100g dummy jig 안에 장착되고, X,Y,Z 3방향에서 2.2G, 10~55Hz로 각 10분간 진동시킨다.

▶ JUDGEMENT / 판정조건

① After test, following specifications must be satisfied.

시험후에, 다음의 사양들이 만족되어야 한다.

- . Acceleration / 진동가속도 : Initial Value ± 30% / 초기치대비 변화율 ± 30% 이하
- . Rated Current / 정격전류 : Max 90 mArms

② There should be no abnormalities in appearance and structure.

외관 및 구조상 이상이 없을것



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7. Caution for Use / 주의사항

- (1) Do not press the product with more than 0.5 kgf or drop it.
It can cause the transformation of performance or external appearance.
0.5kgf 이상의 힘을 가하거나 떨어뜨리지 않도록 주의하십시오.
기능상 또는 외관구조상 변화를 초래할 수도 있습니다.
- (2) Don't use under the following conditions. It may cause a decline in performance.
다음과 같은 조건에서 사용하지 않도록 주의하시기 바랍니다.
성능저하를 초래할 수 있습니다.
- Do not drop into fluid (such as: water, alcohol, etc.)
물이나 알코올과 같은 유동성물질에 담그지 않도록 하십시오.
 - Do not keep at high temperature or high humidity for extended periods of times
고온이나 고습에서 장시간 방치하지 않도록 주의하십시오.
 - Do not use near gases which cause erosion
부식성 가스 근처에서 사용하지 마시기 바랍니다.
 - Please refrain from operating the vibrator near magnetic devices.
자성을 띠는 장치 근처에서 사용하지 마십시오.
- (3) The vibrator has a strong magnet, so please be aware that it has a magnetic force on the surface of the bracket.
vibrator 내부에는 강력한 자석을 사용하고 있습니다. 외관마감재인 case, bracket의 외부로 자기력이 누설될 수도 있으니 주의하시기 바랍니다.
- (4) To optimize the vibration force, rated frequency and voltage could be changed as to assemble condition.
진동량을 최적화하기 위하여, 정격주파수와 정격전압은 제품조립조건에 따라서 변경될 수 있습니다.
- (5) Packing : Please refer to the packaging drawing.
(It can be modified by the request of the users.)
포장 : 포장도면 참조하시기 바랍니다.
(고객의 요구에 의해서 변경될 수 있습니다.)
- (6) If any problems occur, both the user and Samsung Electro- Mechanics Co.,Ltd. shall try to solve the problem by mutual agreement and on reflection of the specification sheet.
문제가 발생하면, 고객과 (주)삼성전기는 상호협의 및 사양서에 근거하여 해결하도록 노력한다.



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8. SPEC Drawing / 외관도면

ZONE	LTR	DESCRIPTION	DRAWN	CHECKED	APPROVED

*** NOTES**

- 모델명 : DMJBRN0832AB
- MODEL : DMJBRN0832AB
- 이 도면은 외관도면으로 영기되어 있으며, 기이 성능부분은 승인만을 참고할 것
- THIS DRAWING EXPRESS APPEARANCE SIZE. PERFORMANCE OF VIBRATOR REFER TO SPECIFICATIONS OF APPROVAL.
- LOT NUMBER 관리
- MARKING CLASSIFICATION
 - 32AB : MODEL NAME
 - 3 : YEAR (2010 = 0, 2011 = 1, ... , 2020 = 0, ...)
 - 3 : MONTH (Jan. = 1, ... , Sep. = 9, Oct. = A, Nov. = B, Dec. = C)
 - 07 : A DAY (EX : 9TH = 09, 10TH = 10)
 - A : LINE / DAY OR NIGHT (A = #1/DAY, B = #1/NIGHT, ...)
 - G : MANUFACTURING SITE (EX : G, V, ...)

DET	1	LINEAR VIBRATOR	MATERIAL	BPHI * 32T	FINAL SIZE	STOCK SIZE	REMARK

PART LIST	
SIGNATURES	ELECTRO-MECHANICS
DRAWN	JT-HONG 03/07/13
CHECKED	DMJBRN0832AB
ENGINEER	
APPROVED	JHKM 03/07/13
SPEC DRAWING-00	
PART NO.	
DEPT	
SCALE 5 / 1	
SHEET 1 OF 1	

UNLESS OTHERWISE SPECIFIED	
DEC.	TOLERANCES (LENGTH)
~ 4	4 ~ 20
20 ~ 100	100 ~ 300
300 ~	300 ~
X	+0.3
X	+0.1
XX	+0.05
XXX	+0.020
ALGIE	±1
CHAMFER	1 ~ 1.5
BREAK SHARP EDGE	0.3MAX.
CORNER RAD	0.3 ~ 0.8

UNIT	mm
U.S.	6.30 (250g)
F	1.20 ~ 5.20 (FINISH)
G	0.20 ~ 0.60 (GRINDING)
LP	0.10 ~ 0.20 (LAPPING)

A-10-011004-05-1710
A3 (297 x 420)



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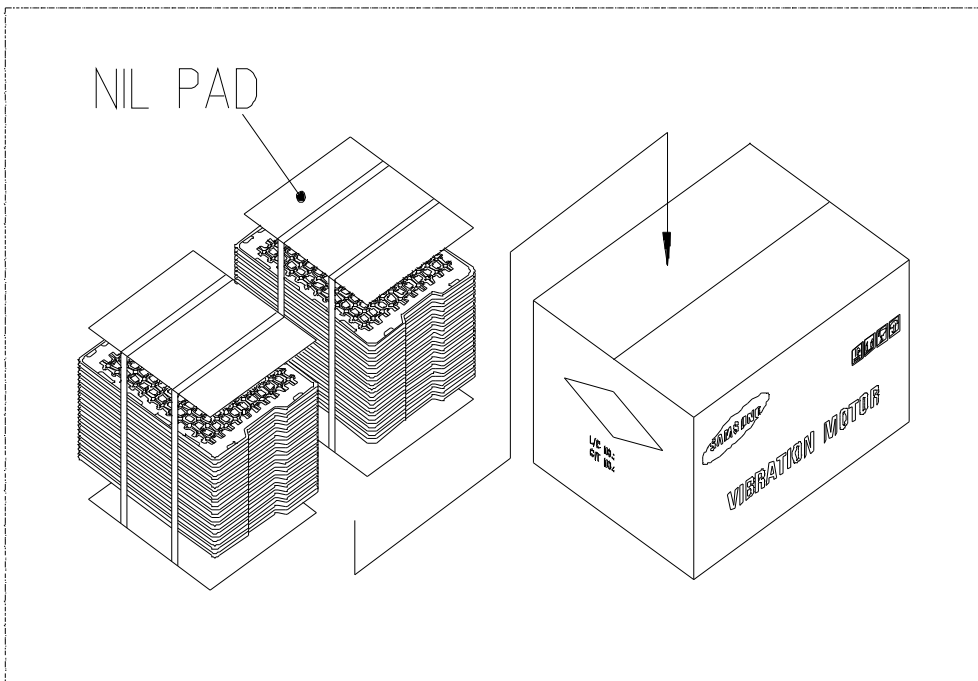
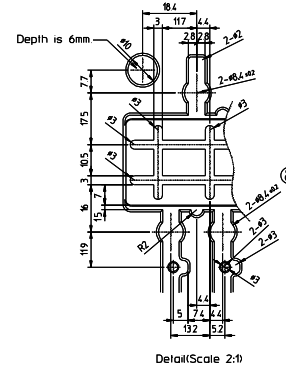
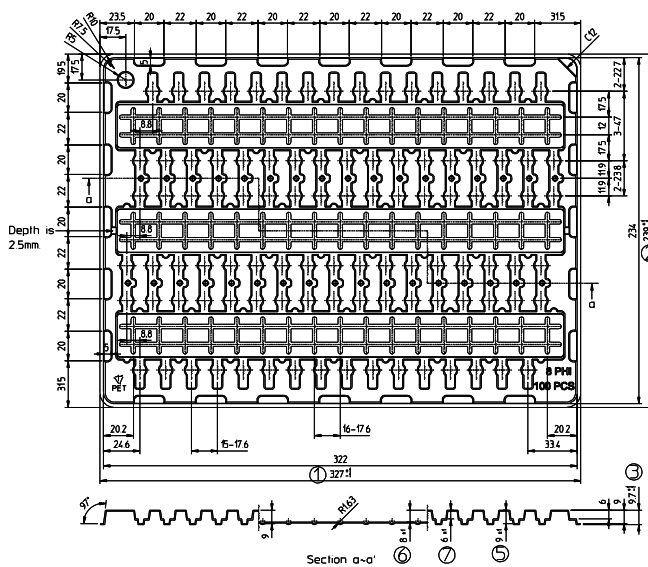
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9. Packaging / 포장사양

- (1)Quantity / 수량 : 100EA/Tray, 40(42)Tray/BOX, 4000EA/BOX
- (2)Dimension, Weight, Material / 치수, 무게, 재질
 - . Tray : 327*239*9.7, 73g± 5%, PET
 - . BOX : 501*341*157



[Halogen Free Marking]



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