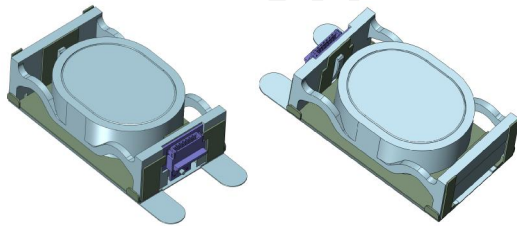


Dynamic Exciter

Product No. 139549

BHS1324-11-08H6.5FW019

Issue No. BS/TES01.2173



Features:

- External driving circuit
- With wire lead
- Screen vibration
- RoHS

Drawn by	Checked by	Approved by	Customer approved
Fay.Chen	Hansen.Tao	Richard.Cheng	

BESTAR Holdings Co., Ltd.

www.be-star.com | info@be-star.com



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1.Characteristics

1.1Technical Terms

1. Resistance	$8 \pm 15\% \Omega @ 20^{\circ}\text{C}$
2. Rated voltage	2.83Vrms
3. Operating voltage	0.3~3.0Vrms
4. Resonance Frequency	$180 \pm 20\% \text{Hz}$
5. Frequency Response	$F_0 \sim 10\text{KHz}$
6. Acceleration (at 2.83Vrms)	$\geq 9\text{Grms}@10\text{g}$ load in middle ; $\geq 7\text{Grms}@10\text{g}$ load in side $\geq 1.2\text{Grms}@100\text{g}$ load in middle; $\geq 1.2\text{Grms}@100\text{g}$ load in side
7. Polarity	Positive voltage to (+), Diaphragm moves forward
8. *RT(Rise Time) 0→90%	$\leq 60\text{ms}$
9. *BT(Break Time) 100%→10%	$\leq 60\text{ms}$
10. Weight	$\approx 5.0\text{g}$

*@ 10g load in middle, 2.83Vrms, 180Hz

1.2 Environmental Conditions

1. Standard conditions for inspection and measurement:

- (1) Temperature: $+15\ldots+35^{\circ}\text{C}$
- (2) Humidity: 45...85%RH (no condensation of moisture)

When a judgment under standard conditions raises doubt, the following conditions apply:

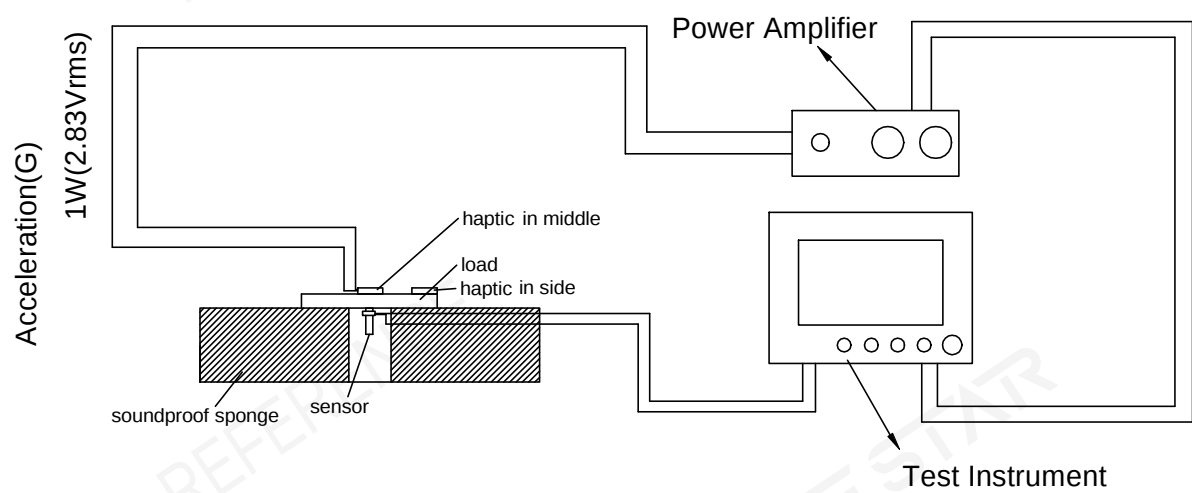
- (1) Temperature: $+18\ldots+22^{\circ}\text{C}$
- (2) Humidity: 50...60%RH (no condensation of moisture)

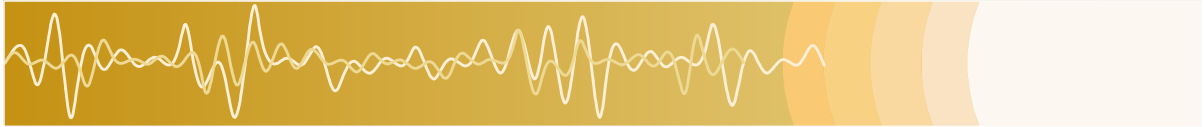
- 2. Operating Temperature: $-40\ldots+85^{\circ}\text{C}$
- 3. Storage Temperature: $-40\ldots+95^{\circ}\text{C}$



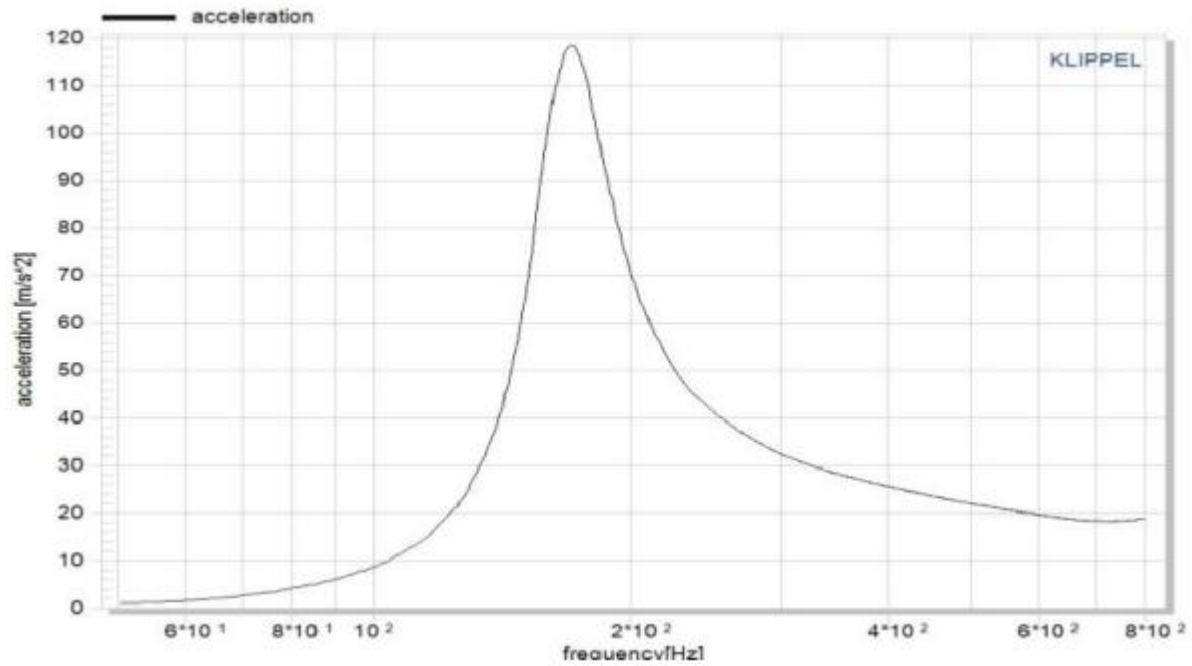


1.3 Haptic actuator Measurement Circuit

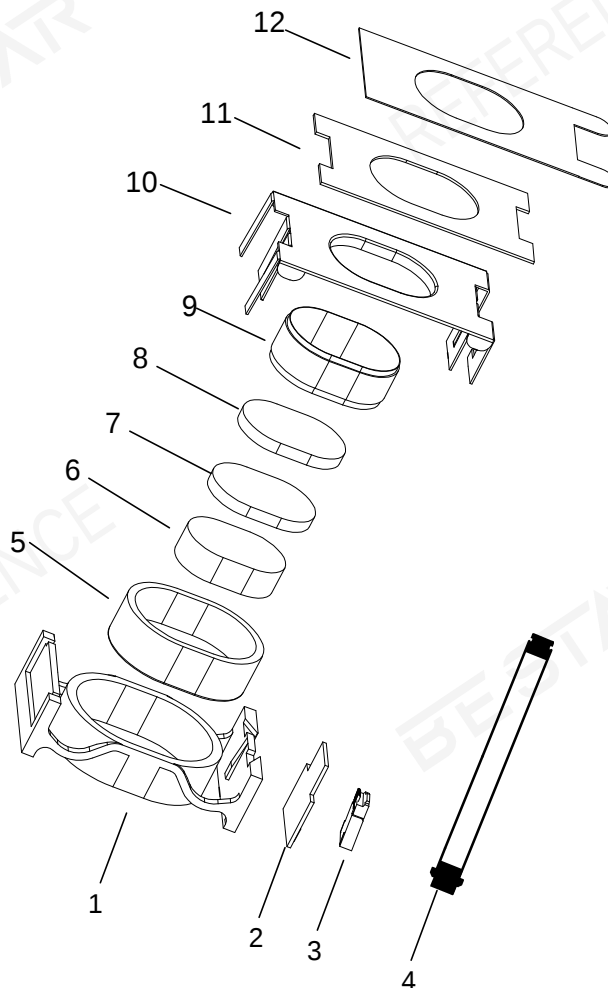




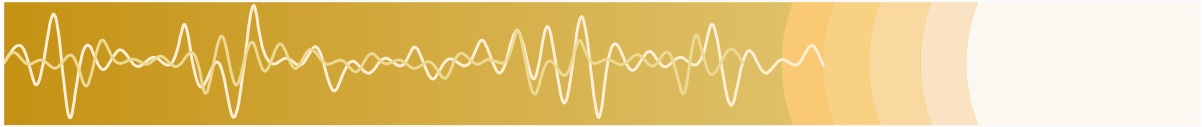
1.4 Acceleration Curve (only for reference)



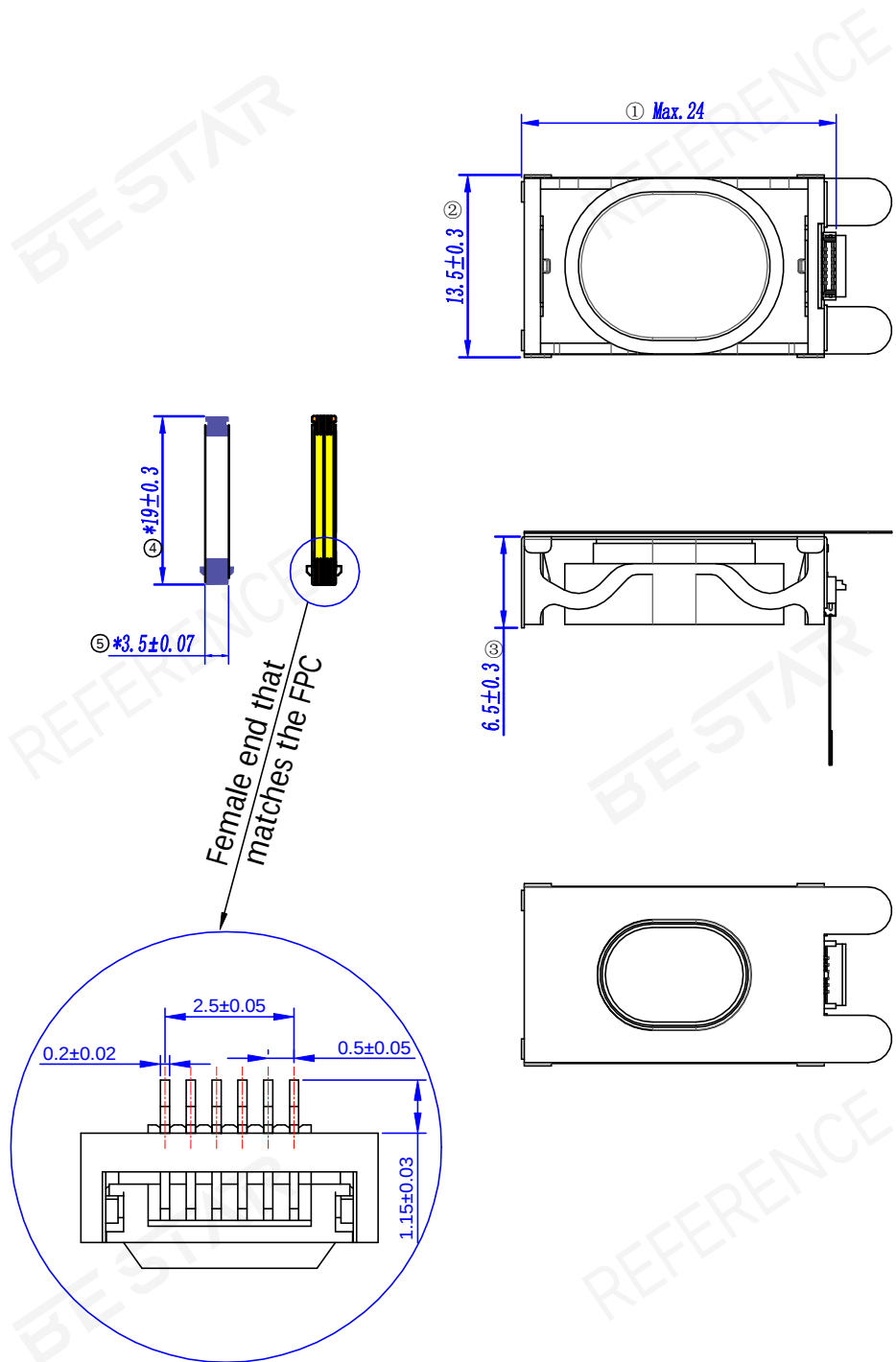
2 Part List



12. Release Liner	Craft Paper
11. Double glue	3M
10. Base Plate	SUS
9. Voice Coil	Al+SV
8. SUB Magnet	NdFeB
7. UP Plate	SPCC
6. Magnet	NdFeB
5. U-YOKE	SPCC
4. FPC for Connect	KAPTON
3. Connector	KAPTON
2. FPC for patch	KAPTON
1. Frame	Plastic



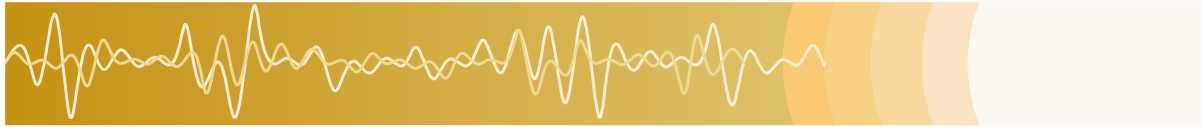
3.Dimension



Computer No: 101049-200650
5:1

Unit:mm





4. Reliability Test

4.1 Load Test

Power (Nom)
Input signal
Cycles

1W,0.5s ON/0.5S OFF
180Hz sine wave
2200000

4.2 High Temperature test load Test

Power
Temperature
Input signal
Duration

1W,0.5s ON/0.5S OFF
 $+85\pm 2^{\circ}\text{C}$
180Hz sine wave
720hrs

4.3 Low Temperature test load Test

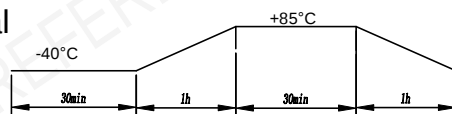
Power
Temperature
Input signal
Duration

1W,0.5s ON/0.5S OFF
 $-40\pm 2^{\circ}\text{C}$
180Hz sine wave
720hrs

4.4 Temperature cycles Test

Power
Temperature
Input signal
Duration

1W,0.5s ON/0.5S OFF
 $-40\sim +85^{\circ}\text{C}$
180Hz sine wave
696hrs



4.5 Damp Heat

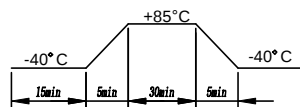
Temperature
Relative Humidity
Duration

$+85\pm 2^{\circ}\text{C}$
85%RH
1000hrs

4.6 Thermal shock

Temperature
Cycles

$-40\sim +85^{\circ}\text{C}$
1000



4.7 Vibration Test

Vibration Frequency
Amplitude
Duration x,y&z directions

55Hz
1.5mm
30min

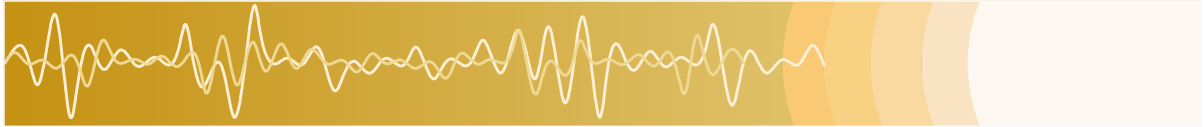
4.8 Drop test

Height(to 10mm thickness woodenboard)
Direction

70cm
3

After the test,all electronic and acoustic characteristic should be satisfied with the specification. Acceleration: Deviation is of $\pm 25\%$ of initial value.





Performance requirements after test:

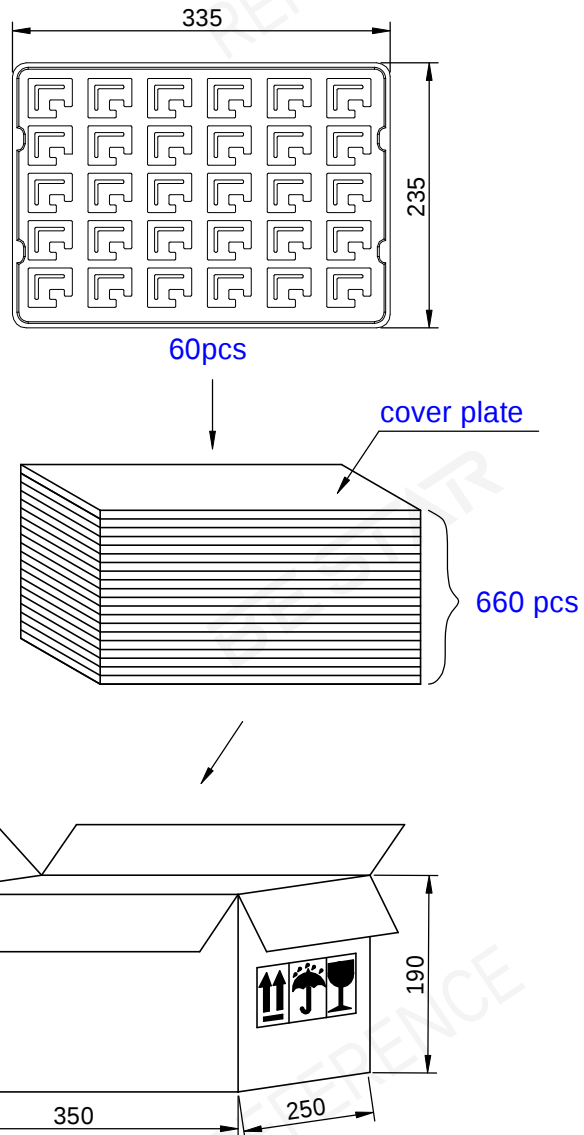
- 1)Acceleration: $\geq 8.0G$ @ 10g load in middle, 2.83Vrms
- 2)RT(Rise Time): $< 72ms$ @ 10g load in middle, 2.83Vrms, 180HZ
- 3)BT(Break Time): $< 72ms$ @ 10g load in middle, 2.83Vrms, 180HZ

Notice: Before the experiment, it should work normally for 1 hour; after the experiment, it should be placed at room temperature for at least 4 hours to test its performance.



5. Packing

The first layer is a cover plate.
1) 60 pcs/tray
2) 11 trays/carton
3) 660 pcs/carton in total
4) carton size 350X250X190mm

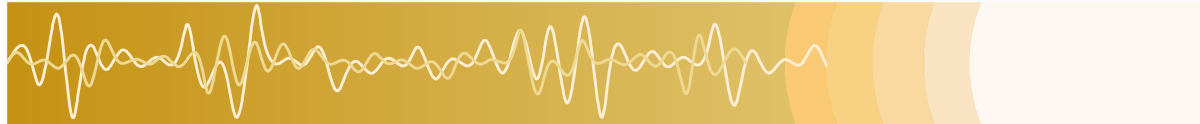




6. History change record

Version	Change Items	Date	Drawn	Checked	Approved
A0	First Edition	2022.12.02	Fay.Chen	Hansen.Tao	Richard.Cheng





7.Important Notice

7.1 The products mustn't be washed

7.2 Store Condition (packing)

The products should be stored in the room, where the temperature/humidity is stable. And avoid such places where there are large temperature changes. Please store the products at the following conditions:

Temperature: -10 to + 40°C Humidity: 15 to 85% R.H.

7.3 Expire Date on Storage

Expire date (Shelf life) of the products is six months after delivered under the conditions of a sealed and an unopened package. Please use the products within six months after delivered.

If you store the products for a long time (more than six months), use carefully because the products may be degraded in the solderability and/or rusty. Please confirm solderability and characteristics for the products regularly.

7.4 Notice on Product Storage

(1) Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced at quality, and/or be degraded in the solderability due to the storage in a chemical atmosphere.

(2) Please use the products immediately after the package is opened, because the characteristics may be reduced at quality, and/or be degraded in the solderability due to storage under the poor condition.

7.5 Rated and Max input power

Rated input power

Rated input power is the maximum (limit) value which can be input to the component intentionally. If the actual input power to component keeps exceeding Rated Input power, it will damage the component acoustic performances and reliability. In the worst case, the component will get broken and no sound.

Max input power

Max input power is the maximum (limit) value for unexpected input power which is caused in the customer's circuit like surge voltage. If the actual input power to component keeps exceeding Maximum input power, it will break the component and cause no sound in a short time. Please note that component will have a risk to get broken if the unexpected input power continues.

The value of input power is set based on the sinusoidal power in the normal speaker use. If the special signal is input to component, the values of Rated and Max input power will be different. Please make a well-investigation at your laboratory in the case of the special signal input.

