

SPECIFICATION

SHEET FOR APPROVAL

(Revision: A)

CUSTOMER: COOLPAD

PRODUCT: DYNAMIC RECEIVER

BID PART NUMBER: R0612R20AS-F-01

CUSTOMER PART NUMBER: 460200122

TITLE: W6.0×L12×H2.0 32 ohms/ROHS

	PREPARED	CHECKED	APPROVED	R&D CHOP
SIGNATURE (CHOP)				
DATE				

CUSTOMER COMMENT:

SIGNATURE: _____

DATE: _____

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1. SCOPE

This document contains required, electrical, acoustic, mechanical, package and reliability test requirements.

2.Environmental Requirement

This receiverincluding all components, soldering joints and glue must be halogen free, in RoHS requirements and other banned or restricted substances according to customer’s requirements.

3.Electrical Requirements

3.1 DC Resistance

28±10% ohms

3.2 Rated Impedance(in free air)

32±15% ohms @2KHz,1Vrms input

3.3 Power Rating

20mW

3.4 Short Term Max. Power

40mW

4.Acoustical Requirements

4.1 Sound Pressure Level

120±2dB @800mVrms@1KHz(IEC711)

4.2 Bass Resonance Frequency

450 ±100Hz @800mVrms in free air

4.3 Rated Frequency Range

200Hz~7KHz

Frequency Response

See Figure1

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Typical frequency response(see Figure 1) at 800mVrms.

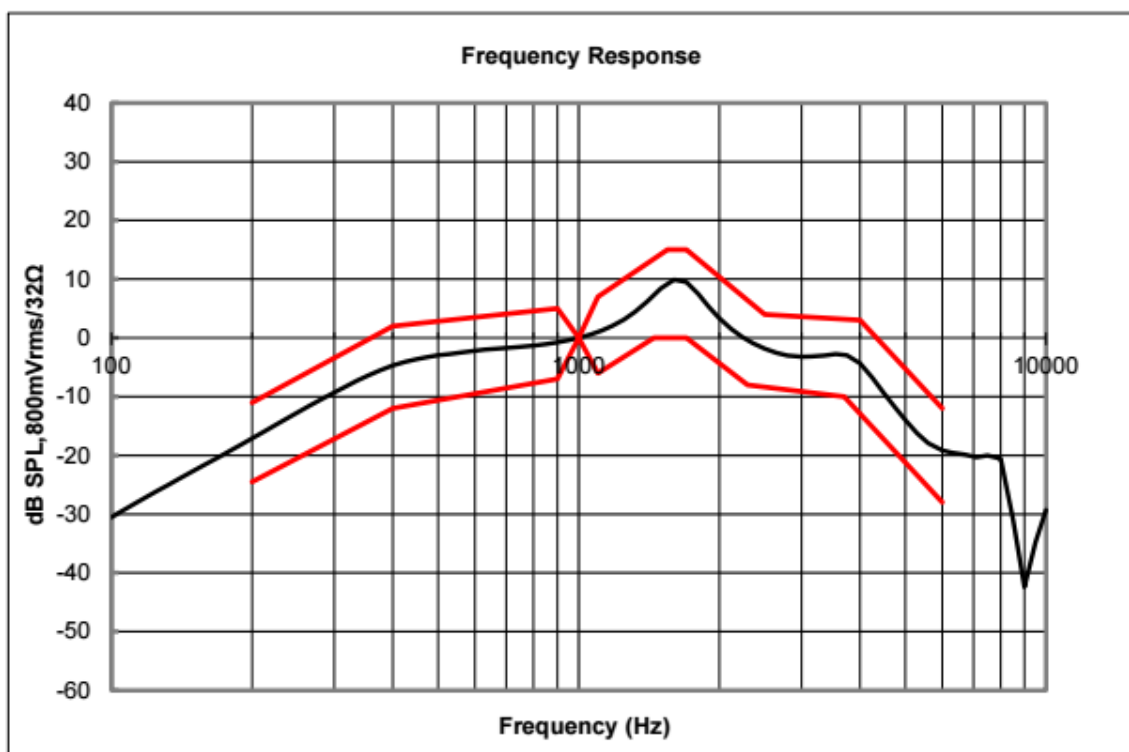


Figure 1,Typical Frequency Response

Frequency	Upper limits	Frequency	Lower Limits
[Hz]	[dB SPL]	[Hz]	[dB SPL]
200	-11	200	-24.5
400	2	400	-12
900	5	900	-7
1000	0	1000	0
1100	7	1100	-6
1550	15	1450	0
1700	15	1700	0
2500	4	2300	-8
4000	3	3700	-10
6000	12	6000	-28

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4.4 Total Harmonic Distortion(THD): Typical THD response(See Figure 2) at 800mVrms.

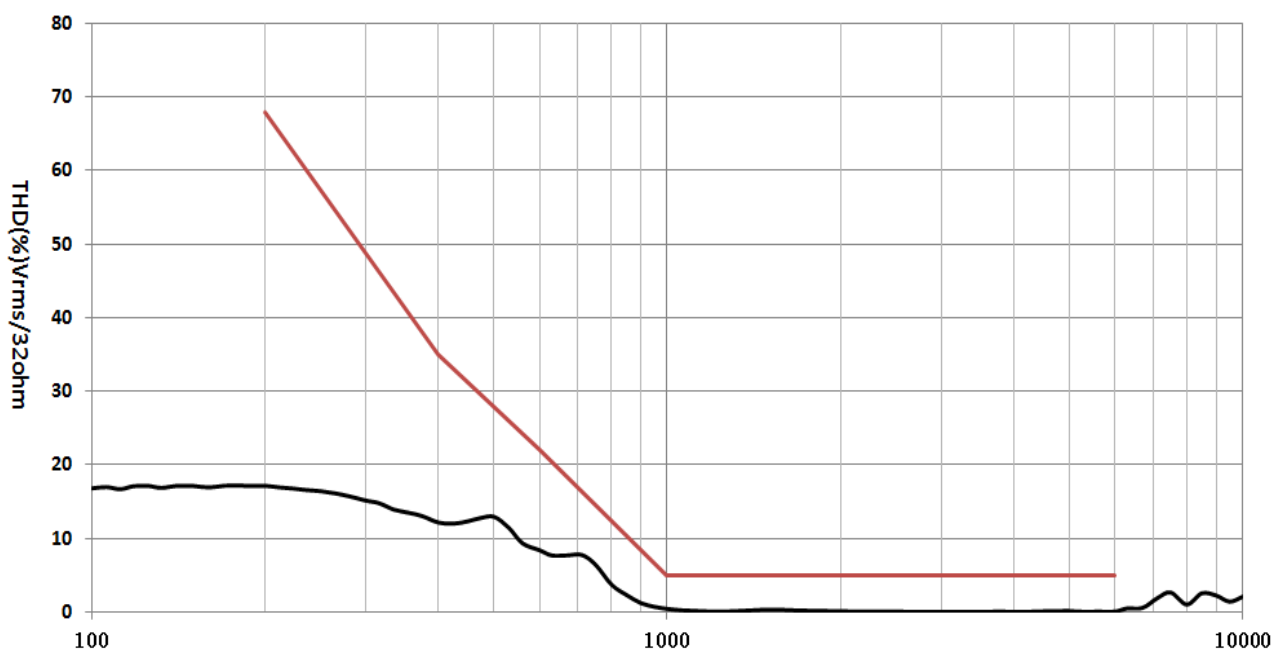


Figure 2 ,Typical THD Response

Frequency [Hz]	Limits [%]
200	68
400	35
600	22
1000	5
6000	5

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4.5 Rub & Buzz

A sine sweep among 200-4000Hz 1-2 S/cycle at 800mVrms will not result in any buzzing or extraneous sound .

5. Test Climatic Condition

Ambient temperature:15℃～35℃,preferably at 23℃

Relative humidity:25%～75%, preferably at 50%

Air pressure:86KPa～106KPa

6.Test Method

6.1 Sensitivity and Frequency Response Curve:

The receiver shall be mounted in a fixture shown in Figure3. And the recommended acoustic measuring devices are shown below in fixture4. The swept sine-wave frequency range is 100Hz～10kHz.(Input800mVrms).

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6.2 T.H.D:

The receiver shall be mounted in a fixture shown in Figure3. And the recommended acoustic measuring devices are shown below in fixture. The swept sine-wave frequency range is 100Hz~10kHz.(Input800mVrms). Figure3 Test Fixture

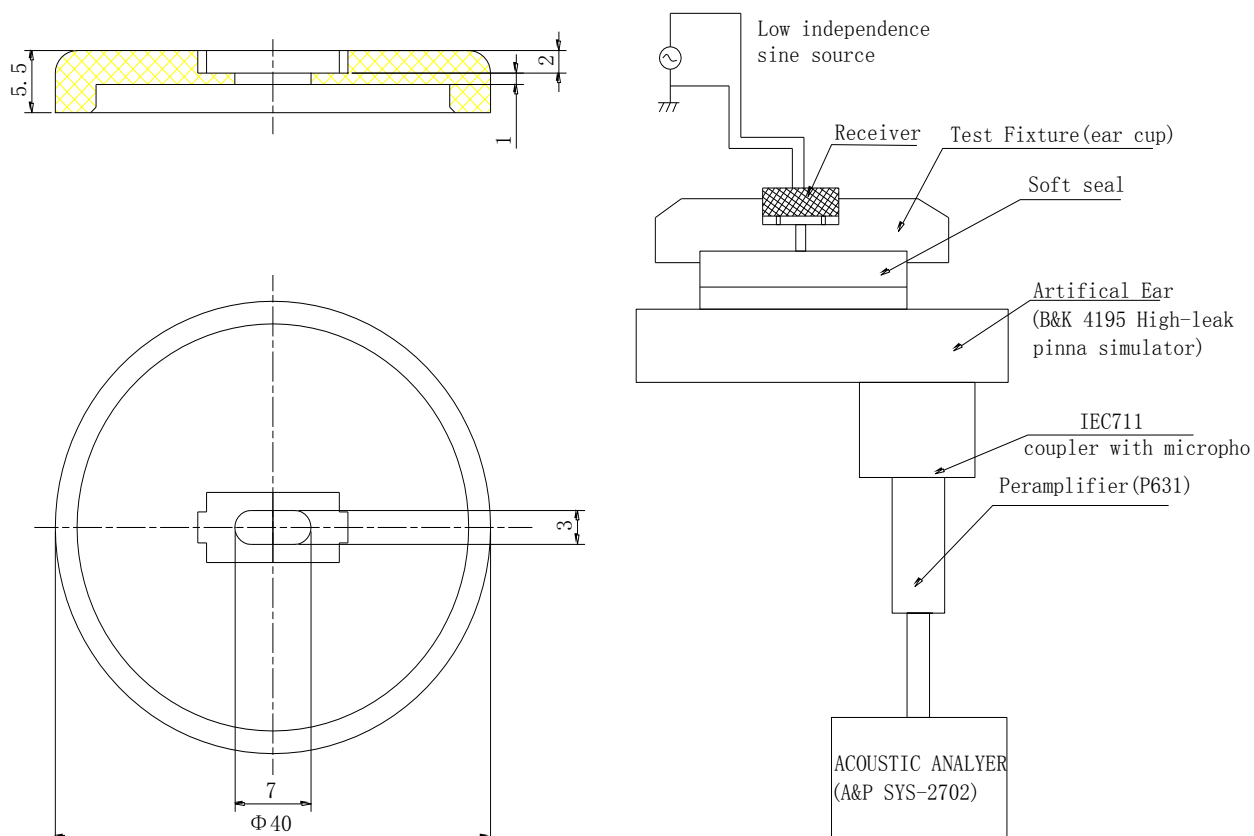


Figure3 receiver testing setup

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7.General Requirements

7.1 Operation temperature range: -20℃ to +70℃

7.2 Storage temperature range: -40℃ to +85℃

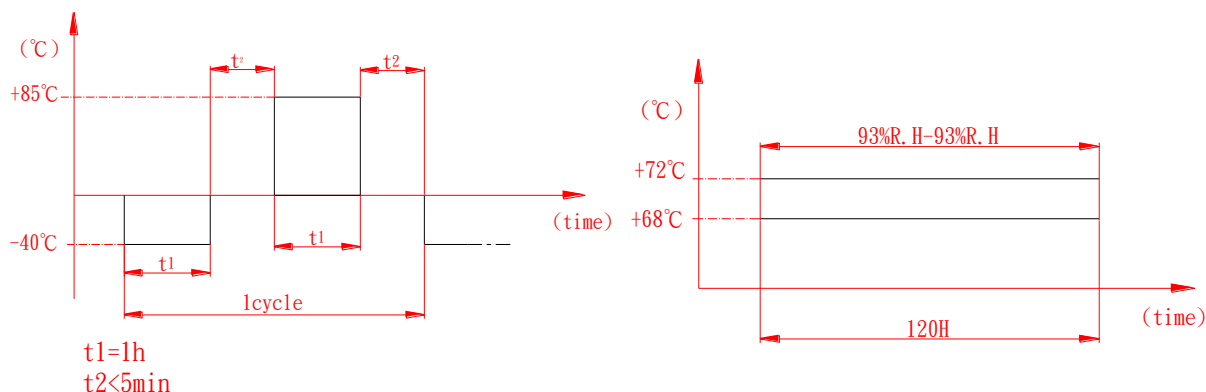
8.General Reliability

After test, the samples should be removed from testing chamber to lab environment with normal test climatic condition. Unless otherwise, the recovery period should be 2 hours at least before 2nd-measurement.

After reliability test, all samples must be meet the requirements specified in section 3 & 4. The sensitivity offset shall be $\pm 3\text{dB}$ less than initial value.

8.1 Thermal shock

Testing condition as below: (transition $< 5\text{min}$, total 50 cycles)



8.2 Humidity heat cycle test

Testing condition as above:

8.3 Drop test

receivers shall be assembled in a 100g fixture, drop samples 1.5m high, 3 times in each direction, total 18 times.

8.4 Vibration Test

receivers shall be assembled in a 100g fixture, Frequency 5~55Hz
Amplitude 0.35mm 30 Minutes per Axis(X, Y and Z axis)

8.5 Roller Test

receivers shall be assembled in a 100g fixture, height 1m,
frequency 10cycles /min , total 100 cycles , each after 20 cycles test

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8.6 Salt spray test

Salt spray : NaCl 5% temperature range: 33°C to 37°C Time :48H

8.7 Low temperature operation life test

This test is conduct with the receiver in free air, temperature range 18°C to 22°C , Test signal pink noise, rated power 20mW 24 hours

8.8 High temperature operation life test

This test is conduct with the receiver in free air, temperature 50°C , sine wave 200-10KHz 2.5S/cycle, rated power 20mW 96 hours .

8.9 Short term max. Power

This test is conduct with the receiver in free air, temperature 50°C , sine wave 200-4KHz 2.5S/cycle Max power 40mW, the duration will be 1second ON, 59 seconds . OFF, The test shall be repeated 60times.

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9. Mechanical Layout and Dimensions

9.1 Mechanical layout for receiver (see Figure 4)

No.	Part Name	Material	Qty.	Treatment	Remark
1	Frame	Plastic	1		
2	Front cover	Plastic	1		
3	Diaphragm	Polymer	1		
4	Magnet	Nd-Fe-B	1		
5	Inner pole plate	Steel	1		
6	Outer pole shoe	Steel	1		
7	Voice coil	Copper	1		
8	Leaf spring	Steel	2		

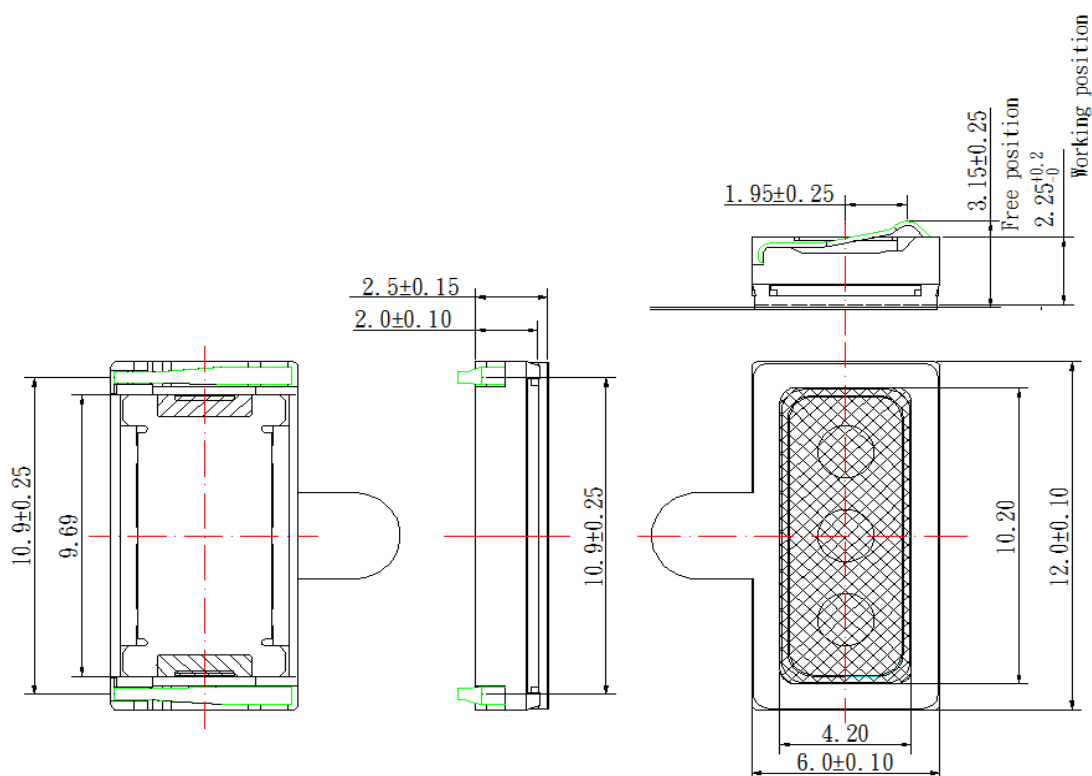


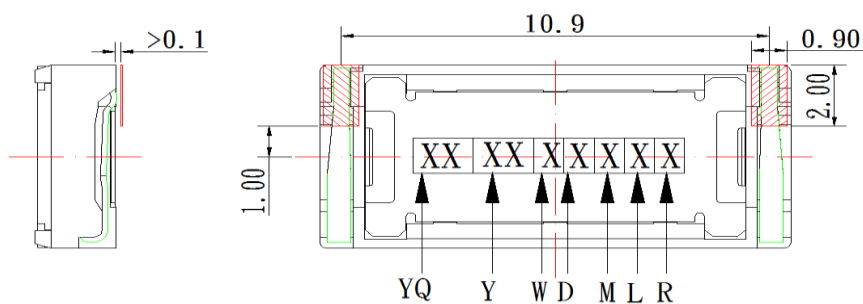
Figure 4, Receiver layout profile

Note:

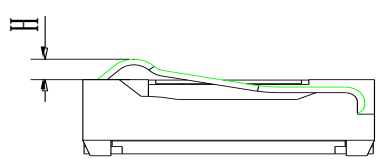
- 1、General unless otherwise noted : $\pm 0.2\text{mm}$
- 2、The minimum force of each spring shouldn't be smaller than 0.3N under working height.

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9.2 Recommendation pad



9.3 spring force

Spring Layout	
compressed height	$0.55 \pm 0.2(\text{mm})$

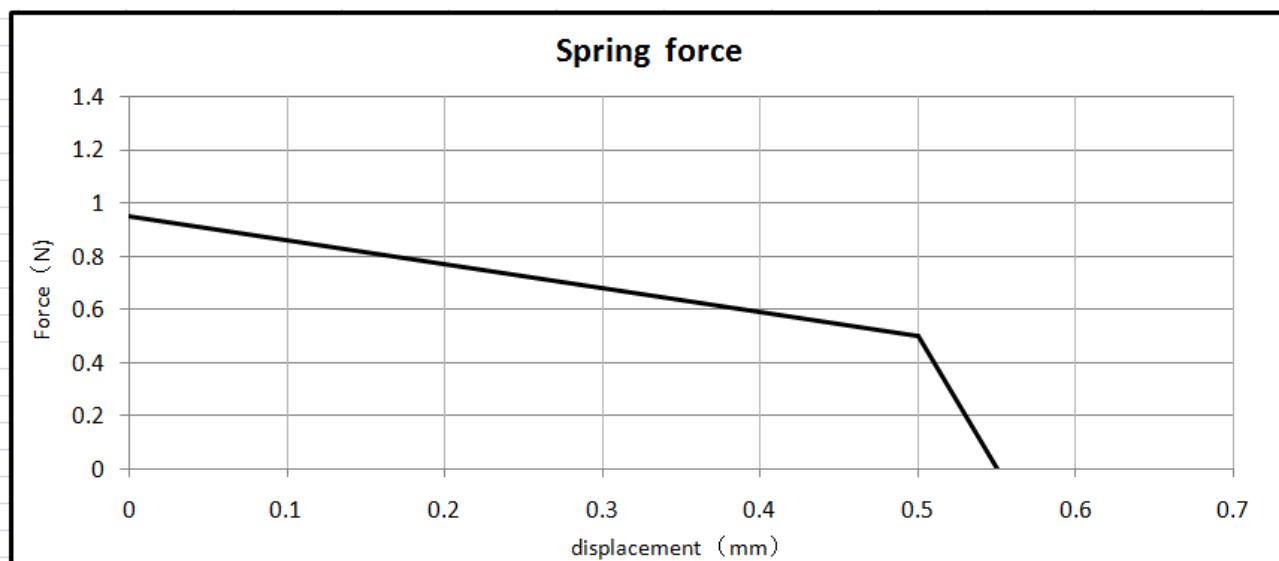


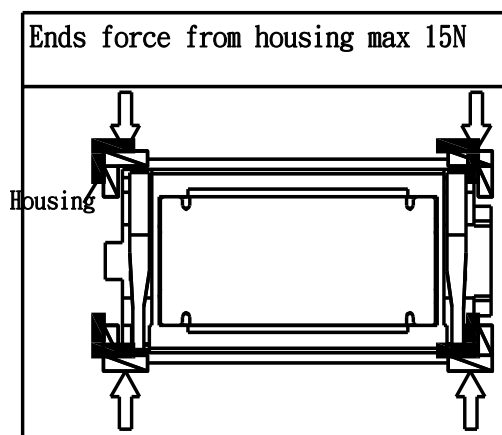
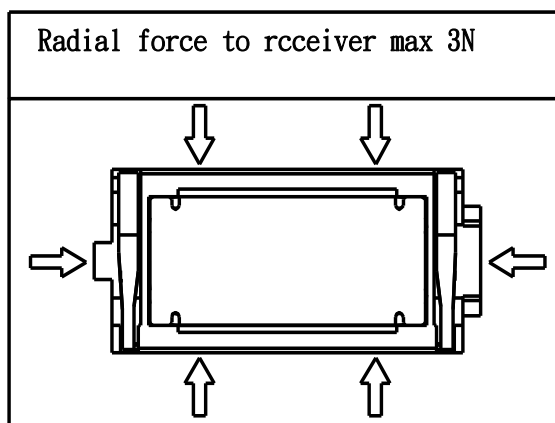
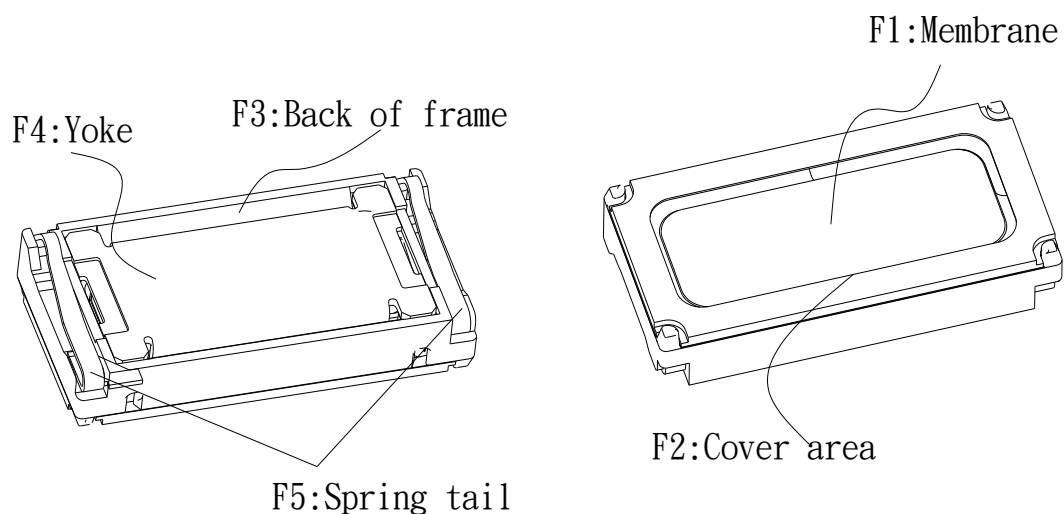
Figure5, Spring force

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9.4 Permitted force to receiver

Max. allowable compression force

No.	from	to	Max. force
1	F2	F3	5N
3	F4	F2	5N
4	F1		0N
5	F5		0N

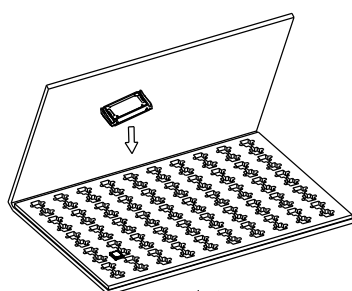


10. Weight

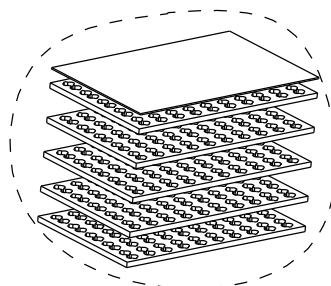
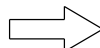
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$0.5 \pm 0.3g$

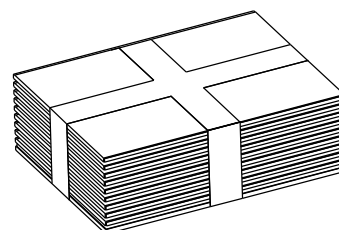
11. Package



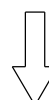
sponge packing
10x10=100pcs
100pcs per tray



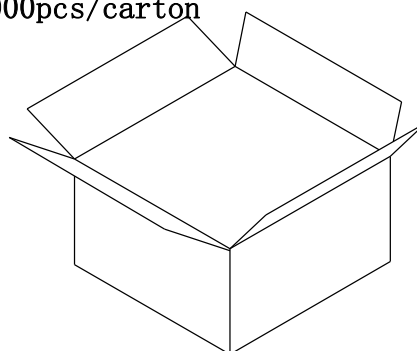
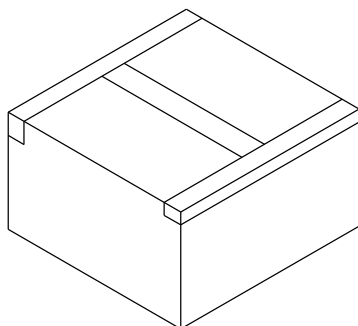
Pasteboard
10X100=1000pcs
1000pcs per pasteboards



Packing box
2 cartons per paking box
Total 2000pcs



1000pcs/carton



12. Application Notes