APPROVAL SHEET
FOR
CELLULAR PORTABLE PHONE RECEIVER

CUSTOMER

AAC P/N NPR0809B-J-04-02

CUSTOMER P/N:

CUSTOMER	APPROVER	CHECKER

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	Product Specification	P/N	NPR0809B-J-04-02

Dynamic Receiver, 30 Ohms,8x9x2.0mm, Spring Contact,GP Compliant

NO.	SPC00007459	Issue:	X1	Revision Date:	July/17/2018	Page:	1/10

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Date	Issue	Detail changes
July/17/2018	X1	Preliminary

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1. Scope

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

2. Environmental Requirements

The transducer including all components and solder joints must be free from lead (Pb) and other banned or restricted substances according to customer's requirements.

3. Electrical Requirements

3.1 Impedance (in free air)	30±20% ohms
3.2 DC Resistance	28±15% ohms
3.3 MAX. continuous input level (rated)	50mW
3.4 Max. short term input level	75mW

4. Acoustical Requirements

4.1 Sound Pressure Level	123+/-3dBSPL Ref. 20uPa (1.26Vrms,1KHz,4195HL)
4.3 Bass Resonance Frequency	500+/-100 Hz (1.26Vrms,in free air, test by MLSSA)
4.4 Rated Frequency Range	200Hz~7kHz
4.5 Frequency Response Curve:	Input:1.26Vrms See Figure1, Table1
4.6 THD	Input:1.26Vrms See Figure2, Table2

4.7 Rub & Buzz

A sine sweep among rated frequency range at 1.26V for a period of 1 second will not result in any buzzing or extraneous sound .

4.8 Overshooting	≤0.15mm(1.26Vrms)

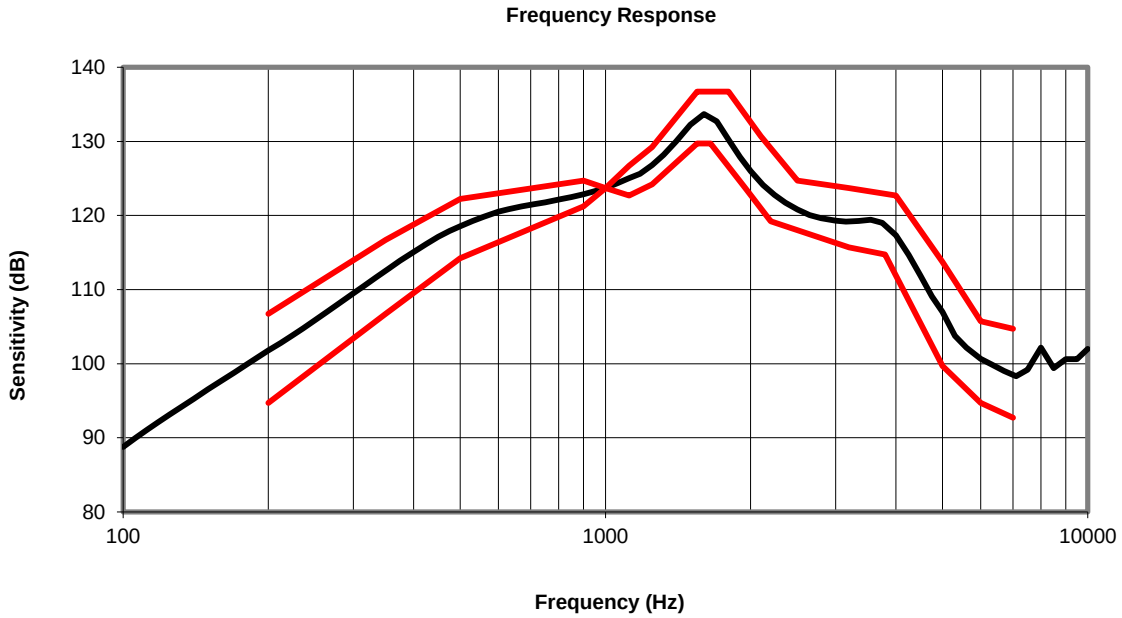


Figure1 Typical FR in Tolerance Window

NOTE: The mask is movable about the Y-axis. The following chart gives the upper and lower limits.

Frequency(Hz)	Upper	Frequency(Hz)	Lower
200	-17	200	-29
350	-7	350	-17
500	-1.5	500	-9.5
900	1	900	-2.5
1000	0	1000	0
1120	3	1120	-1
1250	5.5	1300	0.5
1550	13	1620	6
1800	13	1700	6
2100	7	1950	0
2500	1	2200	-4.5
3200	0	3200	-8
4000	-1	3600	-9
5000	-10	5000	-24
6000	-18	6000	-29
7000	-19	7000	-31

Table1 Tolerance Limits Data for FR

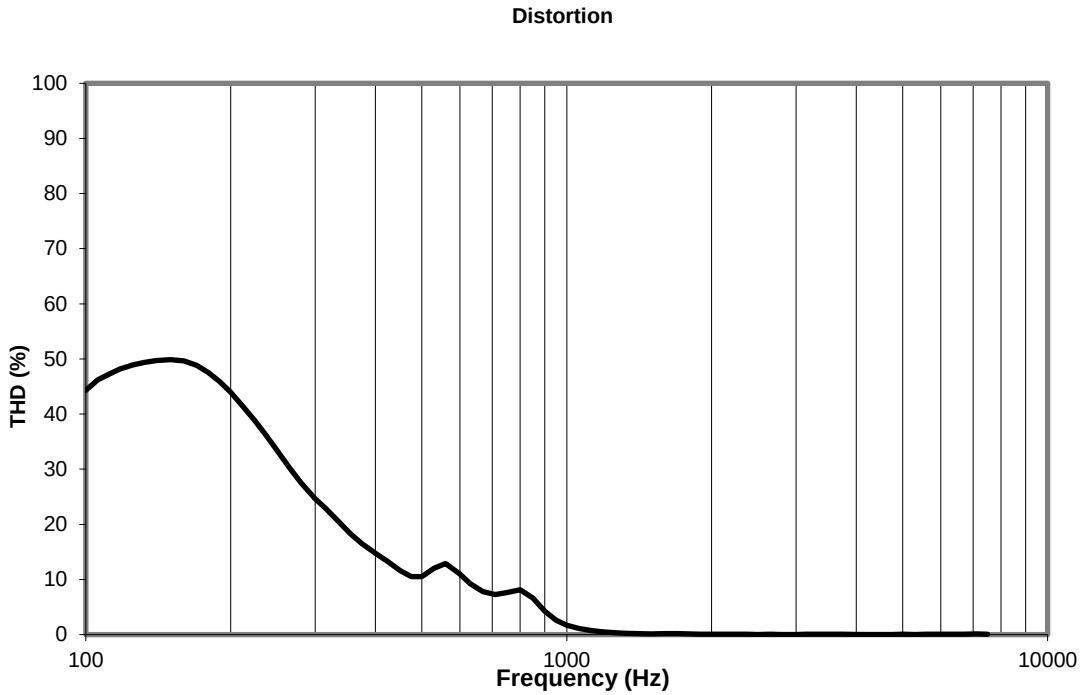


Figure2 Typical THD in Tolerance Window

FREQUENCY(Hz)	UPPER LIMIT(%)
200	
300	
500	
800	
900	
1000	
6000	

Table2 Tolerance Limits Data for THD

5. Test Climatic Condition

Ambient temperature: 15℃~35℃, preferably at 25℃
Relative humidity: 25% to 75%
Air pressure: 86kPa~106kPa
Refer to IEC 268-1

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 Figure4. The swept sine-wave frequency range is 100Hz~10kHz(DRP data).(Input 1.26Vrms).

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 Figure4. The swept sine-wave frequency range is 100Hz~10kHz.(Input 1.26Vrms).

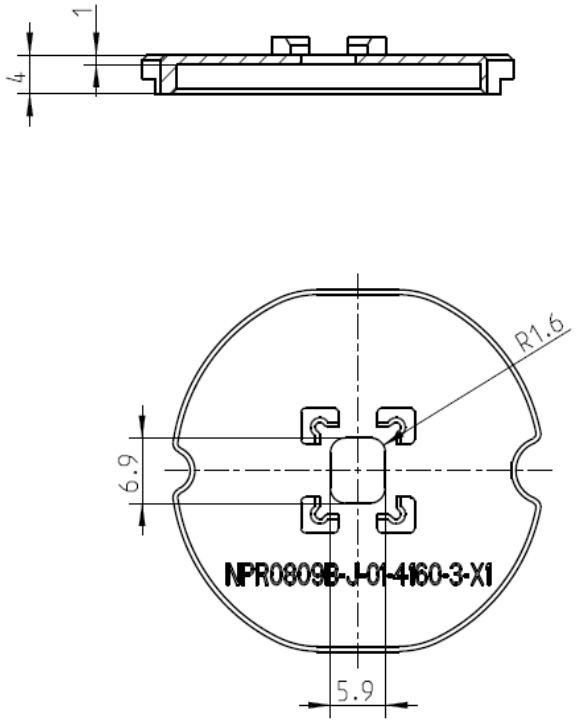


Figure3 Test Fixture

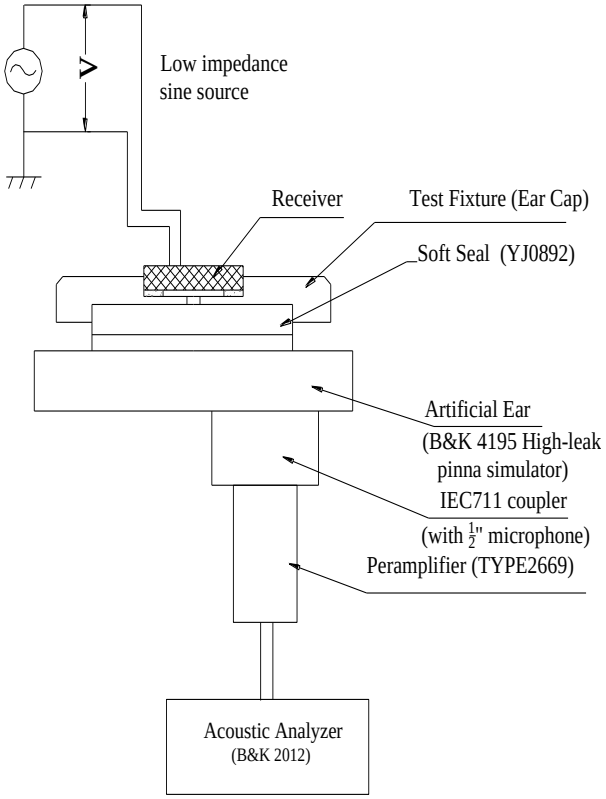


Figure4 Test Flowchart

7. General Requirements

7.1 Operating Temperature Range: -20℃ to +70℃
7.2 Storage Temperature Range: -40℃ to +85℃

8. General Reliability

Immediately after reliability test, the samples shall be stored under climatic conditions such as normally exist in ordinary rooms or laboratories. Unless otherwise noted, the recovery period shall be 4 hours at least before performance testing.
After reliability test, all samples must meet the requirements specified in Section 3&4.

8.1 Temperature Shock:12 samples
-40℃ / +85℃ 10 cycles. 30 minutes at each temperature. 20 - 30 seconds transition time.
Refer to IEC 68-2-14

8.2 Static Humidity Test :12 samples
Soak samples to +65°C with 90% relative humidity for continuous period of 168 hours.
Refer to IEC 68-2-67

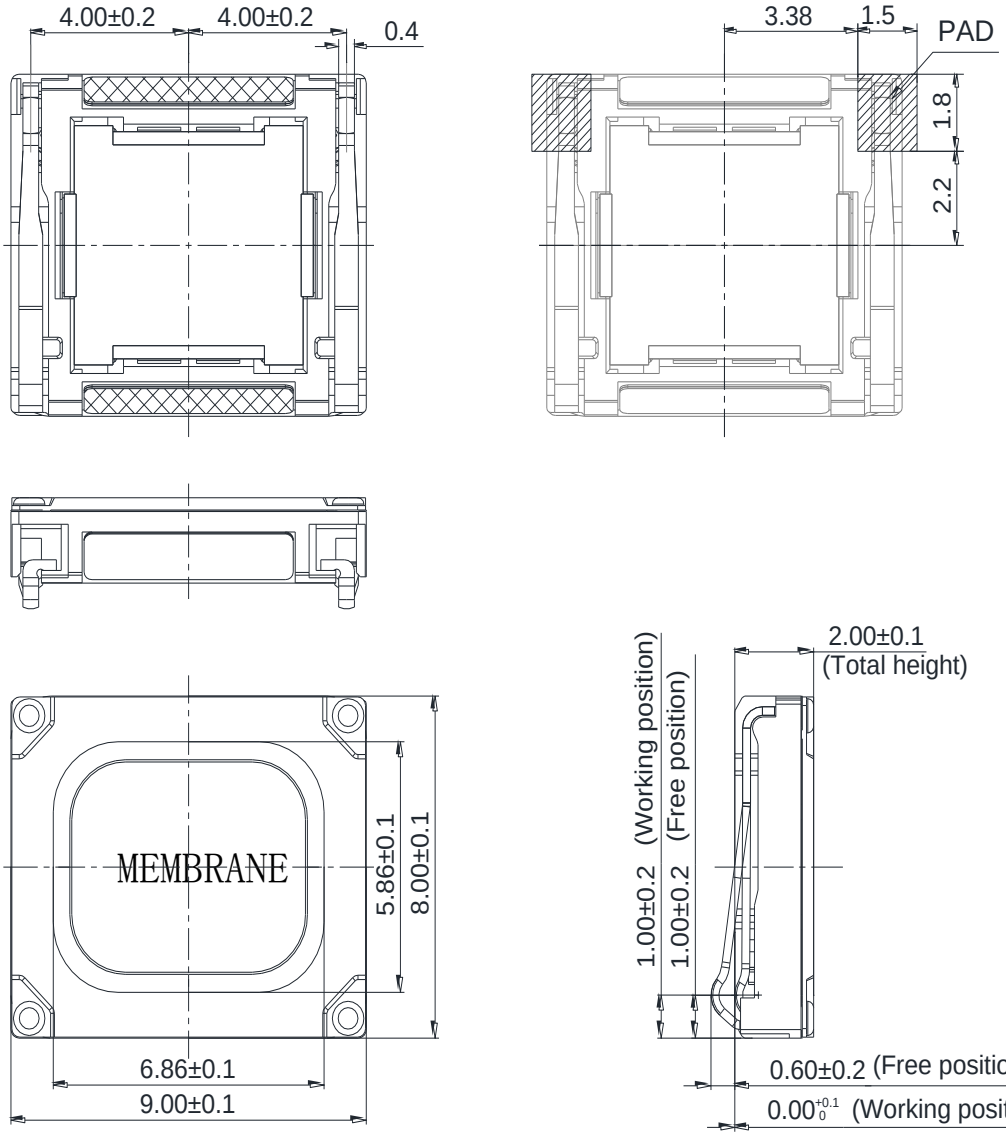
8.3 Drop Test :12 samples
DUTs shall be mounted in a 100g fixture, 1.5m three times in each direction,
total 18 times.

8.4 Operating Life:12 samples
DUTs shall be tested under each specified climatic condition (per section 6) for a continuous period of 100 hours at rated noise power. Input shall be simulated program signal (per IEC 268-1) with a peak to r.m.s ratio of 1.8 to 2.2 in rated frequency range.
Refer to IEC 268-5.

8.5 Short Term Maximum Power(50mW):12 samples
DUTs shall be tested under each specified climatic condition (per section 6) for 1 hour under short term maximum power. Input shall be simulated program signal (per IEC 268-1) with crest factor of 1.8 to 2.2 in rated frequency range. And the signal will be 1 second on,59 second off, total 60 cycles.
Refer to IEC 268-5.

9. Mechanical Layout and Dimensions

9.1 Mechanical layout for Receiver



Unit:mm

1.Tolerance general unless otherwise noted:+/-0.15mm

2.The working position of the contacts will be 0 mm with the single spring force:min 0.4 N

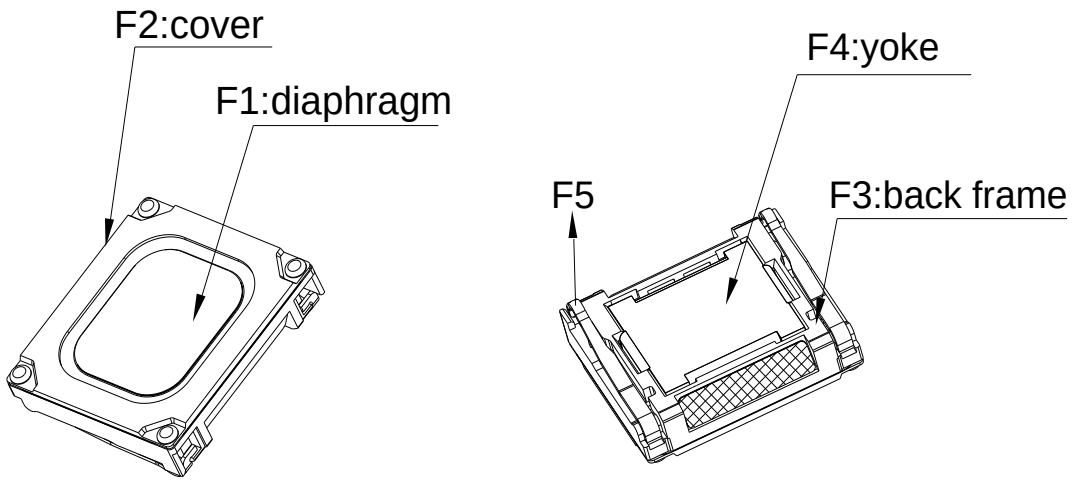
3.There maybe an overshoot for 0.15mm in front of the front cover, the users should notice this.

Figure5

10	MAGNET CAP	1	STEEL		
9	VOICE COIL	1	COPPER		
8	BACK MESH	2			
7	SPRING CONTACT	2	STEEL		
6	FRAME	1	PLASTIC		BLACK
5	MAGNET	1	NdFeB		
4	UPPER PLATE	1	STEEL		
3	DOME	1			
2	DIAPHRAGM	1	PLASTIC		
1	COVER	1	STEEL		
PART NO.	PART NAME	Q'TY	MATERIAL	TREATMENT	REMARK

Table3

9. 2 Permitted Long-Term Force to Receiver



Max.permited compression forces:

No.	From	To	Maximum Permanent Force [N]	Maximum Handling Force [N]
1	F1		0	0
2	F2	F3	5	10
3	F2	F4	5	10
4	F5 Pullout force to springs		0	0

Figure 6

9.3 Plating area

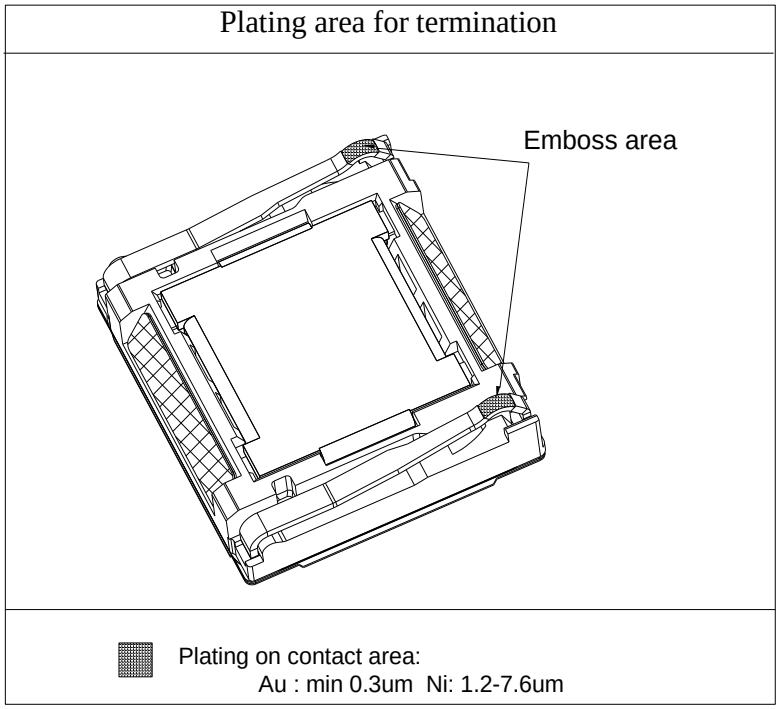


Figure 7

9.4 Date Code

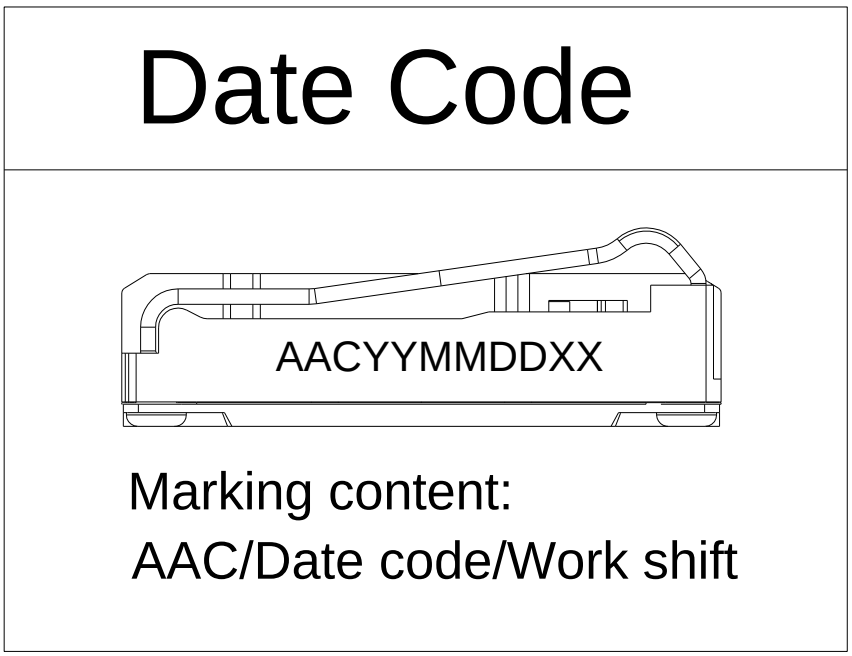
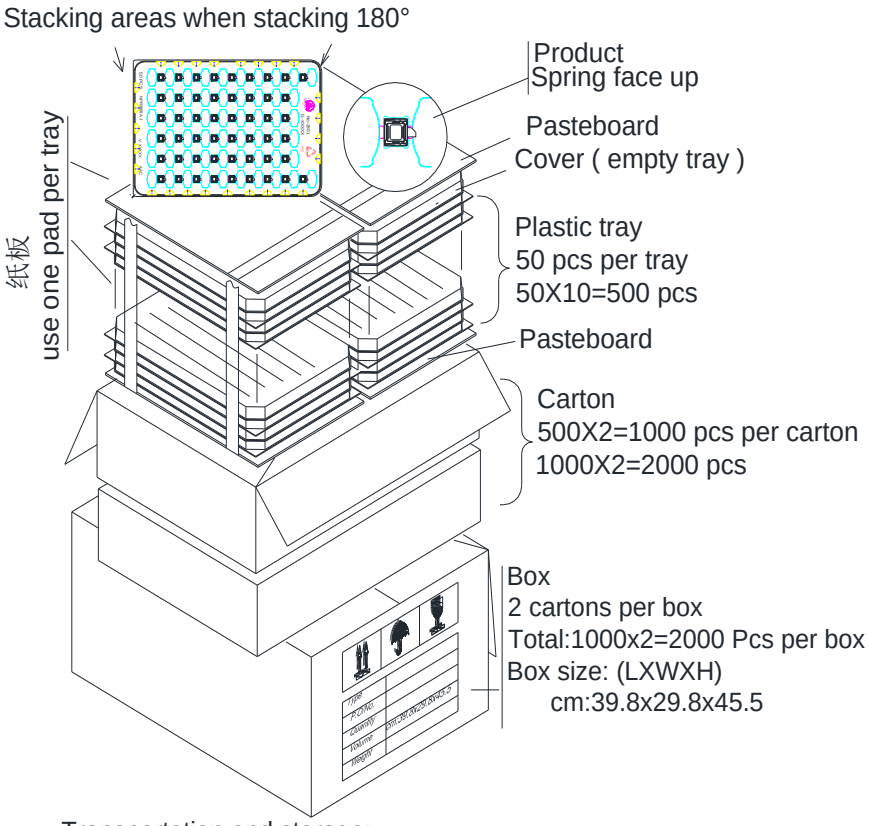


Figure9

10. Weight

0.4+/-0.2g

11. Package



Transportation and storage:

1. Do not add heavy load on the package during shipping and storage. (stacking height ≤2m，stacking weight≤70 Kg)
2. Do not add strong shock during shipping and moving.
3. Keep the package in the room with stable temperature and humidity. (T: +10～+30 °C，H：20~60 ％)
4. The package shelf life is 12 month from the date of original purchase.
5. The package do not directly contact to ground and wall during storage.（Distance to ground ≥10cm，to wall ≥30cm）
6. Keep the product on the tray and do not strong shock when moving ,if not will damage to gasket 、lead wire、spring、contact spring、pad.
7. Keep the product away from hazardous substances (gas、dust、water、food).

Figure 10