APPROVAL SHEET
FOR
CELLULAR PORTABLE PHONE
RECEIVER

CUSTOMER

AAC P/N NPR0809B-J-04-02

CUSTOMER P/N:

AAC 2021.9.6 受控

CUSTOMER	APPROVER	CHECKER

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REV：V4

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

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

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Date	Issue	Detail changes
July/23/2018	V1	Preliminary
Oct/18/2018	V2	Update Waterproof test
Aug/04/2021	V3	Update limits and reliability test
Sept/06/2021	V4	Updata THD and HOHD limits

Table of contents

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	80mW

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)

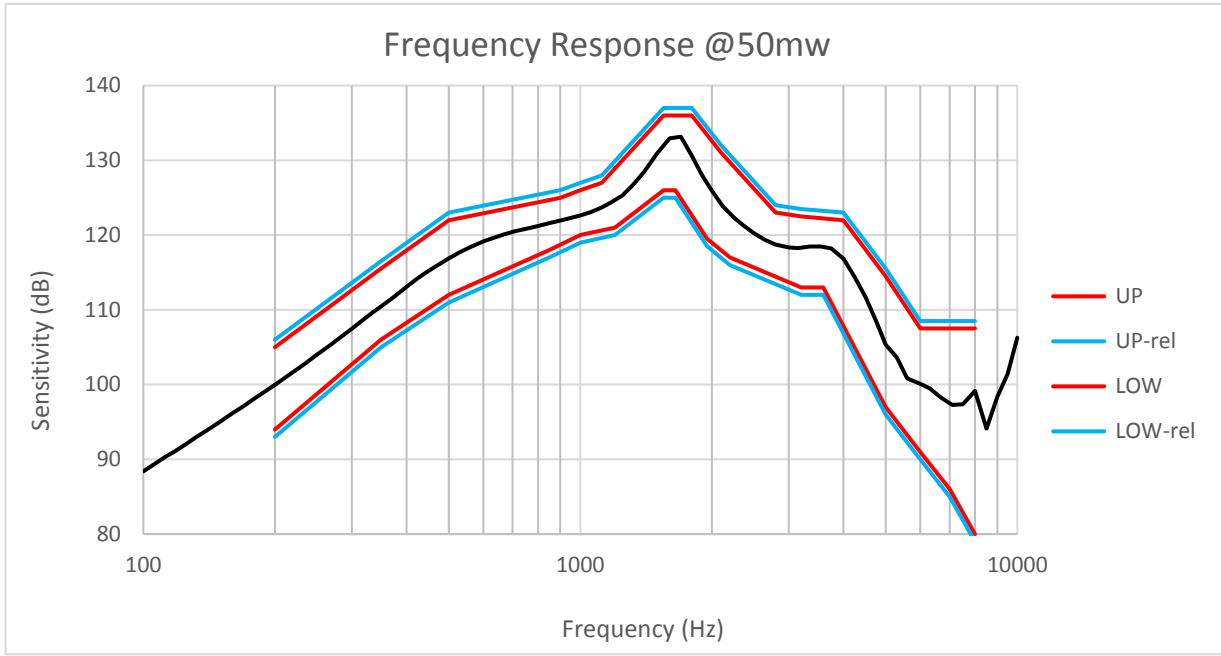


Figure1 Typical FR in Tolerance Window

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

	UP	UP-rel		LOW	LOW-rel
200	105	106	200	94	93
350	115.5	116.5	350	106	105
500	122	123	500	112	111
900	125	126	850	118	117
1000	126	127	1000	120	119
1120	127	128	1200	121	120
1550	136	137	1550	126	125
1800	136	137	1650	126	125
2100	131	132	1950	119.5	118.5
2800	123	124	2200	117	116
3200	122.5	123.5	3200	113	112
4000	122	123	3600	113	112
5000	114.5	115.5	5000	97	96
6000	107.5	108.5	6000	91	90
7000	107.5	108.5	7000	86	85
8000	107.5	108.5	8000	80	79

Table1 Tolerance Limits Data for FR

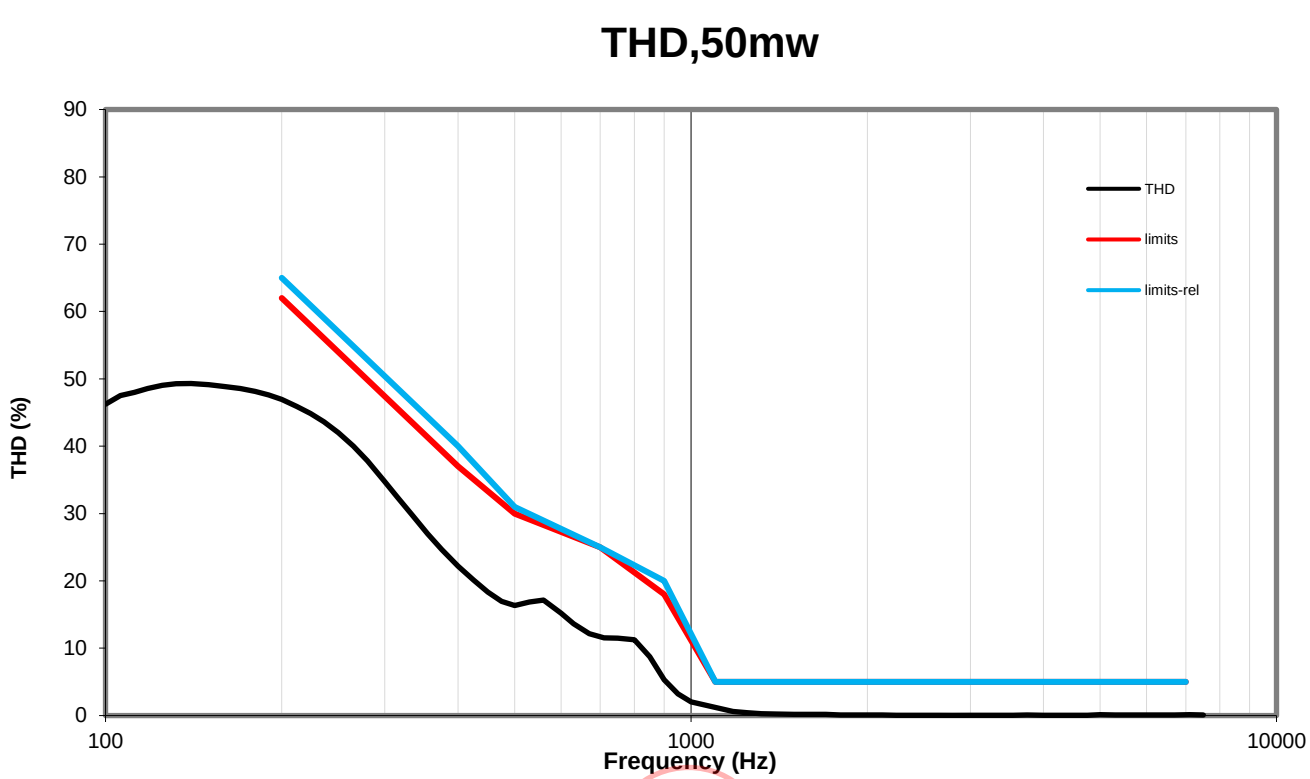


Figure2 Typical THD in Tolerance Window

	limits	limits-rel
200	62	65
400	37	40
500	30	31
700	25	25
900	17	20
1100	5	5
6000	5	5
7000	5	5

Table2 Tolerance Limits Data for THD

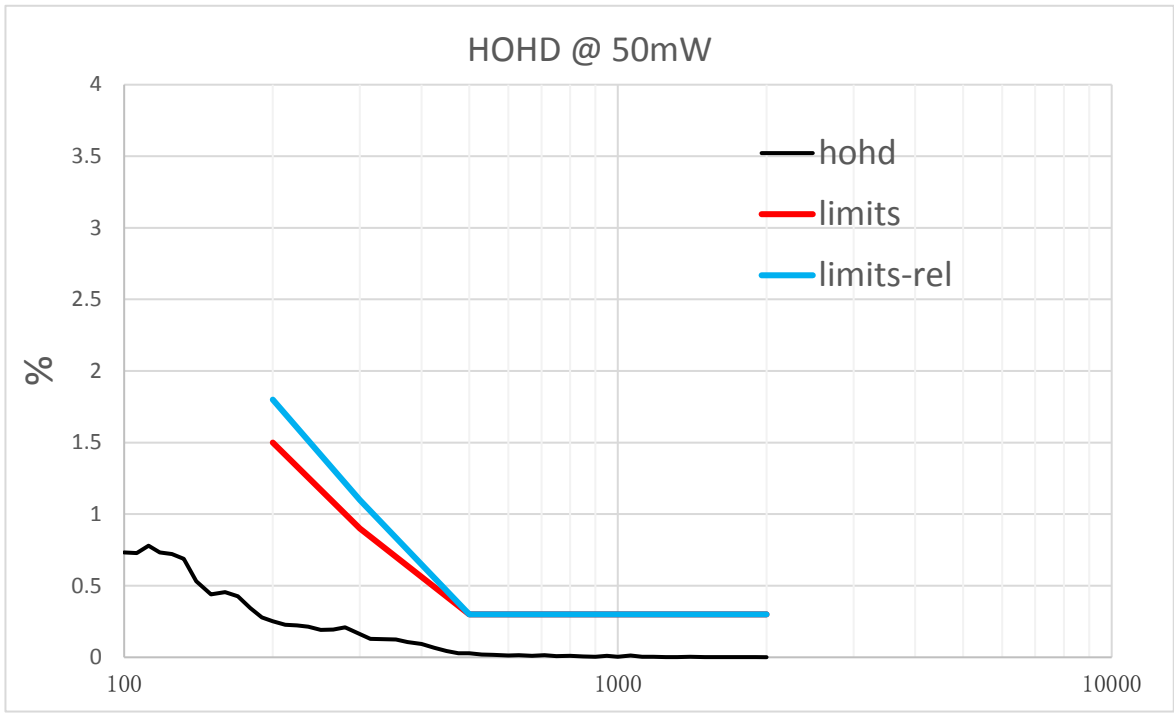


Figure3 Typical HOHD（10th-35th）with 50mW stimulus power in Tolerance Window

FRE	HOHD(10-35)%	
	limits	limits-rel
200	1.5	1.8
300	0.9	1.1
500	0.3	0.3
1000	0.3	0.3
2000	0.3	0.3

Table3 Tolerance Limits Data for HOHD,50mW

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).

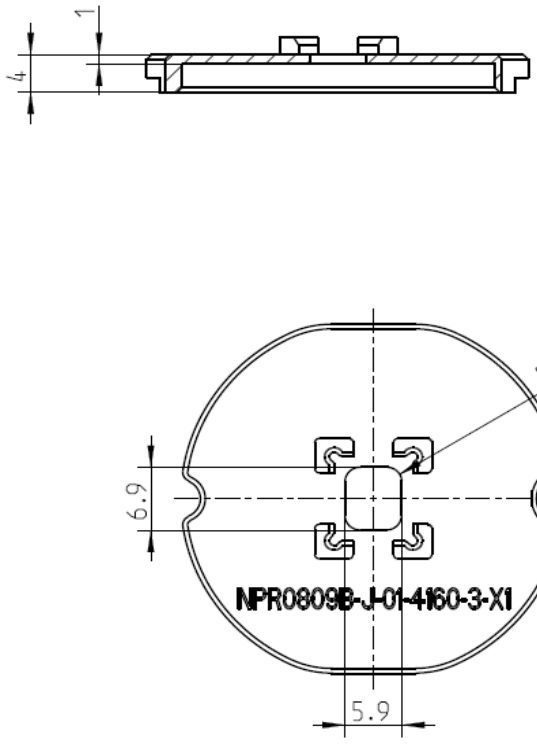


Figure3 Test Fixture

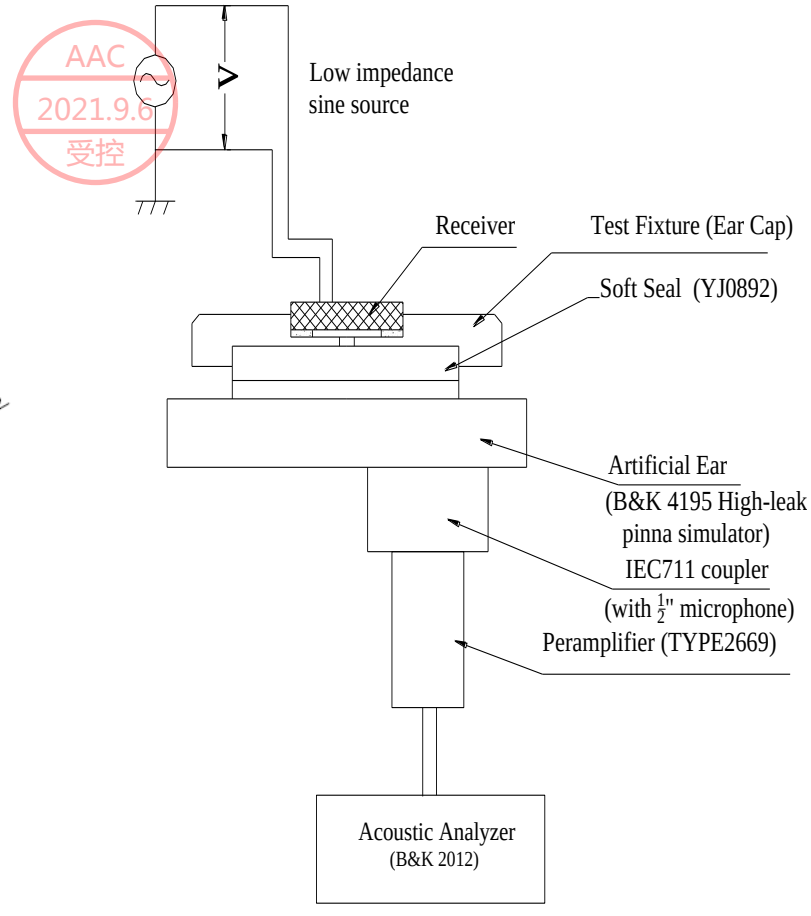


Figure4 Test Flowchart

7. General Requirements

7.1 Operating Temperature Range: -20℃ to +70℃

7.2 Storage Temperature Range: -40℃ to +85℃

8. General Reliability

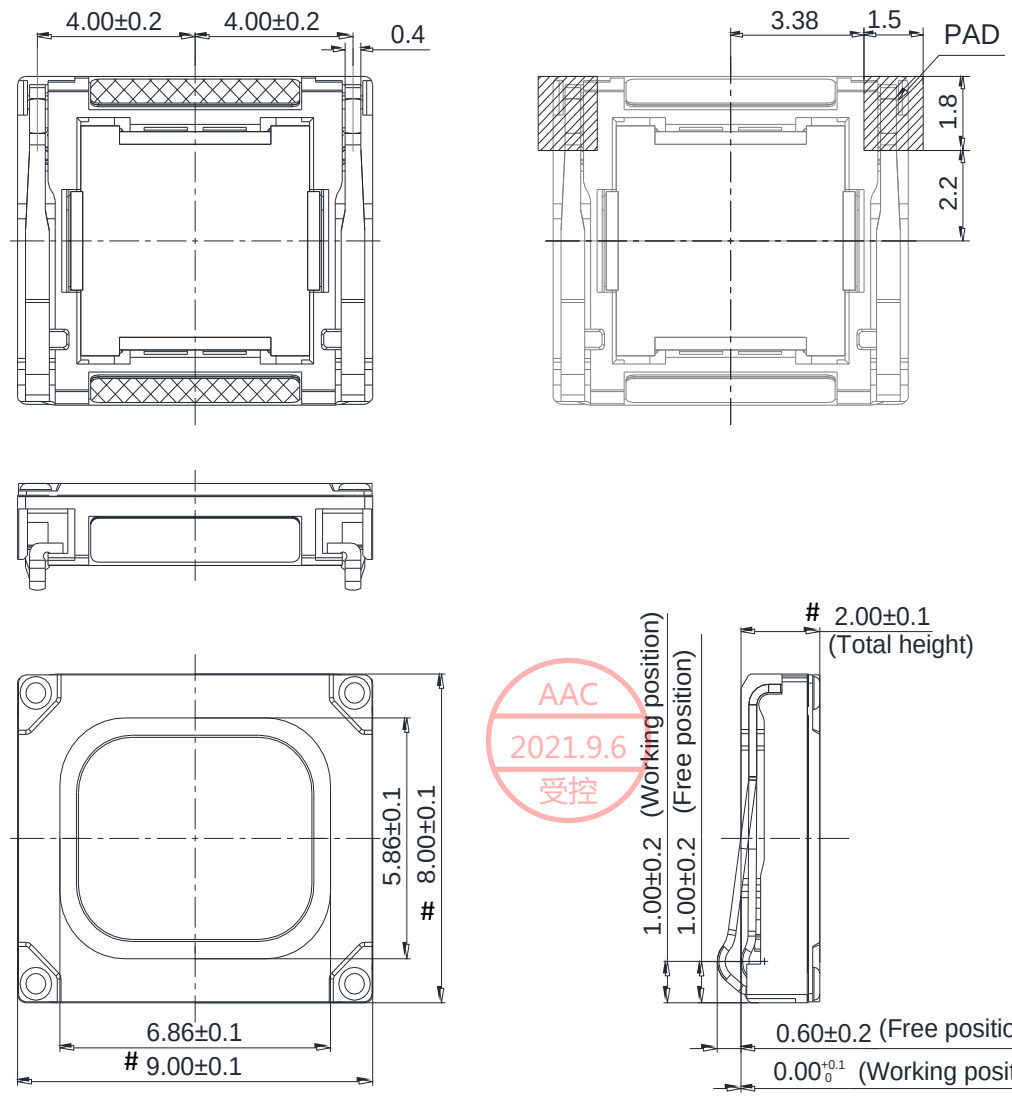
Immediately after reliability test, the samples shall be stored under climatic conditions such as normally exist in ordinary rooms or laboratories. Unless otherwise noted, the recovery period shall be 4 hours at least before performance testing.

跌落试验	大理石，跌落试验台	将样品装在 150g 配重夹具中， 高度：1.5m（振动喇叭为 1m） 接触介质：硬质大理石 次数：6 面 4 角，4 轮，共 40 次 （振动喇叭：6 面 2 轮共 12 次）	外观：与实验前对比无异常 纯音:无杂音、破音、音小、无声等
滚筒试验	滚筒跌落试验机	将样品装在 150g 夹具中(振动喇叭装在 145~150 克的功能机中）， 高度：1m 次数：300 次 转速：5r/min	
微跌试验	微型跌落试验台	将样品装在 150g 配重夹具中， 高度 10cm，正反面各 5000 次，其他四个面各 1000 次，每个面确认 1 次，共 14000 次。 (振动喇叭装在 145~150 克的功能机中，只跌侧面，每面 1000 次，共 4000 次，正反面无要求) 试验速率：15 次/min	
低温存储试验	低温箱	环境：-40℃±2℃，时长：96h 恢复：室内放置 2h 后检测	外观：与实验前对比无异常 纯音:无杂音、破音，无声等 性能：实验前后频响曲线及其他参数符合规格书对应的各项要求；
低温寿命试验	多路扬声器寿命测试仪+低温箱	环境：-20℃±2℃，时长：48H 信号：额定功率下粉噪信号 频率：喇叭 20Hz~20KHz，听筒 200Hz~7KHz 室温恢复 2H 后测试	
高温存储试验	高温箱	环境：85℃±2℃，时长：96h 恢复：室内放置 2h 后测试	
高温高湿存储试验	恒温恒湿箱	环境：60℃，RH95%，时长：120H 室温恢复 2h 后测试	
温度冲击试验	温度变化箱	环境：-40℃，保持 30min，经过 5min 转换到达+85℃，保持 30min，再经过 5min 转换下降至-40℃，此为一个循环，时长：24 个循环 室温恢复 2h，作性能、纯音检测	

温度变化试验	温度变化箱	环境：-20℃，保持 30min，然后以 3℃/min 的速度上升至 70℃ /RH95%，保持 30min，再以 3℃/min 的速度下降至-20℃，此为一个循环，时长：24 个循环 室温恢复 2h，做性能、纯音检测	
寿命试验	多路扬声器寿命测试仪	环境：常温常湿下，时长：120h 信号：额定功率下粉噪信号 频率：喇叭 20Hz~20KHz，听筒 200Hz~7KHz 室温恢复 2h，作性能、纯音检测	
高温高湿寿命试验	多路扬声器寿命测试仪+高温箱	环境：60℃，RH95%，时长：智能机喇叭 96h，功能机喇叭 48h（传统 BOX 不做要求） 信号：额定功率下粉噪信号 频率：20Hz~20KHz 室温恢复 2h，作性能、纯音检测	
短期最大功率	扫频仪	输入最大功率值(参考承认书)的扫频信号给与喇叭或听筒，1S 开，59S 关，持续 60 个周期后作性能、纯音检测	
弹力试验	游标卡尺（高度规）	将喇叭（听筒）弹片压缩至规定的工作高度（参考规格书）后松开，如此反复 20 次，弹片需能回复到规定的范围内	外观：与实验前对比无明显异常，（如弹片断裂，回弹性差，具体按规格书，极限公差为±0.5mm）
盐雾试验	盐雾箱	中性盐雾试验，环境：35℃，RH85%，PH 值：6.5~7.2，NaCl 溶液浓度：5%，喷雾时长：48h	将样品用清水冲洗擦干净，室温放置 2H 后观察； 外观：与实验前对比无异常
音圈冲击试验	直流电源	喇叭电压 4V，听筒电压 3V，持续 1 分钟，正反向电流方向分别测试。	音圈不可散线、断线、碳化，膜片与音圈不可脱层，断胶

9. Mechanical Layout and Dimensions

9.1 Mechanical layout for Receiver



1. Unit:mm
2. Tolerance general unless otherwise noted:+/-0.15mm
3. #: critical dimension,CPK>1.33

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

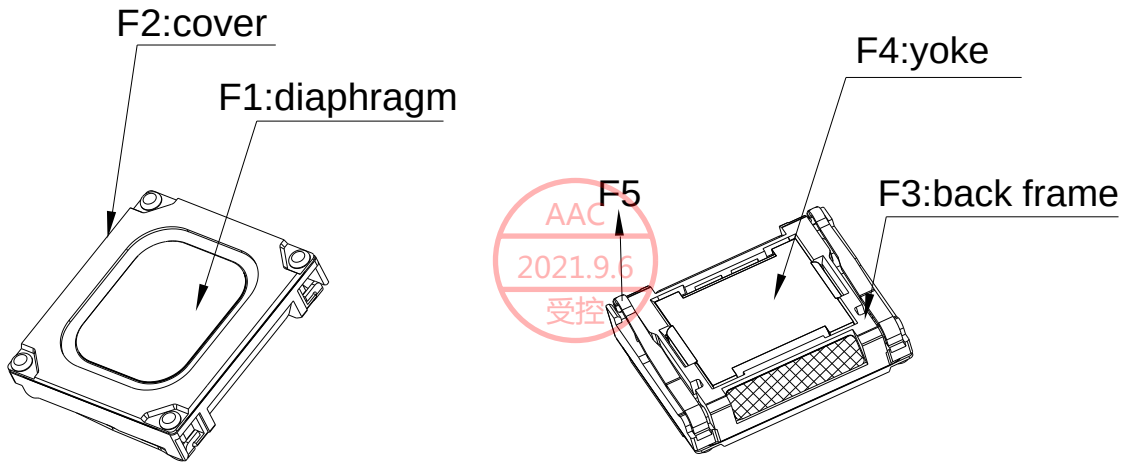
3.There maybe an overshoot for 0.15mm in front of the front cover,
the users should notice this.

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

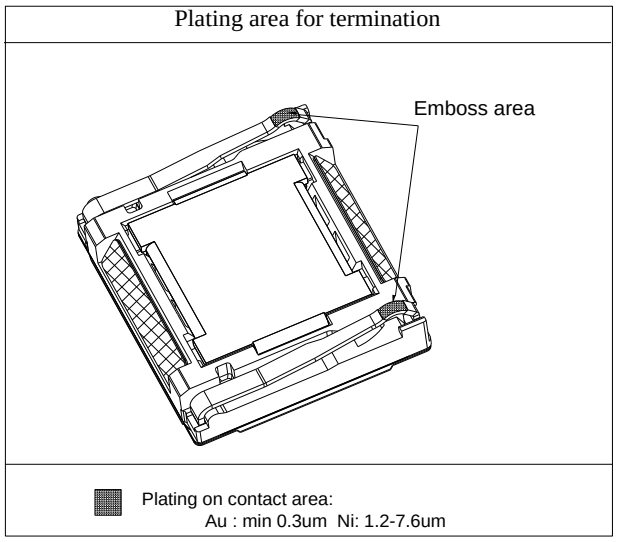
9. 2 Permitted Long-Term Force to Receiver



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 and polarity



polarity:

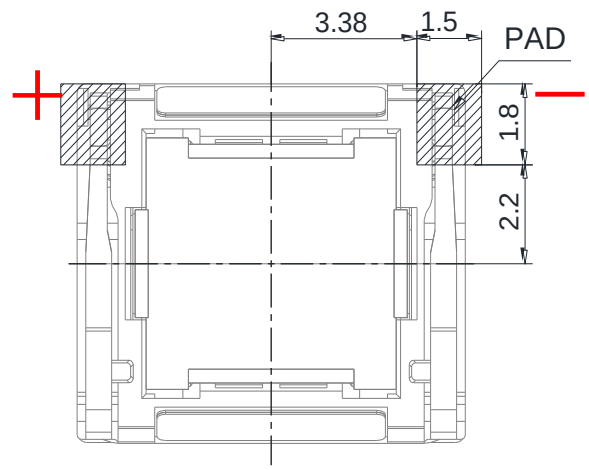
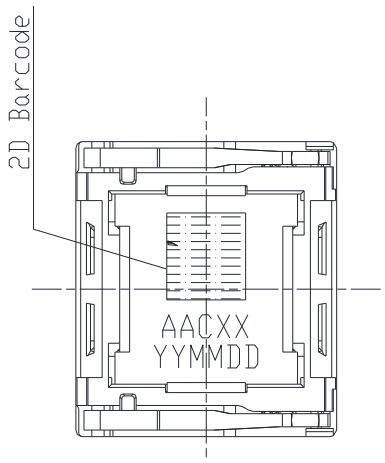


Figure 7

9.4 Date Code



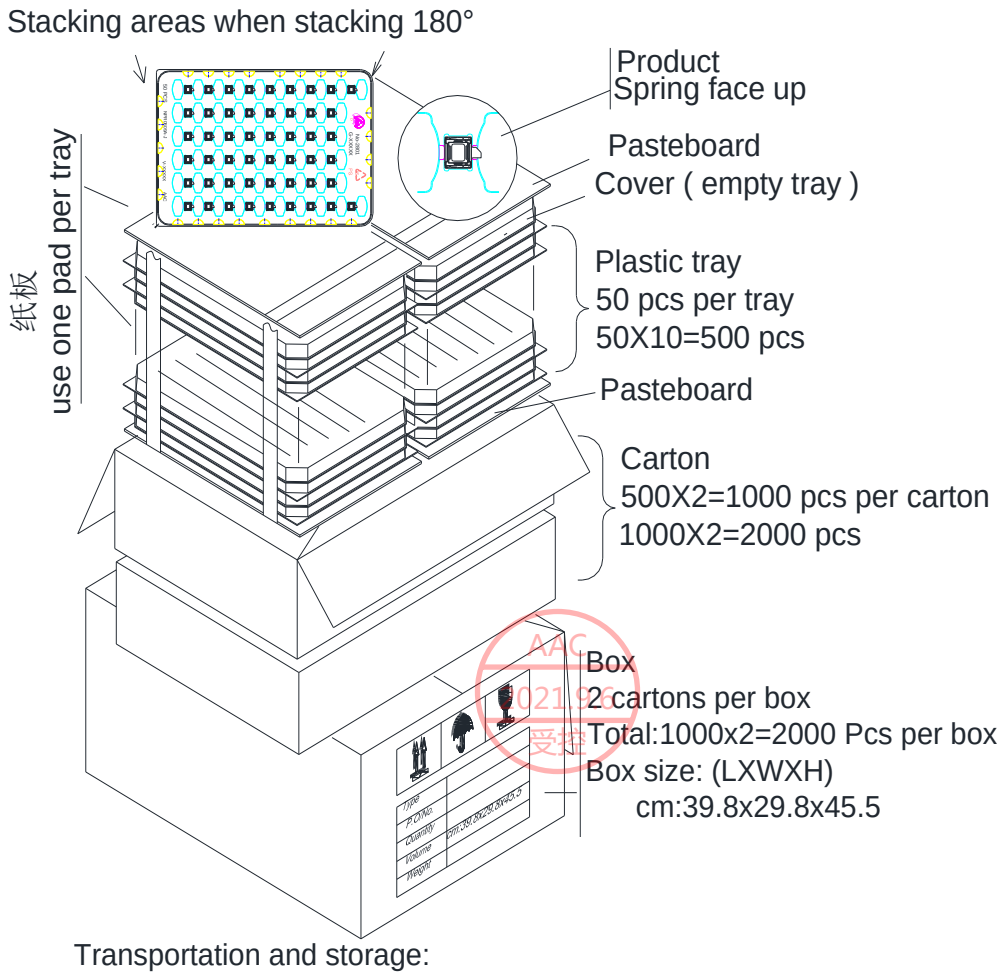
Marking content:
AAC/Work shift/Date code

Figure8

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 9