



**APPROVAL SHEET
FOR
DYNAMIC MINIATURE
SPEAKER**

CUSTOMER: _____

AAC P/N: SPS1217H-04-03

CUSTOMER P/N: _____

CUSTOMER	APPROVER	CHECKER

AAC ACOUSTIC TECHNOLOGIES HOLDINGS INC.

**Add: AAC Technology Building, NO.18., Xinxi Road, North Hi-Tech
Industrial Park, Nanshan District, Shenzhen, P.R. China 518057**

Tel : 0086 755 26054538

REV: X2

AAC Confidential Information



瑞声科技
AAC TECHNOLOGIES

Product Specification

P/N

SPS1217H-04-03

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 1/12

ME	Li Xiaofang	Check/Appr.	Wu Shuwen
Package Eng.	Jiang Xiaojing		
AE	Han Kun	Check/Appr.	Shao Yi

Date	Issue	Detail changes
Mar/06/2017	X1	Preliminary Version
May/04/2017	X2	Change mechanical size

Table of contents

1. Scope
2. Environmental Requirement
3. Electrical Requirements
4. Acoustical Requirements
5. Polarity Requirements
6. Test Climatic Condition
7. Test Method
8. General Requirement
9. General Reliability
10. Mechanical Layout and Dimensions
11. Weight
12. Package

AAC Confidential Information

The information contained in this document is PROPRIETARY to AAC Inc. and shall not be reproduced or used in part or whole without AAC's written consent.

**Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant**

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 2/12

1. Scope

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

2. Environmental Requirement

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

3.1.1 Rated Impedance (in 0.75cc box)	8±15% ohms @2kHz, 2.83Vrms input
3.1.2 DC Resistance	7±10% ohms

3.2 Rated Noise Power (in 0.75cc box)	1.0 Watts/2.83Vrms
---------------------------------------	--------------------

3.3 Short Term Maximum Power (in 0.75cc box)	1.5 Watts/3.46Vrms
--	--------------------

4. Acoustical Requirements

4.1 Sound Pressure Level	95±3dB at 2.83Vrms/10cm ,2kHz in 0.75cc box /on baffle
--------------------------	---

4.2 Bass Resonance Frequency (in 0.75cc box) Frequency Response	850 ± 15% Hz at 2.83Vrms input
--	--------------------------------

4.3 Rated Frequency Range Frequency Response	500 - 20kHz See Figure 1, Table 1
---	--------------------------------------

4.4 THD	See Figure 2, Table 2
---------	-----------------------

4.5 Rub & Buzz

A sine sweep among 200-3400Hz at 2.83V in 0.75cc will not result in any buzzing or extraneous sound, sweep 2-3 cycles, 1 sec for each cycle.

AAC Confidential Information

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002

Issue: X2

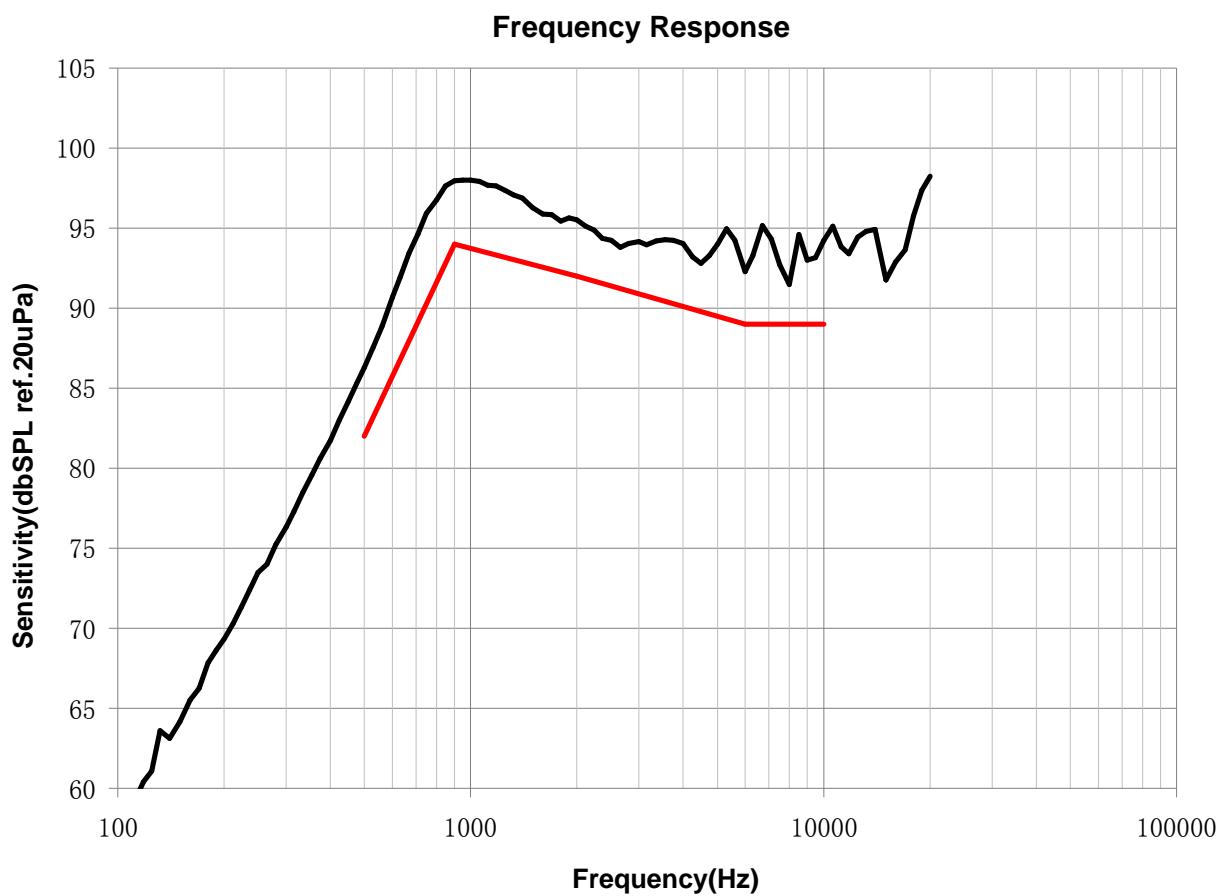
Revision Date: May/04/2017

Page: 3/12

Table 1 Limit Data for Frequency Response

Freq.	Limit
500	82
900	94
2000	92
6000	89
10000	89

Figure 1 Typical Frequency Response Curve

**AAC Confidential Information**

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002

Issue: X2

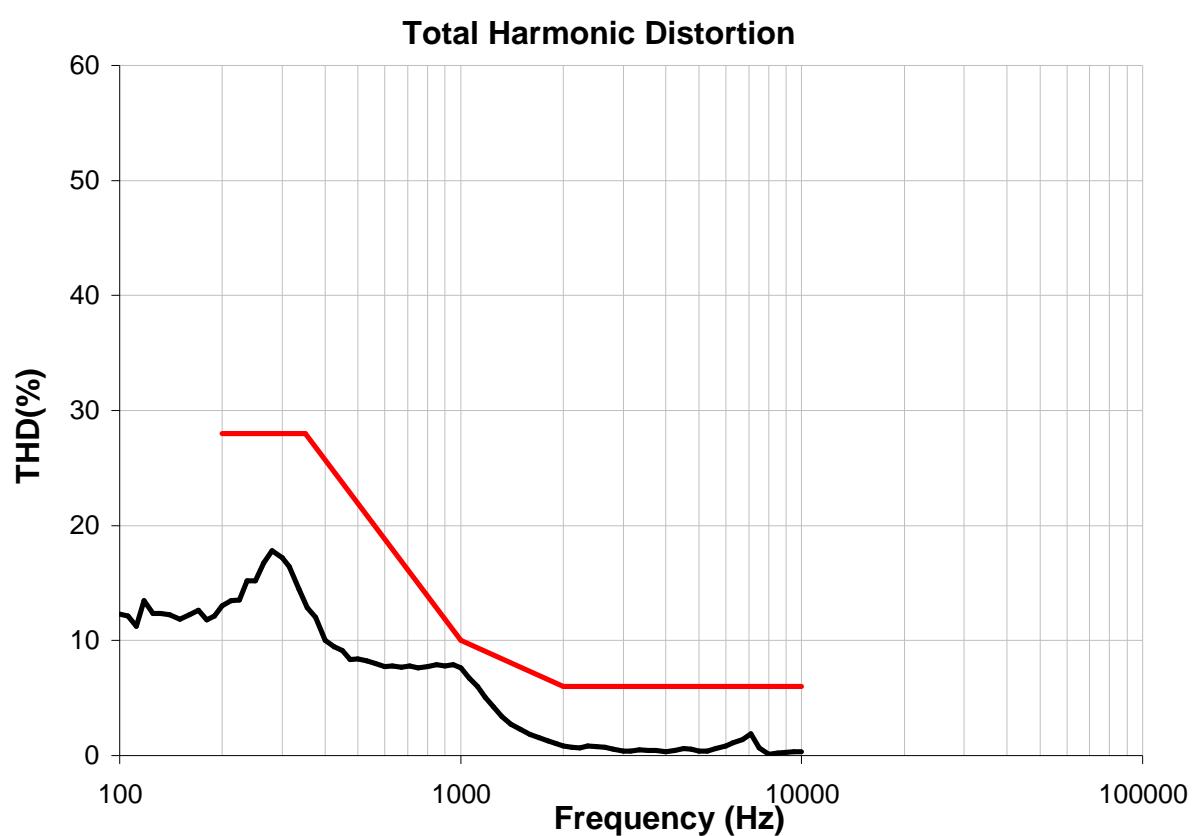
Revision Date: May/04/2017

Page: 4/12

Table 2 Limit Data for THD

Freq.	Limit
200	28
350	28
1000	10
2000	6
10000	6

Figure 2 Typical THD Curve

**AAC Confidential Information**

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002

Issue: X2

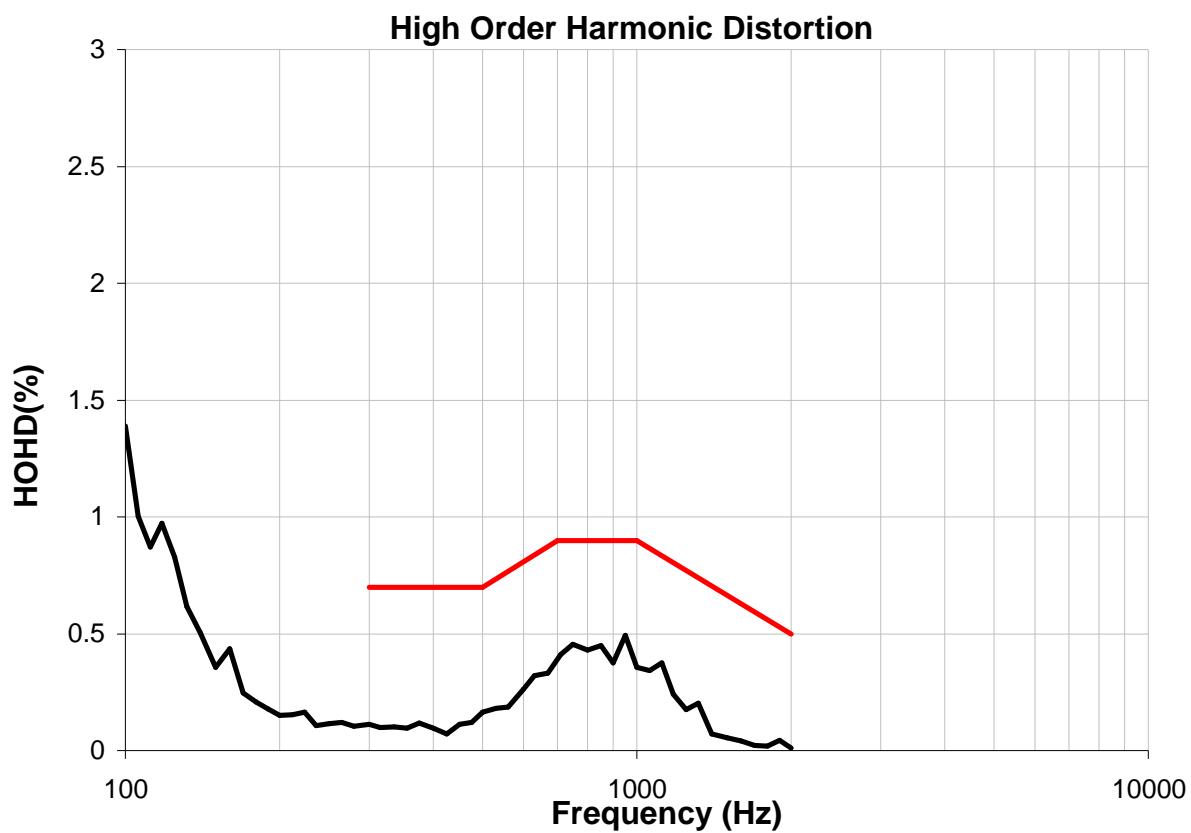
Revision Date: May/04/2017

Page: 5/12

Table 3 Limit Data for HOHD

Freq.	Limit
300	0.7
500	0.7
700	0.9
1000	0.9
2000	0.5

Figure 3 Typical HOHD Curve

**AAC Confidential Information**

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002

Issue: X2

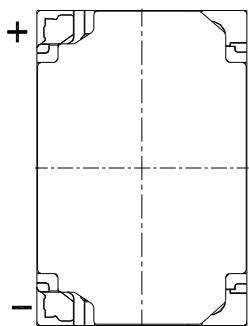
Revision Date: May/04/2017

Page: 6/12

5. Polarity Requirements

5.1 Polarity

When a DC source's "+" polarity is attached to speaker's "+" polarity, "-" polarity is attached speaker's "-" polarity, the membrane will move forward.



5.2 Magnetic Polarity

Top of the magnet is the south pole.

AAC Confidential Information

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 7/12

6. Test Climatic Condition

Ambient temperature: 21 °C - 25 °C, preferably at 23 °C

Relative humidity: 25% to 75%

Air pressure : 86kPa - 106kPa

Refer to IEC 268-1

7. Test Method

7.1 SPL and Frequency Response Curve

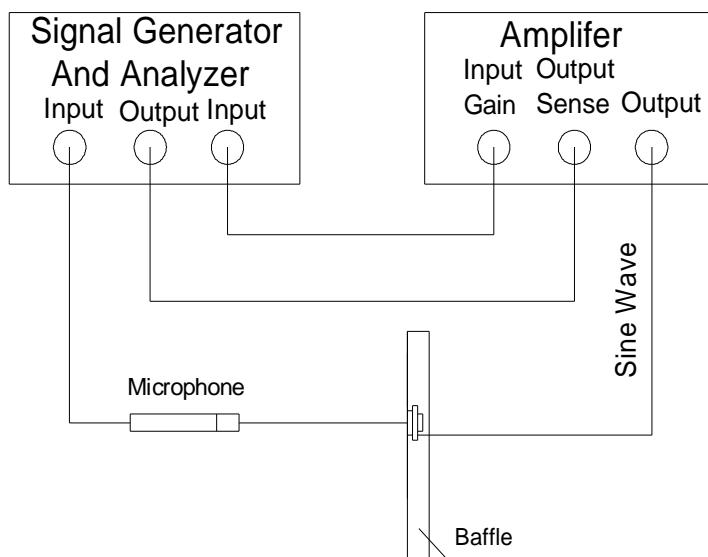
be free-field microphone and placed at specified distance from DUT, on axis. The drive power is rated power, and swept sine-wave range is 100Hz to 20kHz with a R40 of test sequence.

7.2 THD

Tested per Section 7.1 and driven at rated power , sweep at specified frequency range with R40 test sequence.

Figure 4 Test setup

Speaker Measurement Circuit



AAC Confidential Information



Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 8/12

8. General Requirements

8.1 Operating Temperature Range	-20°C to +70°C	without loss of function
8.2 Storage Temperature Range	-40°C to +85°C	without loss of function

9. General Reliability (in 0.75cc box)

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 be meet the requirements specified in section 3 & 4.

9.1 Temperature Shock: 12 samples

-40°C / +85°C 10 cycles. 30 minutes at each temperature. 20 - 30 seconds transition time. Refer to IEC 68-2-14

9.2 Static Humidity Test : 12 samples

Soak samples to +60°C with 90% relative humidity for continuous period of 96 hours.
Refer to IEC 68-2-67

9.3 Drop Test : 12 samples

DUTs shall be mounted in a 150g fixture, drop samples 1.5m three times in each direction, total 18 times.

9.4 Operating Life: 12 samples

DUTs shall be tested under each specified climatic condition (per section 7) for a continuous period of 100 hours at rated noise power. Input shall be pink noise signal (IEC 268-1) with a peak to r.m.s ratio of 1.8 to 2.2 in 20-20KHz. Refer to IEC 268-5.

9.5 Short Term Maximum Power : 10samples

Specified climatic condition (per Section 7) for 1 hour under short term maximum power. Input shall be pink noise signal (IEC 268-1) with crest factor of 1.8 to 2.2 in 20-20KHz. And the signal will be 1 second on, 59 seconds off, total 60 cycles. Refer to IEC 268-5.

AAC Confidential Information

The information contained in this document is PROPRIETARY to AAC Inc. and shall not be reproduced or used in part or whole without AAC's written consent.



瑞声科技
AAC TECHNOLOGIES

Product Specification

P/N

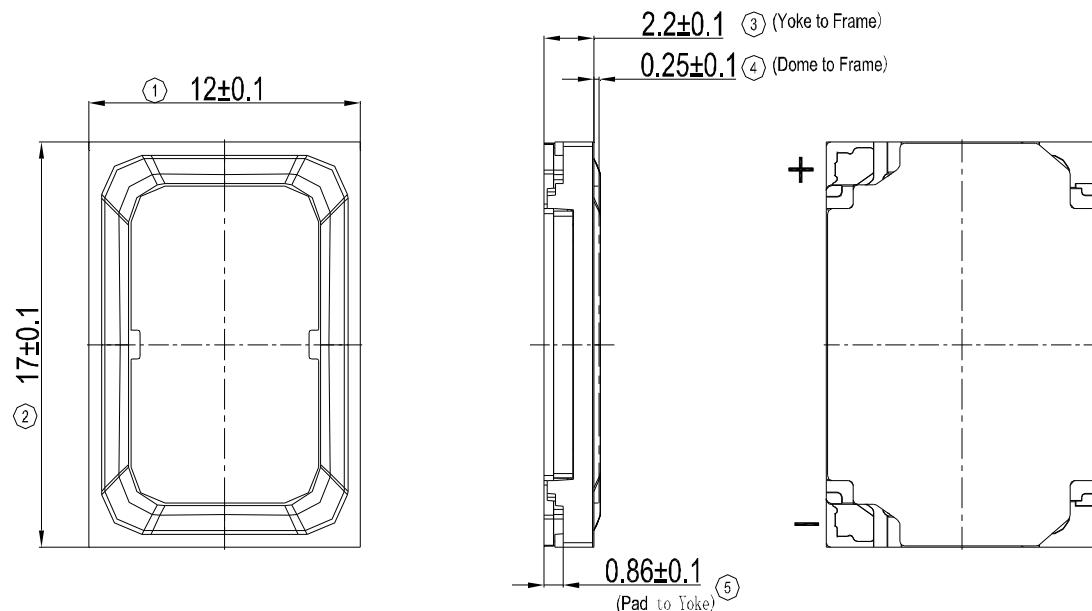
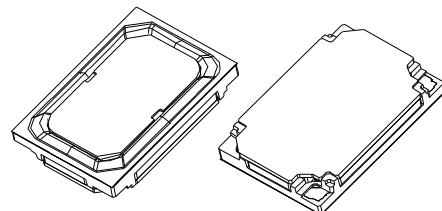
SPS1217H-04-03

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 9/12

10. Mechanical Layout and Dimensions

10.1 Mechanical Layout for Speaker Unit



1. Unit:mm

2. Tolerance general unless otherwise noted ±0.1 mm

AAC Confidential Information

The information contained in this document is PROPRIETARY to AAC Inc. and shall not be reproduced or used in part or whole without AAC's written consent.



瑞声科技
AAC TECHNOLOGIES

Product Specification

P/N

SPS1217H-04-03

Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 10/12

PART NO.	PART NAME	Material	Qty	TREATMENT	REMARK
1	Frame	Plastic	1		
2	Diaphragm	POLYMER	1		
3	Dome	Aluminium foil(white)	1		
4	Yoke	Iron	1		
5	Voice Coil	Copper	1		
6	Magent	NdFeB	5		

AAC Confidential Information

The information contained in this document is PROPRIETARY to AAC Inc. and shall not be reproduced or used in part or whole without AAC's written consent.



Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO. SP_S_1217_H-00002

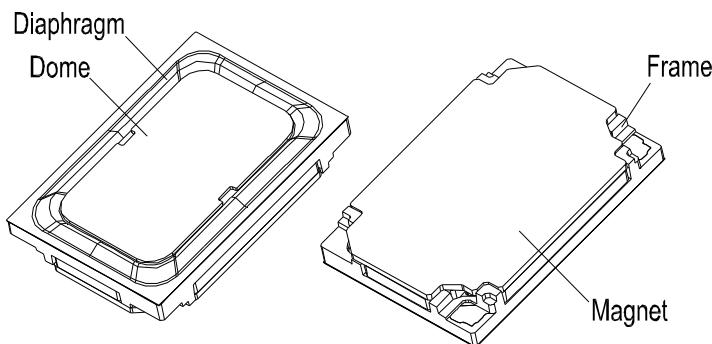
Issue:

X2

Revision Date: May/04/2017

Page: 11/12

10.3 Permitted Force to Speaker



max.handling force		
F1	pull force on magnet	15N
F2	push force on magnet	15 N
F3	on diaphragm	0 N
F4	on dome	0 N

contact force in working position(to the surface of the yoke): $0.7N \leq F \leq 1.3N$

AAC Confidential Information

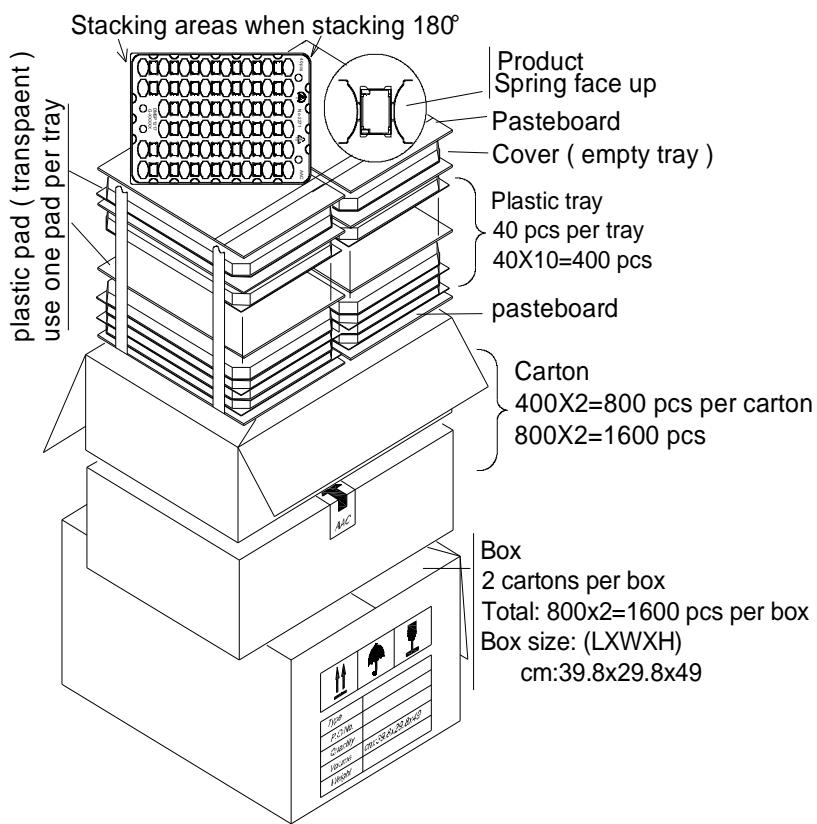


Keywords: Dynamic Speaker, 8 Ohms, 12x17x2.45mm, Contact Pad, GP Compliant

NO: SP_S_1217_H-00002 Issue: X2 Revision Date: May/04/2017 Page: 12/12

11. Weight 2.0±0.3 g

12. Package



Transportation and storage:

1. Do not add heavy load on the package during shipping and storage.
(stacking height $\leq 2m$, stacking weight $\leq 70\text{ Kg}$)
2. Do not add strong shock during shipping and moving.
3. Keep the package in the room with stable temperature and humidity.
(T: $+10\sim+30^{\circ}\text{C}$, 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 $\geq 10\text{cm}$, to wall $\geq 30\text{cm}$)
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).
8. Prohibit the vacuum packing of this product.

AAC Confidential Information

The information contained in this document is PROPRIETARY to AAC Inc. and shall not be reproduced or used in part or whole without AAC's written consent.