



# APPROVAL SHEET FOR SMARTPHONE SPEAKER

TOTAL PAGE	12	www.bestargroups.com	RoHS
------------	----	----------------------	------

Customer		Model Name	BMS20-12-08H3.2RW020-YL
Customer P/N		Product No.	*****
Date	26 Jun. 2017	Issue No.	BS/TES01.****A
Page	01 of 12	Issue Date	2017/06/26

## Table of Contents:

- 1.Test Climatic Condition
- 2.Description
- 3.Characteristics
- 4.Test Setup
- 5.Drawing
- 6.Reliability Test
- 7.Packing
- 8.History Change Record

Drawn by	Checked by	Approved by	Customer approved
杨紫群	张勇磊	张勇磊	

## **BESTAR HOLDING CO.,LTD**

No.199 HuangHe West Road.New district,ChangZhou,JiangSu Province,P.R.China

**Tel:** +86 519 88222567      **Fax:** +86 519 88222551

**E-mail:**wu@be-star.com      **http://www.bestargroups.com**

# BMS20-12-08H3.2RW020-YL

## 1. Test Climatic Condition

- 1.1 Ambient Temperature :15°C~35°C, Preferably at 20°C
- 1.2 Relative Humidity:25% to 75%
- 1.3 Air Pressure:86kPa~106kPa

No.	Item	Specification
1.	Dimension	∅20 x3.2(mm)
2.	AC Impedance	8 Ω ±15%(at 2KHz/1Vrms)
3.	Rated Power	1.0W(2.83Vrms)
4.	Maximum Power	1.2W(3.1 Vrms)
5.	Resonance Frequency	850Hz ± 20%
6.	Frequency Response	Fo~20KHz
7.	S.P.L	87dB(0.1W/0.1m) ± 3 dB at AVE 1.0K 1.2K 1.5K 2.0K Hz
8.	THD	≤10% at 1KHz(0.1m/0.1W)
9.	Buzzes & Rattles	Must be normal at sine wave 2.83Vrms(in free air) from300~3400Hz
10.	Polarity	Positive voltage to (+),Diaphragm moves forward
11.	Working Temperature	-40~+ 85°C
12.	Working Humidity	10%~90%RH
13.	Storage Temperature	-40~+ 85°C
14.	Storage Humidity	10%~90%RH
15.	Weight	~2.1g±0.3g

## 2. Description

- 2.1 Acoustic component Performance Specification
- 2.2 The present document specifies performance requirements for the acoustic characteristics of speaker

## 3. Characteristics

- 3.1 Electrical and Mechanical Characteristics

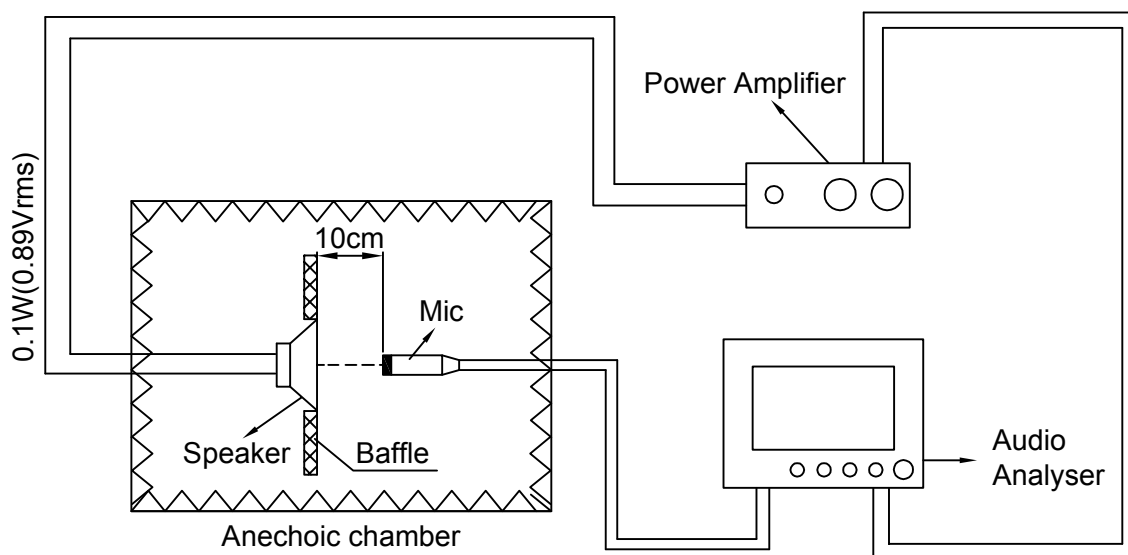
				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A	Page:02 of 12
www.bestargroups.com wu@be-star.com							

This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content.

# BMS20-12-08H3.2RW020-YL

## 4. Test Setup

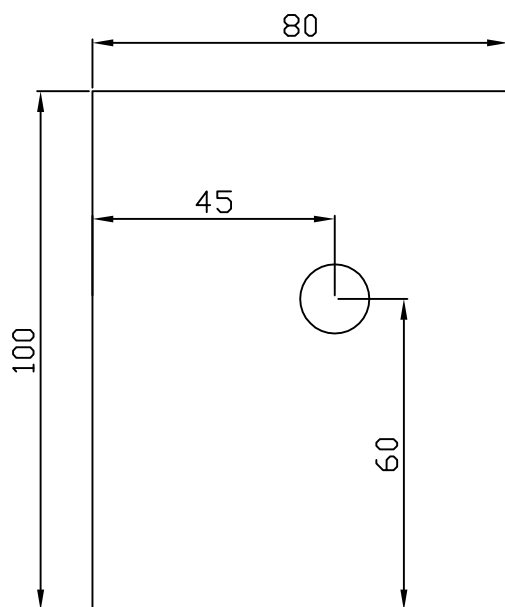
### 4.1 Speaker Measurement Circuit



### 4.2 Baffle Drawing

unit:cm

tolerance:±2



### 4.3 Test Method

The speaker shall be mounted in a baffle of the dimensions 80X100cm show figure 4.2,

The measuring free-field microphone shall be placed 10cm from DUT, on axis.

The test voltage is 0.1W and swept sine-wave range is 100Hz~20KHz with a R80 of test sequence

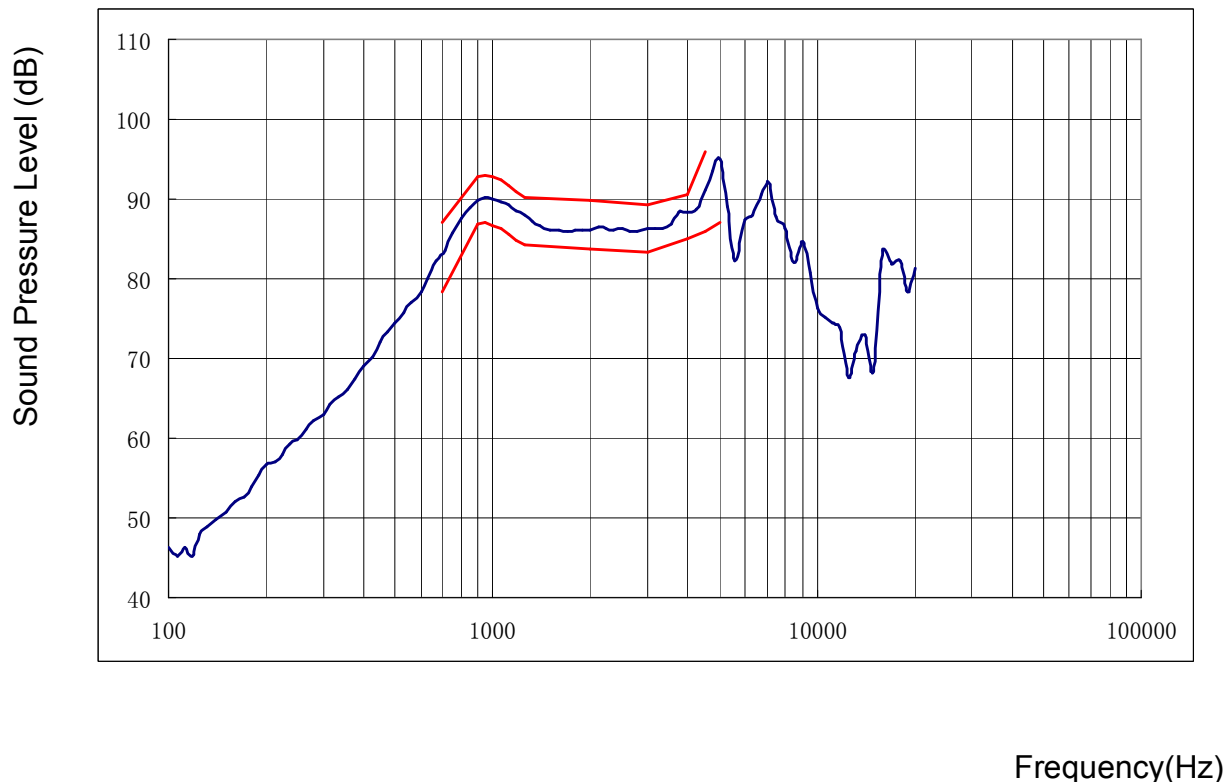
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A	Page:03 of 12
www.bestargroups.com wu@be-star.com							

# BMS20-12-08H3.2RW020-YL

## 4.4 Frequency Response Curve (only for reference)

A: Frequency Response Magn 0 dB re 20.00  $\mu$  Pa/V 1/12Oct



### 4.4.1 Sensitivity

SPL is expressed in dB rel 20  $\mu$  Pa, computed according to IEC 268-5.

Measurement set up according chapter 4.1 and parameters according chapter 4.4.

This test is performed for 100% of products in the production line.

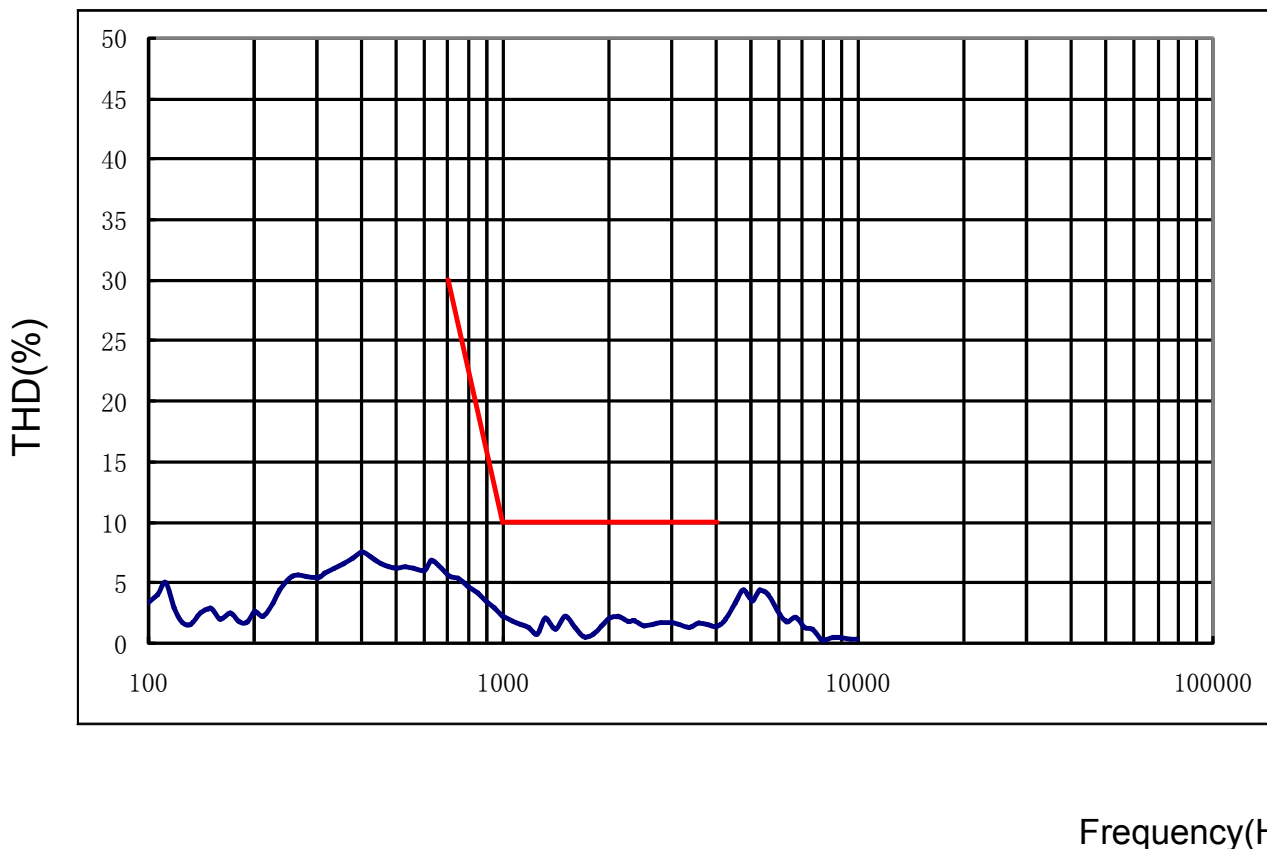
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content.

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL
				Drawn by:	杨紫群	
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker
Rev.	Date	Drawn	Note	Approved by:	张勇磊	
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A
www.bestargroups.com wu@be-star.com						Page:04 of 12

# BMS20-12-08H3.2RW020-YL

## 4.5 Total Harmonic Distortion (only for reference)

A: Frequency Response Magn 0 dB re 20.00  $\mu$  Pa/V 1/12Oct



### 4.5.1 THD

THD is measured according test set up in chapter 4.1 and parameters according chapter 4.5

This test is performed for 100% of products in production line

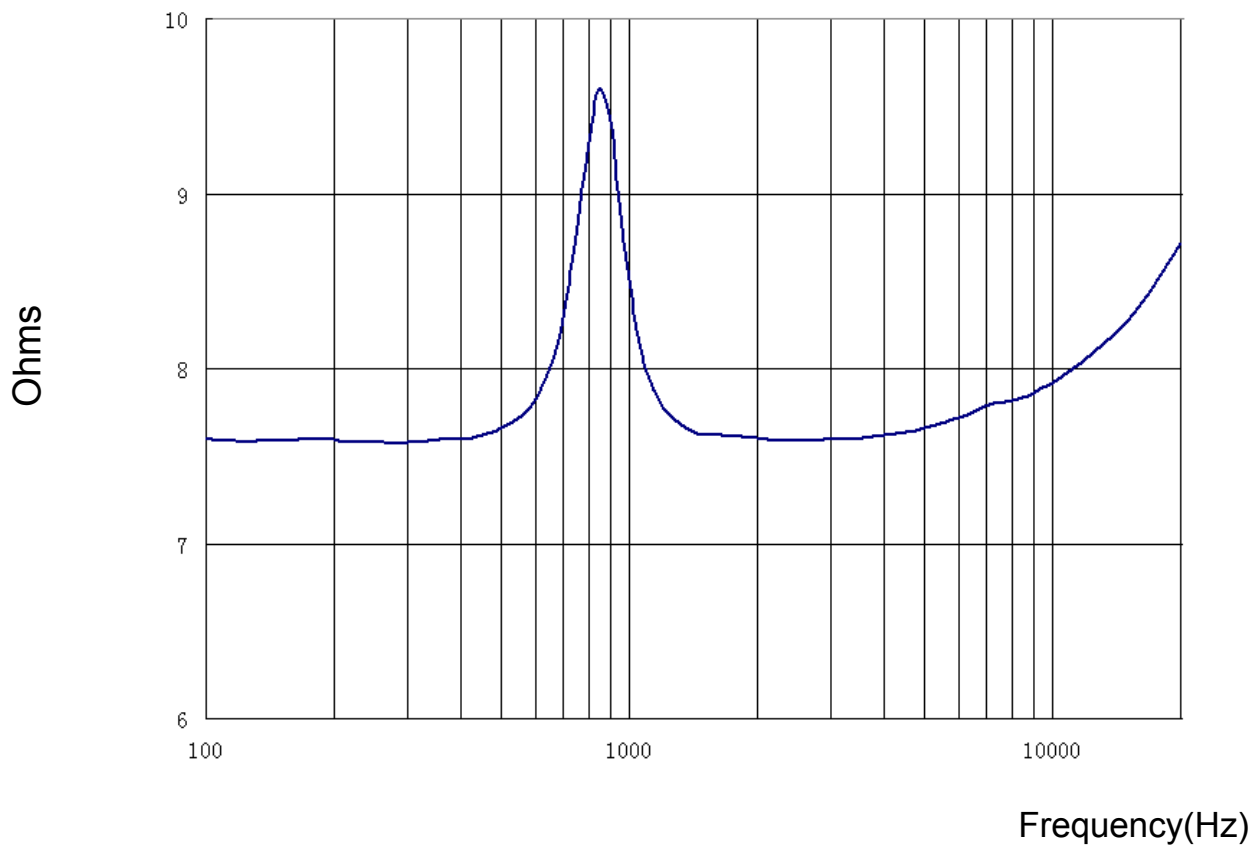
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content.

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A	Page:05 of 12
www.bestargroups.com wu@be-star.com							

# BMS20-12-08H3.2RW020-YL

4.6 F0 Curve (only for reference)

A: Frequency Response Magn 0 dB re 20.00  $\mu$  Pa/V 1/12Oct



### 4.6.1 Resonance Frequency

Resonance frequency is measured according test set up in chapter 4.1 and parameters according chapter 4.6

This test is performed for 100% of products in the production line

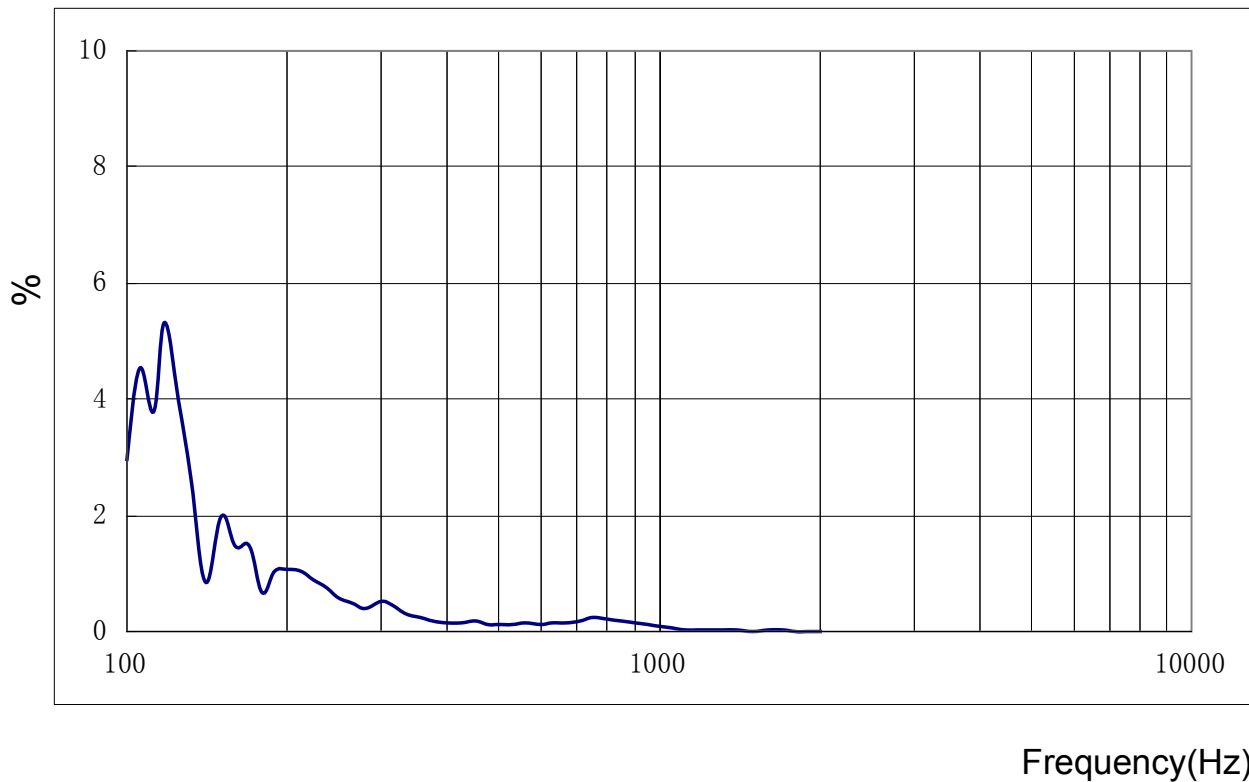
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A	Page:06 of 12
www.bestargroups.com wu@be-star.com							

# BMS20-12-08H3.2RW020-YL

4.7 R&B Curve (only for reference)

A: Frequency Response Magn 0 dB re 20.00  $\mu$  Pa/V 1/12Oct



## 4.7.1 R&B

R&B is measured according test set up in chapter 4.1 and parameters according chapter 4.7

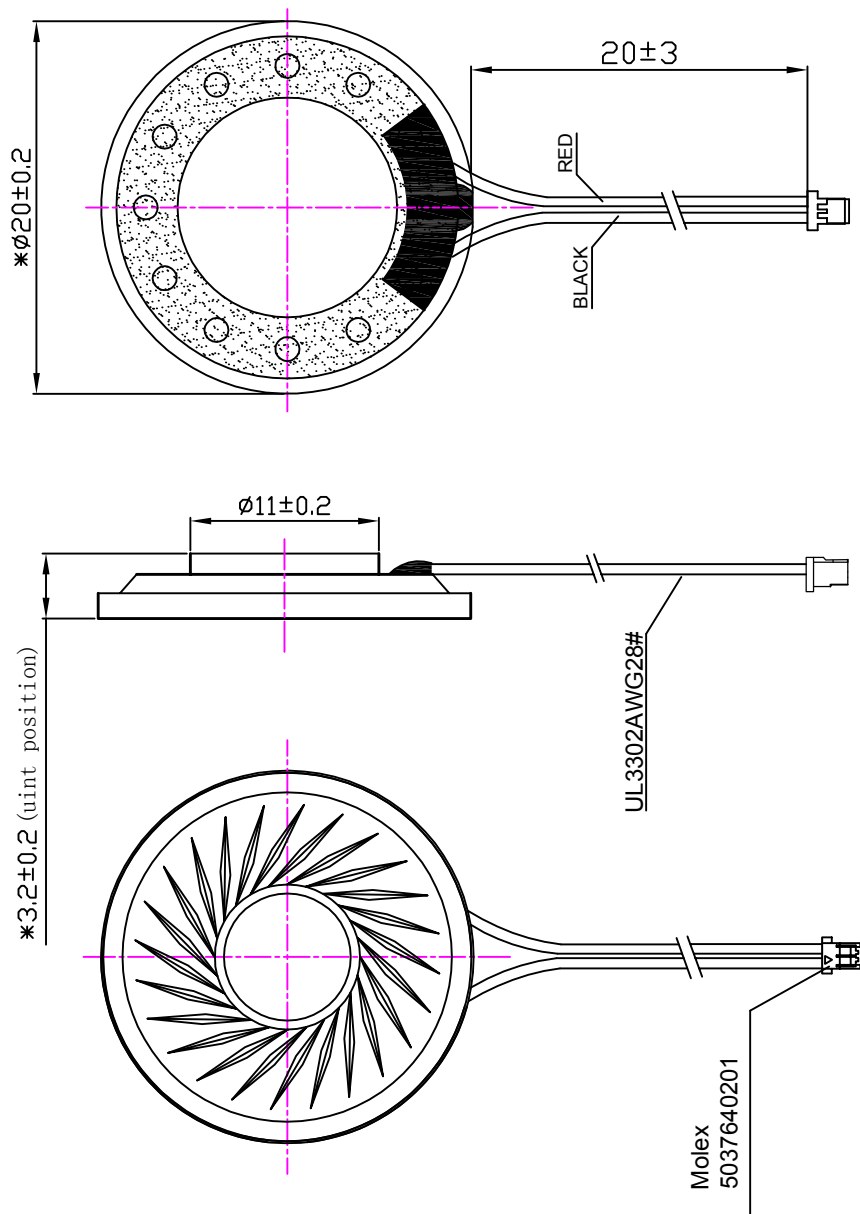
This test is performed for 100% of products in production line

This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A	Page:07 of 12
www.bestargroups.com wu@be-star.com							

# BMS20-12-08H3.2RW020-YL

## 5. Drawing



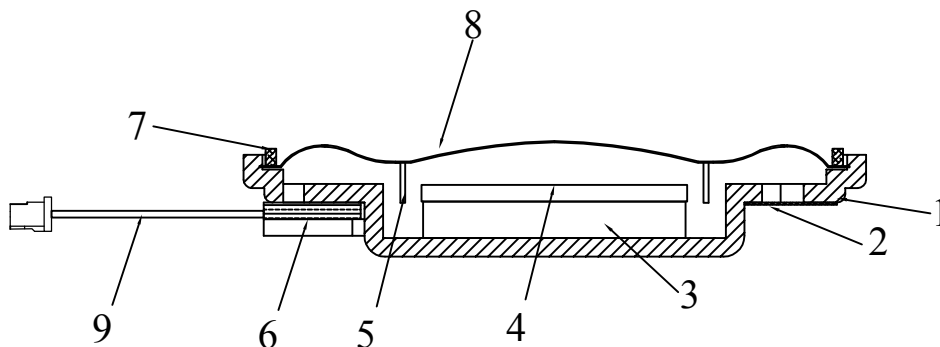
unit:mm  
tolerance:±0.2

This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written consent.

			Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
			Drawn by:	杨紫群		
A	2017/06/26	杨紫群	Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD					DRG NO: BS/TES01.****A	Page:08 of 12
www.bestargroups.com wu@be-star.com						



# BMS20-12-08H3.2RW020-YL



No	Description of the part	Material
1	Frame	SUS
2	Net	Nonwoven cloth
3	Magnet	Nd-Fe-B
4	Polarpiece	SPCC
5	VC	SDHT
6	PCB	FR-4
7	Front Cover	ABS
8	Diaphragm	Mylar
9	Wire	UL3302AWG 28#

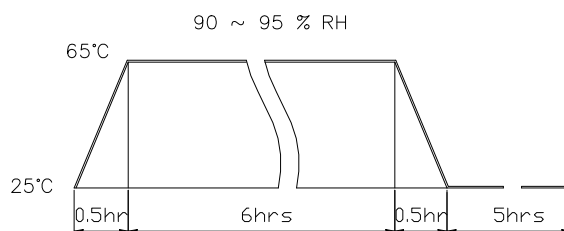
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content.

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL
				Drawn by:	杨紫群	
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker
Rev.	Date	Drawn	Note	Approved by:	张勇磊	
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A
www.bestargroups.com wu@be-star.com						Page:09 of 12

# BMS20-12-08H3.2RW020-YL

## 6. Reliability Test

6.1 Load Test	
Power (Nom)	1.0W(in White noise)
Duration	96hrs
6.2 High Temperature Test	
Temperature	+85±3°C
Duration	96hrs
6.3 Low Temperature Test	
Temperature	-40±3°C
Duration	96hrs
6.4 Damp Heat	
Temperature	40±3°C
Relative Humidity	92%-95%RH
Duration	96hrs
6.5 Temp./Humidity cycle Test	
Cycles	5



- 6.6 Drop Test  
Drop the speakers contained in normal box onto the board 40mm thick 10 times from the height of 75cm
- 6.7 Vibration  
10~55~10Hz sin-wave sweep 15min. 5G(constant)X,Y, Z 3 direction. 2 hours each, total 6 hours.
- 6.8 Lead Wire Pull Strength  
The pull force shall be applied to double lead wire : Horizontal 3.0N(0.306kg) for 30 seconds. Vertical 2.0N(0.204kg) for 30 seconds.

**Notice:**

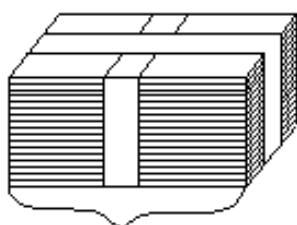
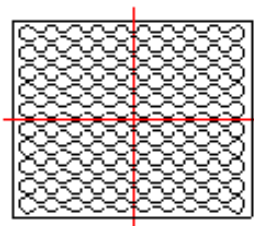
- 1.Immediately after reliability test,the samples shall be stored under climatic conditions such as normally exist in ordinary rooms or laboratories.Unless otherwise noted,the recovery period shall be 4hrs at least before performance testing.
2. After reliability test ,all samples must be meet the requirements specified
- 3.Sensitivity difference at F0~5.0KHz shall be within ±3dB from initial value after test.

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL	
				Drawn by:	杨紫群		
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker	
Rev.	Date	Drawn	Note	Approved by:	张勇磊		
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.***A	Page:10 of 12
www.bestargroups.com wu@be-star.com							

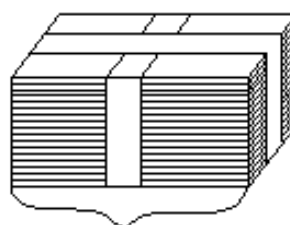
This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content

# BMS20-12-08H3.2RW020-YL

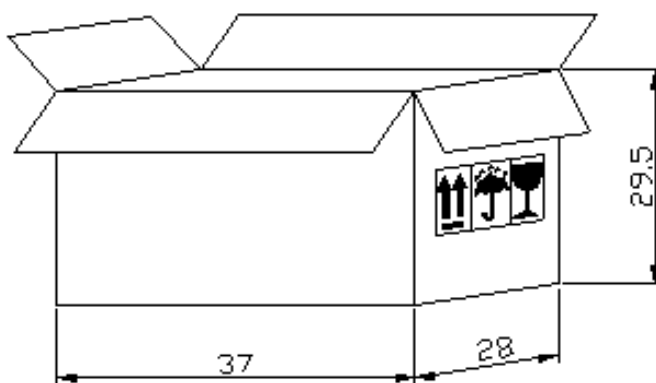
## 7. Packing



800pcs



800pcs



Remark: 100 pcs per tray ; 10 trays for unit; 2 unit per carton  
 Total 2000pcs per box  
 Size: 37 × 28 × 29.5(cm)

This print and information there in are proprietary to BeStar Holding Co., Ltd. and shall not be used in whole or in part without its written content

				Date:	2017/06/26	BMS20-12-08H3.2RW020-YL
				Drawn by:	杨紫群	
A	2017/06/26	杨紫群		Checked by:	张勇磊	Speaker
Rev.	Date	Drawn	Note	Approved by:	张勇磊	
BESTAR HOLDING CO.,LTD						DRG NO: BS/TES01.****A
www.bestargroups.com wu@be-star.com						Page:11 of 12

