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# Specification

## 規 格 書

品名 ( Product Name)	揚聲器 (Speaker)
料號 ( Model No.)	P4028KSG04-W

Revision History			
Version	Date	Description	Author
V1.0	2011/07/19	Creation	RSQ
V1.1	2018/01/11	#改YOKE爲一體成型	LHN

核準 (Approval)	高紅華	2018/01/11
審查 (Check)	曾憲財	2018/01/11
制作 (Author)	饒三慶	2018/01/11

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1.	<b>MODEL:</b>	<b>P4028KSG08-W</b>			
2	Dimension & Weight	Outer Diameter	<b>40X28.5</b> mm	Face side	<b>38.3X26.3</b> mm
		Baffle Opening	<b>38.3X26.3</b> mm		
		Height	<b>Refer to drawing</b>		Weight
3	Magnet	Materials	<b>Rare Earth</b>	S	<b>φ12.5X1.5</b> mm
4.	DC Resistance	<b>8</b>	$\Omega \pm 15\%$ ,	On OHM Meter	
5.	Power Rating	Normal	<b>2</b> Watts	Maximum	<b>3</b> Watts Sine Wave.
		Normal	Watts	Maximum	Watts Square Wave.
6.	Resonant Frequency	<b>700</b> $\pm 20\%$ Hz.			
7.	Output Sound Pressure Level (S.P.L.)	<b>86</b> $\pm 3$ db/ <b>1.0</b> Watt $\cdot$ <b>0.5</b> Meter			
		Average at <b>800, 1000, 1200, 1500</b> Hz.			
8.	Frequency Range	<b>500</b> $\sim$ <b>15000</b> Hz. Average SPL – 10 db.			
9.	Distortion	<b>5</b> % Maximum At <b>1000</b> H <b>1.0</b> W.			
10	Abnormal Sound test	Must be Normal Tested By <b>4.0</b> Volts. Sine Wave.			
11	Load Test	Pink noise with HPF(High Pass Filter 235HZ-3db/Oct) <b>4.0</b> Volts. (RMS.) <b>96</b> Hours.			
12	Waterproof Level	<b>IPX5</b>			
13	Polarity	Diaphragm shall move Forward while Apply a Positive DC Signal to the " + " or " Marked " Terminal.			

Above Measuring condition under temperature : 15~35°C R.H. 25 ~75%. According to standard GB/T9396-1996

## **Mechanical and vibration test**

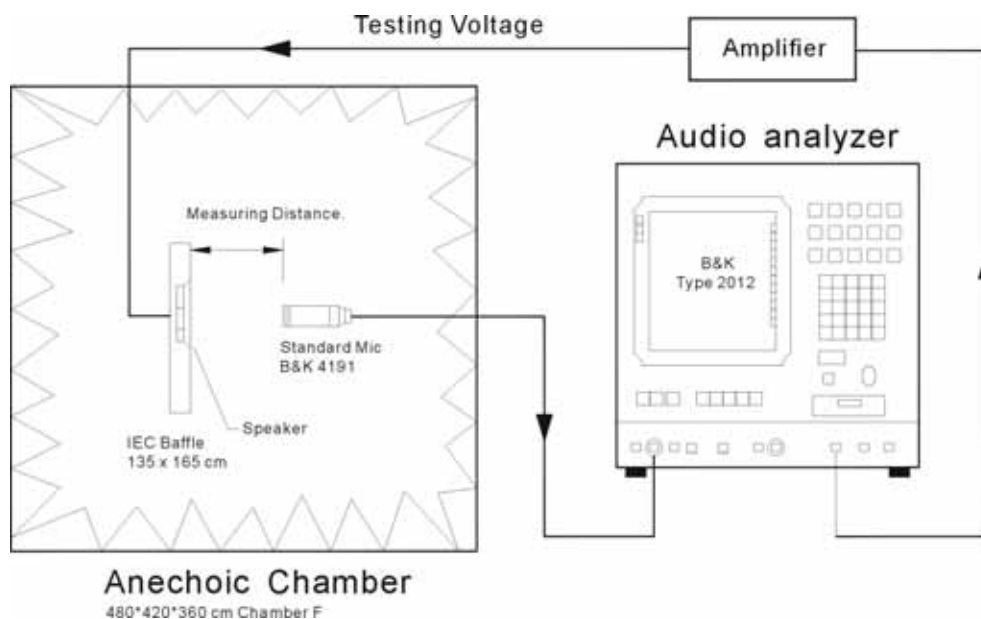
14	High Temperature	<b>+ 60 <math>\pm</math> 2 °C</b>	Humidity Random for 96 Hours. (GB2423.2-81)
15	Low Temperature	<b>- 25 <math>\pm</math> 2 °C</b>	Humidity Random for 96 Hours. (GB2423.1-81)
16	Humidity	<b>+ 40 <math>\pm</math> 2 °C</b>	Relative Humidity (RH) 90 ~ 95 % 96 Hours. (GB5170.18-87)
17	Vibration	Frequency <b>30 <math>\pm</math> 15</b> Hz, Amplitude <b>1.5</b> mm for 3 Hours. (GB11606.8-89)	
18	Drop test	<b>75</b> CM free falling on Concrete floor, 10 times. (GB2423. 8-81)	
After test leave speakers at room temperature for 1 hour, SPL shall not deviate by $\pm 3$ db from pre-test			
19	Temperature Cycle test	<b>- 25 ~ + 60 °C</b>	<b>4</b> Cycles Temperature test. (GB5170.18-87)

After test leave speakers at room temperature for 1 hour, SPL shall not deviate by  $\pm 3$  db from pre-test Measurement, and meet above spec. item 6. 7. 8. 9. 10.

Please refer to next pages for more detailed testing method.

## Test method and User precaution.

1. Characteristics measured according to standard GB/T 9396-1996
  - 1.1 Except other specified, measuring are under Temperature 25~35°C R.H. 25 ~75%
  - 1.2. Judgement condition Temperature 20 ±2 R.H. 63~67%
  - 1.3 .Product shelf life is valid for 12 months only.
2. Output Sound Pressure Level (S.P.L.) and distortion testing setup



### 3. Environment & Mechanical test:

#### 3.1 High Temperature: GB2423.2-81

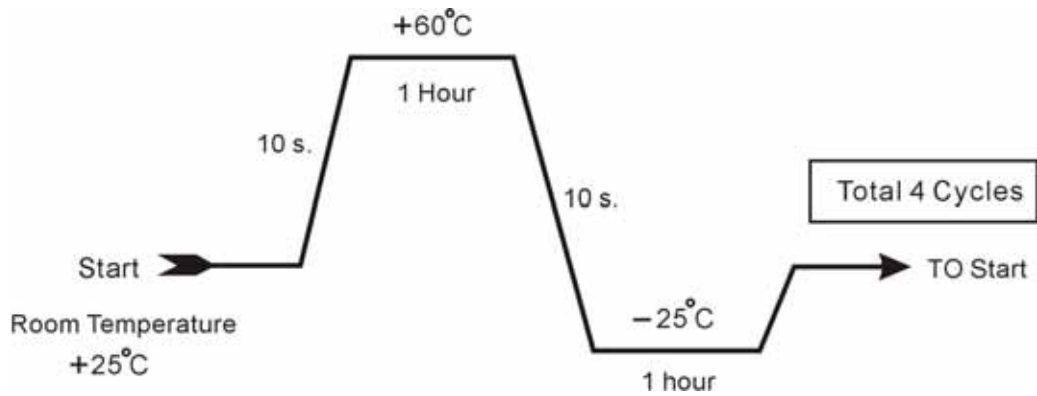
After exposure the speaker in the + 60 ± 2 °C chamber for 96 hours, then leave the speaker at room temperature for 1 hour, the SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 50 Hz, compare with pre-test measurement.

#### 3.2 Low Temperature: GB2423.1-81

After exposure the speaker in the -25 ± 2 °C chamber for 96 hours, then leave the speaker at room temperature for 1 hour, the SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 50 Hz, compare with pre-test measurement.

#### 3.3 Temperature cycle: GB5170.18-87

After exposure the speaker in the chamber, temperature cycle setting as below shows, SPL should not deviate by ± 3 db, and resonant frequency should not deviate by ± 80 Hz, compare with pre-test measurement.



### 3.4 Humidity: GB5170.18-87

After exposure the speaker in the + 40±2 °C, relative humidity 90% ~ 95% chamber for 96 hours, then leave the speaker at room temperature for 6 hours, the SPL should not deviate by ±3 db, and resonant frequency should not deviate by ±50 Hz, compare with pre-test measurement.

### 3.5 Vibration: GB11606.8-89

Frequency 30±15 Hz, Amplitude 1.5 mm for 3 Hours. After test, SPL shall not deviate by ±3 db from pre-test measurement,

### 3.6 Load test: GB/T 9396-1996

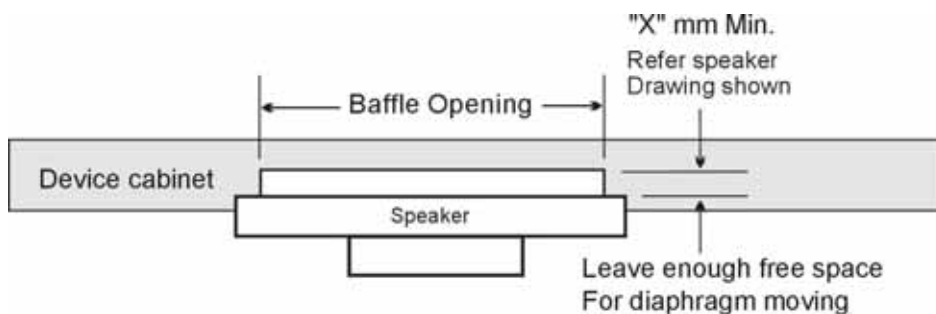
Speaker should not fail after apply 20 ~ 20K Hz Pink noise with HPF rated power input (RMS), 96 hours. After test, SPL shall not deviate by ±3 db from pre-test measurement,

### 3.7 Drop test: GB2423. 8-81

75 cm free falling on concrete floor, 10 times. After test, SPL shall not deviate by ±3 db from pre-test measurement,

## 4. Mounting precaution

In order to keep speaker work normally, there shall leave enough free space for diaphragm moving, minimum distance required is marked in speaker mechanical drawing.



## 5. Measuring & standard referenced

Abstract from GB/T 9396-1996 and IEC 268-5:1989 methods of measurement for main characteristics of loud speakers.

### 5.1 Maximum input voltage

Maximum input voltage is in the shortest time. The speaker can bear simulation signal, that persist time is 1 second, interval 60 seconds, repeated 60 times, but the speaker wouldn't be damaged externally. The maximum signal voltage is the maximum input voltage in/the shortest time.

### 5.2 Rated sine voltage.

It is stipulated by manufacturer, sine signal voltage that make speaker work continuously in rated frequency range, but the speaker wouldn't be damaged heartily or mechanically.

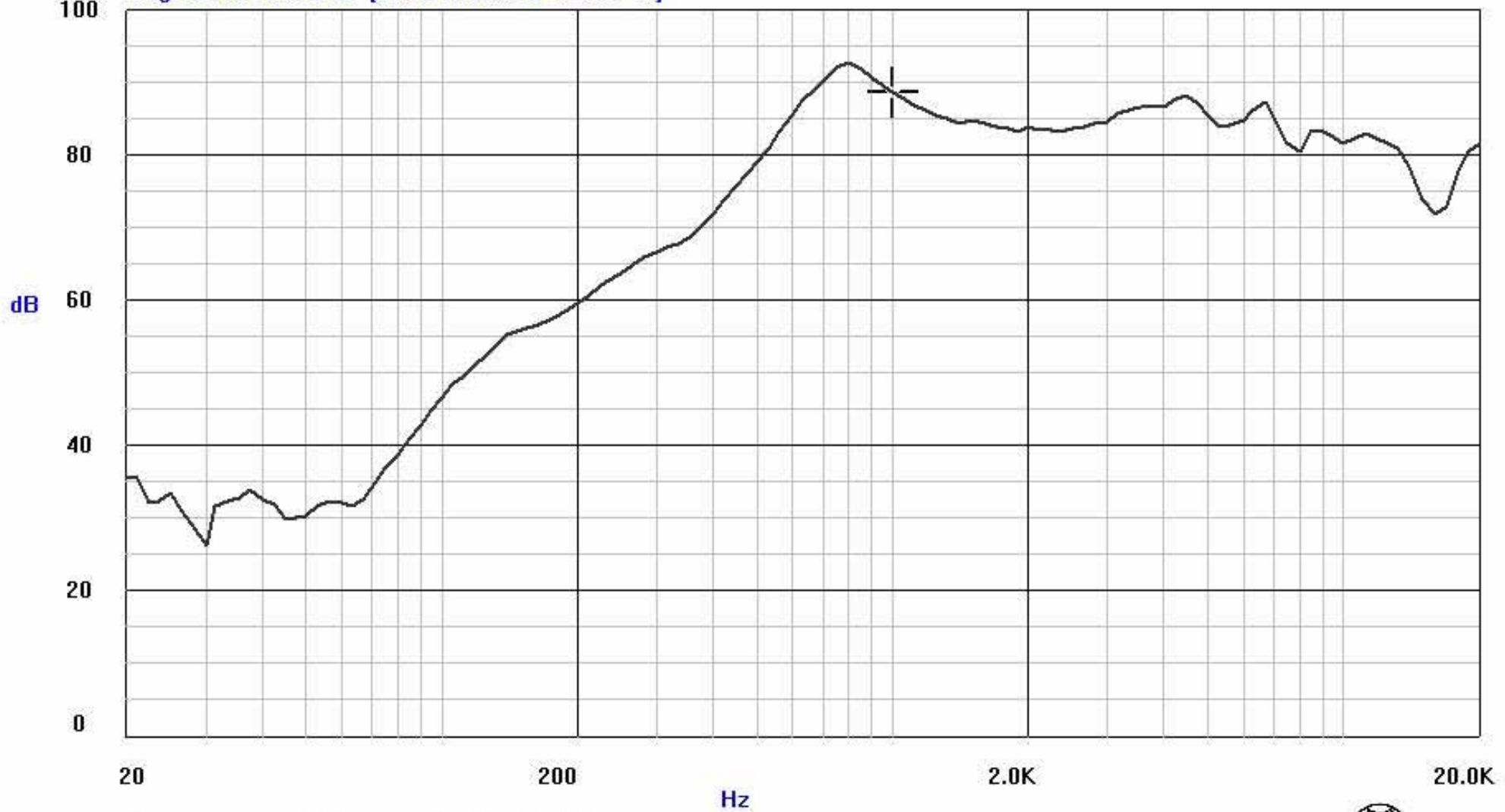
The persist time of the voltage is 1 hour.

### 5.3 The shortest time maximum power.

It is corresponding with the shortest time maximum input voltage, its definition is  $U_{st}^2/R$ ,  $U_{st}$  indicates the shortest input power, R indicates the rated impedance.

P4028KSG08-W VOL:2.83V(1W) DIS:0.5M VANSONIC

Magn dB re 20.0 uPa. [VECO Vanson Chamber F]

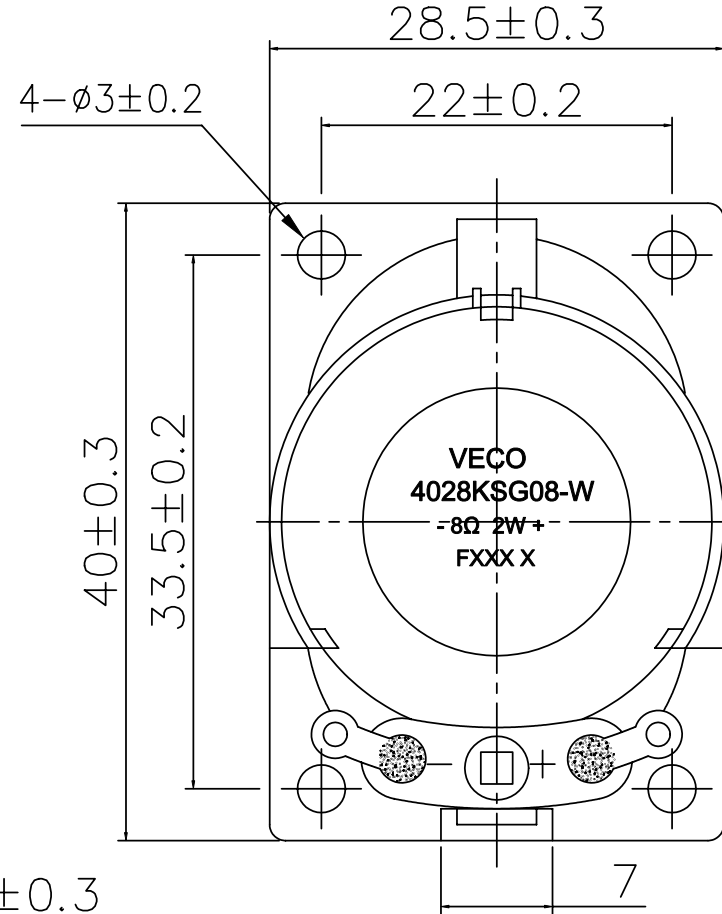
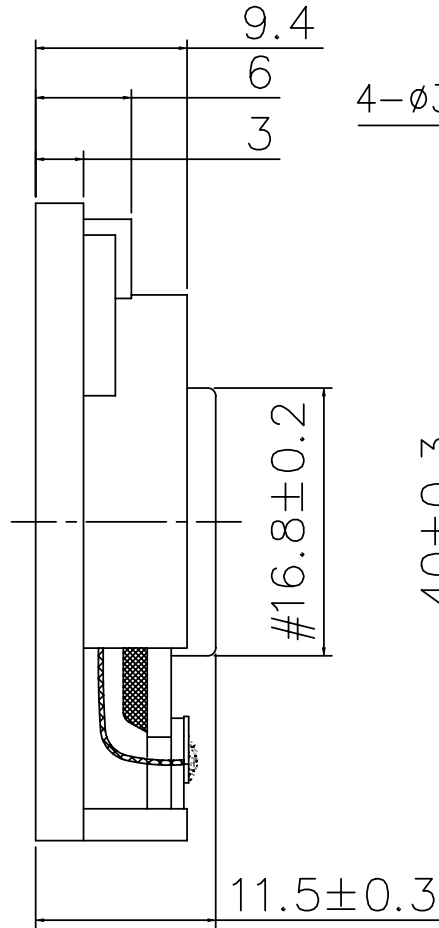
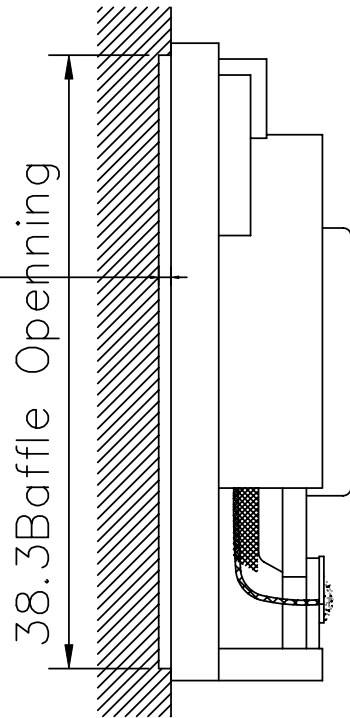


Current Curve: 0 X: 1000 Hz Y: 88.83 dB  
Time[Y/M/D H:M:S]: 2007/ 4/ 2 12:14:42



# MOUNTING NOTICE

AT LEAST  
0.8mm  
FOR  
DIAPHRAGM  
MOVING



VECO  
4028KSG08-W

- 8Ω 2W +

FXXX X

— 生產週幾  
— 生產週期  
— 佛山工廠

RANGE	TOL			✓
0-8	±0.05	±0.10	±0.20	±0.30
8-16	±0.10	±0.15	±0.25	±0.40
16-24	±0.15	±0.20	±0.30	±0.50
24-50	±0.20	±0.25	±0.40	±1.0
50-100	±0.25	±0.30	±0.50	±2
>100	±0.40	±0.40	±0.80	±3

VERSION	DATE	DESCRIPTION
V1.1	18.01.11	# 改YOKE為一體成型
V1.0	07.04.04	

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**Title: P4028KSG08-W**

F:\RD\SPEC\SQUARE\4028\4028KSG04-W.DWG

Unit: mm	Scale:	Appr.:
Tol.:		CHK.:
		Dwg.: 韋華刊