



# SPECIFICATION

## FOR APPRONAL

Customer : \_\_\_\_\_

Product Name : Microphone \_\_\_\_\_

Model Name : VS4015PS40 \_\_\_\_\_

Drawing No. : VS20190814014 \_\_\_\_\_

### Signature of Voise

Approved by	Checkde by	Issued by	Date



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## 2. Scope

This specification applies electret condenser microphone.

## 3. General Characteristics

- 3.1 Out-Diameter : 4 mm
- 3.2 Height : 1.5 mm
- 3.3 Weight : 0.2 g
- 3.4 Operating Temperature : -20~+70°C without loss of function
- 3.5 Store Temperature : -40~+80°C without loss of function

## 4. Electrical and Acoustic Characteristics.

Test condition :5 ~ 35 °C Temp., 35% ~85% RH,86~106 kPa Refer to IEC

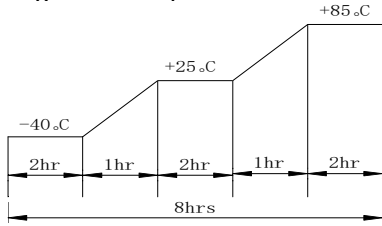
No	Items	Specification	Condition
1	Directivity	Omni-directional	
2	Sensitivity (S)	-40dB±3dB	f=1KHZ, 0dB=1V/pa RL=2.2KΩ
3	Standard Voltage(Vs)	2.0 V.D.C	
4	Output impedance (Zout)	2.2 KΩ	f=1KHz, 1ubar
5	Operating Voltage	1-10 V.D.C	
6	Decreasing Voltage (ΔS-Vs)	-3dB	Vc=2.0V to1.5V
7	Max. Current Consumption (IDss)	0.5 mA	Vc=2.0V , RL=2.2KΩ
8	Max input Sound Pressure Leve	110 dB	
9	Min Signal to noise ration (S/N)	55 dBA	f=1 KHZ , S.P.L=1Pa
10	Material	AL	
11	Environmental Regulations	RoHS	

We use "Pascal (Pa)" indication of sensitivity as per the recommendation of I.E.C.(International Electro technical Commission).The Sensitivity of "Pa" will increase 20dB comparing with "ubar" indication.  
Example: -60dB (0dB=1V/ubar) =-40dB (1V/Pa)

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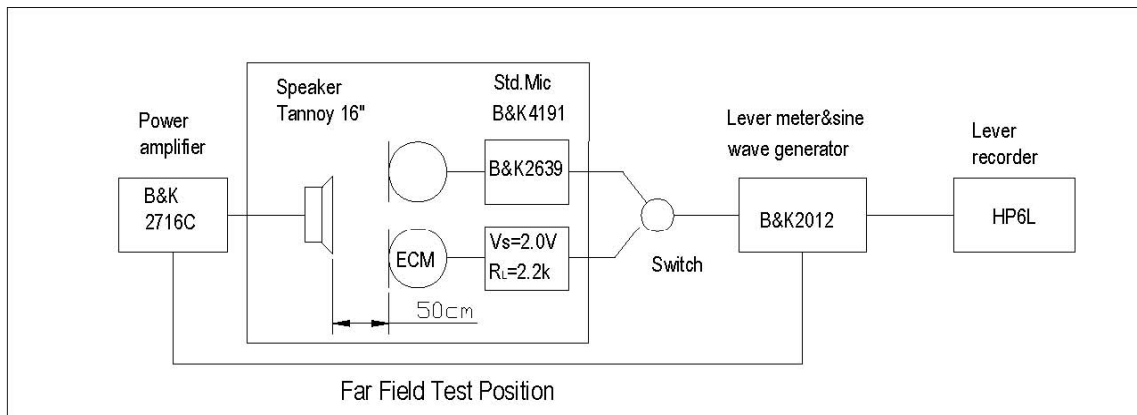
## 5. Reliability Test

After any following tests, the sensitivity of the microphone to be within  $\pm 3\text{dB}$  of initial sensitivity after 3 hours of conditioning at  $20^\circ\text{C}$

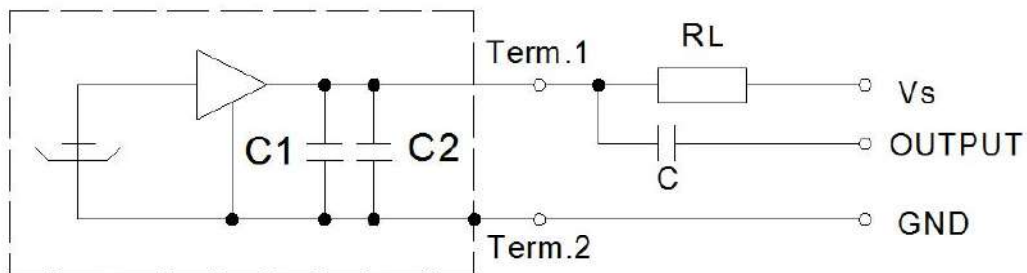
No	Items	Specification
1	High Temp.Test	Keep 72 hours at $+70\pm 3^\circ\text{C}$ , and leave 3 hours in normal temperature and then check.
2	Low Temp.Test	Keep 72 hours at $-40\pm 3^\circ\text{C}$ , and leave 3 hours in normal temperature and then check.
3	Humidity Test	Keep 72 hours at $-45\pm 3^\circ\text{C}$ , relative humidity 90 to 95% and leave 3 hours in normal temperature and then check.
4	Temperature Cycles Test	<p>According to the figure of temperature and time cycle, each 10 times</p> 
5	Vibration Test	1 minute frequency from 10Hz to 55Hz, amplitude 1.52mm, the vibration in three directions 2 hours
6	Drop Test	Three faces of package from 1 meters high free fall to the ground, each 6 times
7	Temperature Impact Test	$-20^\circ\text{C}\pm 3^\circ\text{C}$ for 30 minutes, and then $70^\circ\text{C}\pm 3^\circ\text{C}$ for 30 minutes, each 10 times
8	Solderability	The soldering copper of a type of 90W shall be applied, The temperature of the working surface of the soldering copper shall be $320\pm 10^\circ\text{C}$ , Welding time is within 2 to 3 seconds.
9	Soldering Condition	ECM shall be soldered fixed on the metal block(heat sink)which has the higher radiation effects said heat sink
		The pinhole after soldering shall be avoided
		ECM may easily destroyed by the static electricity and the countermeasure for eliminating the static electricity (the ground for soldering copper, for worktable and for human body) shall be executed

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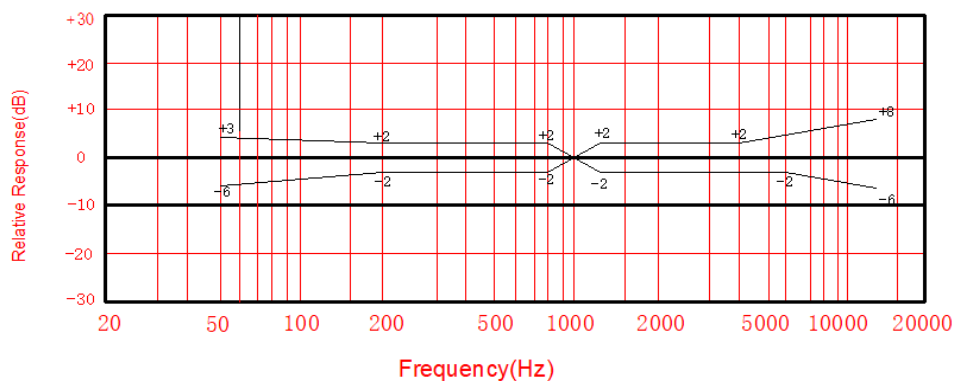
## 6. Measurement Method & Frequency Response curve



$R_L=680\Omega$  (external resistance)

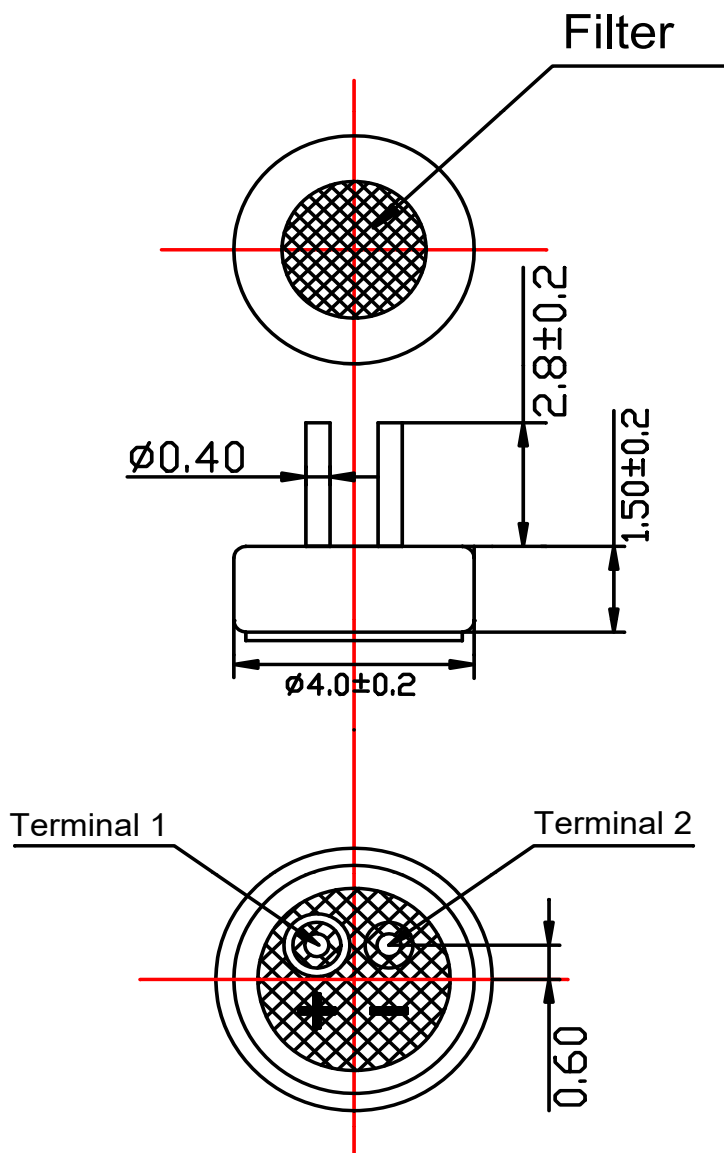


$V_s$ : Source Voltage 2.0V  $R_L$ : Load Resistance 2.2K $\Omega$   $C_1=10\text{pF}$   $C_2=33\text{pF}$   $R_L=680\Omega$ ,  $C_1=5\mu\text{F}$



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## 7. Dimensions



FIRST ANGLE PROJECTION

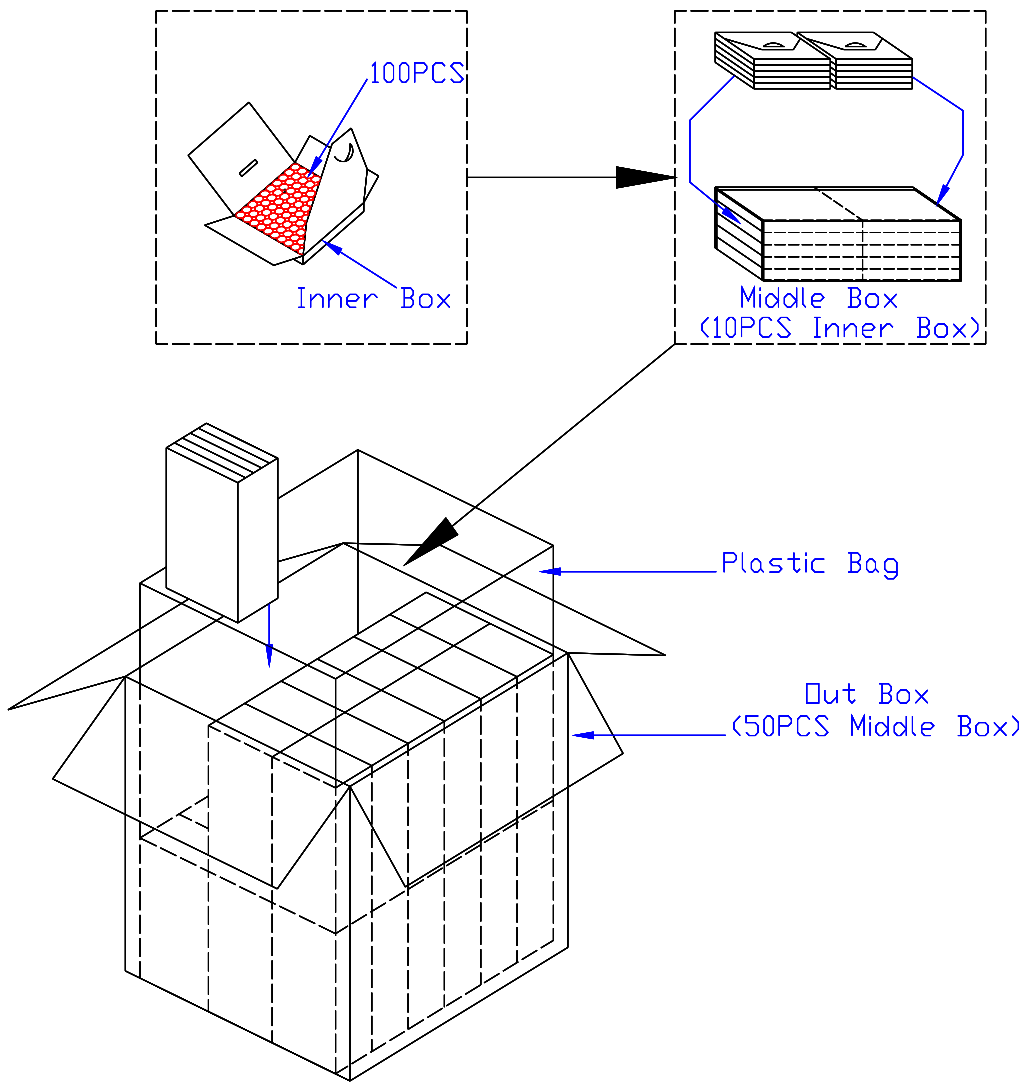


UNIT : mm

Tolerance :  $\pm 0.2$

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## 8. Packing



Inner Box	61mm×61mm×4mm	100PCS×1=100PCS
Middle Box	124mm×63mm×21mm	100PCS×10=1000PCS
Out Box	230mm×230mm×270mm	1000PCS×5=5000PCS