



1. Model NO. **SM M9745P**

2. Electrical Characteristics

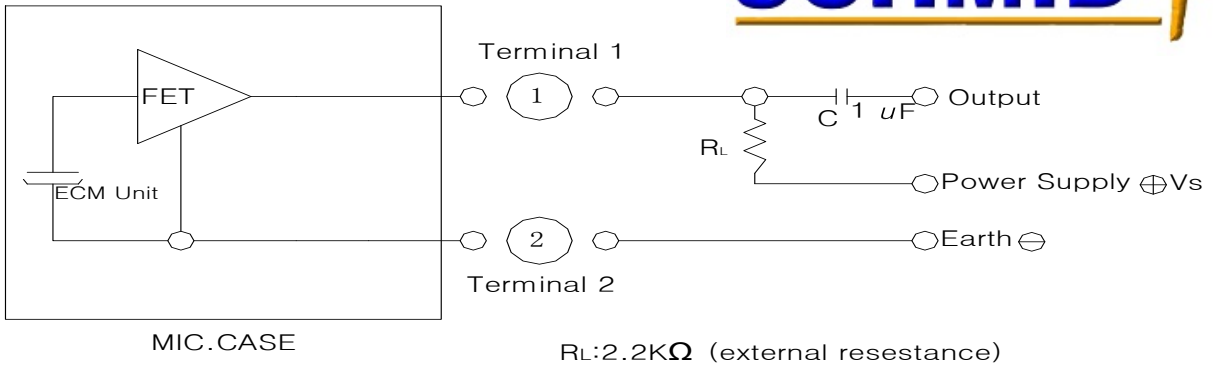
Standard Test Condition : Temperature :15°C~35°C Rel.Humidity:45%~
75%(RH) Pressure :86~106KPa

Judgment Test Condition : Temperature :20°C±2°C Rel.Humidity:60%~
70%(RH) Pressure :86~106KPa

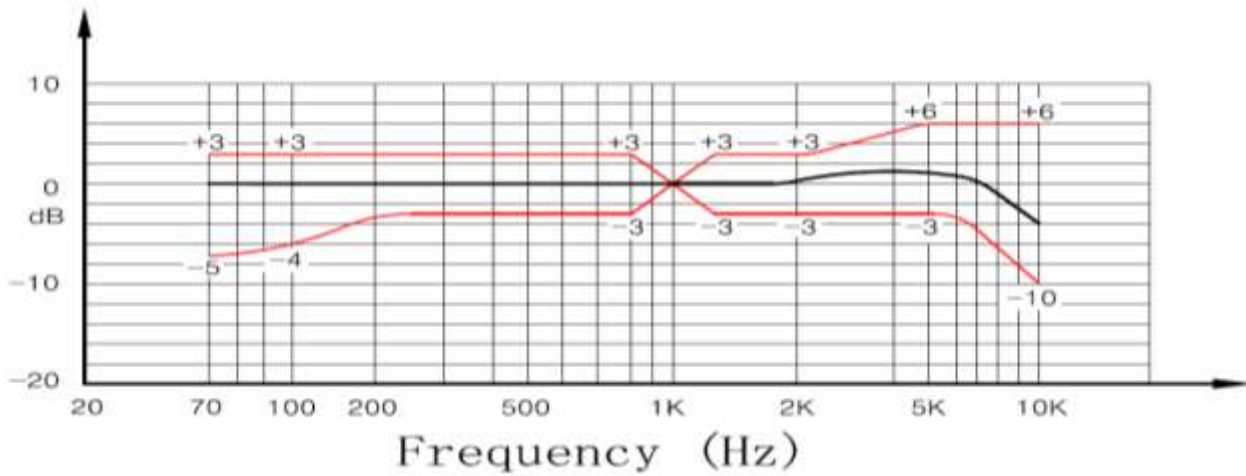
NO.	Parameter	Symbol	Condition	Limits			Unit
				Min.	standard	Max.	
1	Dimension			Φ9.7×4.5(H)			mm
2	Directivity			Omni directional			
3	test condition			4.5V	2.2KΩ		
4	Sensitivity	S	f=1KHZ, 0dB=1V/Pa	-45	-42	-39	dB
5	Operating Voltage			1		10	v
6	Output Impedance	ZOUT	f= 1KHZ			2.2	KΩ
7	Current Consumption	IDDS	Vc=4.5V , RL=2.2KΩ			500	uA
8	Signal to Noise Ratio	S/N	f=1 KHZ , S.P.L=1Pa (A-Weighted)	58			dB
9	Decreasing Voltage	ΔS-VS	Vc=4.5V to 3.0V			-3	dB
10	Max Input Sound Level					110	dB
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)

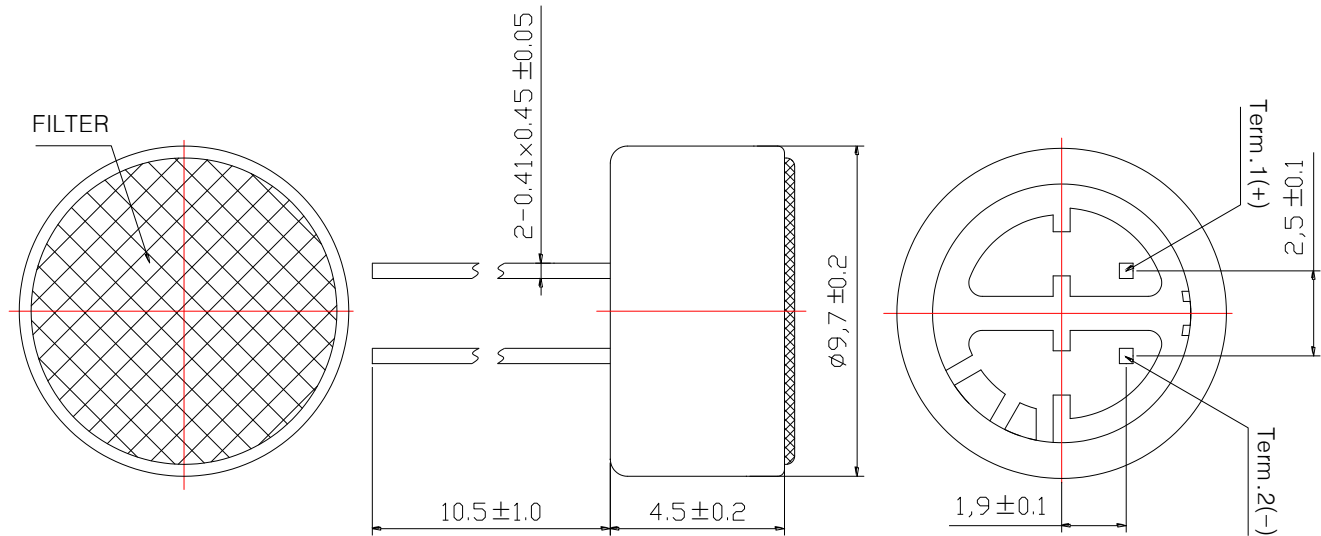
3. Circuit Diagram



4. Typical Frequency Response Curve (far field)



5. Outside Drawing

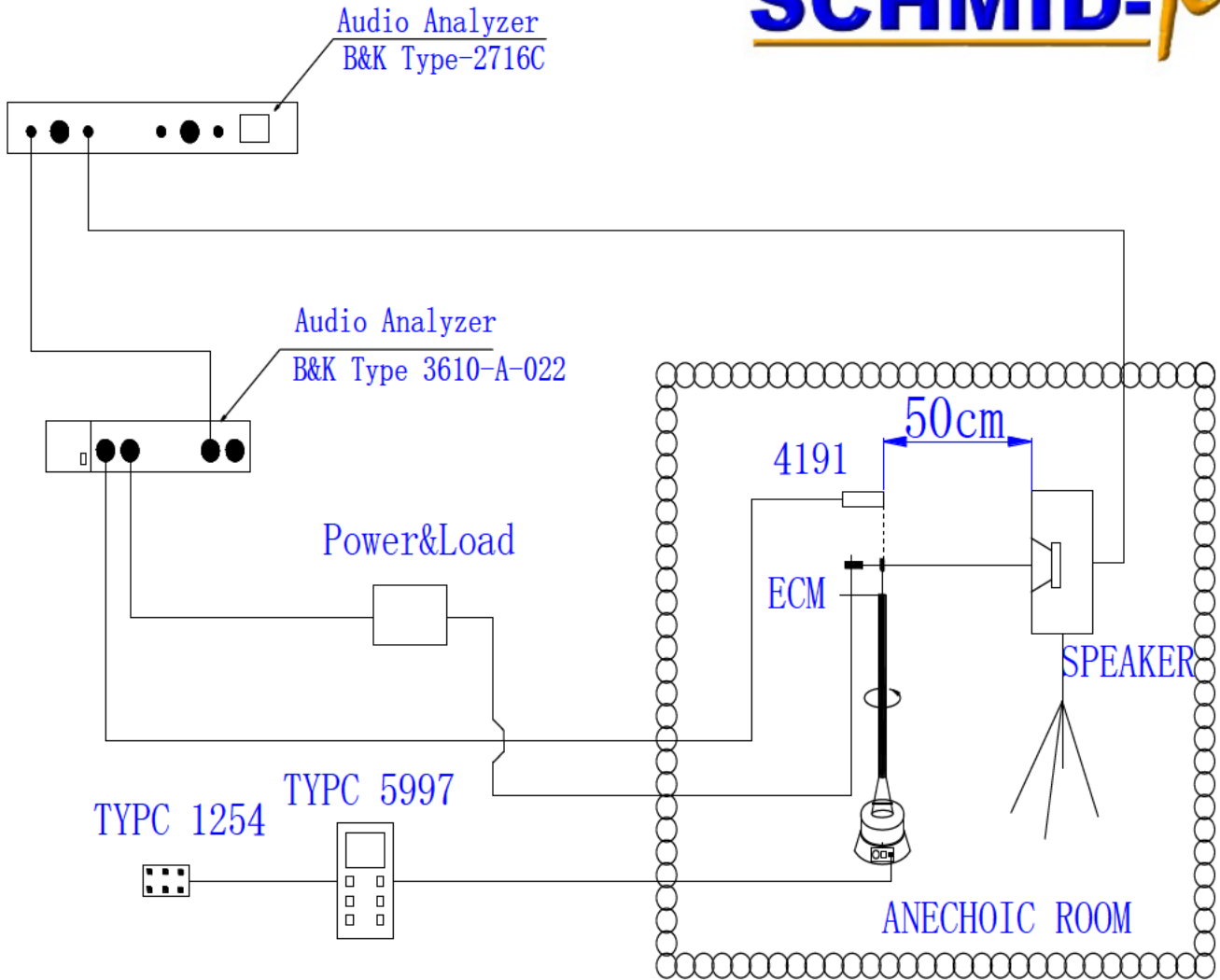


6. Reliability Test

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 $15^{\circ}\text{C} \sim 35^{\circ}\text{C}$ and $45\% \sim 75\% \text{RH}$

6.1	Vibration Test	1 minute frequency from 10Hz to 55Hz, amplitude 1.52mm, the vibration in three directions 2 hours
6.2	Drop Test	Three faces of package from 1 meters high free fall to the ground, each 10 times
6.3	Dry Heat Test	$70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 96 hours
6.4	Dry Cold	$-40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ for 96 hours
6.5	Damp Heat Test	$45^{\circ}\text{C} \pm 3^{\circ}\text{C}$ and $90\% \sim 95\% \text{RH}$ for 96 hours
6.6	Temperature Cycles Test	<p>According to the figure of temperature and time cycle, each 10 times</p> <p>The diagram illustrates a temperature cycle with the following segments: a 2-hour dwell at -20°C, a 1-hour ramp to $+25^{\circ}\text{C}$, a 2-hour dwell at $+25^{\circ}\text{C}$, a 1-hour ramp to $+70^{\circ}\text{C}$, and a final 2-hour dwell at $+70^{\circ}\text{C}$. The total duration of one cycle is 8 hours.</p>
6.7	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
7 Storage environment		
7.1	Storage Temperature/Humidity :	$-40^{\circ}\text{C} \sim +70^{\circ}\text{C} / 35\% \sim 85\% \text{RH}$
7.2	Operating Temperature/Humidity :	$-30^{\circ}\text{C} \sim +65^{\circ}\text{C} / 35\% \sim 85\% \text{RH}$

8. Measuring System



9. Soldering Condition

9.1 The soldering copper of a type of 90W shall be applied , The temperature of the working surface of the soldering copper shall be $350 \pm 20^{\circ}\text{C}$

9.2 Welding time is within 2 seconds

9.3 ECM shall be soldered fixed on the metal block(heat sink)which has the higher radiation effects said heat sink

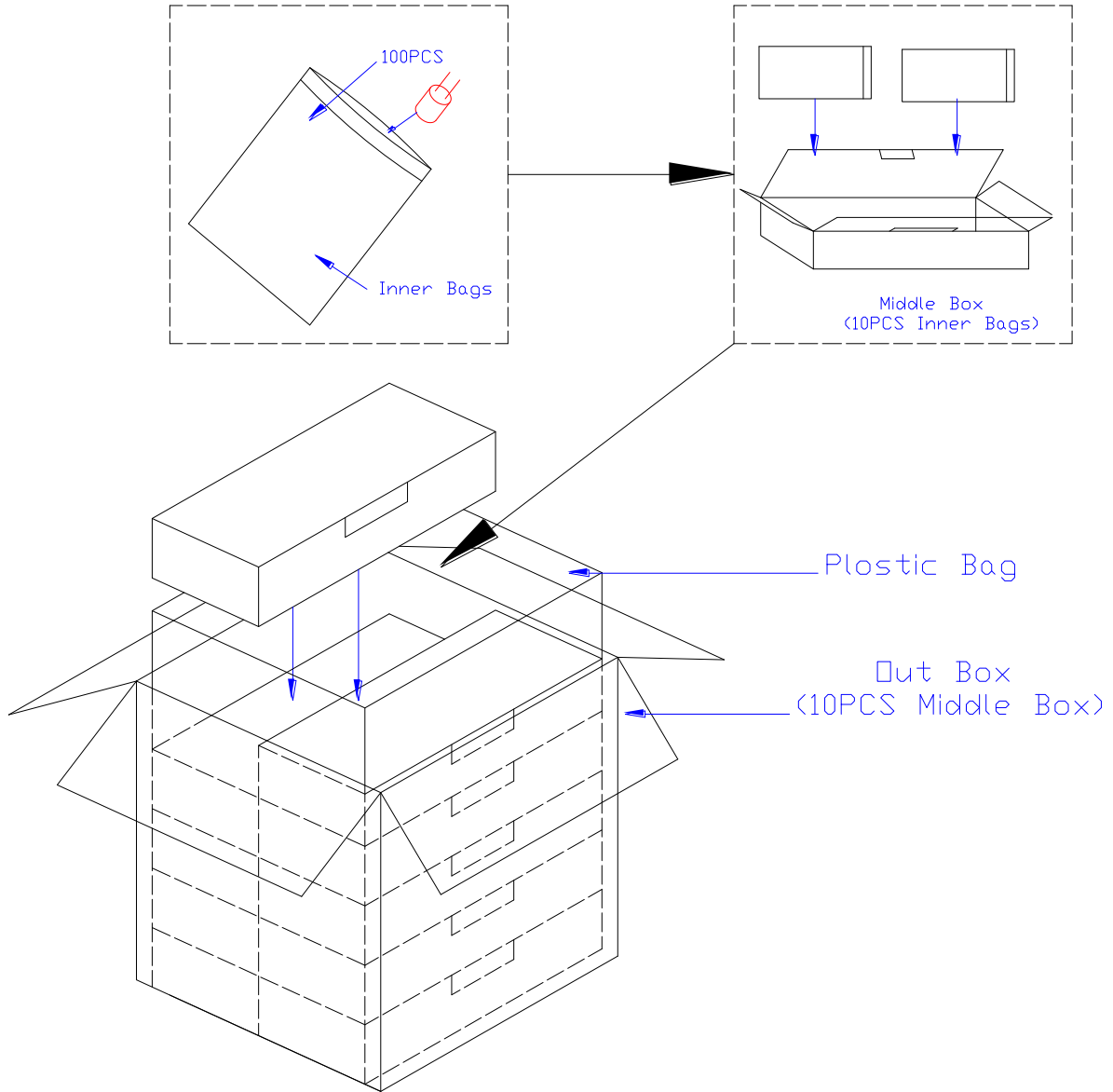
9.4 The pinhole after soldering shall be avoided

9.5 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

9.6 Shape of heat sink



10. Packing diagram



Inner Bags	136mm×90mm	100PCS×1=100PCS
Middle Box	215mm×105mm×60mm	100PCS×10=1000PCS
Out Box	230mm×230mm×320mm	1000PCS×10=10000PCS