



**MODEL:** EM-9745P-46  
**PRODUCT:** Electret Condenser Microphone  
**EDITION:** A/2016

**TYPE: OMNI DIRECTIONAL FOIL ELECTRET CONDENSER MICROPHONE**

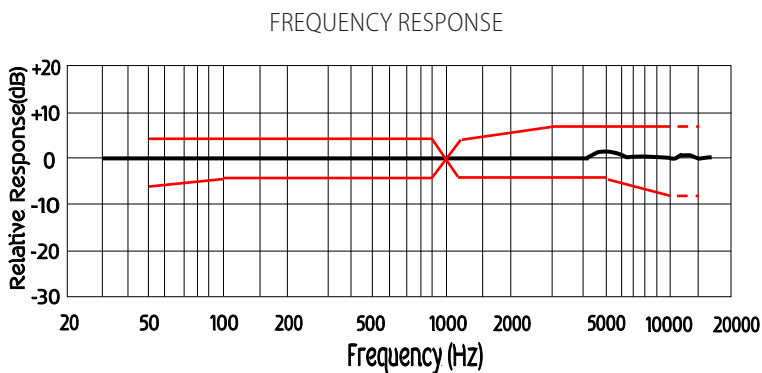
**ELECTRICAL CHARACTERISTICS**

Temperature = 20±2 °C Humidity=65±5%

parameter	symbol	condition	limits			unit
			min	center	max	
sensitivity	S	0dB=1V/Pa at 1kHz	-49	-46	-43	dB
output impedance	Z out	f=1kHz			2.2	KΩ
current consumption	I <sub>oss</sub>	V <sub>cc</sub> =3.0V, R <sub>L</sub> =2.2KΩ			500	μA
signal to noise ratio	S/N	at 1kHz S.P.L=1Pa (A-Weighted Curve)	58			dB
decreasing voltage	ΔS	V <sub>cc</sub> =3.0V to 2.0V			-3	dB
operating voltage			1.0		10	V
maximum input S.P.L					110	dB
dimension		Ø9.7 x 4.5 mm				

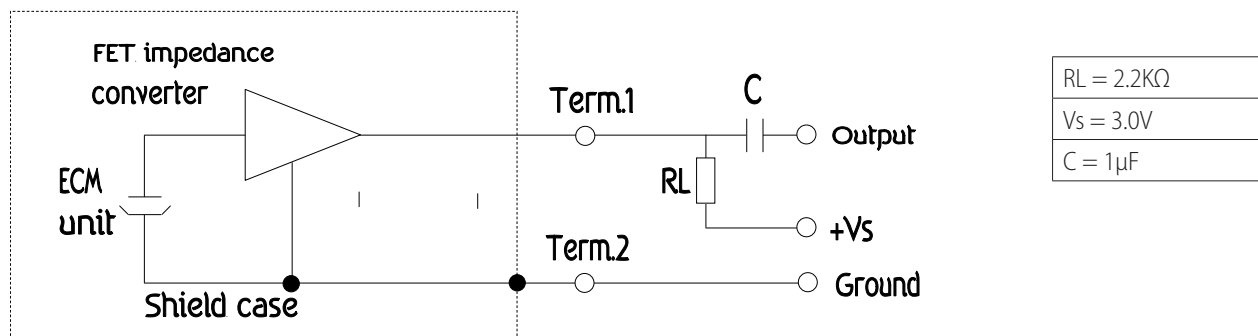
**TYPICAL FREQUENCY RESPONSE CURVE**

MICROPHONE RESPONSE TOLERANCE WINDOW



Frequency(Hz)	Lower Limit(dB)	Upper Limit(dB)
50	-6	+3
100	-3	+3
800	-3	+3
1000	0	0
1200	-3	+3
3000	-3	+8
5000	-3	+8
10000	-8	+8

**MEASUREMENT CIRCUIT**



RL = 2.2KΩ
Vs = 3.0V
C = 1μF



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### TEMPERATURE CONDITIONS

storage temperature range -40°C ~ +85°C

operation temperature range -40°C ~ +85°C

Note: Store in electronic warehouse.

### TERMINAL MECHANICAL STRENGTH

Terminal should be no interference in operation after pulled the terminal with 1kg for 1 minute.

### RELIABILITY TEST

After each of following tests, the sensitivity of the microphone should be within  $\pm 3\text{dB}$  of initial sensitivity after 3 hours of conditioning at 20°C .

vibration test

frequency 10Hz ~ 55Hz

amplitude 1.52mm

change of frequency 1 octave/min

2 hours in each of axis

high temperature test +70°C for 72 hours

low temperature test -20°C for 72 hours

humidity test 90% ~ 95%RH, +40°C for 240 hours

temperature cycles -20°C  $\longleftrightarrow$  +25°C  $\longleftrightarrow$  +70°C  $\longleftrightarrow$  +20°C  
 (2h) (1h) (2h) (1h) (2h) (2h) for 10 cycles

packing drop test

height 1m

procedure 5 times from each of axis

electrostatic discharge Tested to IEC61000-4-2 level 3

contact discharge The microphone shall operate normally after 10 discharges to is 6KV DC and the discharge network is 150pF & 330Ω.

air discharge The microphone shall operate normally after 10 discharges to is 8KV DC and the discharge network is 150pF & 330Ω

### SOLDERING CONDITION

We suggest using an anti-static welding machine which can control soldering temperature automatically.

Soldering temperature should be controlled at under 320 °C and soldering time for each terminal should be 1~2 seconds.

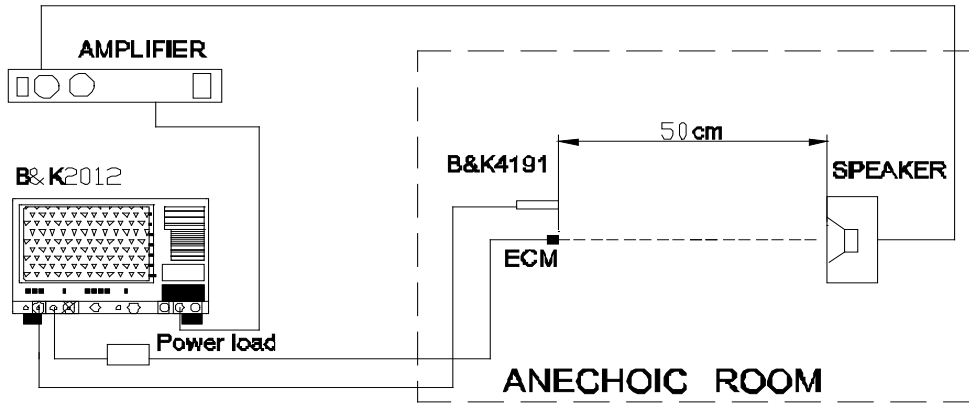
Microphone should be fixed on the metal block (heat sink) and heat sink shall contact with MIC tightly.

Microphone may easily be damaged by the static electricity. The countermeasure for eliminating the static electricity shall be by grounding both the worktable and the operator.



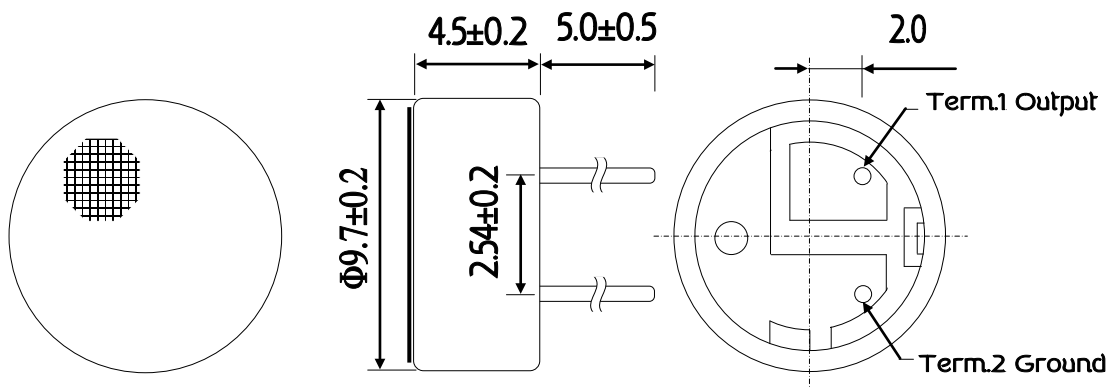
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### MEASUREMENT SETUP DRAWING

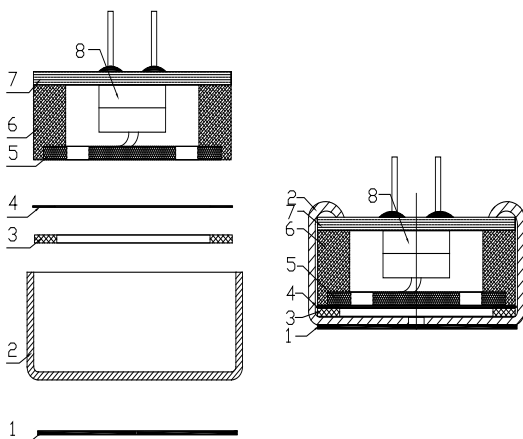


### PRODUCT EXTERNAL VIEW AND DIMENSION

Unit : mm



### EXPLODED DRAWING AND MATERIAL TABLE



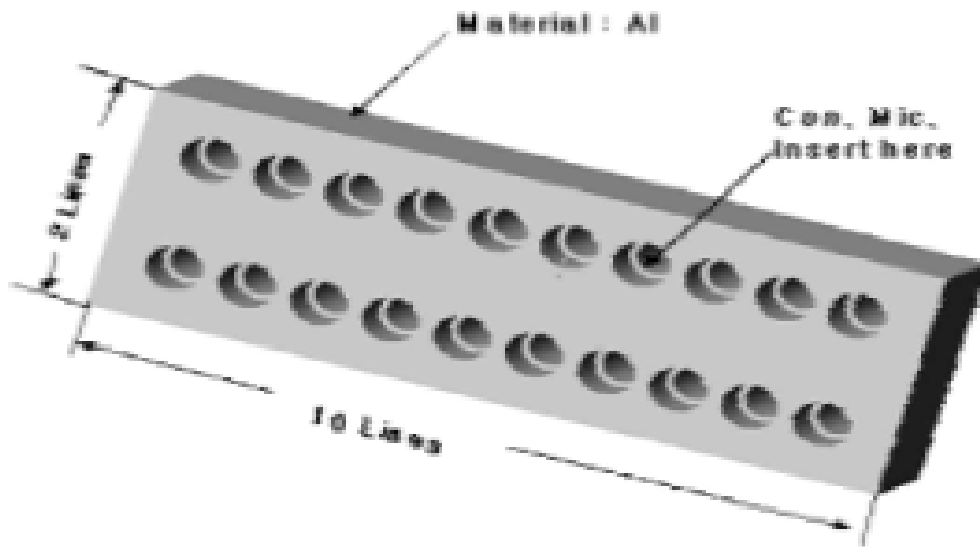
	Name	Material	Quantity	Remark
1	Dustproof gauze	Non-weave cloth	1	
2	Case	Al-Mg alloy	1	
3	Diaphragm		1	
4	Spacer		1	
5	Electret Plate		1	
6	Chamber		1	
7	PCB		1	FR4
8	FET		1	
9	PIN		2	



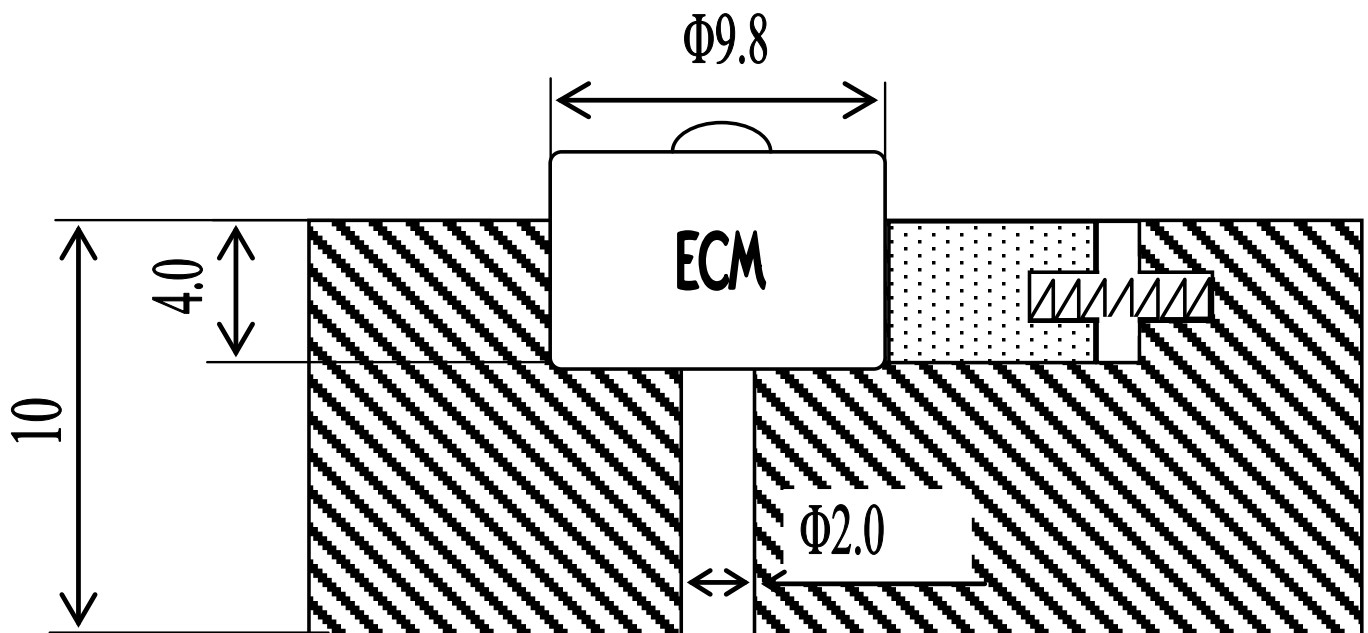
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## HEAT SINK

### SHAPE OF HEAT SINK



### SHAPE OF HOLE AT FIXED PART





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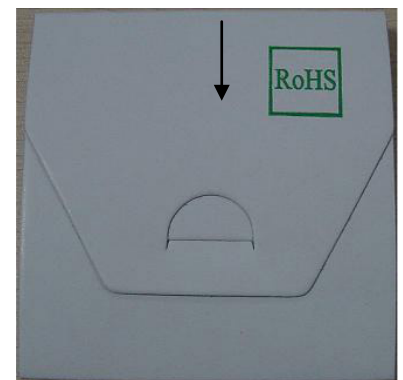
**PACKING**

DIMENSION: (LENGTH\*WIDTH \*HEIGHT)  
 ANTI-STATIC SPONGE: 100mm\*100mm\*10mm  
 SMALL PACKET: 100mm\*100mm\*17mm  
 MIDDLE BOX: 450mm\*280mm\*135mm  
 CARTON SIZE: 550mm\*230mm\*235mm

**QUANTITY AND WEIGHT**

100PCS/Small Box  
 6000PCS/Mid Box  
 12000PCS/Per Carton

1PC=0.7g  
 NET WEIGHT : 8.4kg  
 GROSS WEIGHT : 12.0kg



6000PCS →



12000PCS →

