



**MODEL:** EM-6050  
**PRODUCT:** Electret Condenser Microphone

**TYPE: FOIL ELECTRET CONDENSER MICROPHONE**

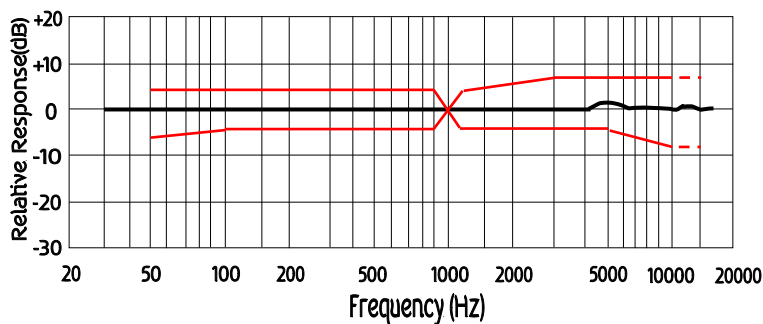
**ELECTRICAL CHARACTERISTICS**

Temperature = 20±2 °C Humidity=65±5%

parameter	symbol	condition	limits			unit
			min	center	max	
sensitivity	S	0dB=1V/Pa at 1kHz	-45	-42	-39	dB
output impedance	Z out	f=1kHz			2.2	KΩ
current consumption	I <sub>oss</sub>	V <sub>cc</sub> =2.0V, 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
dimensions		∅6.0 x 5.0mm				

**TYPICAL FREQUENCY RESPONSE CURVE**

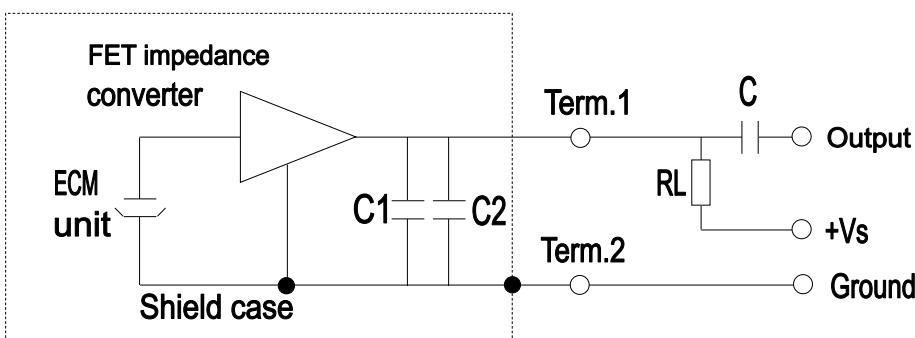
FREQUENCY RESPONSE



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
12000	-8	+8

**MEASUREMENT CIRCUIT**



RL = 2.2KΩ
Vs = 2.0V
C = 1μF
C1 = 10PF
C2 = 33PF



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### TEMPERATURE CONDITIONS

storage temperature range -40C ~ +85C

operation temperature range -40C ~ +85C

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 +85°C for 240 hours

low temperature test -40°C for 240 hours

humidity test 90% ~ 95%RH, +60°C for 240 hours

thermal shocking test -40°C, 30 minutes  $\longleftrightarrow$  +80°C, 30 minutes, repeated 32 cycles  $\rightarrow$  room temperature, 3 hours

temperature cycles -40°C  $\longleftrightarrow$  +20°C  $\longleftrightarrow$  +85°C  $\longleftrightarrow$  +20°C  $\longleftrightarrow$  -40°C  
 (2h) (0.5h) (2h) (0.1h) (2h) (0.5h) (2h) (0.5h) (2h) for 5 cycles

packing drop test

height 1.5m

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.

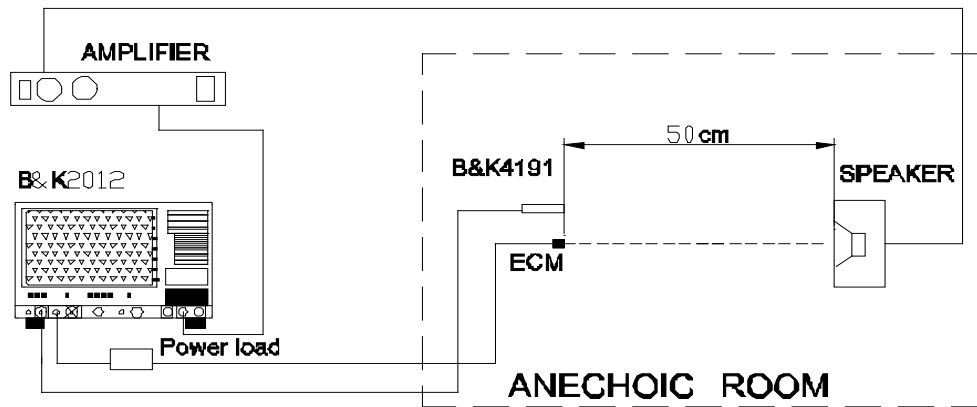
Microphone should be fixed on the metal block (heat sink), which has high radiation effects, and heat sink shall contact with MIC tightly.

Microphone may easily be destroyed by the static electricity and the countermeasure for eliminating the static electricity shall be electrocution (**worktable and human body shall be ground connection**).



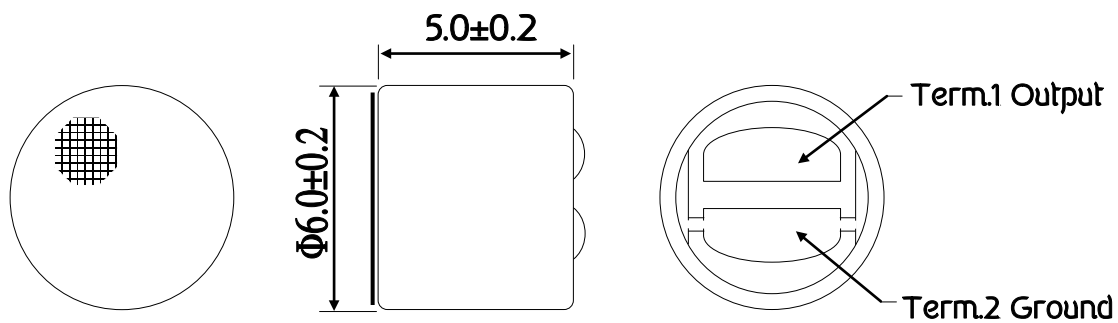
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**MEASUREMENT SETUP DRAWING**

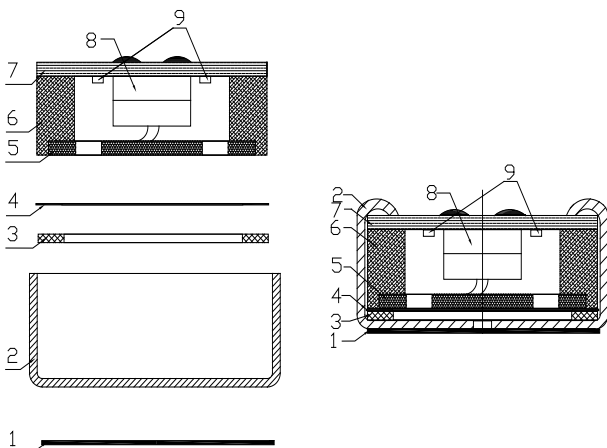


**PRODUCT EXTERNAL VIEW AND DIMENSION**

Unit : mm



**EXPLODED DRAWING AND MATERIAL TABLE**



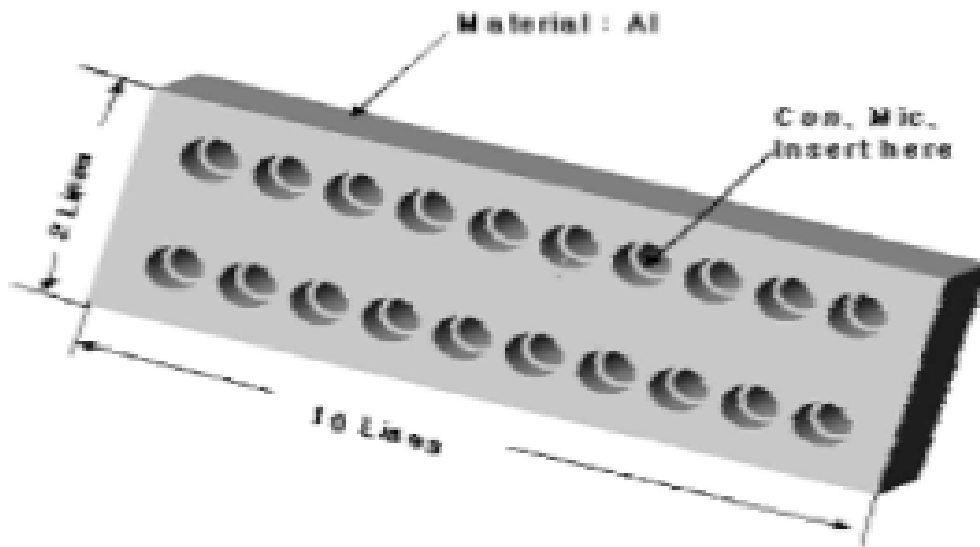
	Name	Material	Quantity	Remark
1	Dustproof gauze	Non-weave cloth	1	
2	Case	Al-Mg alloy	1	
3	Diaphragm		1	
4	Spacer		1	
5	Electret plate		1	
6	Chamber		1	
7	PCB	FR4	1	
8	FET		1	
9	Capacitors	10+33PF	1	



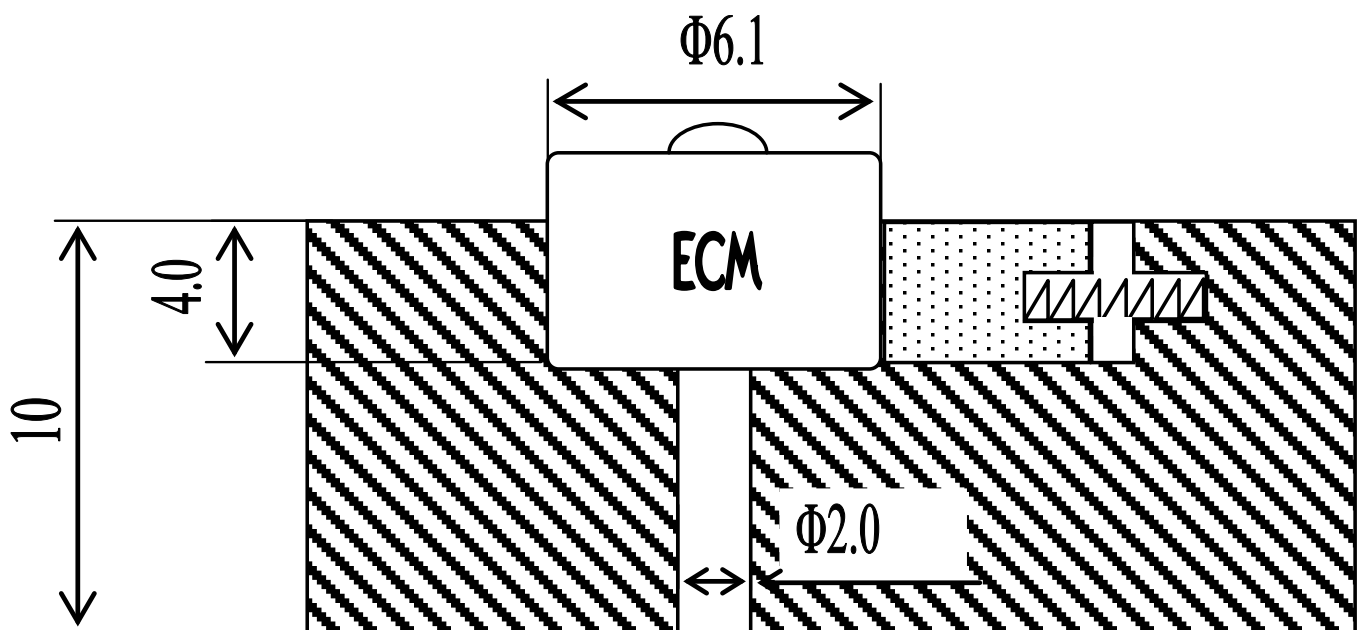
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## HEAT SINK

### SHAPE OF HEAT SINK



### SHAPE OF HOLE AT FIXED PART





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### PACKING

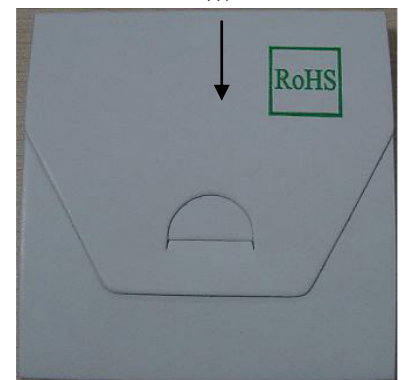
DIMENSION: (LENGTH\*WIDTH \*HEIGHT)  
ANTI-STATIC FOAM: 80mm\*80mm\*2mm  
SMALL PACKET: 85mm\*85 mm\*10mm  
MIDDLE BOX: 170mm\*85mm\*50mm  
CARTON SIZE: 550mm\*230mm\*235mm

### QUANTITY AND WEIGHT

100PCS/Small Box  
1000PCS/Mid Box  
30000PCS/Per Carton  
1PC=0.3g  
NET WEIGHT : 9.0kg  
GROSS WEIGHT : 13.0kg



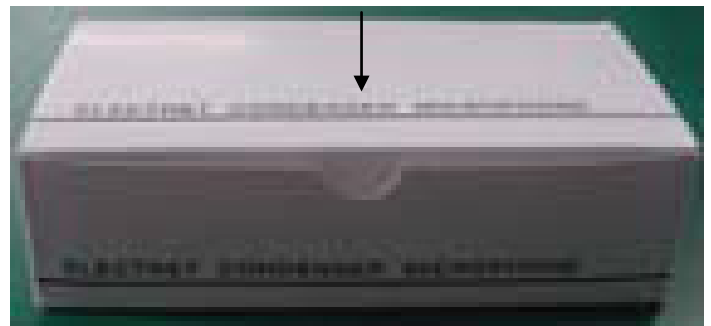
X1



X10

100PCS →

1000PCS →



X30

30000PCS →

