



**MODEL:** EM4015LW-38C10nF  
**PRODUCT:** Omni Directional Back Electret Condenser Microphone  
**EDITION:** A/2017

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

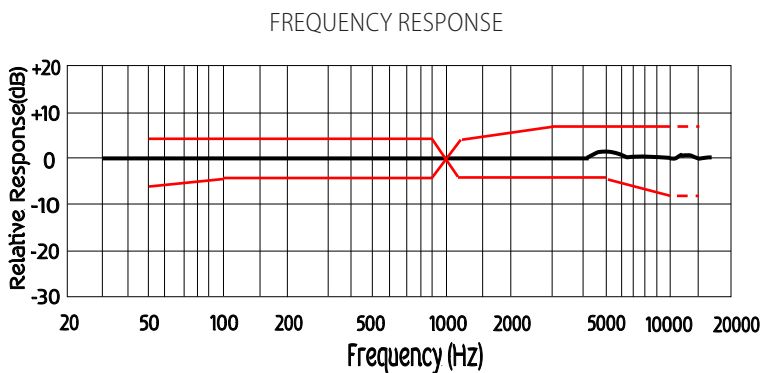
**ELECTRICAL CHARACTERISTICS**

Temperature = 20±2 °C Humidity=65±5%

parameter	symbol	condition	limits			unit
			min	center	max	
sensitivity	S	0dB=1V/Pa at 1kHz	-41	-38	-35	dB
output impedance	Z out	f=1kHz			2.2	KΩ
current consumption	I <sub>SS</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
dimension		∅4.0 x 1.5 mm (LW100)				

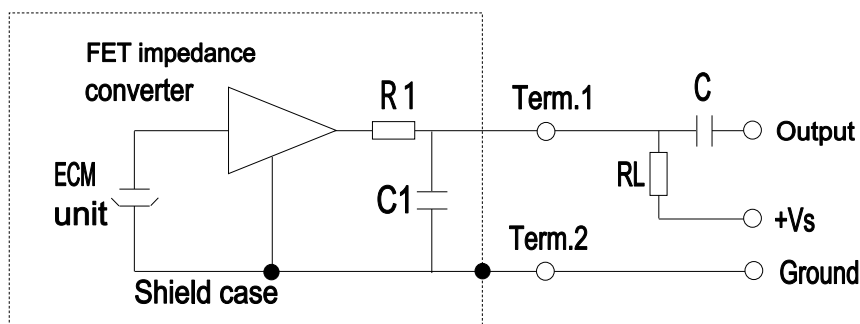
**TYPICAL FREQUENCY RESPONSE CURVE**

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 =2.0V
C1=10nF
R1=330Ω
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 the 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) (0.5) (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

IP level **IP67**

**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.

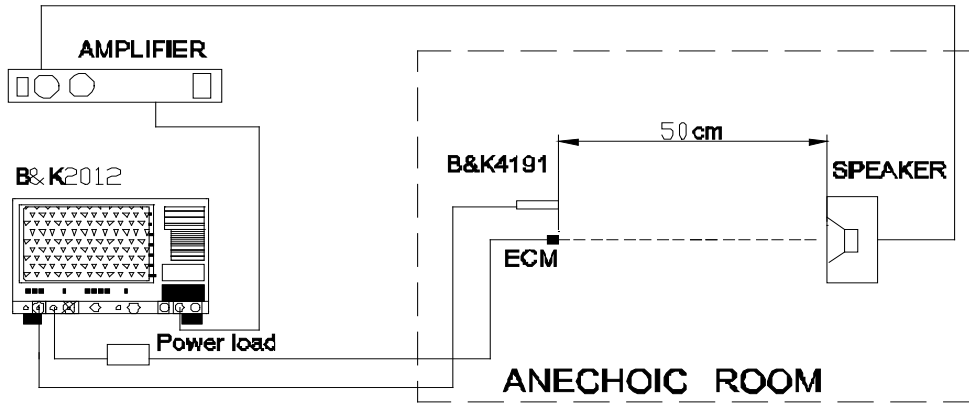
Microphone should be fixed on the metal block (heat sink) and the heat sink shall contact with MIC tightly.

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.



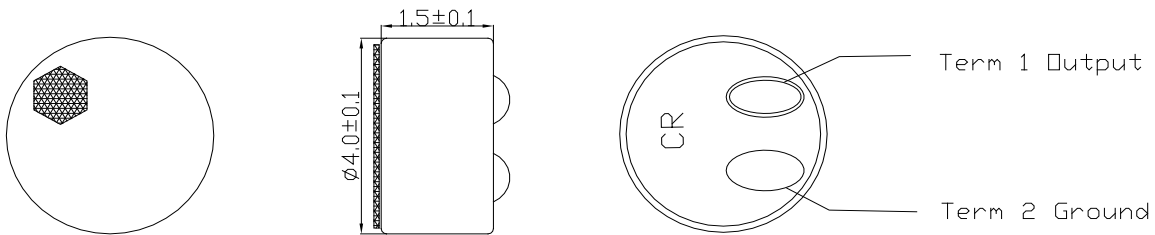
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**MEASUREMENT SETUP DRAWING**

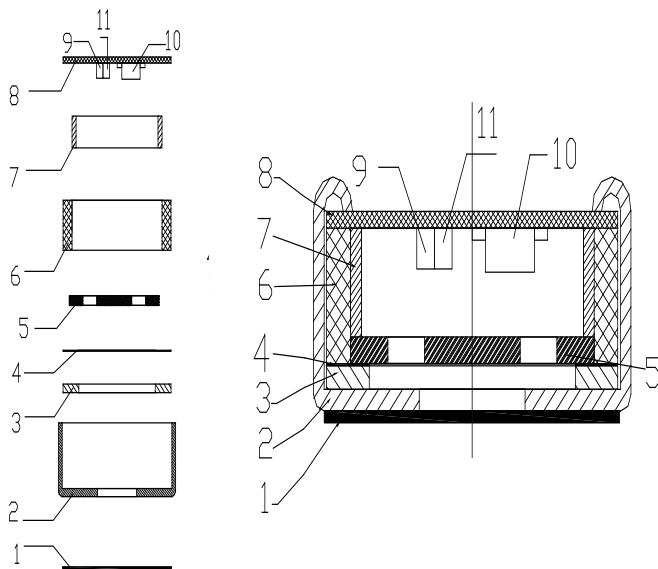


**PRODUCT EXTERNAL VIEW AND DIMENSION**

Unit : mm



**EXPLODED DRAWING AND MATERIAL TABLE**



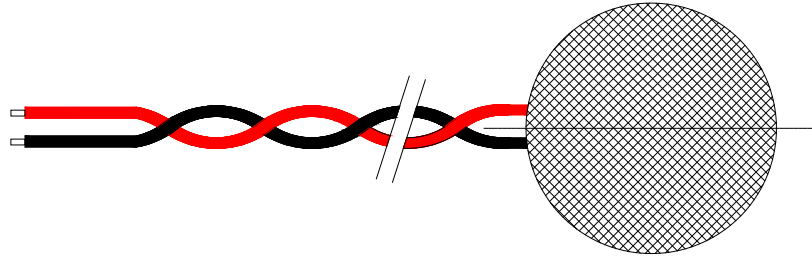
	Name	Material	Quantity
1	Dustproof gauze	Non-weave cloth	1
2	Case	Al-Mg alloy	1
3	Diaphragm		1
4	Spacer		1
5	Electret Plate		1
6	Chamber		1
7	Copper Ring		1
8	PCB	FR4	1
9	Chip Capacitor	10nF	2
10	FET		1
11	Resistance	330Ω	1



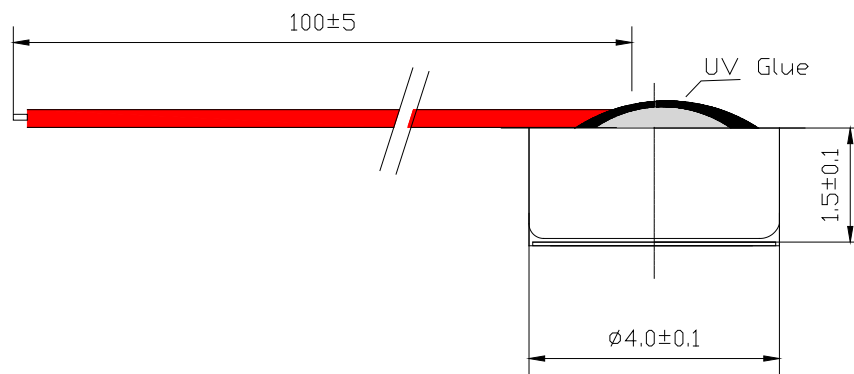
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**ACCESSORY DRAWING**

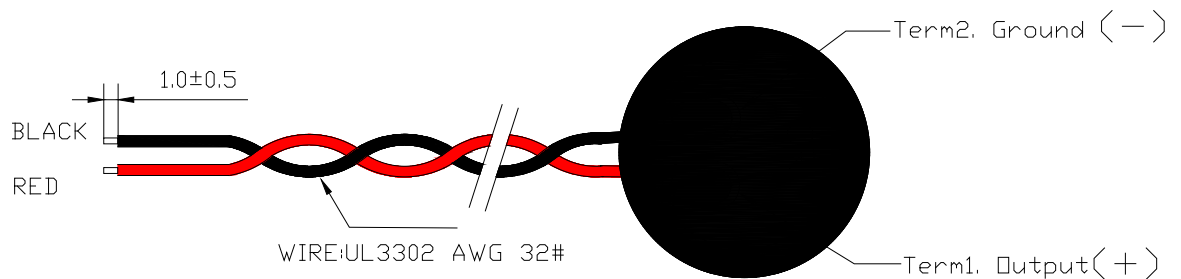
TOP VIEW



SIDE VIEW



BOTTOM VIEW

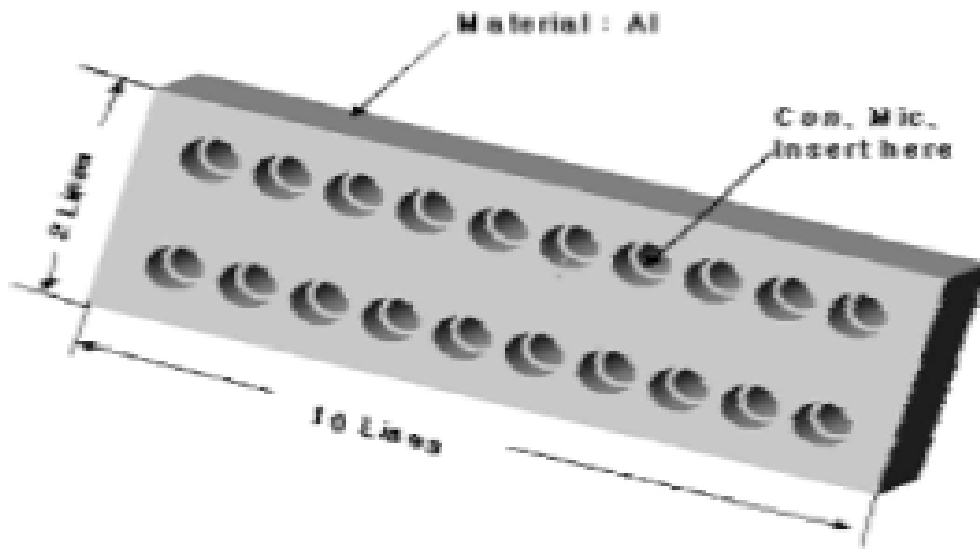




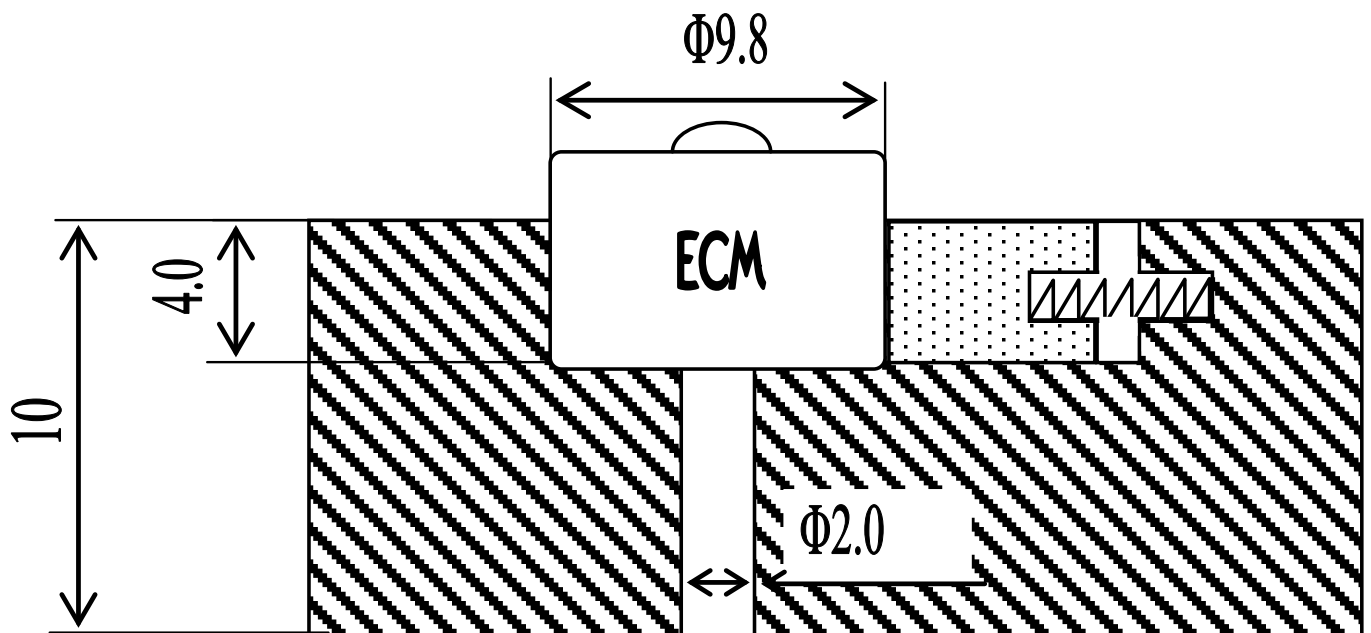
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## HEAT SINK

### SHAPE OF HEAT SINK



### SHAPE OF HOLE AT FIXED PART





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**PACKING**

DIMENSION:(LENGTH x WIDTH x HEIGHT)

Small Box:

100mm x 100mm x 10mm

Middle Box:

205mm x 105mm x 50mm

Carton Size:

550mm x 230mm x 235mm

QUANTITY AND WEIGHT

100pcs/SMALL BOX

1000pcs/MID BOX

20000pcs/CARTON

1PC=0.8g

NET WEIGHT: 1.6kg

GROSS WEIGHT: 4.6kg



X1

100PCS



X10

1000PCS



X20

20000PCS

