



Electret Condenser Microphone

6x2.7 mm

With wires & rubber

MEO6027C100H-382C1-R2

Revision

Date	Version	Status	Changes	Approver
2014/02/14	V0.1	Draft	First release	PG
2014/04/09	V0.3	Draft	Update the PN (C1033 to C1)	PG
2017/08/01	V1.0	Release	New logo	LD/LC

1. Scope

This document is the technical specification of electret condenser (ECM) Omni-Directional Microphone, waterproof with added wires.

2. Product Type

MEO6027C100H-382C1-R2

3. Electro Acoustic Specifications

Table 3-1 Electro Acoustic Specifications

No.	Parameter	Symbol	Condition	Limits			Unit
				Min	Nom.	Max	
3.1	Sensitivity	S	f=1kHz, Pin=1Pa, 0dB=1V/Pa	-40	-38	-36	dB
3.2	Directivity			Omni-directional			
3.3	Output Impedance	ZOUT	f=1kHz			2.2	kΩ
3.4	Current Consumption	IDSS	RL=2.2kΩ, Vs=2.0V	100		500	μA
3.5	S/N Ratio	S/N	f=1kHz, Pin=1Pa, (A-Weighted)	58			dB
3.6	Operating Voltage			1.0	2.0	10	V
3.7	Sensitivity vs. Voltage	ΔS	Vs= 2.0V to 1.5V			3	dB
3.8	Distortion	THD	94dB SPL at 1kHz			1%	
			115dB SPL at 1kHz			3%	

4. Frequency Response

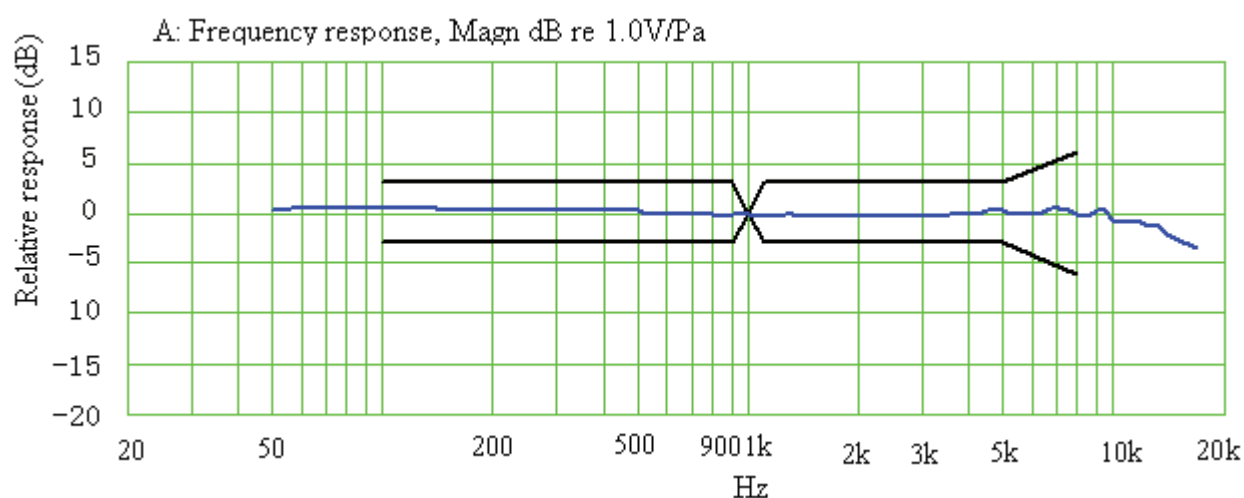


Fig. 4-1 Frequency Response

Table 4-1 Frequency Response Limit Data

Frequency [Hz]	100	900	1K	1.1K	3K 4K 5K		8k	10K
Upper limit [dB]	3 3		0 3		3 3 3		6	—
Frequency [Hz]	100	900	1K	1.1K	3K 4K 5K		8k	10K
Lower limit [dB]	-3 -3		0	-3	-3	— -3	-6	—

5. Schematic Diagram

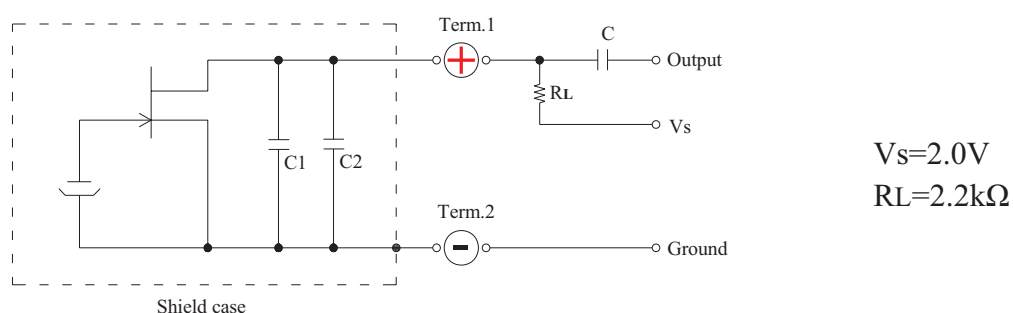


Fig. 5-1 Schematic Diagram

6. Measurement System Setup

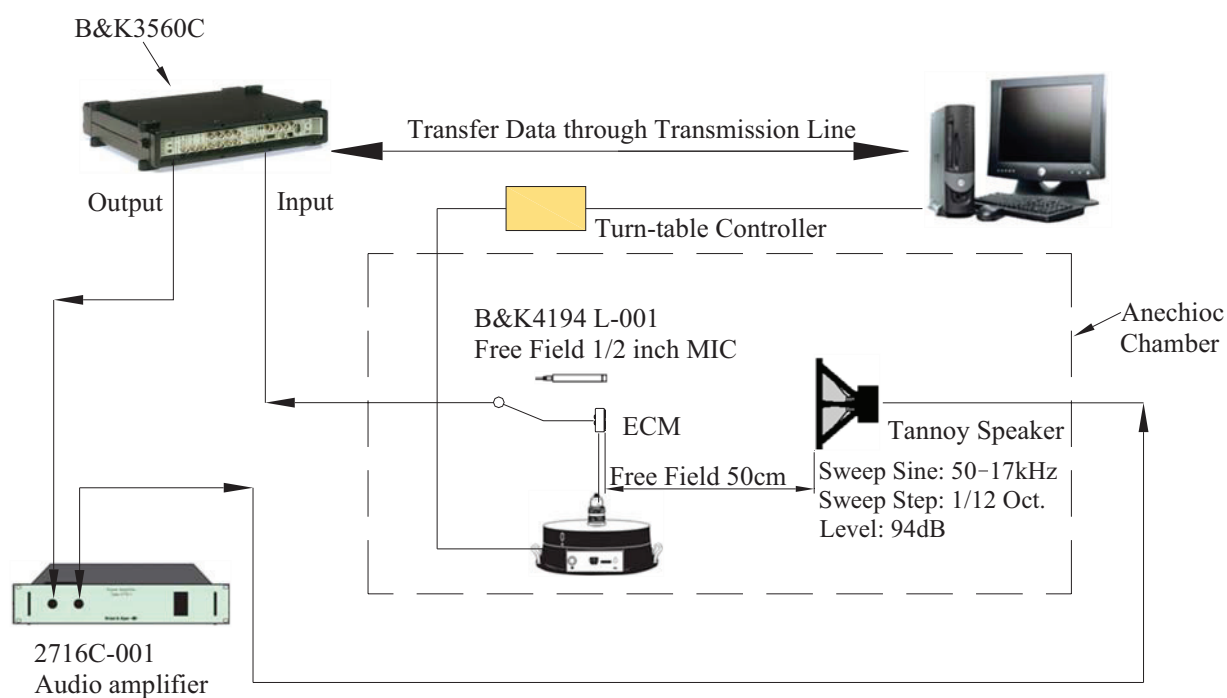
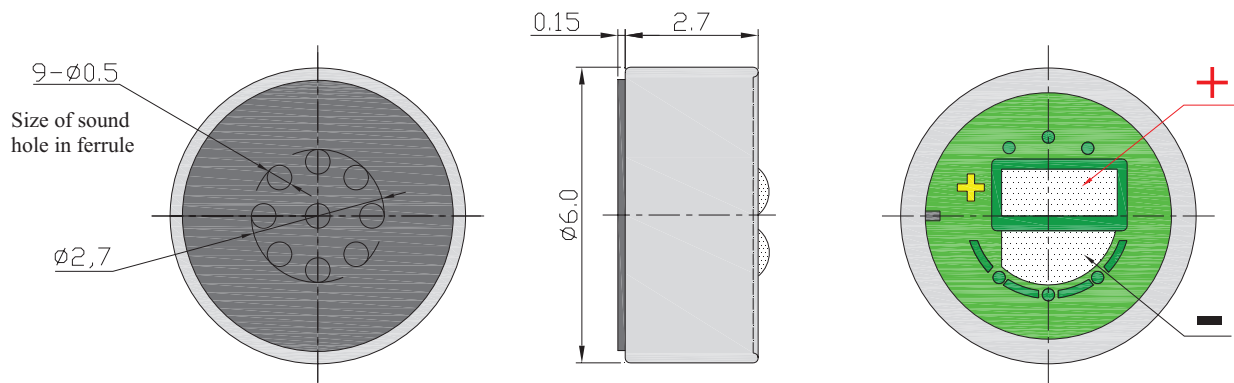


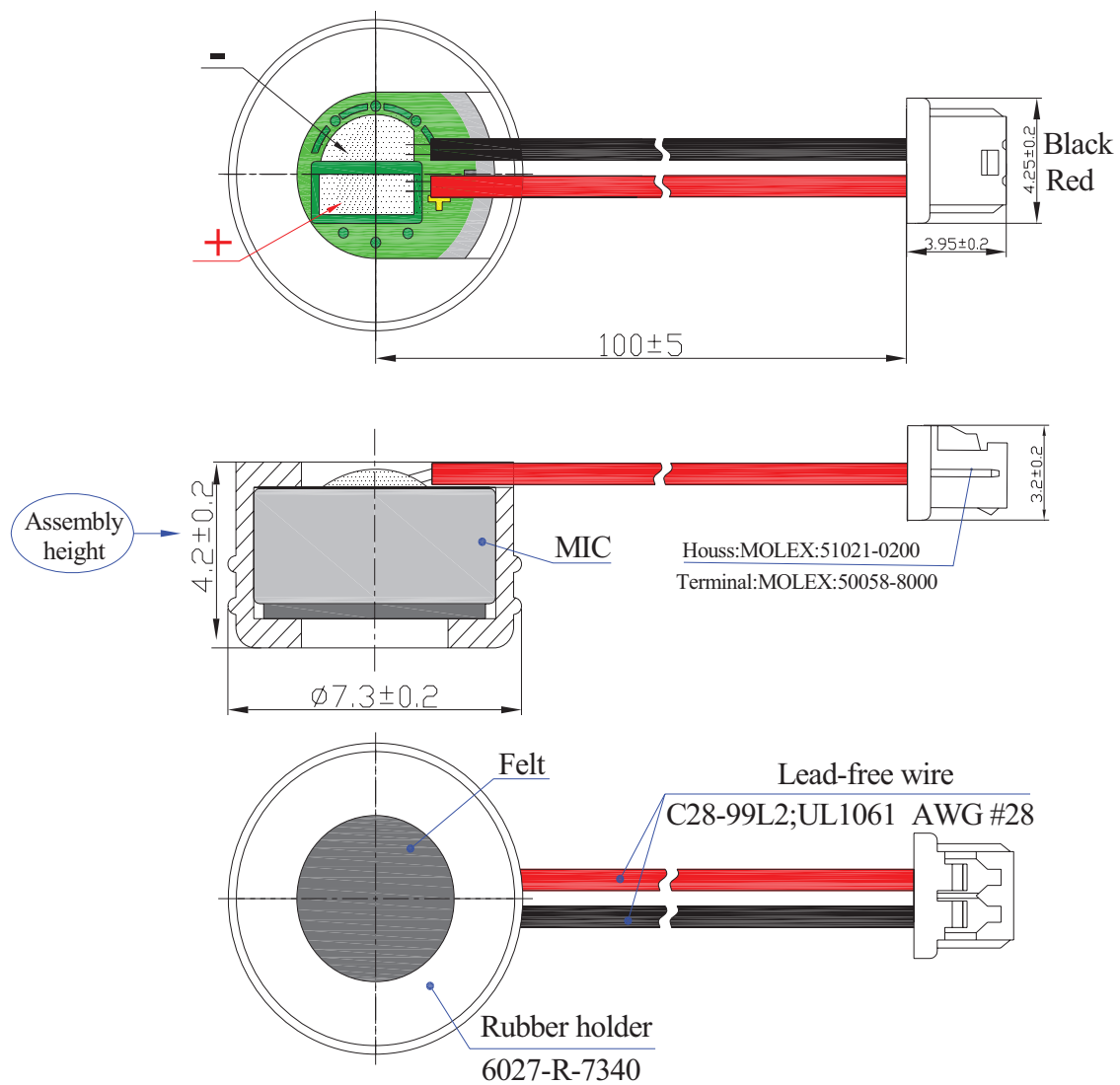
Fig. 6-1 Measurement System Setup

7. Dimension



Unmarked Tolerance: ± 0.1 (mm)

Fig. 7-1 Dimension



Unmarked tolerance is ± 0.15 (mm).

Fig. 7-2 Microphone Assembly

8. Reliability Tests

All the test conditions of the Reliability Tests are specified in the reference document, listed in Section 12.

After conducting any of the following tests, the sensitivity change of DUT shall be less than $\pm 3\text{dB}$ from its initial value and shall keep its initial operation and appearance.

8.1 Hi-T emperature Test

Temperature: +85°C
Duration: 240 hours

8.2 Low -Temperature Test

Temperature: -40°C
Duration: 240 hours

8.3 Humidity & Heat Test

Temperature: +70°C
Humidity: 93% RH
Duration: 240 hours

8.4 Thermal Shocking Test

Temperature & duration: -40°C, 30 minutes
Temperature & duration: +80°C, 30 minutes,
Cycles: 32 cycles

8.5 V ibration Test

Frequency: 10-55Hz
Amplitude: 1.52mm
Direction: 2 directions
Duration: 2 hours

8.6 Drop Test

Drop the microphones to the floor without package
Height: 1.5m
Reference surface: slippery marble floor
Duration: 5 times

8.7 W ire Tension Test

Pull strength: 6N
Strength Direction: horizontal
Duration: 1 minute

8.8 ESD

a. Contact discharge
Discharge position: Output of microphone
Charge voltage: $\pm 6000\text{VDC}$

Discharge network:	150pF & 330Ω
b. Air discharge	
Discharge position:	Sound hole
Charge voltage:	±8000VDC
Discharge network:	150pF & 330Ω

8.9 Waterproof Level

Meet the requirements of IP54

9. Packaging

To Be Determined

10 Soldering Suggestions

The temperature of the soldering irons must be limited to $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$. Soldering time should not exceed 2 seconds.

Operators, the solder fixture and the soldering iron must be statically grounded under each soldering process.

11 Special Cautions

11.1 Environmental Condition

Storage Condition: $-40^{\circ}\text{C} \sim +70^{\circ}\text{C}$.

Operation Condition: $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$.

Arbitration Condition: $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$, R.H. 63%~67%, Air pressure: 86~106Kpa.

11.2 Storage

Keep ECM in warehouse with humidity less than 75%R.H. and without sudden temperature change, acid air, any other harmful air or strong magnetic field.

Please protect products against moist, shock, sunburn and pressure.

Please take proper measures against ESD in the process. Please use the shipment package for long-term storage.