



Electret Condenser Microphone

6x2.2 mm with pins

MEO6022P28-383C1033

Revision

Date	Version	Status	Changes	Approver
2013/07/23	V0.1	Draft	First release	PG
2017/08/01	V0.1		New logo	LD

1. Scope

This document is the technical specification of electret condenser (ECM) Omni-Directional Microphone.

2. Product Type

MEO6022P28-383C1033

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	-41	-38	-35	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			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

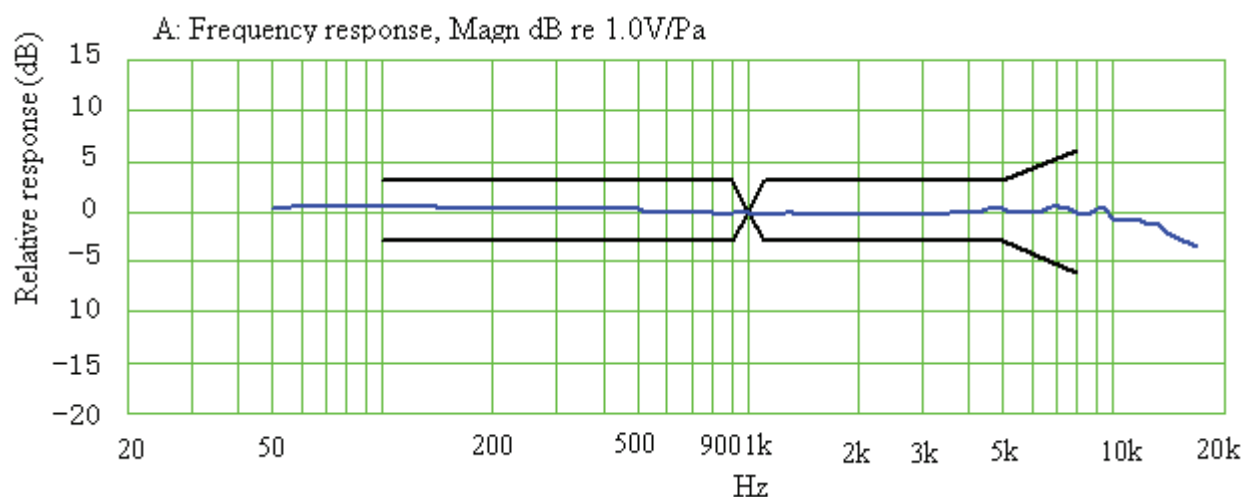


Fig. 4-1 Frequency Response

Table 4-1 Frequency Response Limit Data

Frequency [Hz]	100	300	1K	1.1K	3K	4K	5K	8k	10K
Upper limit [dB]	3	3	0	3	3	3	3	6	—
Frequency [Hz]	100	300	1K	1.1K	3K	4K	5K	8k	10K
Lower limit [dB]	-3	-3	0	-3	-3	—	-3	-6	—

5. Schematic Diagram

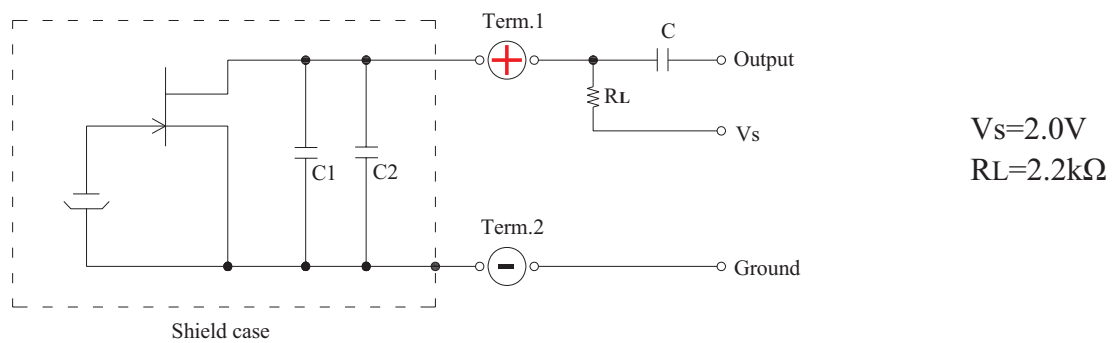


Fig. 5-1 Schematic Diagram

6. Measurement System Setup

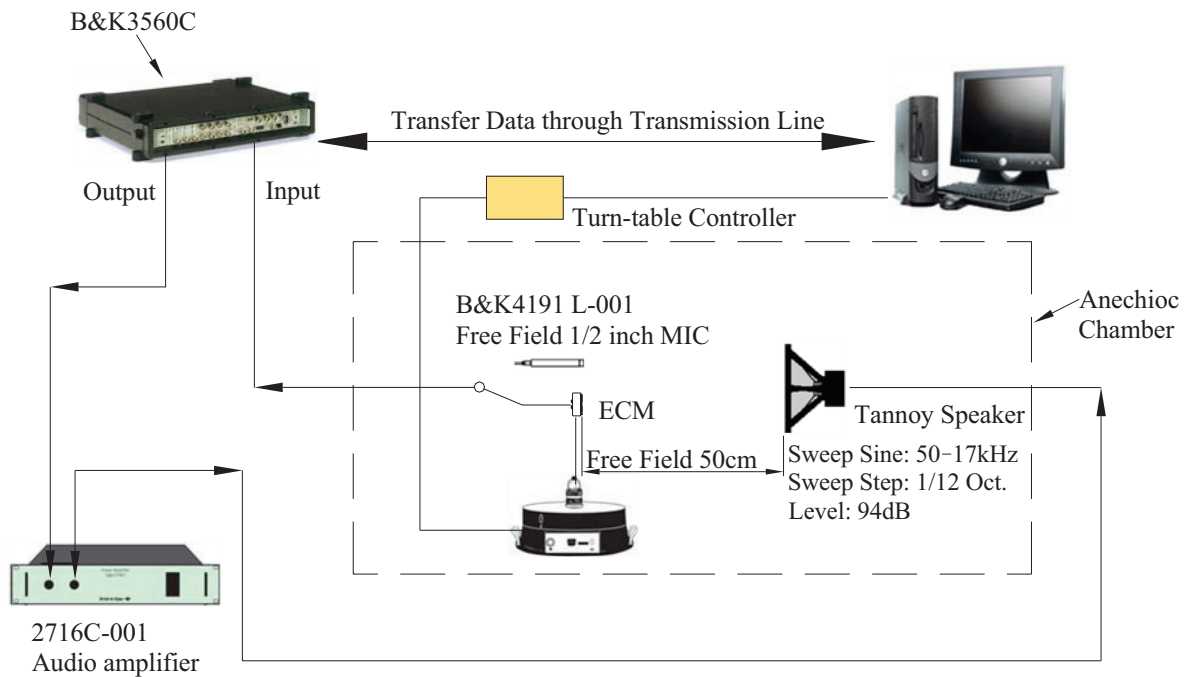
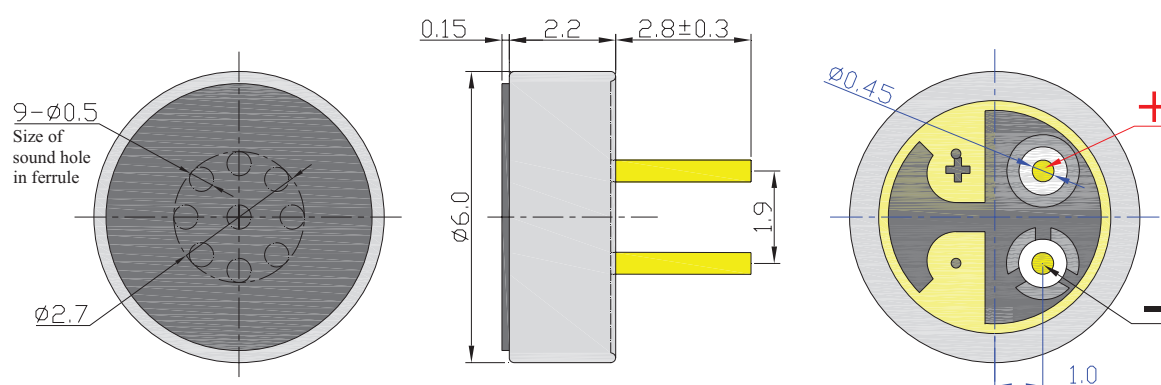


Fig. 6-1 Measurement System Setup

7. Dimension



Unmarked Tolerance: ± 0.1 (mm)

Fig. 7-1 Dimension

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-Temperature Test

Temperature: $+85^{\circ}\text{C}$
Duration: 240 hours

8.2 Low-Temperature Test

Temperature: -40°C
Duration: 240 hours

8.3 Humidity & Heat Test

Temperature: $+70^{\circ}\text{C}$
Humidity: 93% RH
Duration: 240 hours

8.4 Thermal Shocking Test

Temperature & duration: -40°C , 30 minutes
Temperature & duration: $+80^{\circ}\text{C}$, 30 minutes,
Cycles: 32 cycles

8.5 Vibration 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 PIN Firmness Test

Pull Strength: 10N

Strength Direction: Vertical

Duration: 1minutes

8.8 ESD

a. Contact discharge

Discharge position: Output of microphone

Charge voltage: $\pm 6000\text{VDC}$

Discharge network: 150pF & 330Ω

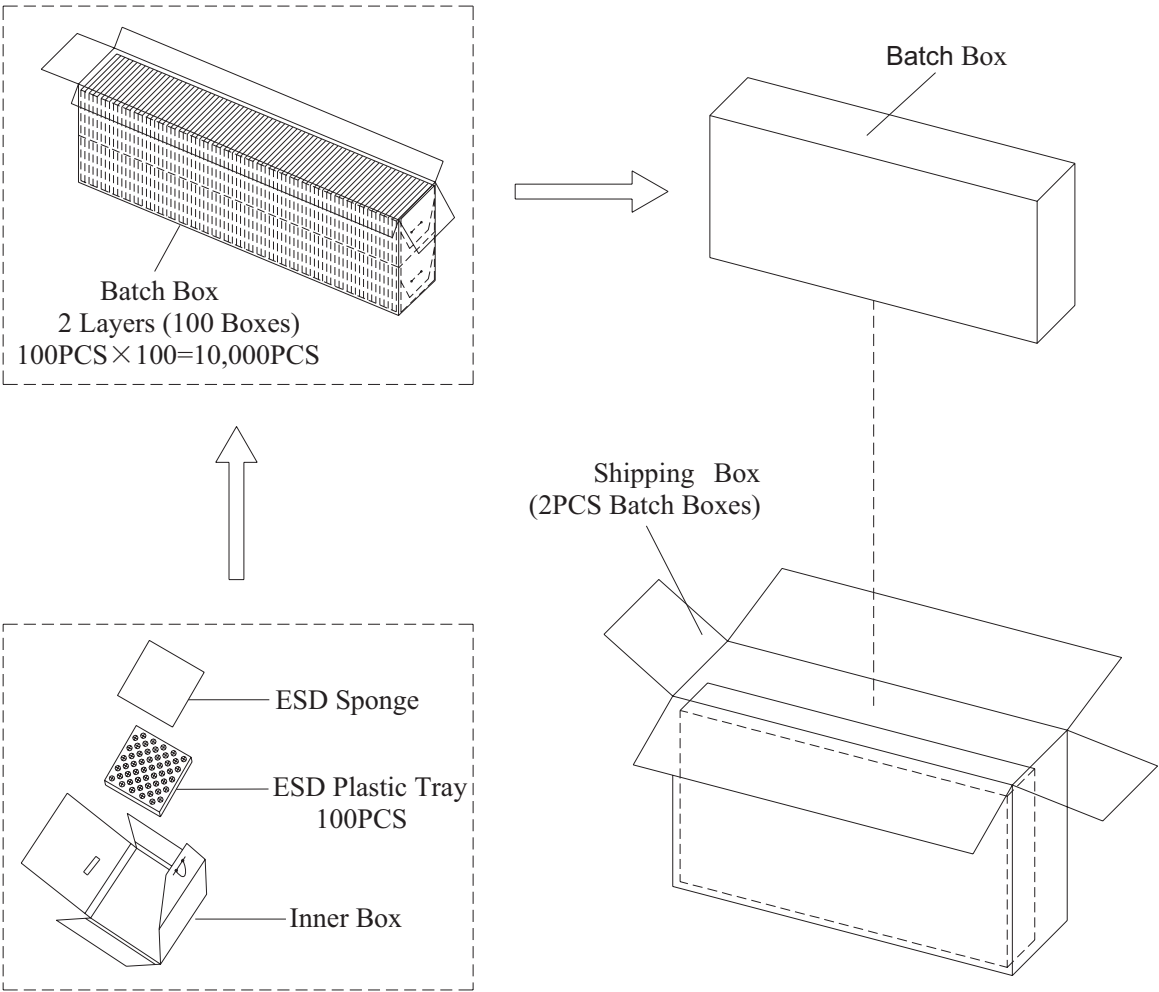
b. Air discharge

Discharge position: Sound hole

Charge voltage: $\pm 8000\text{VDC}$

Discharge network: 150pF & 330Ω

9. Packaging



Inner Box	82mm×82mm×8mm	$100\text{PCS} \times 1 = 100\text{PCS}$
Batch Box	435mm×100mm×185mm	$100\text{PCS} \times 100 = 10,000\text{PCS}$
Shipping Box	455mm×233mm×211mm	$10,000\text{PCS} \times 2 = 20,000\text{PCS}$

Fig. 9-1 Packaging

10. Soldering Suggestions

10.1 Soldering Condition

All the soldering process must be completed in a metallic fixture. 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.

10.2 Soldering Fixture

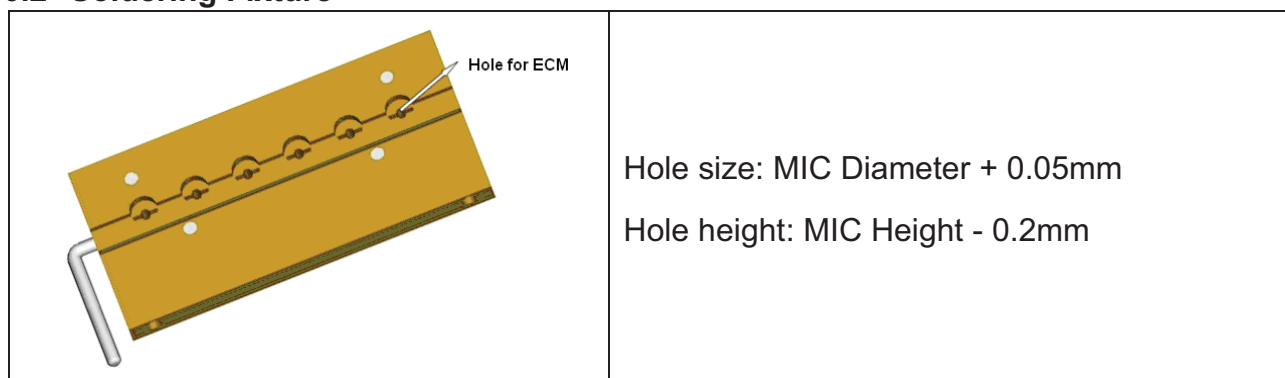


Fig. 10-1 Soldering Fixture

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.

12. References

- 1) Reliability Test Manual SM-III-S080-04-E.