Electret Condenser Microphone

With twist wires

6.0×2.2 mm

MEO6022W100423C1033

Revision

Date	Version	Status	Changes	Approver
2019/5/23	V0.1	Draft	Initial release	AX

1. Scope

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

2. Product Type

MEO6022W100423C1033

3. Electro Acoustic Specifications

Table 3-1 Electrical Specifications

（Test Condition: +20℃±1,63%～67% RH, 86~106Kpa, Vs=2V, unless specified differently）

No.	Parameter	Symbol	Condition	Limits			Unit
				Min	Nom.	Max	
3.1	Sensitivity	S	f=1kHz, Pin=1Pa, 0dB=1V/Pa	-45	-42	-39	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	Total Harmonic Distortion	THD	94dB SPL at 1kHz			1%	
			115dB SPL at 1kHz			3%	

4. Frequency Response

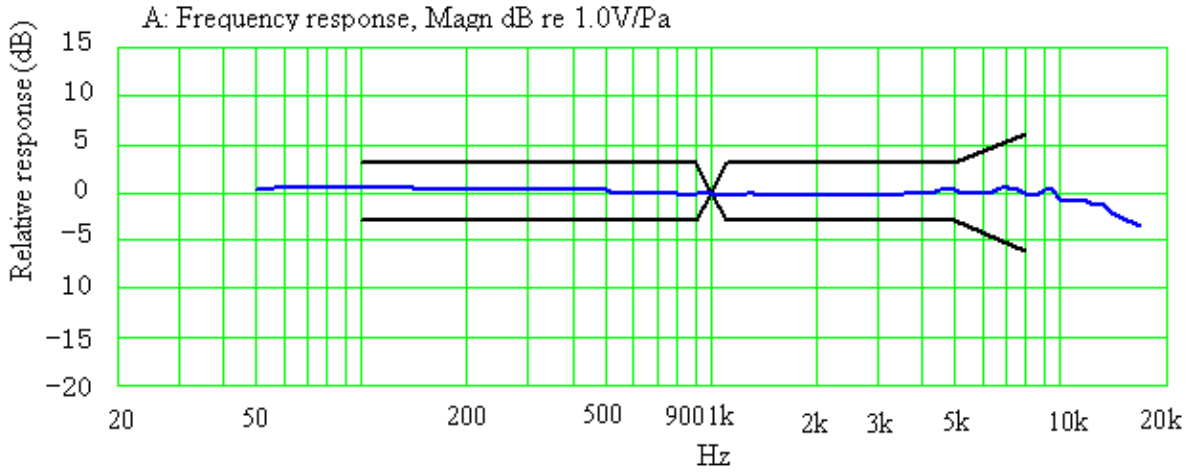
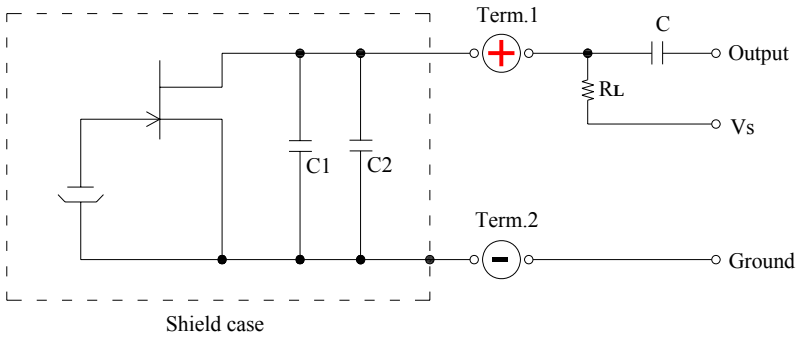


Fig. 4-1 Frequency Response

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



Vs=2.0V
RL=2.2kΩ

Fig. 5-1 Schematic Diagram

6. Measurement System Setup

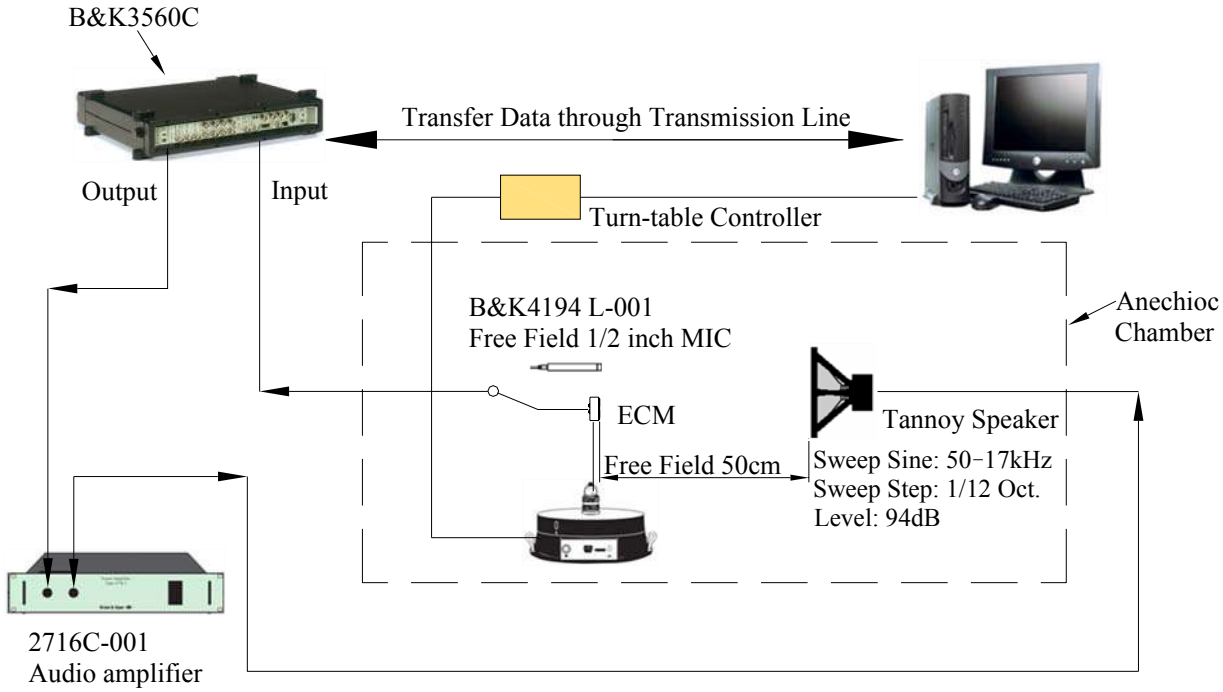
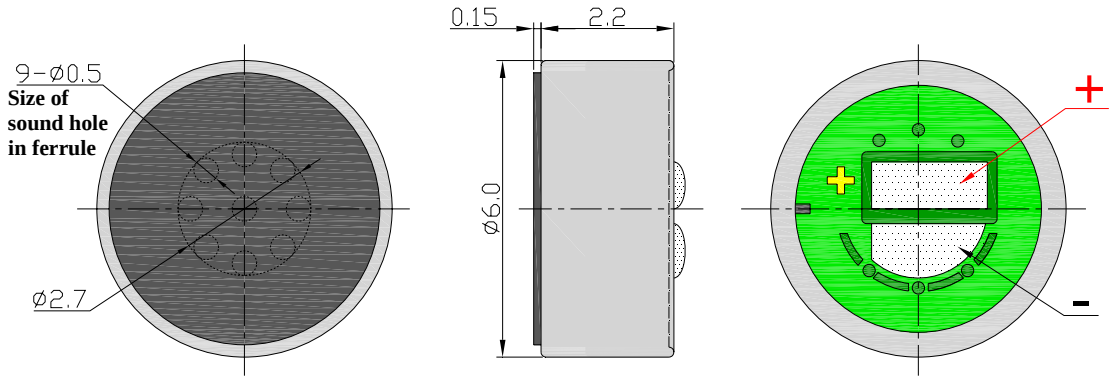


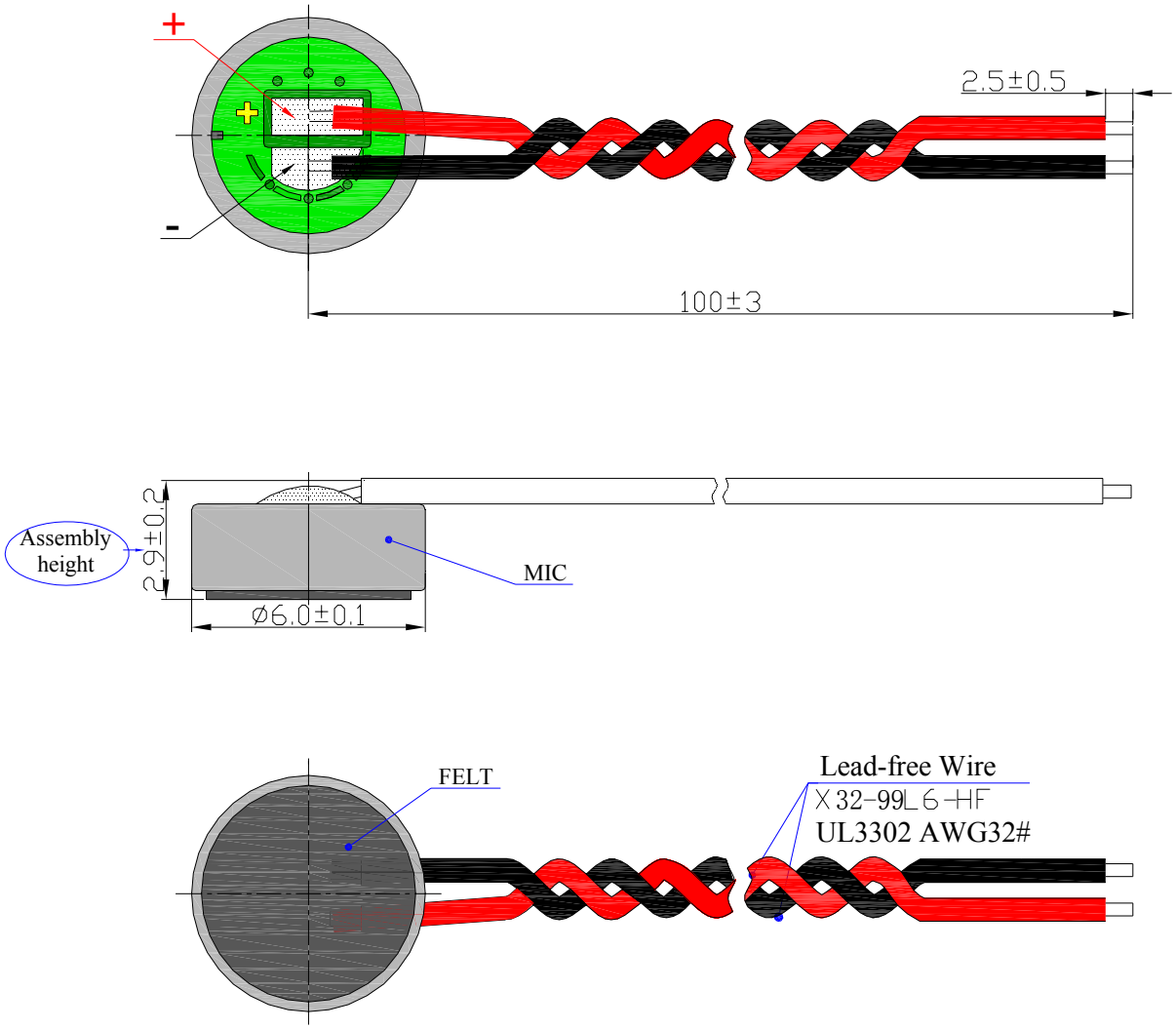
Fig. 6-1 Measurement System Setup

7. Dimension



Unmarked Tolerance: ± 0.1 (mm)

Fig. 7-1 Microphone Capsule



Unmarked tolerance is ± 0.15 (mm).

Fig. 7-2 Microphone Assembly

8. Reliability Tests

After conducting any of the following tests, the sensitivity change of DUT shall be less than ±3dB from its initial value and shall keep its initial operation and appearance.

The measurement to be done after 2 hours of conditioning at +15 ℃～+35℃, R.H 45%～75%

8.1 Hi-Temperature Test

Temperature: +85℃
Duration: 240 hours

8.2 Low-Temperature Test

Temperature: -40℃
Duration: 240 hours

8.3 Humidity & Heat Test

Temperature: +60℃
Humidity: 93% RH
Duration: 240 hours

8.4 Thermal Shocking Test

Temperature & duration: -40℃, 30 minutes
Temperature & duration: +80℃, 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
Height: 1.5m
Reference surface: slippery marble floor
Duration: 3 times

8.7 Soldering Heat Test

Place microphones in the metallic fixture
Soldering Heat: 350°C
Duration: 5S
Recover: 1h

8.8 ESD

The tests are performed acc. to IEC61000-4-2 level 3
a. Contact discharge
Discharge position: Output of microphone

Charge voltage: ±6000VDC
Discharge network: 150pF & 330Ω

b. Air discharge

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

9 Packaging

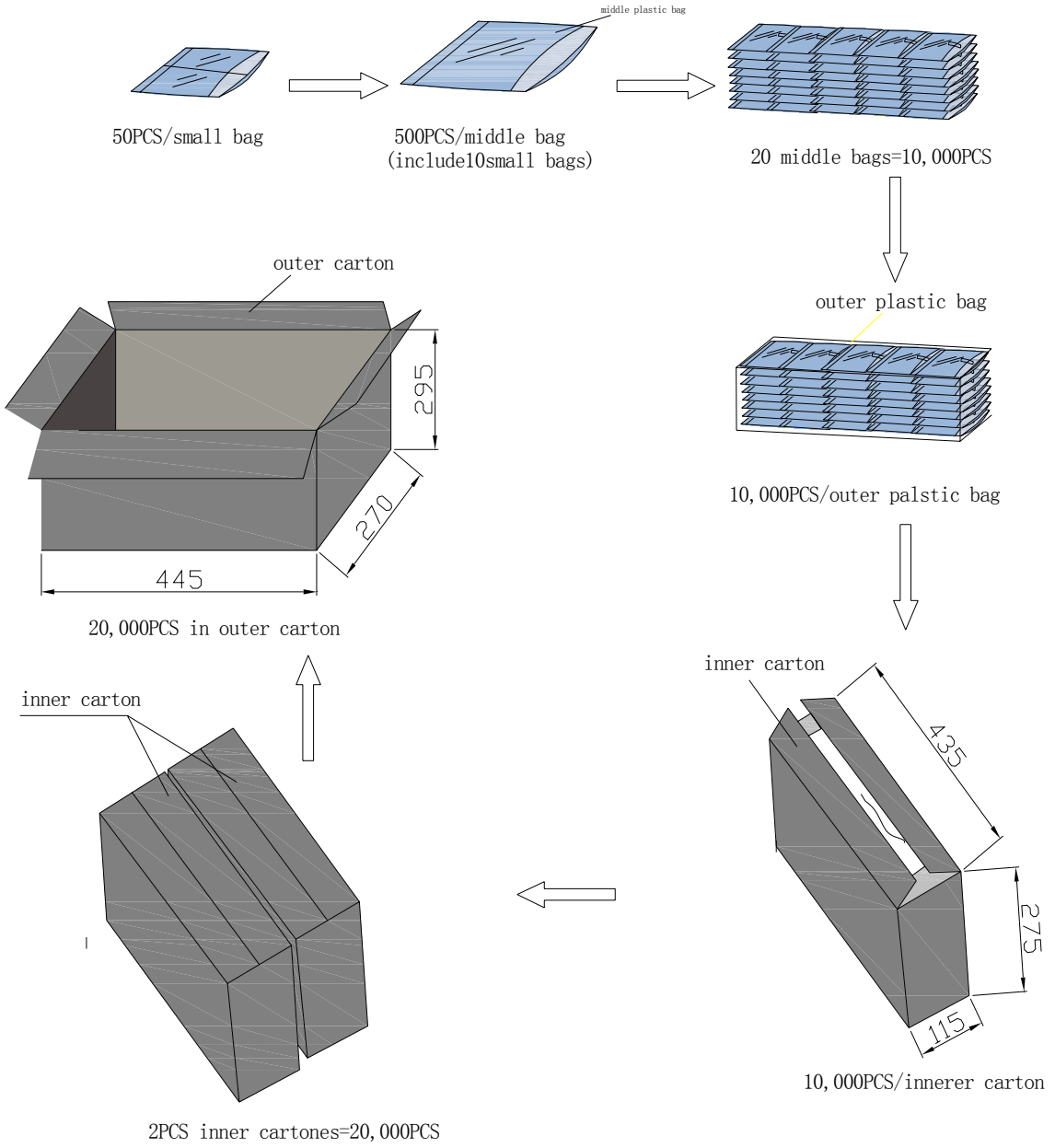


Fig. 9-1 Packaging

10 Soldering Suggestions

The temperature of the soldering irons must be limited to 350°C± 10°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°C ~+70°C.

Operation Condition: -20°C ~+60°C.

Arbitration Condition: 20°C ±1°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.