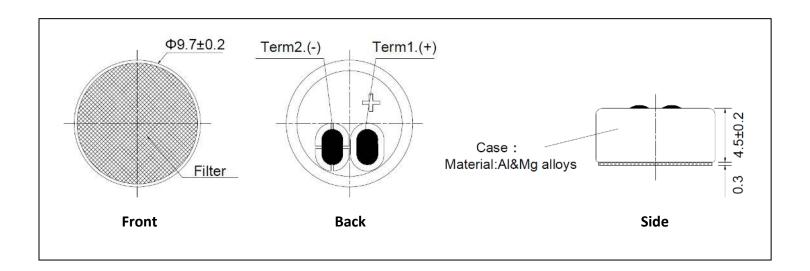


# Specification Part Number: TM141057

# <u>Description: Omni-Directional Electret Condenser Microphone</u>

(Size: 9.7mm x 4.5mm)

**RoHS Compliant** 



| Revision | Date              | Comments        |
|----------|-------------------|-----------------|
| Α        | February 28, 2023 | Initial Release |



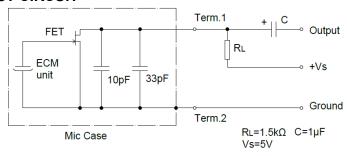
# 1. ELECTRICAL SPECIFICATIONS

| Standard Conditions |              | Basic Test Conditions |              |
|---------------------|--------------|-----------------------|--------------|
| Temperature         | 5 to 35°C    | Temperature           | 20 ± 2°C     |
| Humidity            | 45 to 85%    | Humidity              | 63 to 67%    |
| Air Pressure        | 86 to 106kPa | Air Pressure          | 86 to 106kPa |

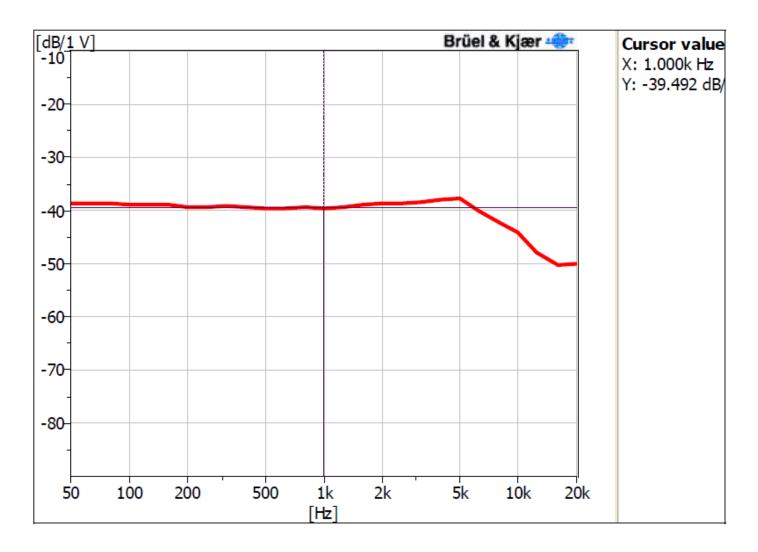
| Parameter   |                                | SPEC   | Unit |
|---|--------------------------------|--|------|
| Directional Characteristic                          |                                | Omni-directional                                   | dB   |
| Sensitivity   |                                | -40±3  | dB   |
| Impedance   |                                | 2.2 (Max)  | kΩ   |
| S/N Ratio (A weighted network)                      |                                | 66 (Typ)   | dB   |
| Maxir   | num Input Sound Pressure Level | 110<br>THD≤3%                                      | dB   |
| Standard Operating Voltage                          |                                | 5.0  | Vdc  |
| Operating Voltage Range                             |                                | 1.0~10.0   | Vdc  |
| Decrease Voltage Characteristics(Vs=2.0 to 1.5V dc) |                                | -3(Max)  | dB   |
| Current Consumption                                 |                                | 500 (Max)  | μA   |
| Standard Test Circuit                               |                                | See Fig. 1   | _    |
| Frequency Response Characteristic                   |                                | See Fig. 2   | _    |
| (@f=1kHz, Pi  |                                | RL= 1.5kΩ, Vs=5<br>(@f=1kHz, Pin=1Pa, 0<br>L=50cm) |      |



#### 2. STANDARD TEST CIRCUIT



## 3. TYPICAL FREQUENCY RESPONSE IN ANECHOIC CHAMBER





## 4. RELIABILITY

| Item Test conditions |                          | Test conditions   | Evaluation standard  |
|----------------------|--------------------------|---|--|
| 1                    | Hi-Temp.Test             | The microphone unit must be subjected to +85℃ for 100 hours and exposed to room temperature for 3 hours.  |  |
| 2                    | Low-Temp.Test            | The microphone unit must be subjected to -40℃ for 100 hours and exposed to room temperature for 3 hours.  |  |
| 3                    | Humidity &Heat<br>Test   | The microphone unit must be subjected to +55℃, 85% RH-for 100 hours and exposed to room temp for 3 hours.   |  |
| 4                    | Thermal<br>Shock Test    | The microphone unit must be subjected to following condition [+80 $^{\circ}$ C 0.5H $\rightarrow$ room temp 1H $\rightarrow$ -40 $^{\circ}$ C 0.5H $\rightarrow$ room temp 1H]at 10 cycles.     |  |
| 5                    | Vibration Test           | The microphone unit must be subjected to a procedure that it is vibrating for two hours from each of the three directions(x y z) with a frequency of 10-55Hz and a 1.52mm-high amplitude.       | After any of the tests, the sensitivity of the microphone unit shall not change more than $\pm 3$ dB from initial value and shall keep its initial operation and appearance. |
| 6                    | Drop Test                | The microphone unit must be subjected to a procedure that it is dropped on a slippery marble floor for 5 times from each axis for a total of 5 times from a 1.0-meter-height without packaging. |  |
| 7                    | Storage<br>Temperature   | -35℃~+60℃ R.H .less than 90%  |  |
| 8                    | Operating<br>Temperature | -35℃~+60℃ R.H. less than 90%  |  |
| 9                    | ESD Protection           | The test microphone must be discharged between each ESD exposure without ground(contact:±6KV,air:±8KV)  |  |

#### **NOTES:**

All the soldering procedures upon microphones must be completed in a heat sink device. The temperature of the soldering iron must be limited to 360°C±20°C and the soldering time should not exceed 3 seconds.

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