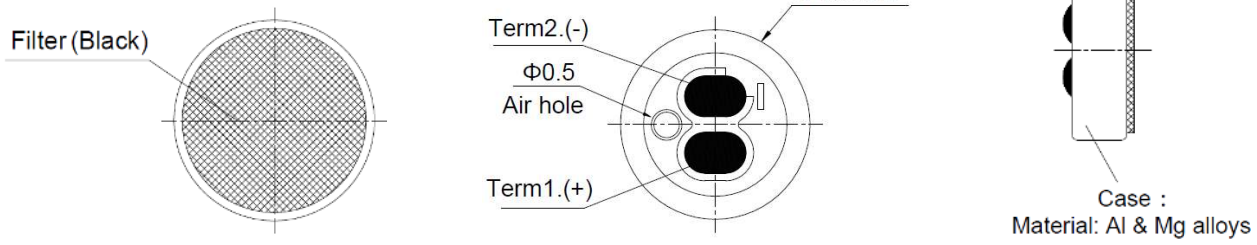
# Specification

# Part Number: TM141062

**Description: Noise Cancelling Electret Condenser Microphone**

**(Size: 4mm x 1.2 mm)**

**RoHS Compliant**




**Front** **Back** **Side**

| Revision | Date | Comments |
|---|---|---|
| A | March 2, 2023 | Initial Release |



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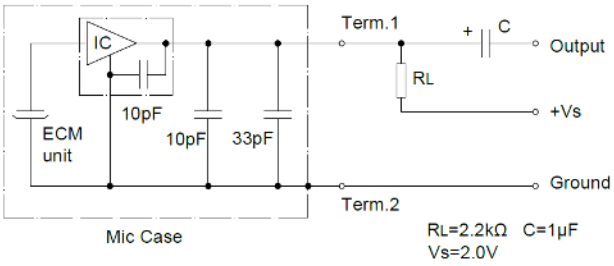
Please contact Top Shelf Acoustics for sales inquiries or integration assistance of your microphone at sales@tsacoustics.com or Miranda Ullrich at (P) 317.512.4569

## 1. ELECTRICAL SPECIFICATIONS

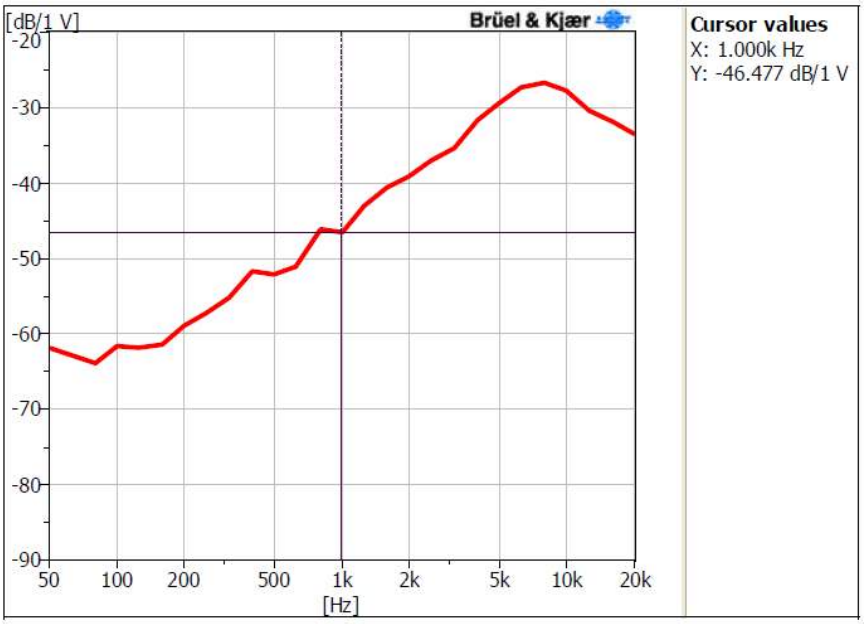
| Standard Conditions | | Basic Test Conditions | |
|---|---|---|---|
| Temperature | 5 to 35℃ | Temperature | 20 ± 2℃ |
| Humidity | 45 to 85% | Humidity | 63 to 67% |
| Air Pressure | 86 to 106kPa | Air Pressure | 86 to 106kPa |

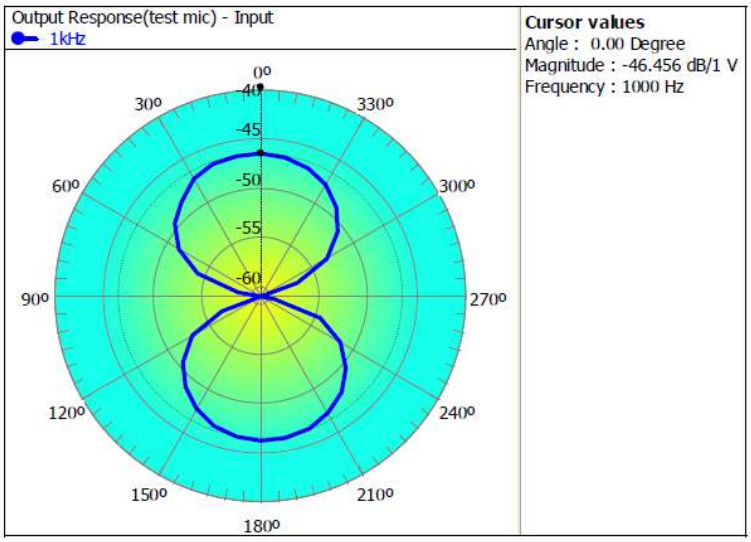
| Parameter | | SPEC | Unit |
|---|---|---|---|
| Directional Characteristic | | Noise Cancelling | dB |
| Sensitivity | | -46±3 | dB |
| Impedance | | 2.2 (Max) | kΩ |
| S/N Ratio (A weighted network) | | 45 (Typ) | dB |
| Maximum Input Sound Pressure Level | | 105<br>THD≤3% | dB |
| Standard Operating Voltage | | 2.0 | Vdc |
| Operating Voltage Range | | 1.7~5.0 | Vdc |
| Decrease Voltage Characteristics (Vs=2.0 to 1.5V dc) | | -3(Max) | dB |
| Current Consumption | | 300 (Max) | μA |
| Standard Test Circuit | | See Fig. 1 | — |
| Frequency Response Characteristic | | See Fig. 2 | — |
| Memo | Standard test condition | RL= 2.2kΩ, Vs=2V dc<br>(@f=1kHz, Pin=1Pa, 0dB=1V/pa, L=50cm) | |

## 2. STANDARD TEST CIRCUIT




## 3. TYPICAL FREQUENCY RESPONSE IN ANECHOIC CHAMBER



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## 4. RELIABILITY

| Item | | 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. | After any of the tests, the sensitivity of the microphone unit shall not change more than ±3dB from initial value and shall keep its initial operation and appearance. |
| 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 Test | The microphone unit must be subjected to +55℃, 85% RH-for 100 hours and exposed to room temp for 3 hours. | |
| 4 | Thermal Shock Test | The microphone unit must be subjected to following condition [+80℃ 0.5H → room temp 1H→ -40℃ 0.5H →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. | |
| 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 Temperature | -35℃~+60℃ R.H .less than 90% | |
| 8 | Operating 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℃±20℃ 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.