



Data Sheet

AUM-5241L-HD

PUI Audio's all-new **HD Series** microphones use premium-grade MOSFETs and diaphragms for high sensitivity and superior signal-to-noise ratio. Each microphone features GSM buzz-blocking capacitors. Upgrade the ECM microphone that you use today with a PUI Audio **HD Series** microphone.

The 14mm diameter **AUM-5241L-HD** ECM is a back-electret cardioid/uni-directional microphone designed for extreme fidelity and focused recording of acoustic sources directly on-axis with the face of the microphone.

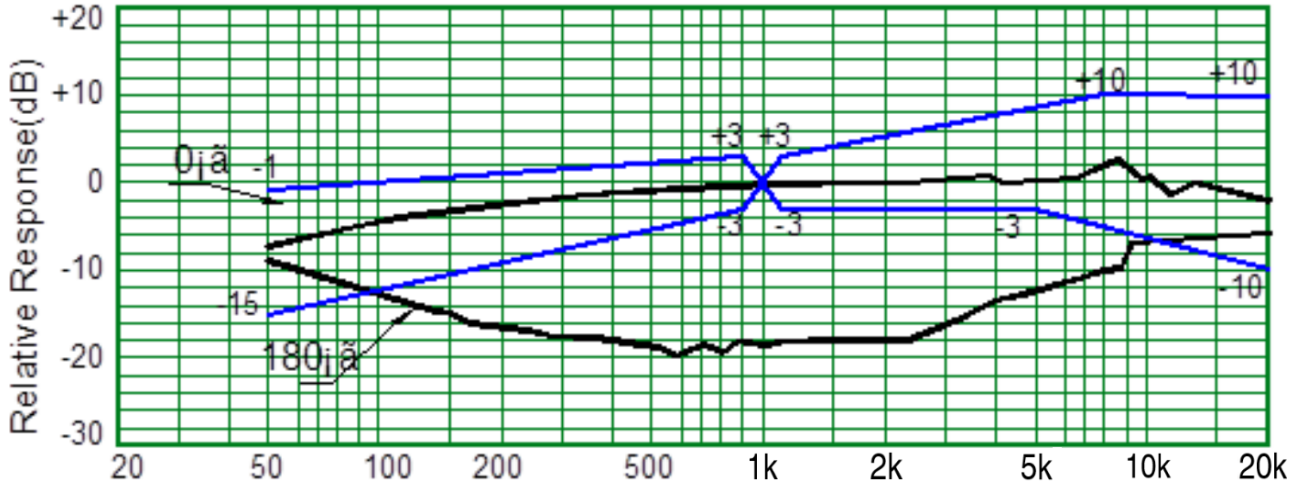
Features:

- -41dB sensitivity
- 74dB signal-to-noise ratio
- Cardioid pickup pattern
- 14mm diameter
- 5.2mm height

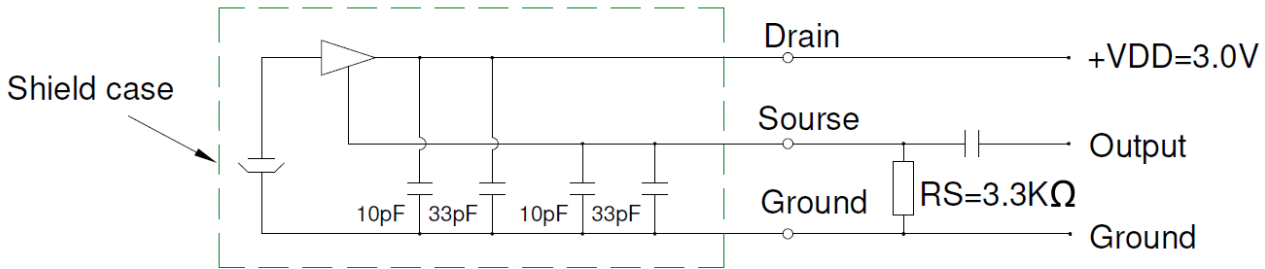
Specifications ($V_{DD} = 3.0V$, unless otherwise specified.)

| Parameter | Test Condition | Value | Unit |
|-------------------------------|---|-------------------------------------|------------|
| Sensitivity | 94dB SPL $f_{IN} = 1 \text{ kHz}$ All operating modes | -44 (min) -41 (typ) -38 (max) | dBFS |
| Signal-to-Noise Ratio | $f_{IN} = 1 \text{ kHz}$, 94dB SPL, A-weighted | 74 (typ) | dB |
| Attenuation | $-180^\circ \pm 20^\circ$ from membrane's front surface | 12 (min) | dB |
| Frequency Range | See Frequency Response Curve response limits | 20 – 20k | Hz |
| Acoustic Overload Point (AOP) | $f_{IN} = 1 \text{ kHz}$, 10% THD | 135 (typ) | dB |
| Output Impedance | $f = 1 \text{ kHz}$ | 3.3 (max) | k Ω |
| Supply Voltage | | 3.0 (typ) | V_{DD} |
| Supply Voltage Range | | 1.0 (min) 10.0 (max) | V_{DD} |
| Supply Current | $V_{dd} = 3.0V$, $R_L = 3.3k\Omega$ | 500 (typ) | μA |
| Operating Temperature | | -20 (min) 70 (max) | $^\circ C$ |
| Storage Temperature | | -40 (min) 85 (max) | $^\circ C$ |

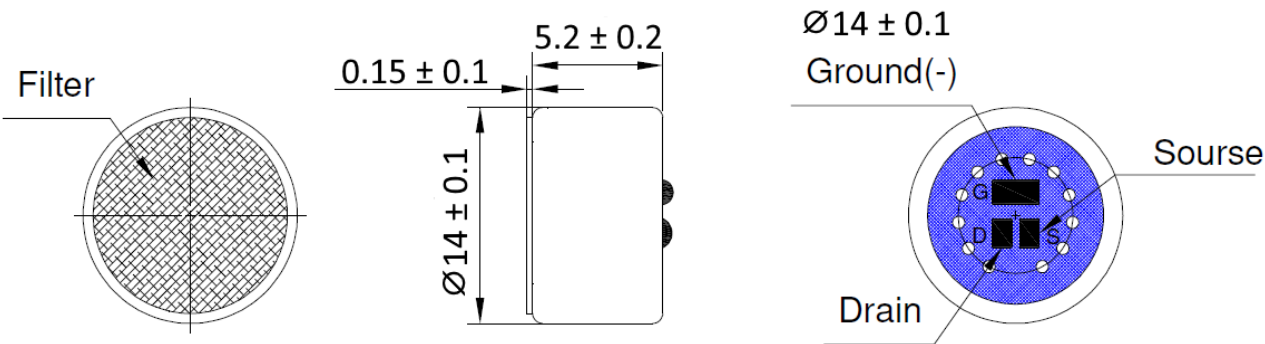
Typical Frequency Response (Driven by a 94dB SPL excitation source)



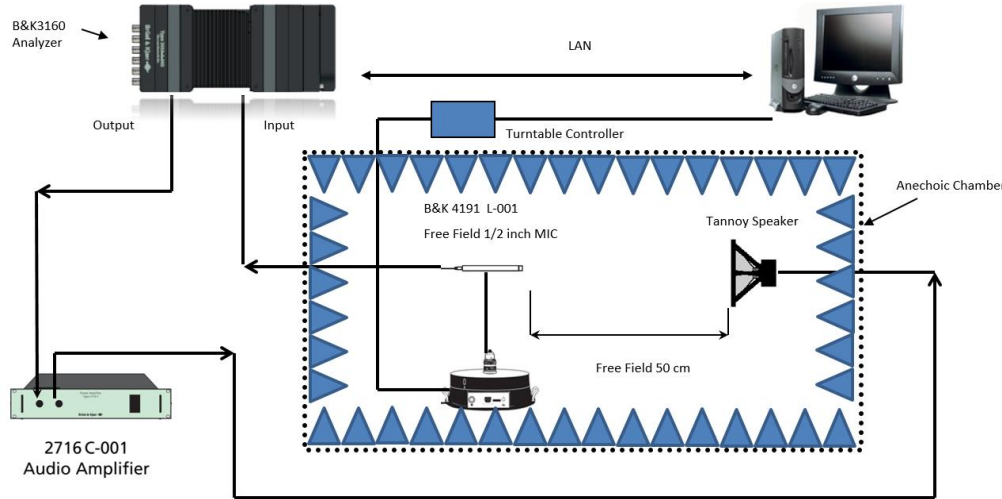
Typical Application Circuit



Dimensions (in mm)



Measurement Method



| Standard Conditions | Temperature | Humidity | Air Pressure |
|------------------------|-------------|----------------|---------------------|
| Environment Conditions | 22±5°C | 30% ≤ RH ≤ 70% | 86kPa ≤ AP ≤ 106kPa |
| Arbitration Conditions | 20±5°C | 40% ≤ RH ≤ 70% | 86kPa ≤ AP ≤ 106kPa |

Microphone Handling Precautions

High temperature and/or static electricity may damage microphones. To ensure careful handling, we suggest following these precautions:

- Ensure the power rating of the soldering iron is below 90 watts
- The temperature of the soldering iron must be limited to 360°C ±10°C (680°F ±50°F)
- Soldering duration for each terminal shall be at or under 2 seconds
- Avoid the rear sound holes when soldering
- If practical, use a metal fixture to hold the microphone in-place and to act as a heatsink. A fixture should have appropriate diameter holes drilled through the entire fixture to prevent pressure from being placed on the diaphragm (as below)

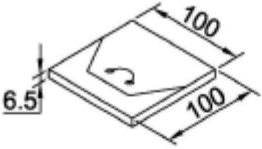
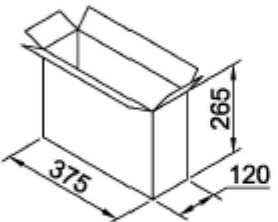
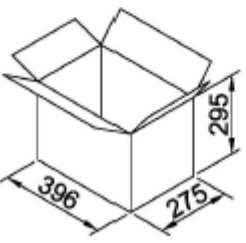


Reliability Testing

| Type of Test | Test Specifications |
|----------------------------------|---|
| High Temperature Test | 200 hours at +70°C ± 3°C followed by two hours in normal room temperature |
| Low Temperature Test | 200 hours at -25°C ± 3°C followed by two hours in normal room temperature |
| Humidity Test | 200 hours at +40°C ± 3°C with relative humidity at 90% to 95% followed by 2 hours in normal room temperature |
| Temperature Cycle Testing | 30 minutes at -25°C, 10 minutes at 20°C, 30 minutes at +70°C, 10 minutes at 20°C for five cycles, followed by 2 hours in normal room temperature |
| Vibration Test | 10 to 55 Hz for 1 minute with 1.52mm distance, followed by a two-hour 3 axis test in packaging |
| Drop Test | Drop microphones in packaging onto concrete floor from 1 meter height in each of 3 axis |
| ESD Test (according to IEC 6100) | <ol style="list-style-type: none">1. Contact discharge - Discharge 6000 VDC from capacitor into microphone output through 330Ω resistor ten times.2. Air discharge - Discharge 8000 VDC into sound hole of the microphone ten times. |

After each test, the speaker's SPL shall be ±3 dB of the original SPL.

Packaging

| | Drawing | Qty (pcs.) | Size(mm) L×W×H | Material |
|----------------|---|-------------------|-------------------|----------|
| Packing |  | 50 | 100×100×6.5 | Paper |
| Middle Package |  | 5000 (100×50) | 375×120×265 | Paper |
| Outer Package |  | 10000 (2×5000) | 396×275×295 | Paper |

Specifications Revisions

| Revision | Description | Date |
|----------|------------------------------------|------------|
| A | Datasheet developed by Engineering | 11/01/2023 |

Note:

- Unless otherwise specified:
 - All dimensions are in millimeters.
 - Default tolerances are $\pm 0.5\text{mm}$ and angles are $\pm 3^\circ$.
- Specifications subject to change or withdrawal without notice.
- This part is RoHS 2015/863/EU Compliant.