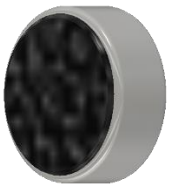
PUIaudio



Data Sheet	POM-2032L

PUI Audio's 6.0mm diameter omni-directional POM-2042L ECM microphone features a nominal -32dBV sensitivity and 75dB signal-to-noise ratio.

Features:

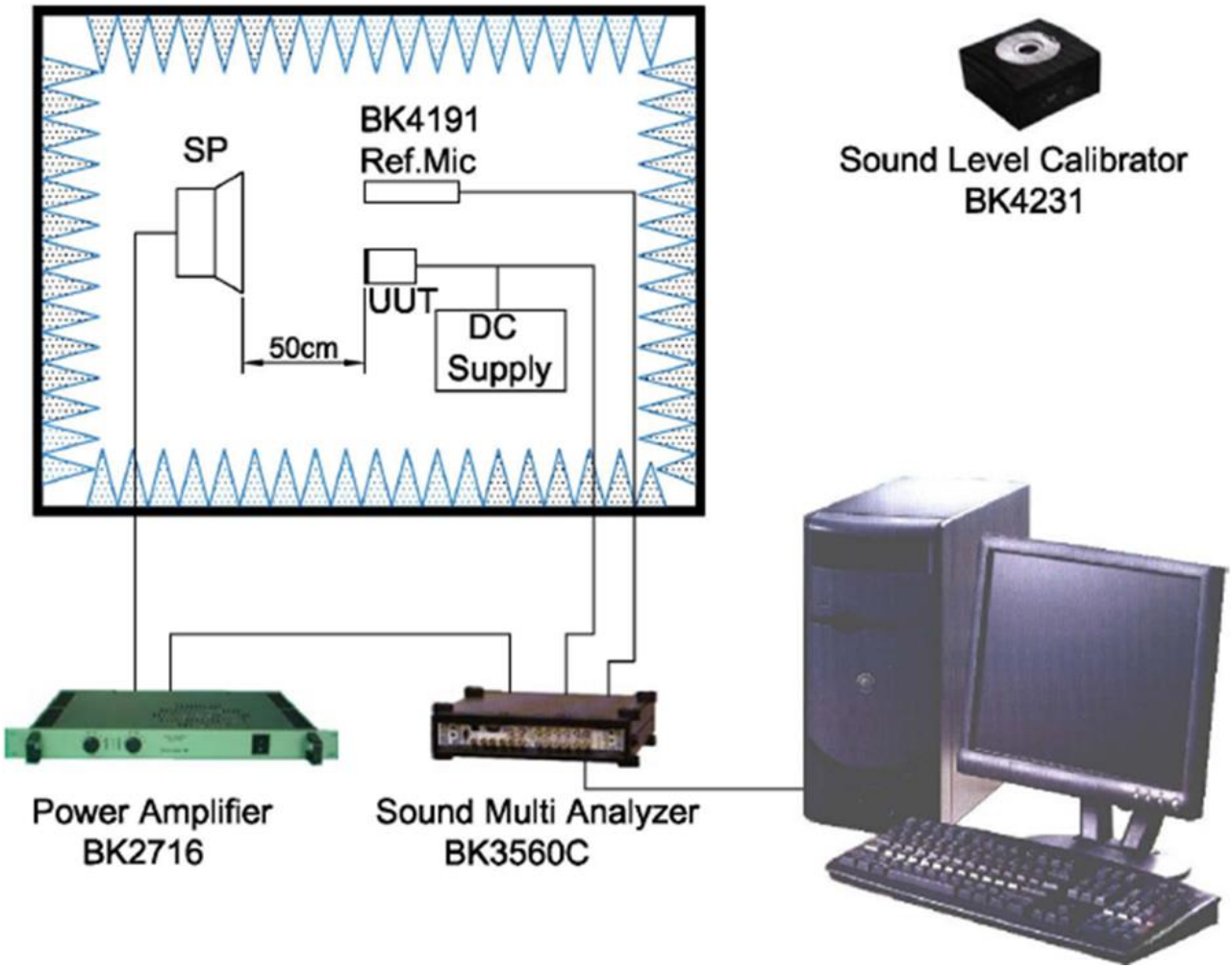
- 6.0mm diameter
- 2.0mm height
- -32dBV sensitivity
- 75dB (typical) signal-to-noise ratio
- Omni-directional polar response

Specifications

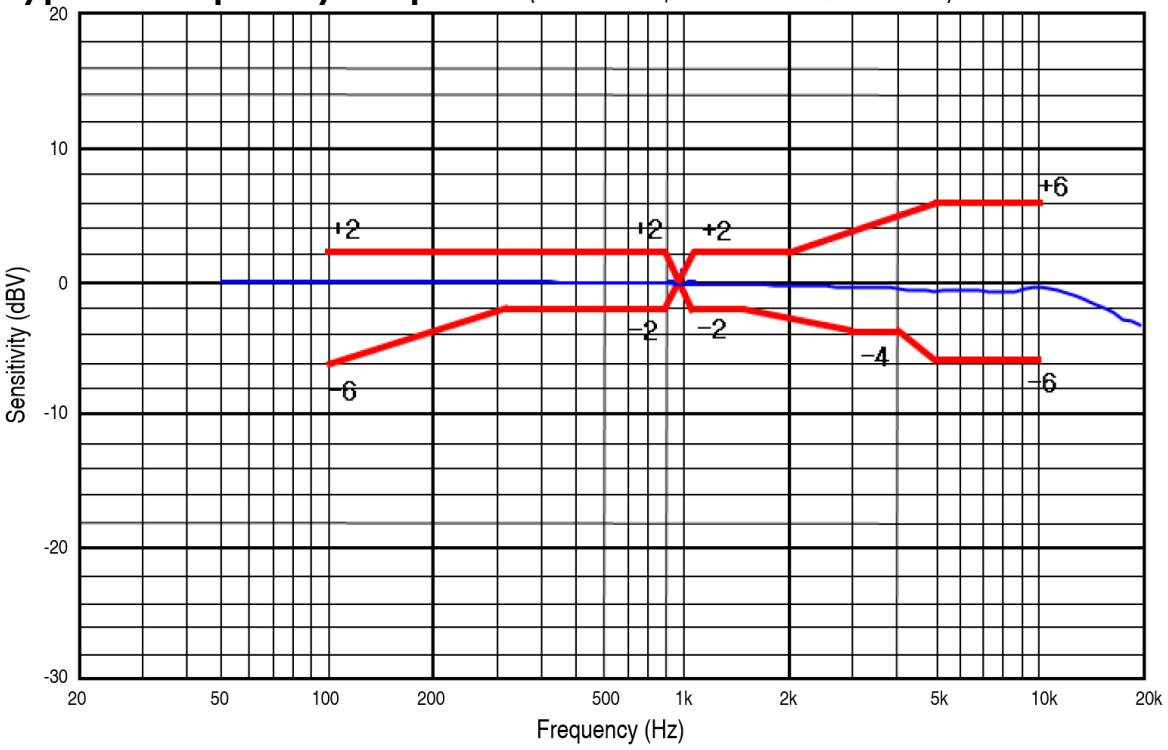
(V_{SUPP} = 3.0V_{DC}, R_L = 2.2kΩ, f = 1kHz, Acoustic Input = 94dBSPL (1Pa), 0 dBV = 1V @ 1Pa, unless otherwise stated.)

Parameters	Values	Units
Sensitivity	-32 ±3	dBV
Typical Signal-to-Noise Ratio A-weighted	75	dB(A)
Frequency Range	20 ≤ f ≤ 20,000	Hz
Maximum Sensitivity Deviation with Respect to Supply Voltage DV = 3V ≤ V_S ≤ 2.5V	-3	dB
Maximum SPL Input THD = 10%	110	dBSPL
Operating Voltage Range	1.0 ≤ V_S ≤ 10	V_{DC}
Maximum Power Supply Current	450	µA
Maximum Output Impedance	2.0	kΩ
Directivity	Omni-directional	-
Operating Temperature Range	-40 ≤ T_O ≤ 85	°C
Storage Temperature Range	-40 ≤ T_S ≤ 85	°C
Weight	< 3.2	gm

Measurement Method (in Anechoic Chamber)



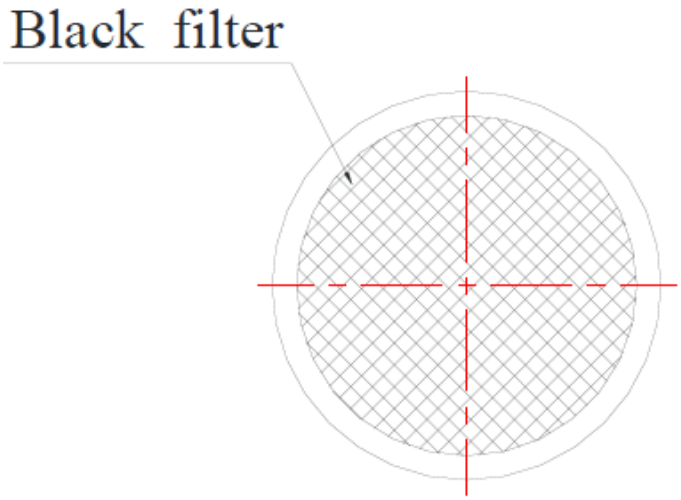
Typical Frequency Response (Acoustic input = 94dBSPL; V_S = $2V_{DC}$)

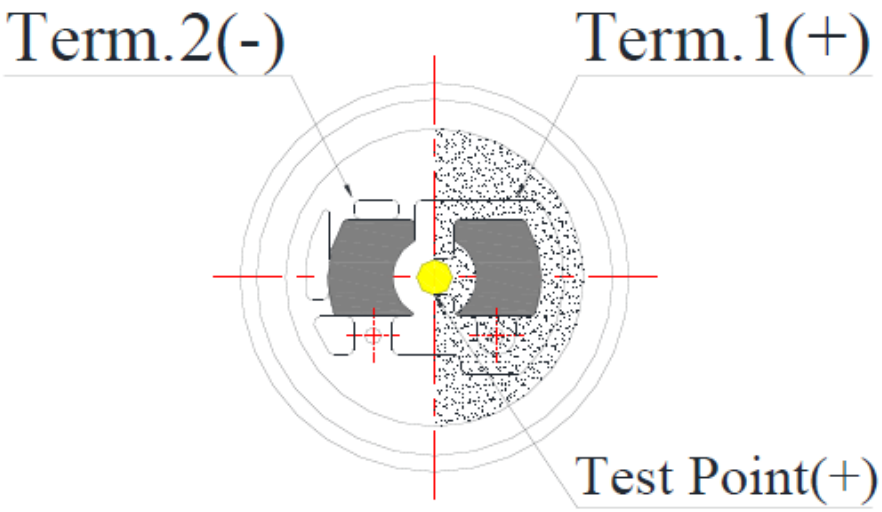


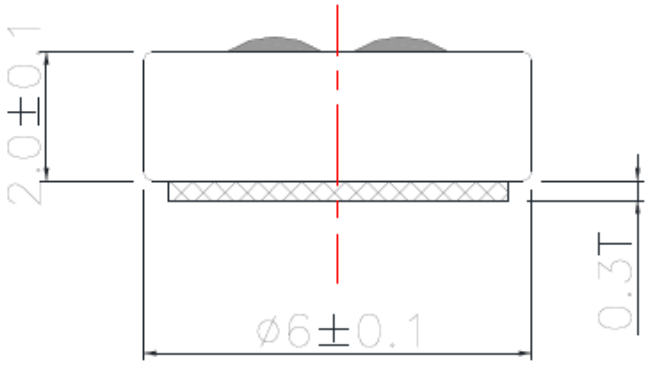
Reliability Testing (V_S = 3V; Acoustic input = 94dBSPL, unless otherwise indicated. After any of the following tests, a retested microphone's sensitivity shall not change by more than ±3dBV, maintaining its initial operation and appearance.)

Type of Test	Test Specifications
High Temperature Test	100 hours at 85°C ± 3°C followed by two hours at 22°C. The measurement is preformed after two-hour conditioning at 22°C±5°C, 30% ≤ RH ≤ 70%.
Low Temperature Test	100 hours at -40°C ± 3°C followed by two hours at 22°C. The measurement is preformed after two-hour conditioning at 22°C±5°C, 30% ≤ RH ≤ 70%.
Humidity Test	200 hours at +40°C ± 3°C, 90% ≤ RH ≤ 95% followed by two hours at normal room temperature. The measurement is preformed after two-hour conditioning at 22°C±5°C, 30% ≤ RH ≤ 70%.
Temperature Cycle Testing	Consists of five cycles of the following temperatures and time: 30 minutes at -40°C, 10 minutes at 20°C, 30 minutes at +80°C, 10 minutes at 20°C. The measurement is preformed after two-hour conditioning at 22°C±5°C, 30% ≤ RH ≤ 70%.
Vibration Test	For 60 seconds, the vibration frequency varies from 10Hz to 55Hz with a 1.52mm vibration magnitude. This is followed by a two-hour, three-axis test with the device-under-test placed in packaging material.
Drop Test	With a microphone contained by packaging material, the device is dropped onto a concrete floor from a 1m height. Performed on all three-axis.
ESD Test According to IEC 6100	1. Contact discharge: Discharge 6000V_{DC} from 160pF capacitor into a microphone's output through 330Ω resistor ten times. 2. Air discharge: Discharge 8000V_{DC} into the microphone's sound port through 330Ω resistor ten times.

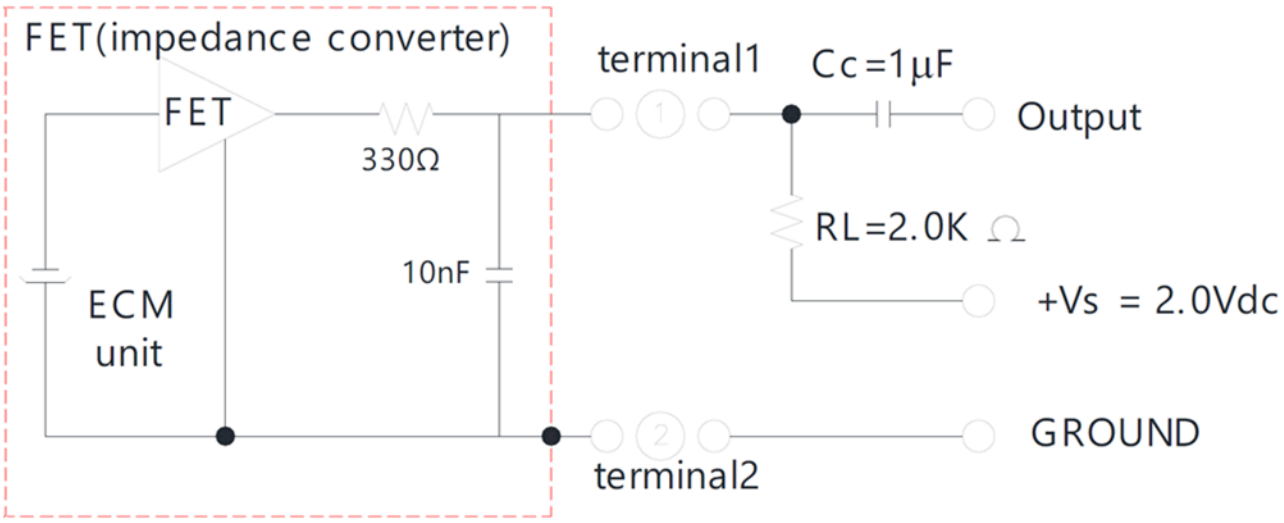
Dimensions







Typical Applications Circuit



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
- 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)

Packaging

- **Inner Box: 100pcs**
- **Middle Box: 1000pcs**
- **Carton quantity: 10,000pcs**

Specifications Revisions

Revision	Description	Date	Approval
A	Datasheet Released from Engineering	04/21/2025	KH

Note:

1. Unless otherwise specified:
   A. All dimensions are in millimeters.
   B. Default tolerances are ±0.5mm and angles are ±3°.
2. Specifications subject to change or withdrawal without notice.
3. This part is RoHS 2011/65/EU Compliant.