

Data Sheet

PNM-5050L-C3310-R

PUI Audio's noise-canceling microphones are designed with dipole inlets on the back of the microphone capsule to reduce background noise from wind and the road for the clearest possible pickup of a user's voice—especially when used in automotive applications.

The frequency response of the microphone is exceptionally flat when placed 2.54cm from the acoustic source, but rolls-off at 2 to 5 dB/octave when placed 50cm away from the acoustic source.

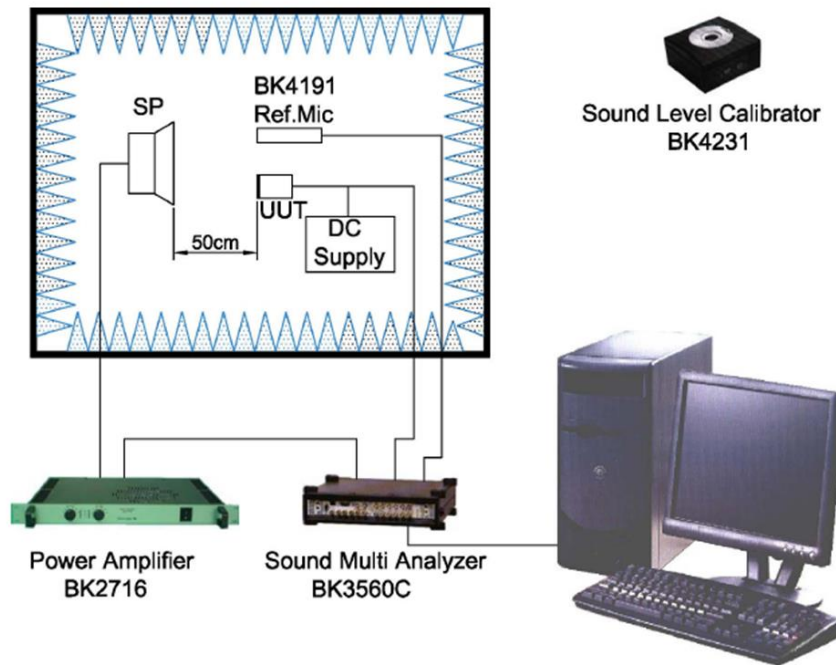
Features:

- 6mm diameter
- 5mm height
- -50 dB sensitivity @ 50cm
- >52 dB signal-to-noise ratio
- Dipole design reduces the effect of wind and road noise
- Integrated 33pF and 10pF buzz-blocking capacitors reduce GSM noise

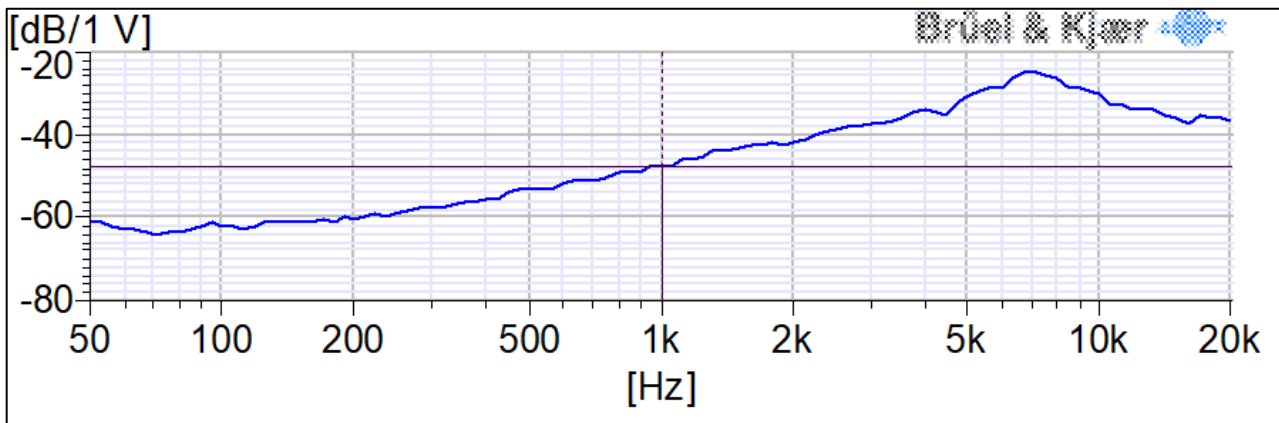
Specifications

| Parameters | Values | Units |
|--|--------------|-------|
| Sensitivity (1 kHz @ 50cm) 0 dB=1V/Pa | -50 ±3 | dB |
| Rated Voltage | 2 | VDC |
| Output Impedance (@ 1 kHz) | 0.68 | kΩ |
| Current consumption (3VS with 2.2 kΩ RL) | 500 | μA |
| Signal-to-Noise Ratio (1kHz, 94 dB input, A-weighted) | >55 | dB |
| Decreasing Voltage (2VS to 1.5VS) | -3 | dB |
| Frequency Range (@ 2.54cm) | 20 ~ 20,000 | Hz |
| Frequency Range (@ 50cm, -10 dB) | 250 ~ 20,000 | Hz |
| Operating Voltage Range | 1 ~ 10 | VDC |
| Maximum SPL Input (THD<3%) | 110 | dB |
| Directivity | Dipole | - |
| Operating Temperature | -20 ~ +60 | °C |
| Storage Temperature | -40 ~ +70 | °C |
| Weight | <0.3 | Grams |

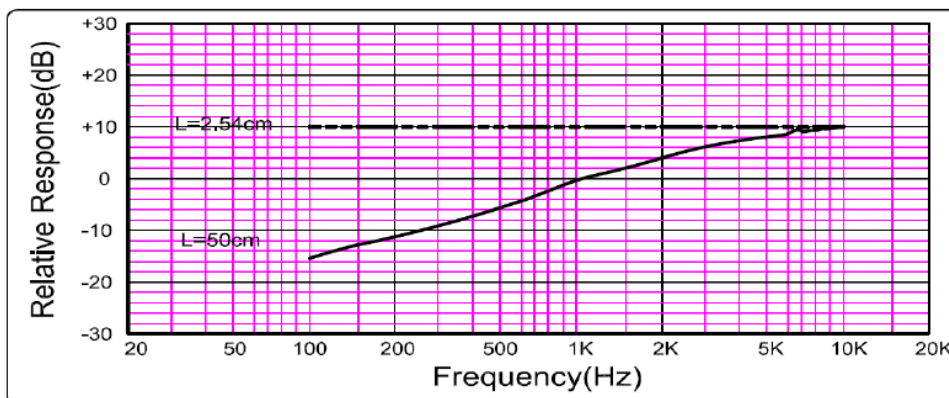
Measurement Method (in Anechoic Chamber)



Typical Frequency Response (measured at 50cm with 2V input and 94 dB source)



Typical Frequency Response Near-Field vs. Far-Field (2.54cm vs 50cm)

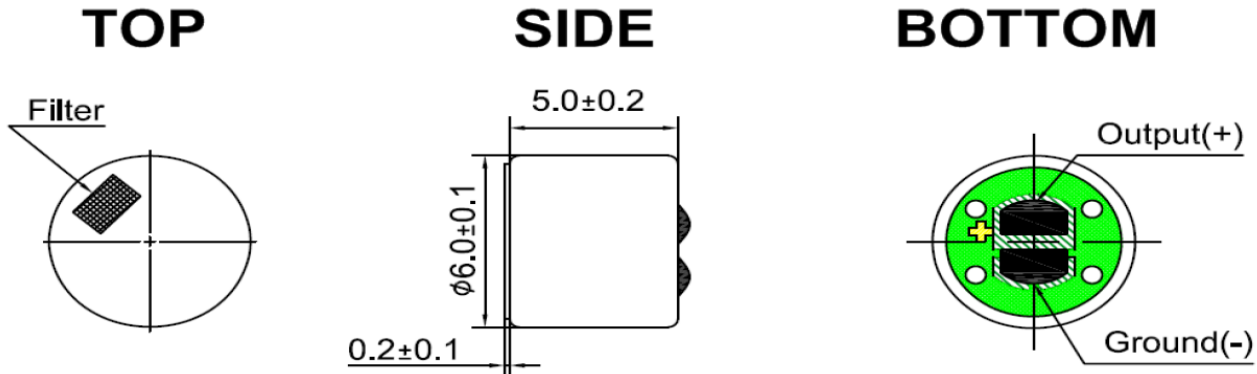


Reliability Testing

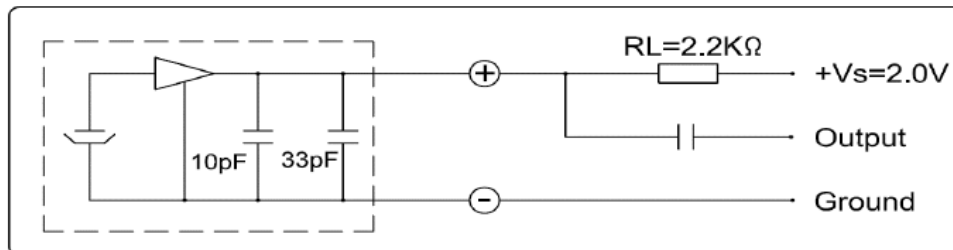
| Type of Test | Test Specifications |
|----------------------------------|--|
| High Temperature Test | 200 hours at +60°C ± 3°C followed by two hours in normal room temperature |
| Low Temperature Test | 200 hours at -20°C ± 3°C followed by two hours in normal room temperature |
| Humidity Test | 200 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"> Contact discharge - Discharge 6000 VDC from capacitor into microphone output through 330Ω resistor ten times. 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

Dimensions



Recommended Drive Circuit



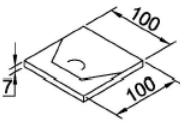
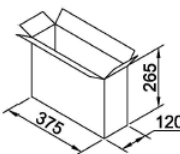
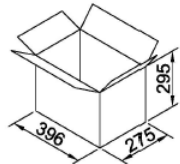
Microphone Handling Precautions

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 $360^{\circ}\text{C} \pm 10^{\circ}\text{C}$ ($680^{\circ}\text{F} \pm 50^{\circ}\text{F}$)
- 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

| | Drawing | Qty (pcs.) | Size(mm) L×W×H | Material |
|----------------|---|--------------------|-------------------|----------|
| Packing |  | 100 | 100×100×6.5 | Paper |
| Middle Package |  | 10000 (100×100) | 375×120×265 | Paper |
| Outer Package |  | 20000 (2×10000) | 396×275×295 | Paper |