

Data Sheet

PNM-5054L-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.

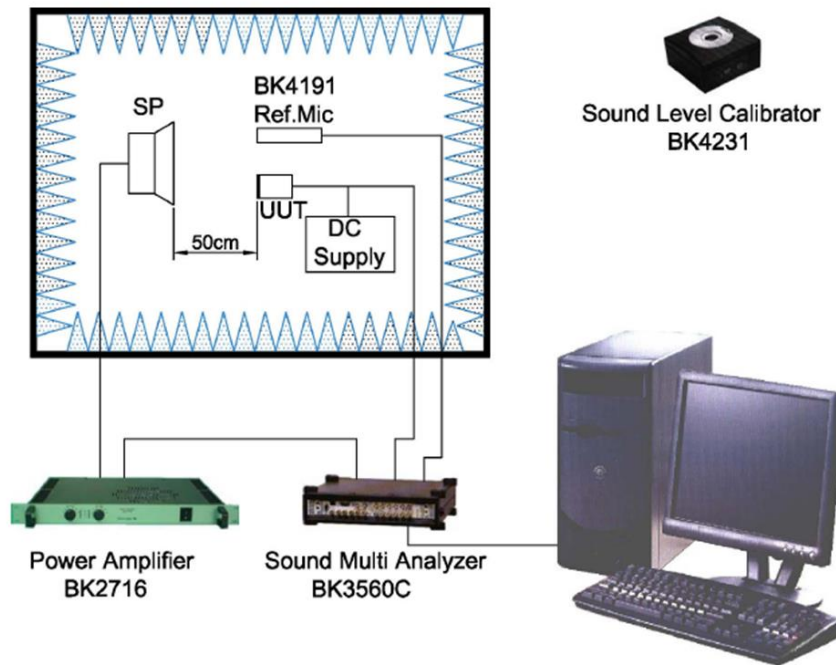
Features:

- 6mm diameter
- 5mm height
- -54 dB sensitivity @ 50cm
- >56 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

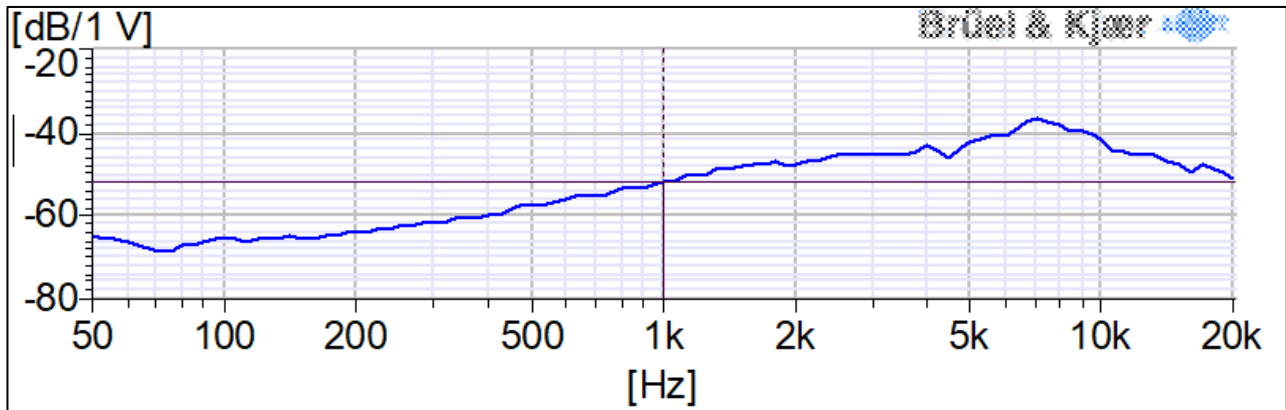
Specifications

Parameters	Values	Units
Sensitivity (1 kHz @ 50cm) 0 dB=1V/Pa	-54 ±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)	>56	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	Noise-Canceling	-
Operating Temperature	-20 ~ +60	°C
Storage Temperature	-40 ~ +70	°C
Weight	<0.3	Grams

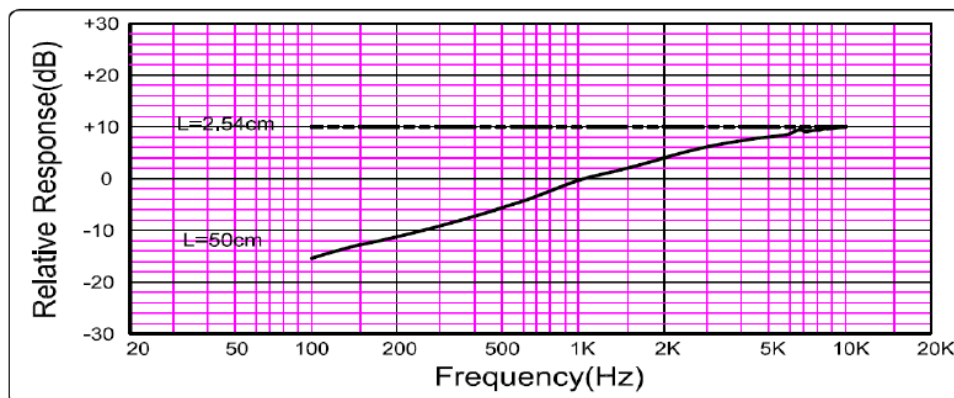
Measurement Method (in Anechoic Chamber)



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)

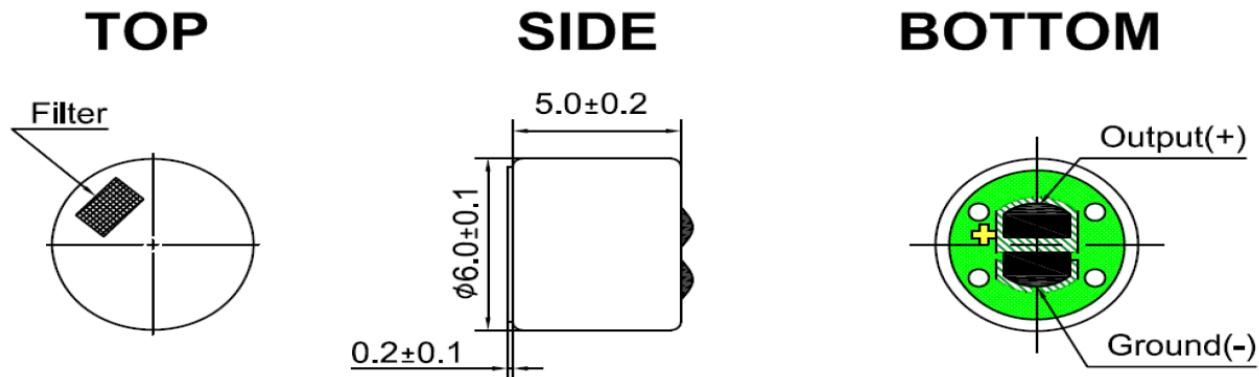


Reliability Testing

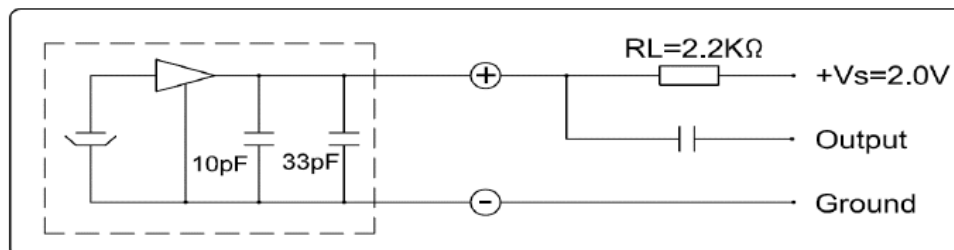
Type of Test	Test Specifications
High Temperature Test	200 hours at $+60^{\circ}\text{C} \pm 3^{\circ}\text{C}$ followed by two hours in normal room temperature
Low Temperature Test	200 hours at $-20^{\circ}\text{C} \pm 3^{\circ}\text{C}$ followed by two hours in normal room temperature
Humidity Test	200 hours at $+40^{\circ}\text{C} \pm 3^{\circ}\text{C}$ 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 $+70^{\circ}\text{C}$, 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

Dimensions



Recommended Drive Circuit



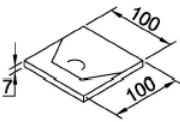
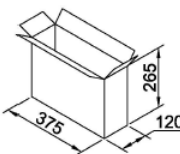
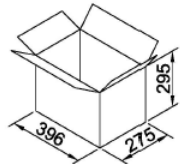
Microphone Handling Precautions

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

Specifications Revisions

Revision	Description	Date
-	Released from Engineering	9/4/2018

Note:

1. Unless otherwise specified:
 - A. All dimensions are in millimeters.
 - B. Default tolerances are $\pm 0.5\text{mm}$ and angles are $\pm 3^\circ$.
2. Specifications subject to change or withdrawal without notice.
3. This part is RoHS 2011/65/EU Compliant.

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