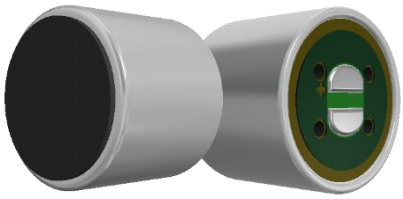


Data Sheet	PNM-5050L-C3310-R

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:

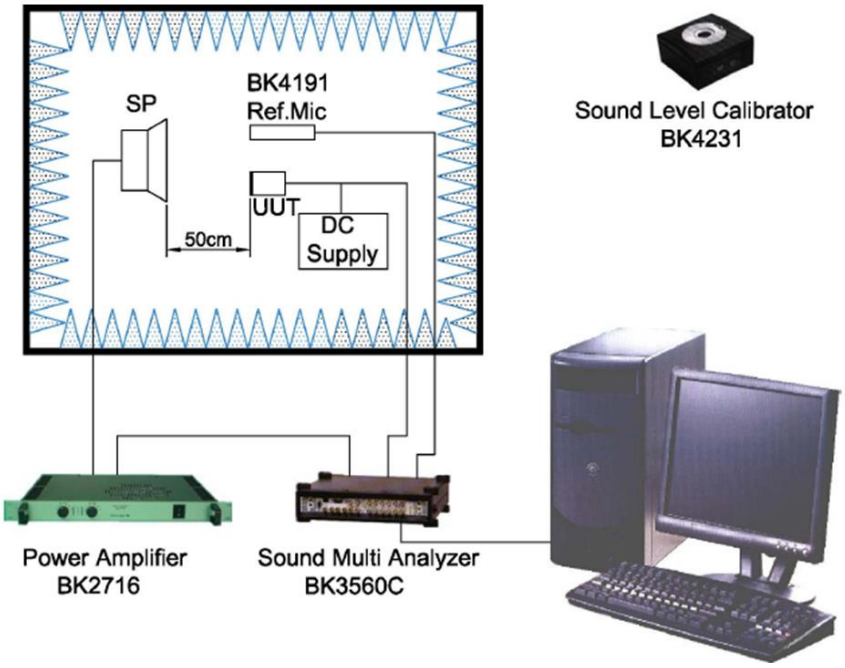
- 6mm diameter
- 5mm height
- -50 dB sensitivity @ 50cm
- >52 dB signal-to-noise ratio
- Dipole design reduces the effect of wind and road noise
- Integrated 33pF and 10pF buzz-blocking capacitors reduce GSM noise

Specifications

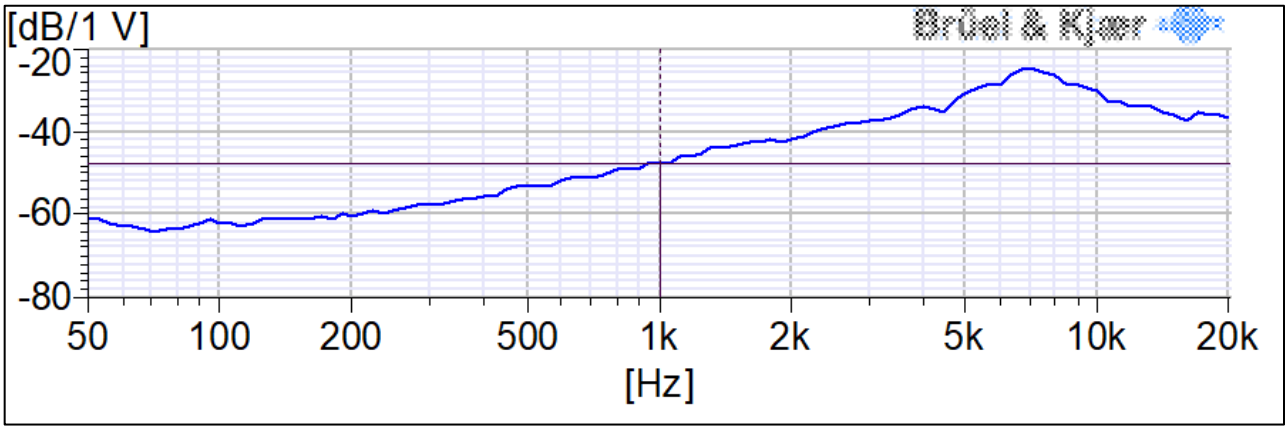
Parameters	Values	Units
Sensitivity (1 kHz @ 50cm) 0 dB=1V/Pa	-50 ±3	dB
Rated Voltage	2	VDC
Output Impedance (@ 1 kHz)	0.68	kΩ
Current consumption (3VS with 2.2 kΩ RL)	500	µA
Signal-to-Noise Ratio (1kHz, 94 dB input, A-weighted)	>55	dB
Decreasing Voltage (2VS to 1.5VS)	-3	dB
Frequency Range (@ 2.54cm)	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

PUI Audio, Inc., 3541 Stop Eight Road, Dayton, OH 45414
Tel: (937) 415-5901 Fax: (937) 415-5925

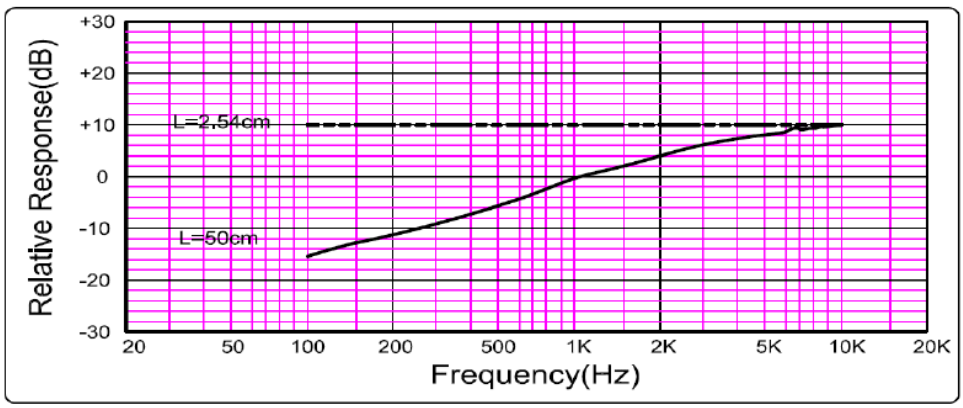
Measurement Method (in Anechoic Chamber)



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)



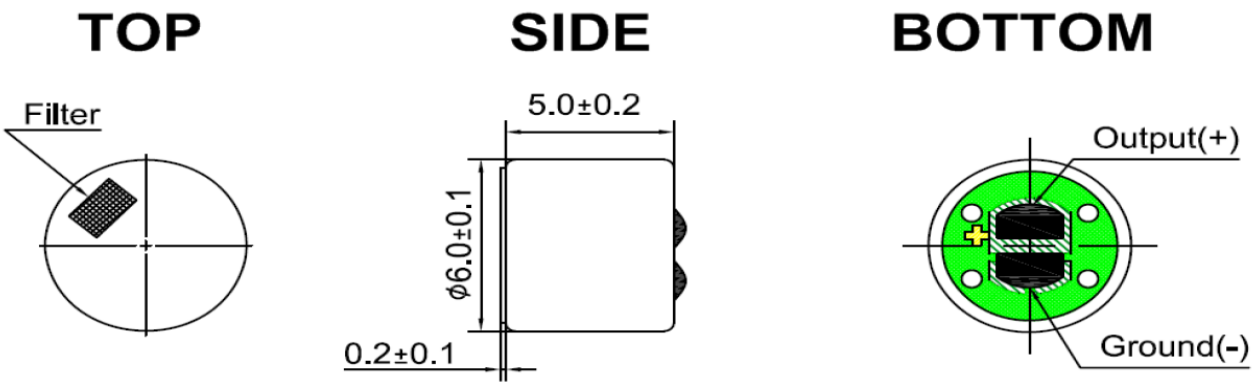
PUI Audio, Inc., 3541 Stop Eight Road, Dayton, OH 45414
Tel: (937) 415-5901 Fax: (937) 415-5925

Reliability Testing

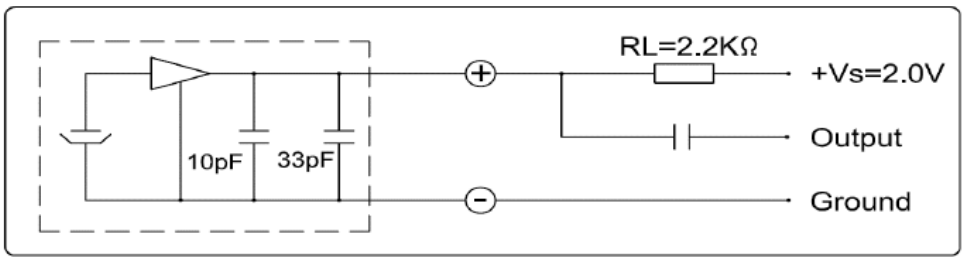
Type of Test	Test Specifications
High Temperature Test	200 hours at +60°C ± 3°C followed by two hours in normal room temperature
Low Temperature Test	200 hours at -20°C ± 3°C followed by two hours in normal room temperature
Humidity Test	200 hours at +40°C ± 3°C with relative humidity at 90% to 95% followed 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)	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



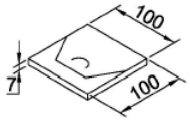
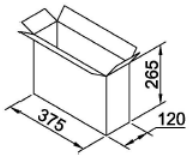
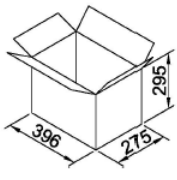
PUI Audio, Inc., 3541 Stop Eight Road, Dayton, OH 45414
Tel: (937) 415-5901 Fax: (937) 415-5925

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

	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

PUI Audio, Inc., 3541 Stop Eight Road, Dayton, OH 45414
Tel: (937) 415-5901 Fax: (937) 415-5925

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 ±0.5mm and angles are ±3°.
2. Specifications subject to change or withdrawal without notice.
3. This part is RoHS 2011/65/EU Compliant.

PUI Audio, Inc., 3541 Stop Eight Road, Dayton, OH 45414
Tel: (937) 415-5901 Fax: (937) 415-5925