



Data Sheet

AS02204MR-N50-R

Introducing the N50 Mini Speaker Series from PUI Audio. High-grade neodymium magnetic motors are employed in each N50 Series speaker to create the highest output possible, in the smallest form factor.

The 22mm diameter **AS02204MR-N50-R** features a unique cone and tangential surround design to minimize resonances for flat frequency response from 300 Hz out to 20 kHz. Integrated 32 AWG lead wires allow for easy installation.

Features:

- Unique design for flat frequency response
- High 79 dB output at 1W/50cm
- N50 neodymium motor
- Only 6.7mm thick
- 1.5mm of excursion

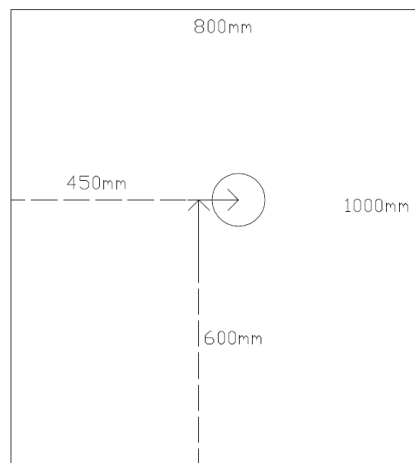
Specifications

Parameters	Values	Units
Rated Input Power	2	Watts
Max Input Power	2.5	Watts
Impedance	$4 \pm 15\%$	Ohms
Sensitivity (SPL @ 1W/50cm) (800, 1000, 1200, and 1500 Hz)	79 ± 3	dB
Distortion (Max @ 2W, 1 kHz)	<5%	
Resonant Frequency	$300 \pm 20\%$	Hz
Frequency Range	200 ~ 20,000	Hz
Housing Material	ABS	
Magnet Material	NdFeB	
Weight	5.5	Grams

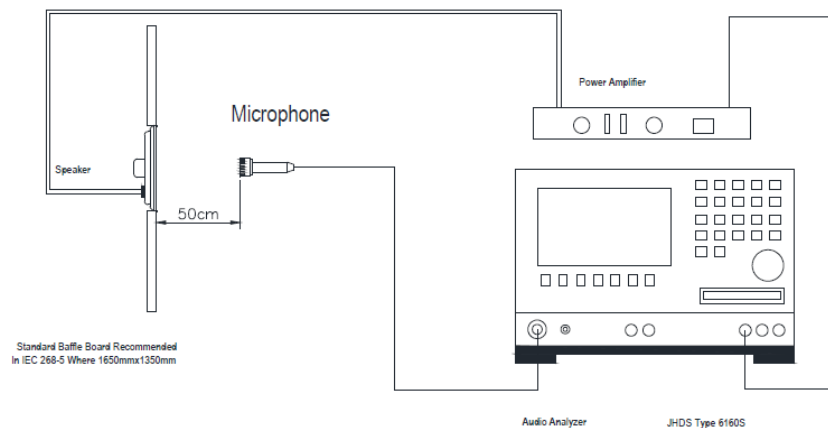
Specifications (continued)

Buzz, Rattle, etc.	Should not be audible with 2.83Vpk sine wave from 300 Hz to 10 kHz	
Polarity	When positive voltage is applied to the positive terminal, the diaphragm will move outward	
Operating Temperature	-20 ~ +60	°C
Storage Temperature	-30 ~ +70	°C

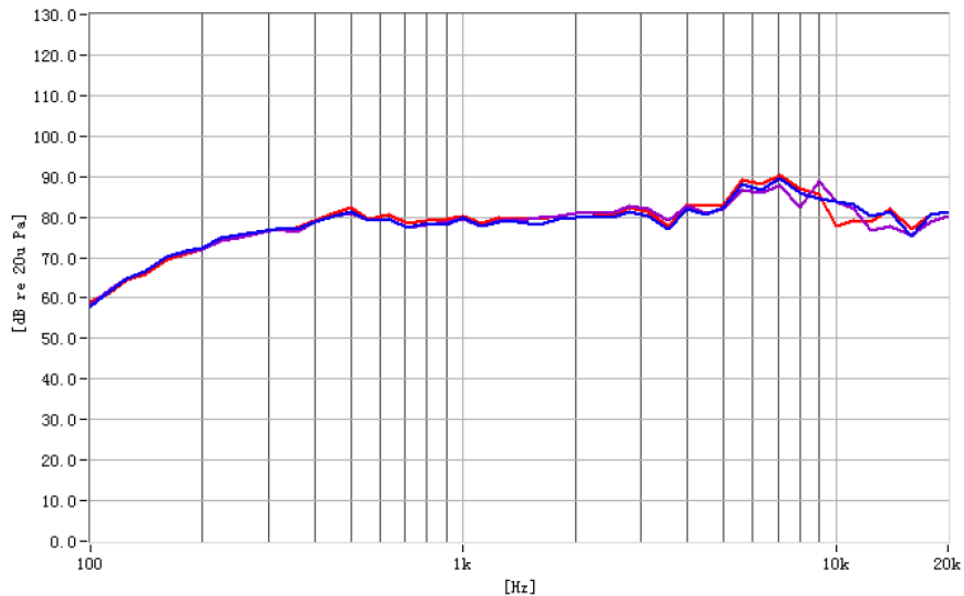
Measurement Method



Test Baffle (speaker mounted in circle)



Frequency Response (measured at 50cm with 1W input power)

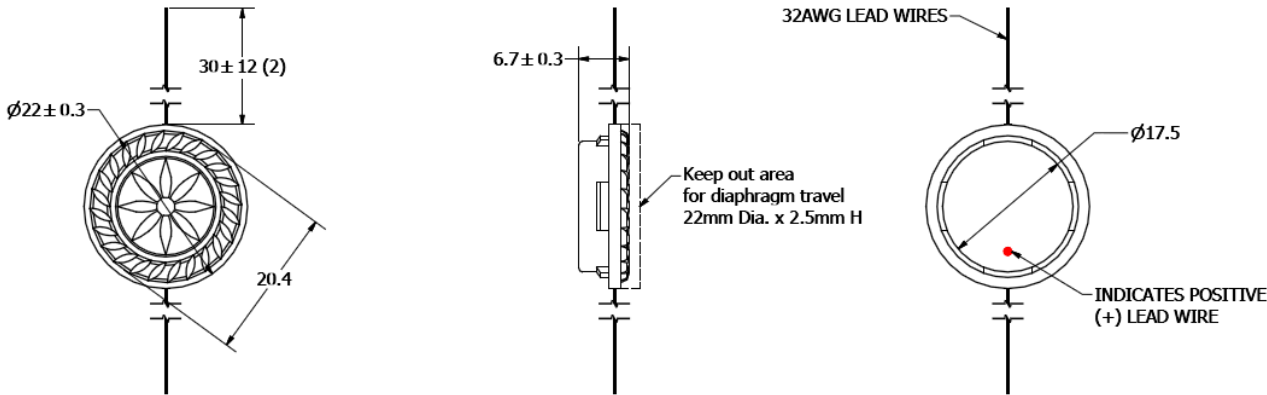


Reliability Testing

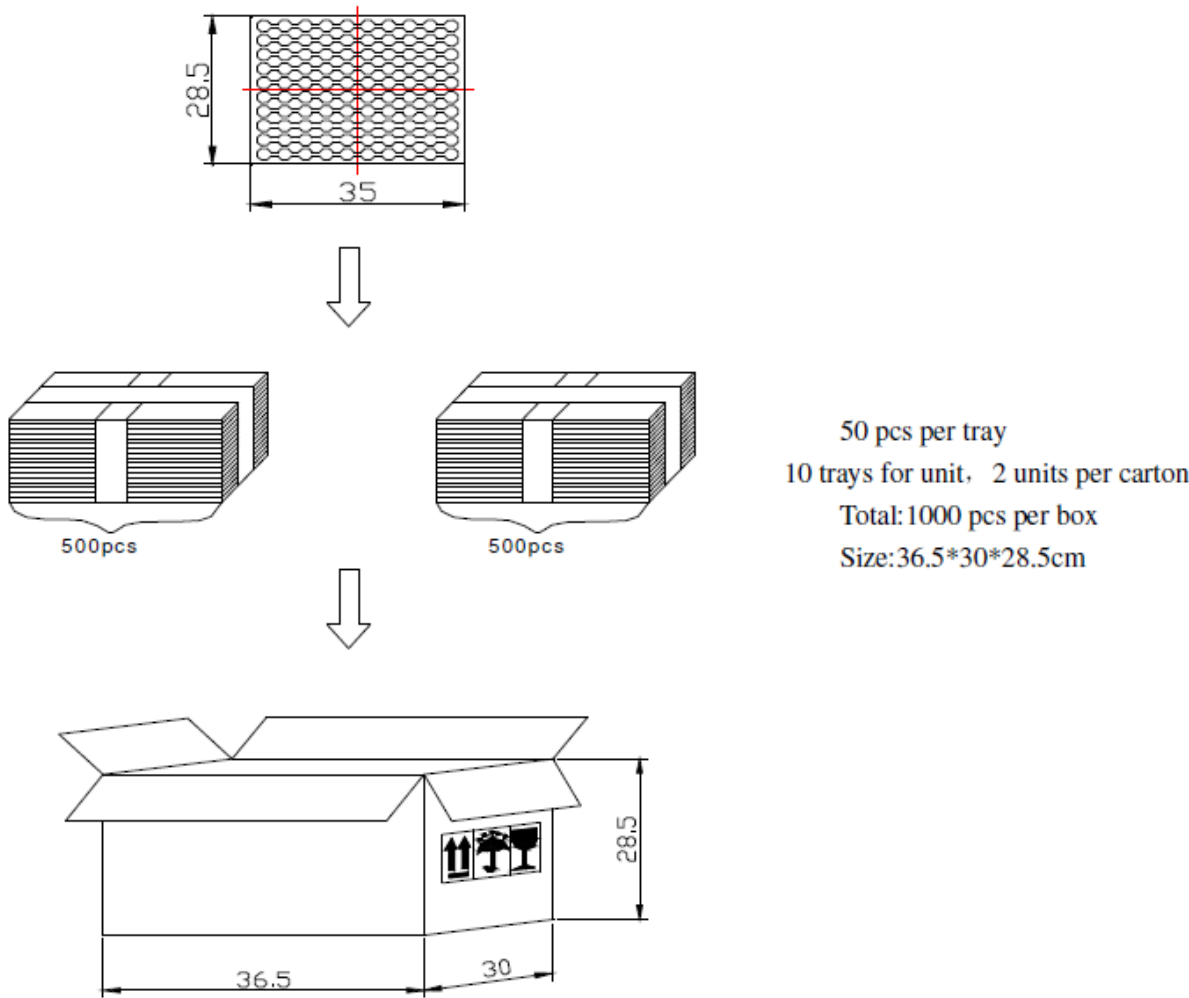
Type of Test	Test Specifications
High Temperature Test	96 hours at $+70^{\circ}\text{C} \pm 3^{\circ}\text{C}$ followed by six hours in normal room temperature
Low Temperature Test	96 hours at $-30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ followed by six hours in normal room temperature
Humidity Test	96 hours at $+30^{\circ}\text{C} \pm 3^{\circ}\text{C}$ with relative humidity at 92% to 95% followed by 3 hours in normal room temperature
Temperature Cycle Testing	The part shall be subjected to 5 cycles using the following procedure:
Vibration Test	10 to 55 to 10 Hz cycles, 15 minutes per cycle. 2 hours in each axis X, Y, and Z.
Drop Test	Drop the speakers onto a 40mm thick board 10 times from a height of 75cm.
Load Test	Pink noise is applied at the speakers rated power for 24 hours at room temperature

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

Dimensions



Packaging



Specifications Revisions		
Revision	Description	Date

	Released from Engineering	5/11/2017
A	Updated SPL, Temperature Ratings, and added Packaging Information	7/13/2017

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.