Data Sheet	AS02704MS-N50-LW100-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 27mm square frame **AS02704MS-N50-LW100-R** features a polymer cone, rubber surround, and a Poron gasket for an IP67 ingress protection rating. Add high fidelity sound to your product without sacrificing space with this big-sounding speaker that measures only 6.6mm thick!

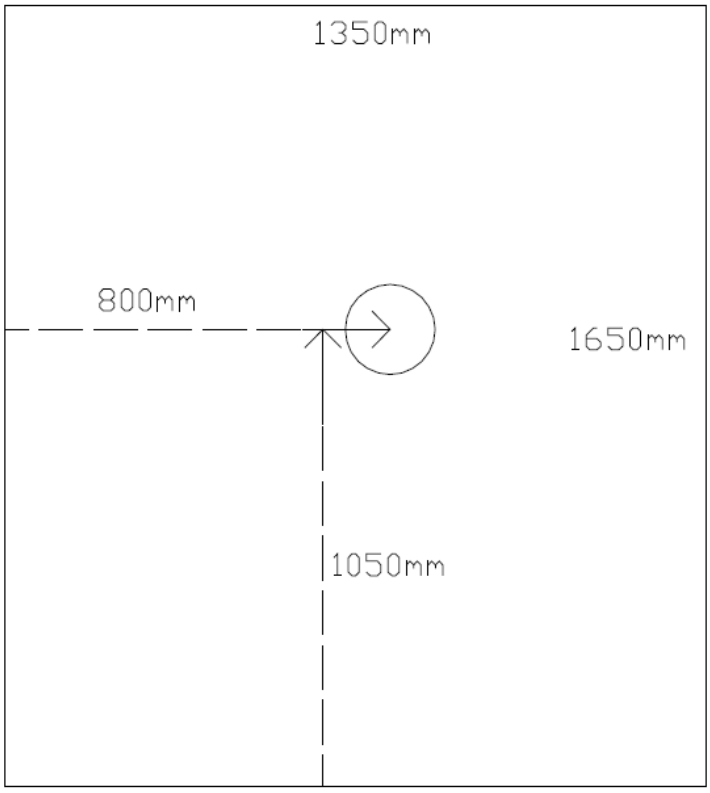
Features:

- Polymer cone with rubber surround with Poron gasket for IP67 rating
- High 79 dB output at 1W/50cm with full range sound
- N50 neodymium motor and 100mm lead wires
- Only 6.6 mm thick with 1.5 mm of excursion

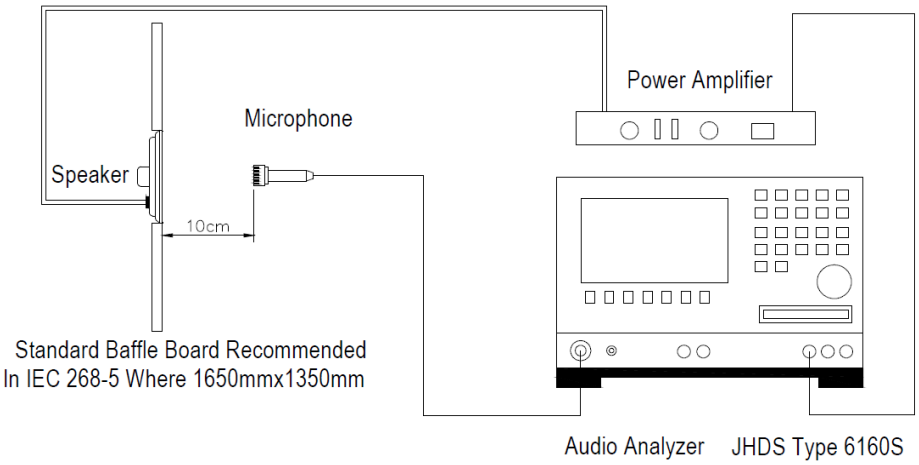
Specifications

Parameters	Values	Units
Rated Input Power	2	Watts
Max Input Power	2.5	Watts
Impedance	4 ± 15%	Ohms
Sensitivity (SPL @ 1W/50cm) (800, 1000, 1200, and 1500 Hz)	79 ± 3	dBA
Resonant Frequency	350 ± 20%	Hz
Frequency Range	300 ~ 20,000	Hz
Housing Material	PBT	-
Magnet Material	NdFeB	-
Weight	9	Grams
Environmental Compliances	ROHS/REACH	-
Ingress Protection	IP67	
Buzz, Rattle, etc.	Should not be audible with 2.83 V sine wave from 350 Hz to 5 kHz	-
Polarity	When positive voltage is applied to the positive terminal, the diaphragm will move outward	-
Operating Temperature (T_{OP})	$-20 \le T_{OP} \le 70$	°C
Storage Temperature (T_{ST})	$-30 \le T_{ST} \le 80$	°C

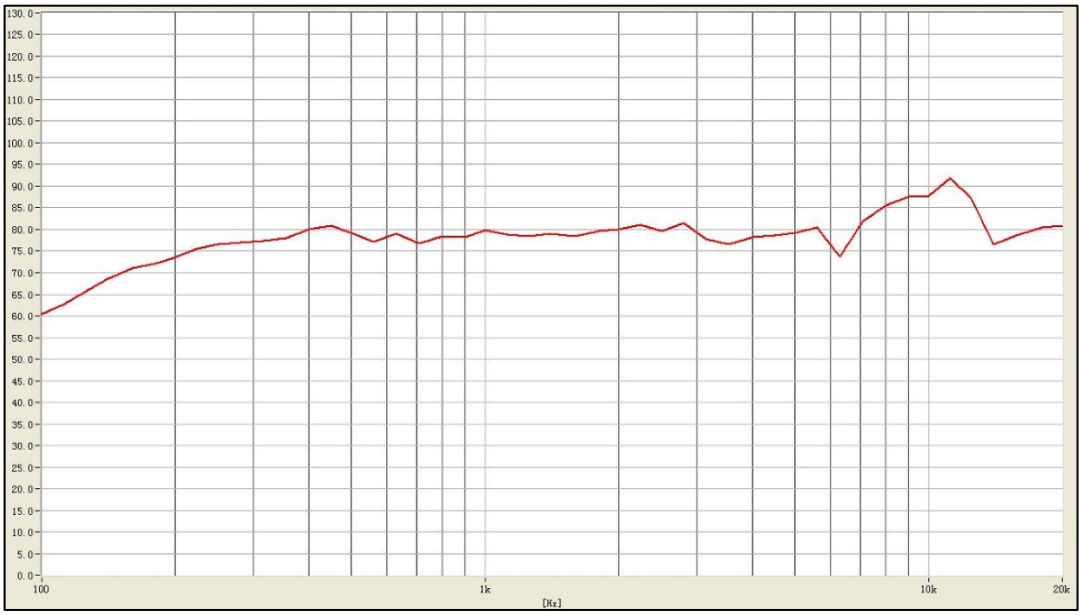
Measurement Method



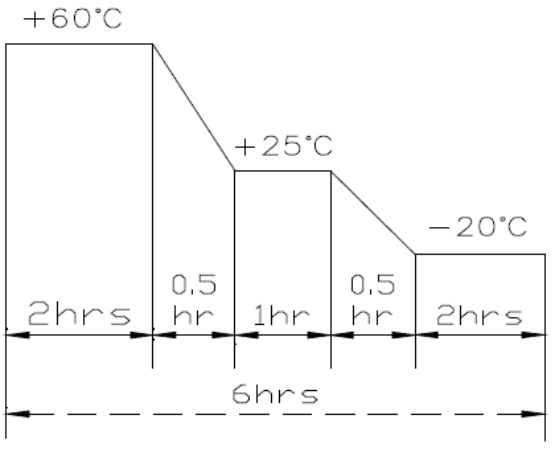
Test Baffle (speaker mounted in circle)



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

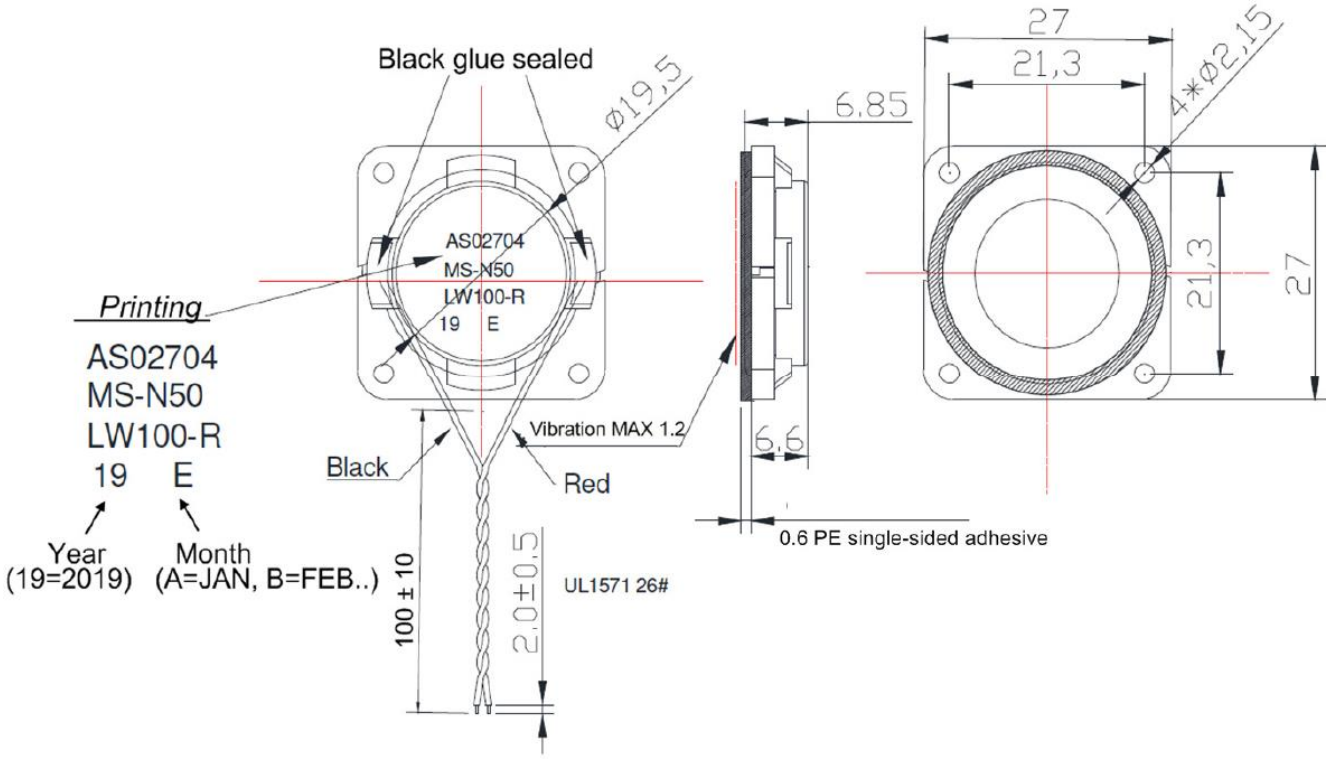


Reliability Testing

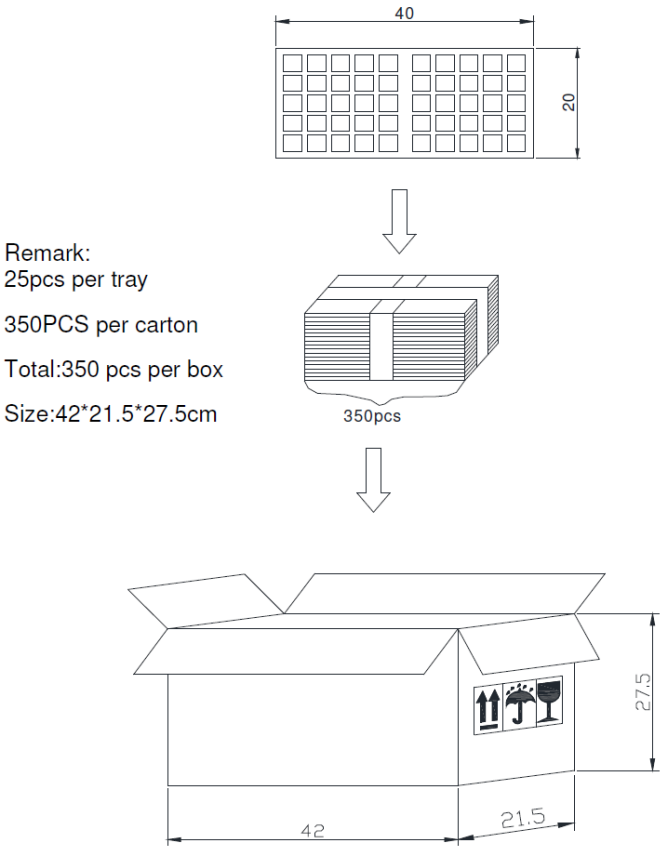
Type of Test	Test Specifications
High Temperature Test	96 hours at +60°C ± 2°C followed by six hours in normal room temperature
Low Temperature Test	96 hours at -25°C ± 2°C followed by six hours in normal room temperature
Humidity Test	48 hours at +40°C ± 2°C with relative humidity at 92% to 95% followed by 6 hours in normal room temperature
Temperature Cycle Testing	The part shall be subjected to 4 cycles using the following procedure: 
Vibration Test	Frequency 30 ± 15 Hz, Amplitude 1.5 mm for 3 Hours
Drop Test	75 CM free falling on Concrete floor, 10 times
Load Test	White noise is applied at the speakers rated power for 96 hours at room temperature

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

Dimensions (Tolerances are ±0.5mm unless otherwise noted)



Packaging (in cm)



Specifications Revisions

Revision	Description	Date
-	Released from Engineering	3/21/2018
A	Revised gasket material and Storage Temperature	5/21/2019
B	Revised IP rating to IP67	6/10/2019
C	Revised gasket material to Poron	3/4/2020
D	Revised IP Rating, Max Power, gasket material, storage temperature and reliability test	10/27/2021
E	Operating and Storage Temperature Ranges were expanded to currently shown values	08/30/2023

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.