PUIaudio

Data Sheet	AS03428PR-LWC120

The **AS03428PR-LWC120** is designed for applications that require robust low-frequency response and low THD in very compact designs.

Features:

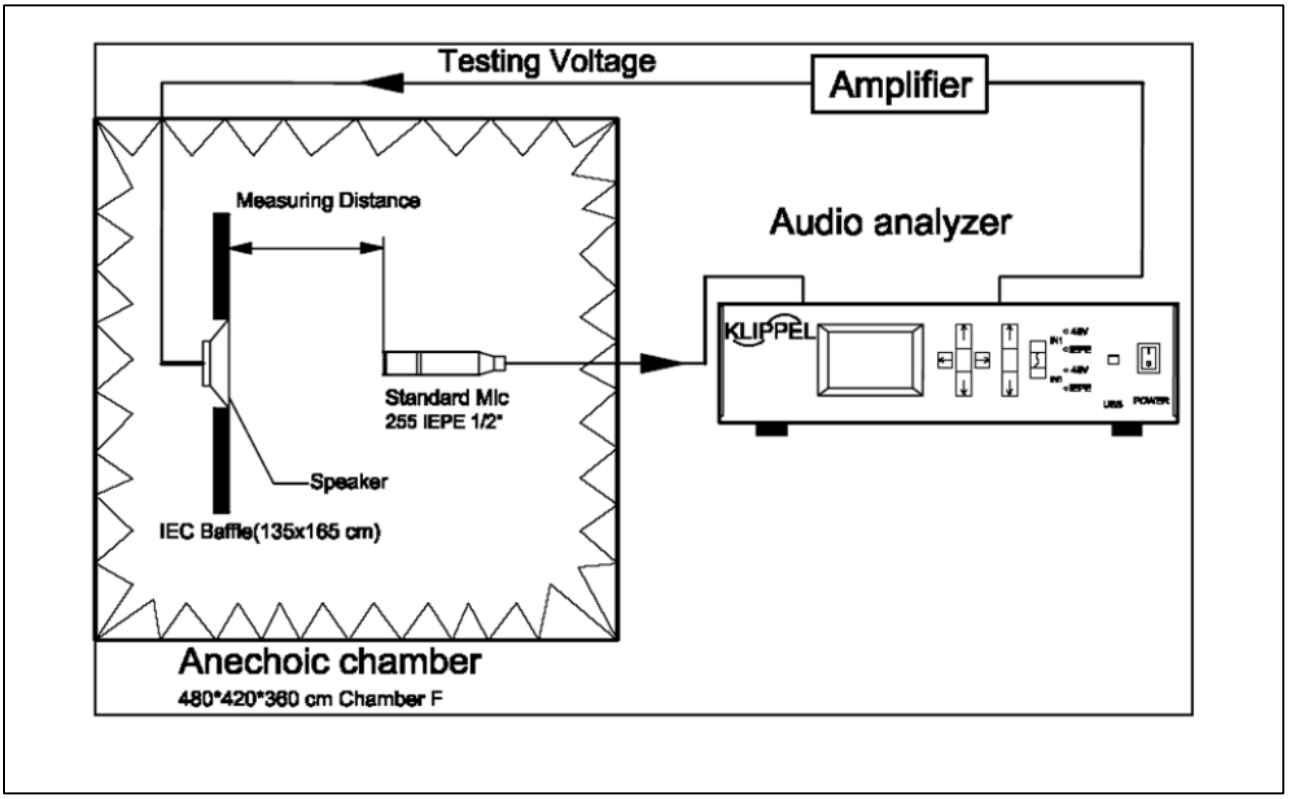
- 86.0dBSPL: 0.2W dissipation, distance = 0.1m
- 440Hz free-air resonance
- 33.8mm diameter x 7.0mm dimensions
- Lead Wire Assembly with Molex Connector for easy integration

Specifications

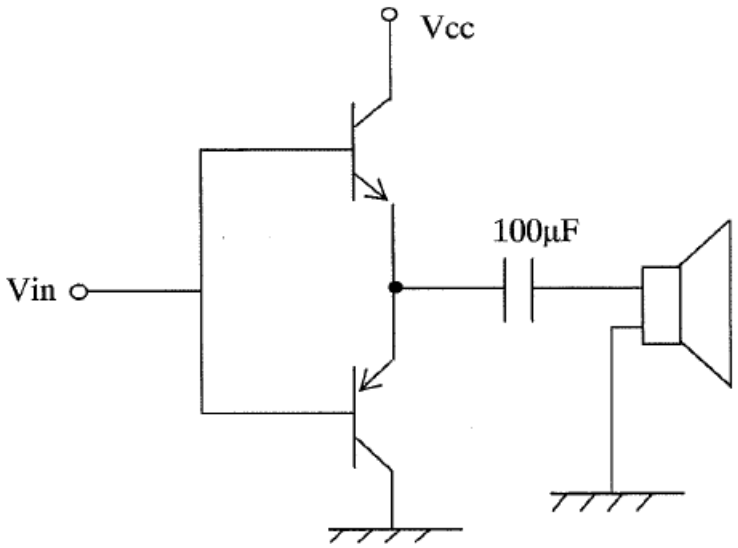
(Specifications measured with following conditions: ambient temperature; 15°C ≤ T_A ≤_35°C, relative humidity; 25% ≤ RH_A ≤ 85%, according to standard IEC60068, unless otherwise stated. Judgement Condition: ambient temperature; 20 ±2°C; relative humidity; 60% ≤ RH_A ≤ 70%.

Parameters	Values	Units
Rated Input Power	0.2	Watts
Maximum Input Power	0.4	Watts
Impedance	28 ±4	Ohms
Sensitivity (SPL) P_{DRIVE} = 0.2W, distance = 0.1m f = 440Hz-2KHz	86±3	dB
Resonant Frequency (f_O)	440 ±20%	Hz
Frequency Range (-10 dB)	440 ≤ f ≤ 20,000	Hz
Total Harmonic Distortion (THD) f = 1kHz, P_{DRIVE} = 0.2W	≤5	%
Frame Material	Polypropylene	-
Magnet Material	NdFeB	-
Diaphragm Material	PEI	-
Weight	8.0	gm
Buzz, Rattle, etc.	Not audible with P_{DRIVE} = 0.2W, sine wave	-
Polarity	Applying positive dc current to "+" terminal moves diaphragm forward	-
Operating Temperature Range	-40 ≤ T_O ≤105	°C
Storage Temperature Range	-40 ≤ T_S ≤120	°C
Environmental Compliance	RoHS/REACH	-

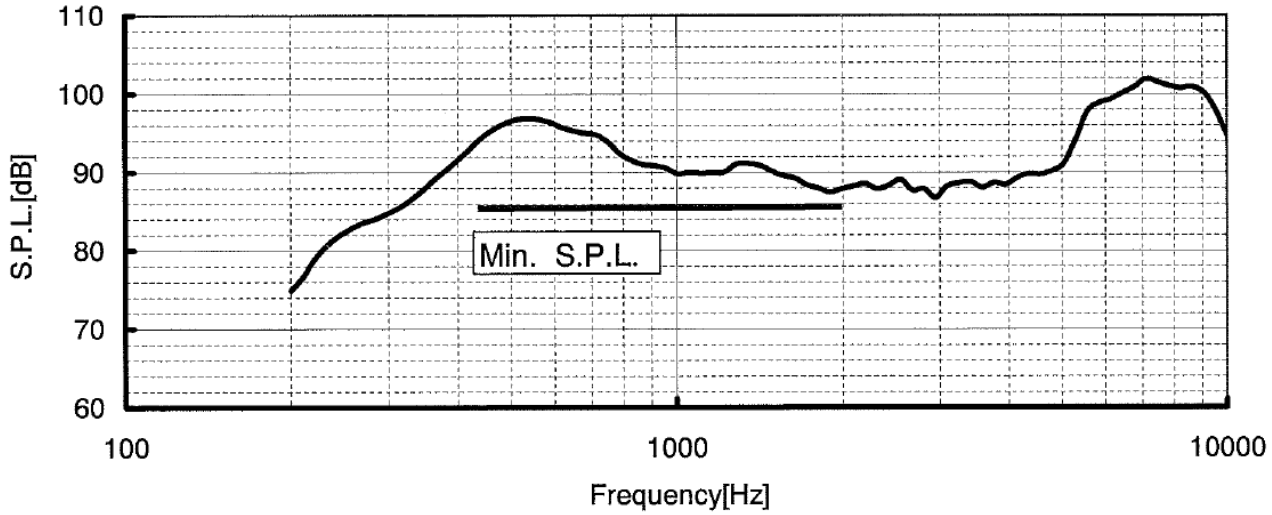
Measurement Method (measured with P_{DRIVE} = 0.2W, distance = 10cm)



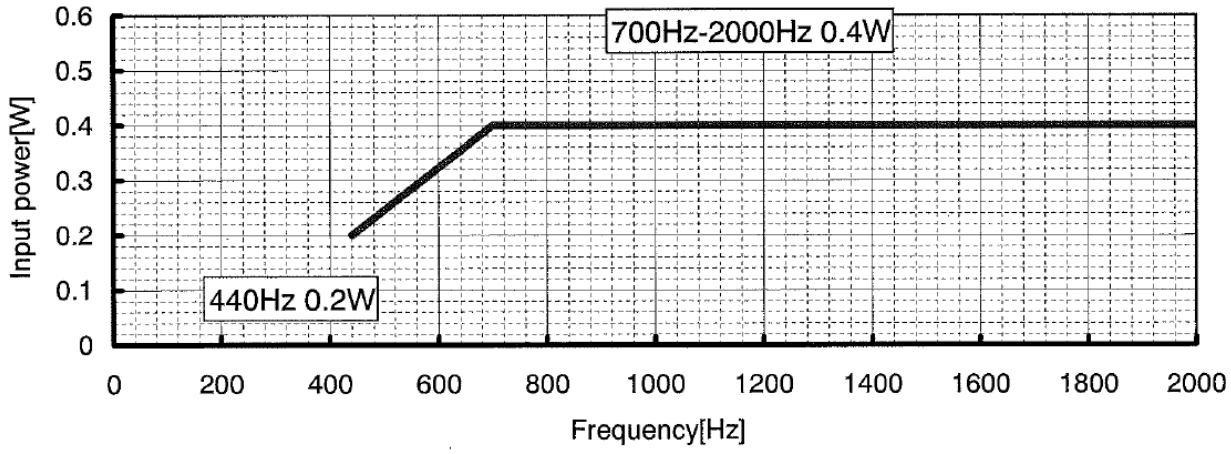
Recommended Drive Circuit



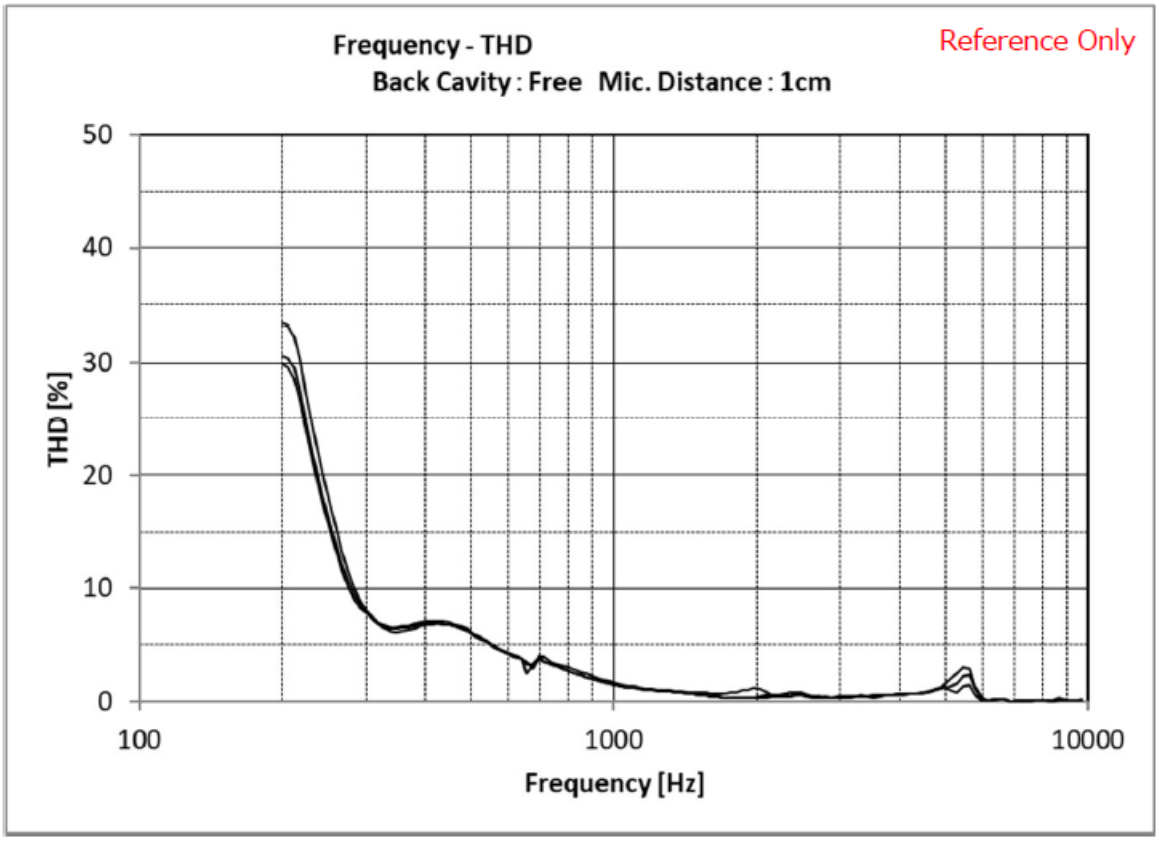
Typical Frequency Response (P_{DRIVE} = 0.2W, distance = 10cm on baffle 400X400X150mm, back cavity: 100cm3)



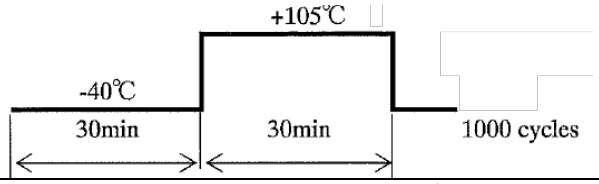
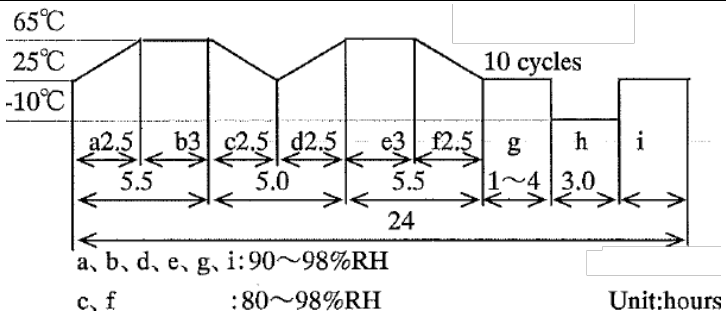
Maximum Input Power Frequency Response



Typical THD vs. Frequency (P_{DRIVE} = 0.2W)

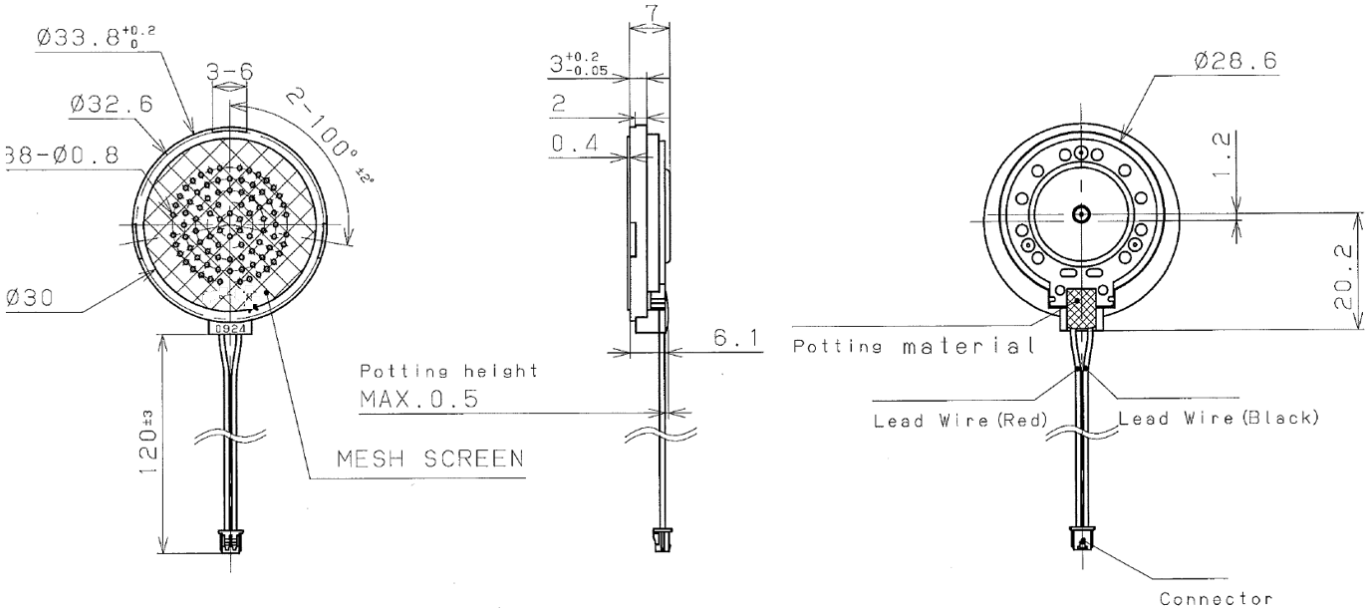


Reliability Testing

Type of Test	Test Specifications	Judgement
High Temperature Test Standard	96 hours at +120°C followed by one hour in normal room temperature	SPL shall not deviate by ±3dB. Resonant frequency shall not deviate by ±50Hz. (compared with pre-test measurement)
Low Temperature Test IEC60068-2-1	96 hours at -40°C followed by one hour in normal room temperature	
Thermal Shock Testing IEC60068-2-14		
Thermal Humidity Shock Testing IEC60068-2-38		SPL shall not deviate by ±3dB. Resonant frequency shall not deviate by ±80Hz. (compared with pre-test measurement)
Vibration Test IEC60068-2-6	Frequency 10, 200, 10 Hz, Sine wave sweep 15min, 49m/s2, X, Y, Z 3 directions 2 hours. Total 6 hours	SPL shall not deviate by ±3dB.

Drop Test IEC60068-2-38	100 cm free falling on concrete floor, every 3 surface 1 time, total 3 times. 100 cm fixed fall on concrete floor, every 6 surface 1 times, total 6 times.	(compared with pre-test measurement)
Ordinary Temp Life (Standard)	Room temperature, 400Hz, 0.2W input, 1000hours	
High Temperature Life (Standard)	105°C, 400Hz, 0.2W input, 500hours	
Low Temp Life (Standard)	-40°C, 400Hz, 0.2W input, 500hours	

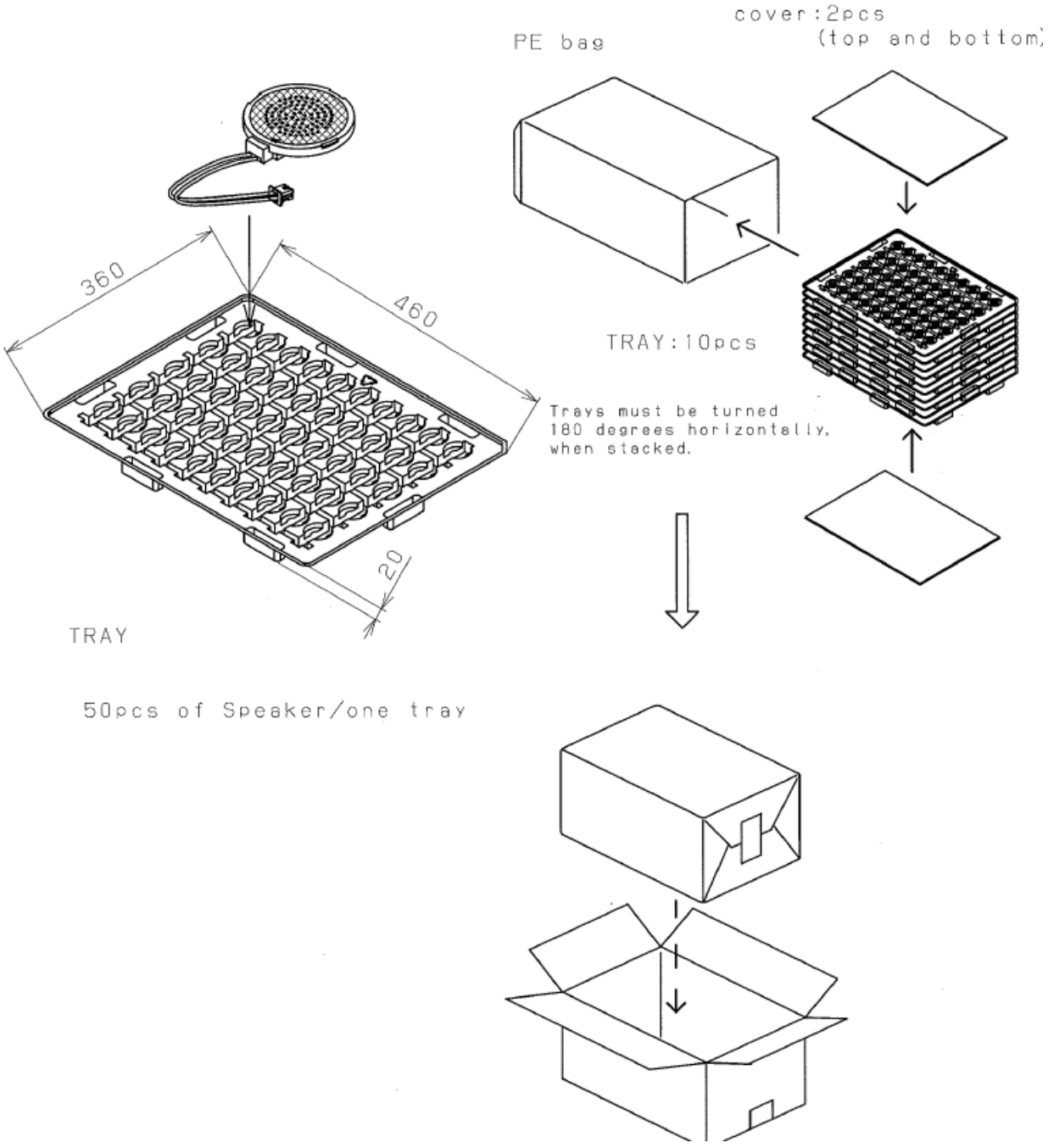
Dimensions (All dimensions in mm; tolerance is +0.5mm, unless otherwise stated.)

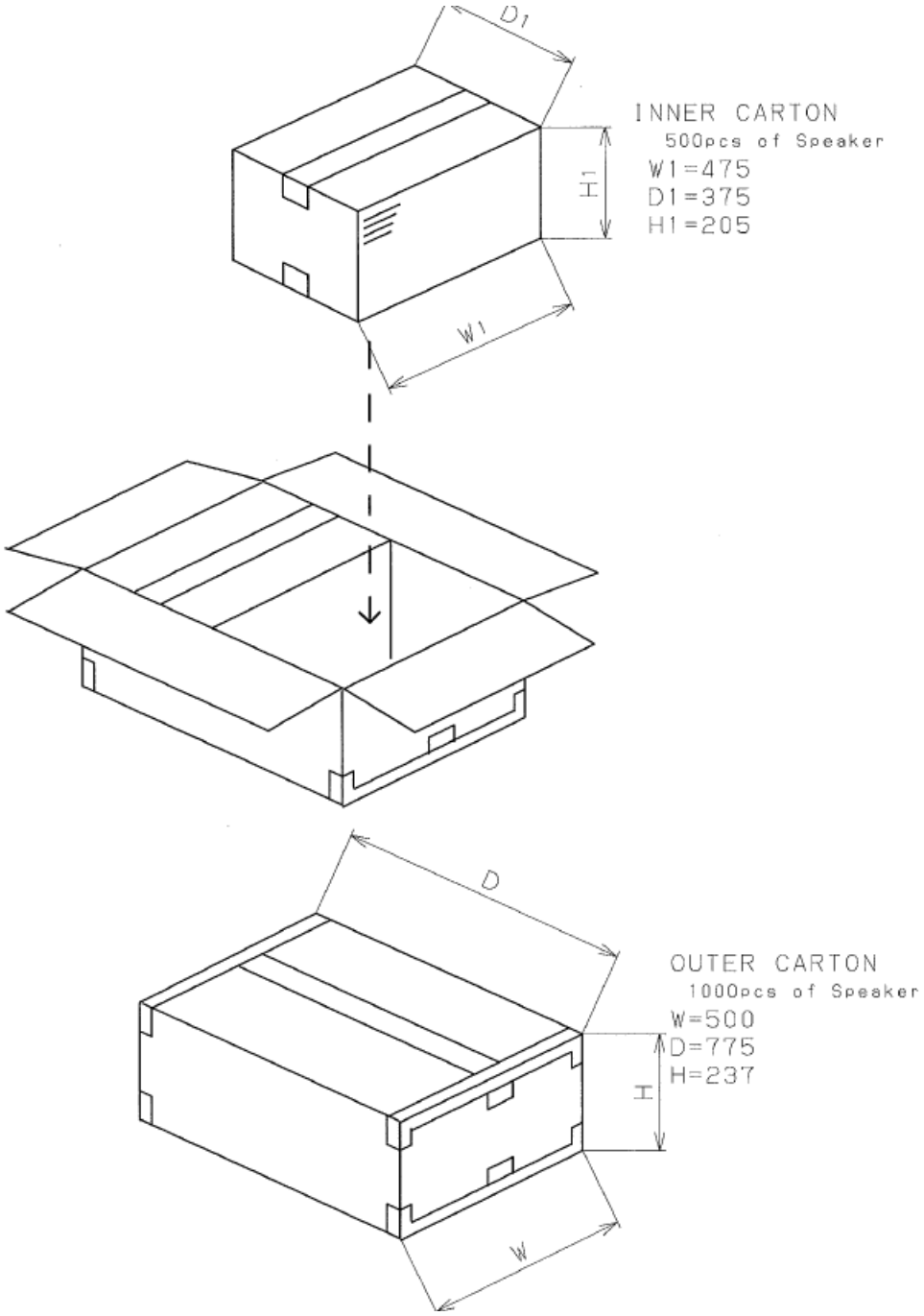


Connector: Molex 51021-0200
Terminal: Molex 50079-8000
Lead Wire: AWG#28 UL1571

Packaging

Tray: 50pcs, Inner Box: 500pcs, Carton: 1,000pcs





Measurement & Standard Reference

Abstract from GB/T 9396-1996 and IEC 268-5:1989: methods of measurement for main characteristics of loudspeakers.

5.1 Rated sine voltage.

A sinusoidal signal voltage specified by the manufacturer which makes the speaker work continuously in the rated frequency range, without causing electrical or mechanical damage to the speaker. The continuous voltage time is 1 hour.

5.2 Rated sine power.

The rated sine power corresponding with the rated sine voltage defined by: U_S^2/R, where U_s indicates the rated sin voltage and R indicates the rated impedance of the speaker.

5.3 Rated noise power.

The rated sine power corresponding with the rated sine voltage defined by: U_n^2/R, where U_n indicates the rated sin voltage and R indicates the rated impedance of the speaker.

Specifications Revisions

Revision	Description	Date	Approved
A	Datasheet released from Engineering	05/21/2026	NK

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.