



|            |                   |
|------------|-------------------|
| Data Sheet | AS05004MR-4-LWC45 |
|------------|-------------------|

**Features:**

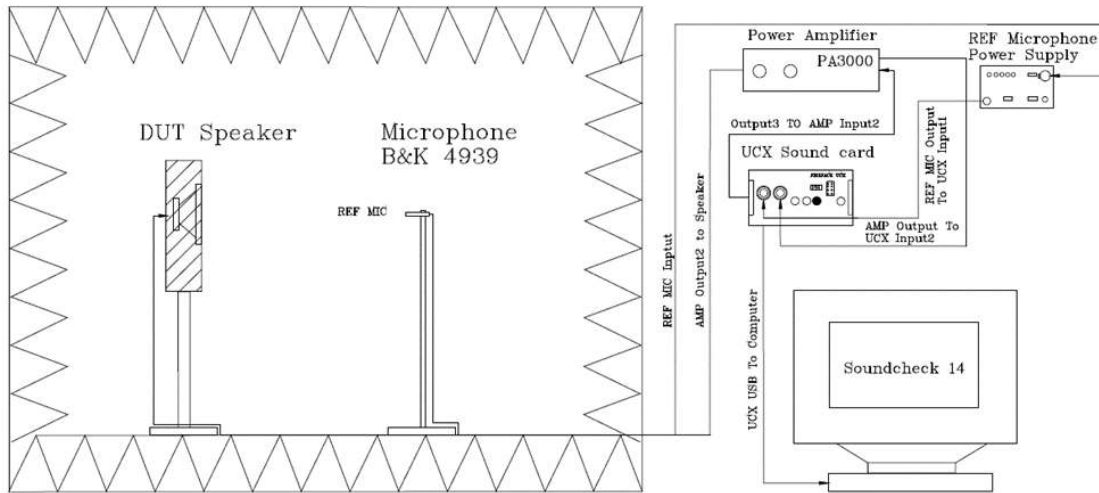
- High Input power and High SPL
- Low threshold distortion
- IP67 Rated

**Specifications**

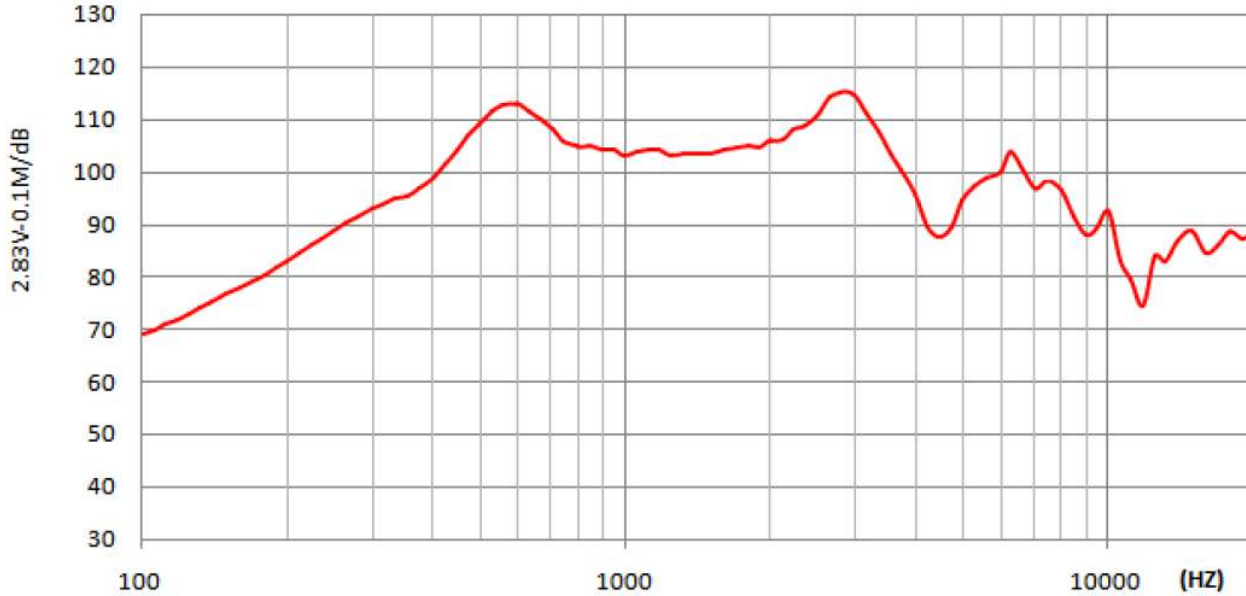
| Parameters  | Values  | Units |
|---|---|-------|
| Rated Input Power                                     | 2.0   | Watts |
| Max Input Power                                       | 3.0   | Watts |
| Impedance   | 4 ± 20%   | Ohms  |
| Output SPL (At 0.8 1.0 1.2 1.5KHz; 2.83V/10cm)        | 103 ± 3   | dB    |
| Resonant Frequency                                    | 530 ± 20%   | Hz    |
| Frequency Range                                       | 530 ~ 20,000  | Hz    |
| THD   | <5%   |       |
| Recommended Enclosure Volume (closed box, no damping) | 166.4   | cc    |
| Frame Material  | SPCC  | -     |
| Magnet Material                                       | NdFeB   | -     |
| Diaphragm Material                                    | PET   | -     |
| Weight  | 17  | Grams |
| Ingress Protection Rating                             | IP67  | -     |
| Buzz, Rattle, etc.                                    | Not be audible at 2.83V sine wave between Fo~20K                          | -     |
| Environmental Compliances                             | ROHS/REACH  | -     |
| Polarity  | Diaphragm shall move Forward when Apply a Positive DC. Current to the “+” | -     |
| Storage Temperature                                   | -30 ~ 70  | °C    |
| Operating Temperature                                 | -20 ~ 60  | °C    |

## Measurement Method

### Speaker Testing framework diagram



## Typical Frequency Response



### Typical Thiele-Small Parameters (based on Golden Sample, up to 20% variance is normal)

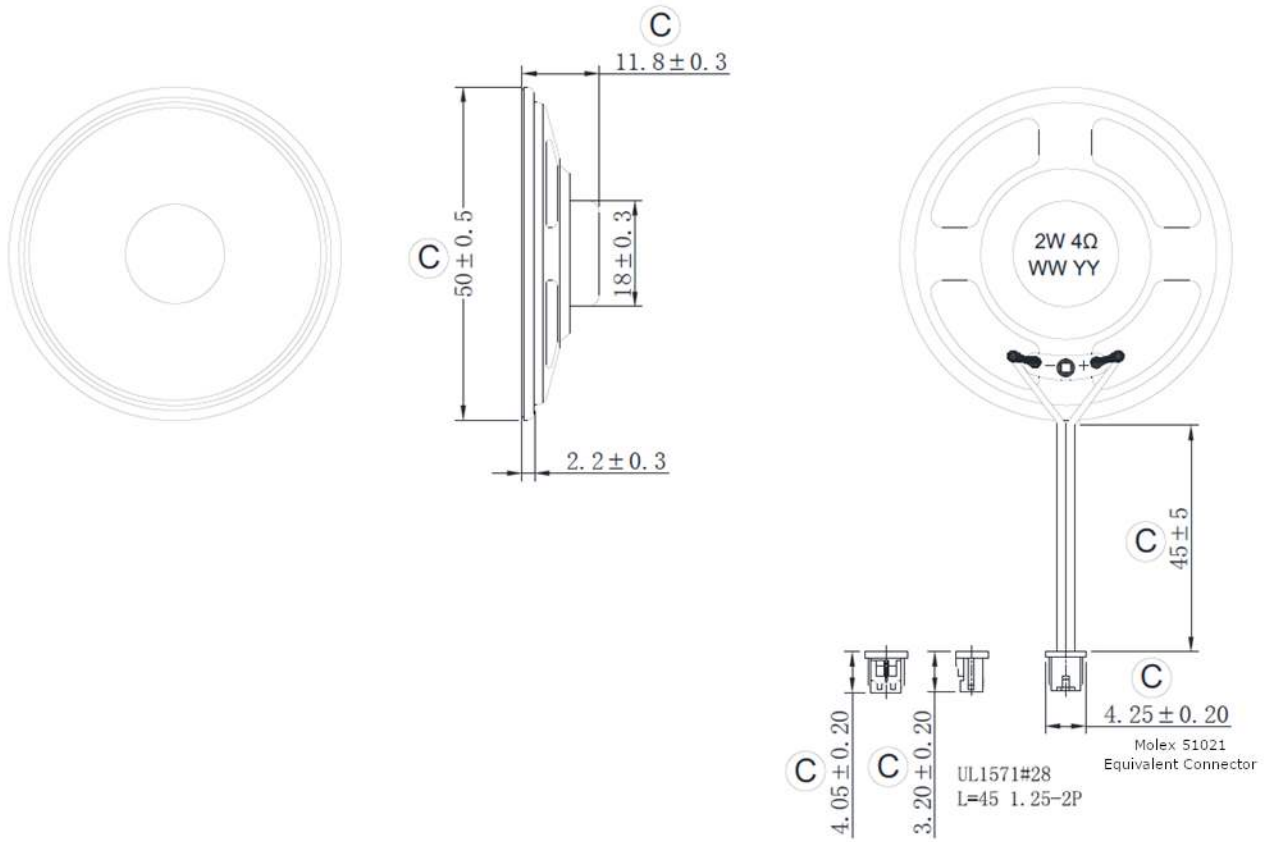
| Specification | Value  | Description                         |
|---------------|--------|-------------------------------------|
| Re            | 3.8    | DC resistance                       |
| Le            | 0.028  | Inductance @ 10 kHz                 |
| Fs            | 615.6  | Resonant Frequency                  |
| Mms           | 0.461  | Moving Mass                         |
| Bl            | 0.811  | Magnet Force Factor                 |
| Qms           | 16.717 | Mechanical Q-factor                 |
| Qes           | 10.312 | Electrical Q-factor                 |
| Qts           | 6.378  | Total Q-factor                      |
| Vas           | 0.0264 | Equivalent Air Volume of Suspension |

### Reliability Testing

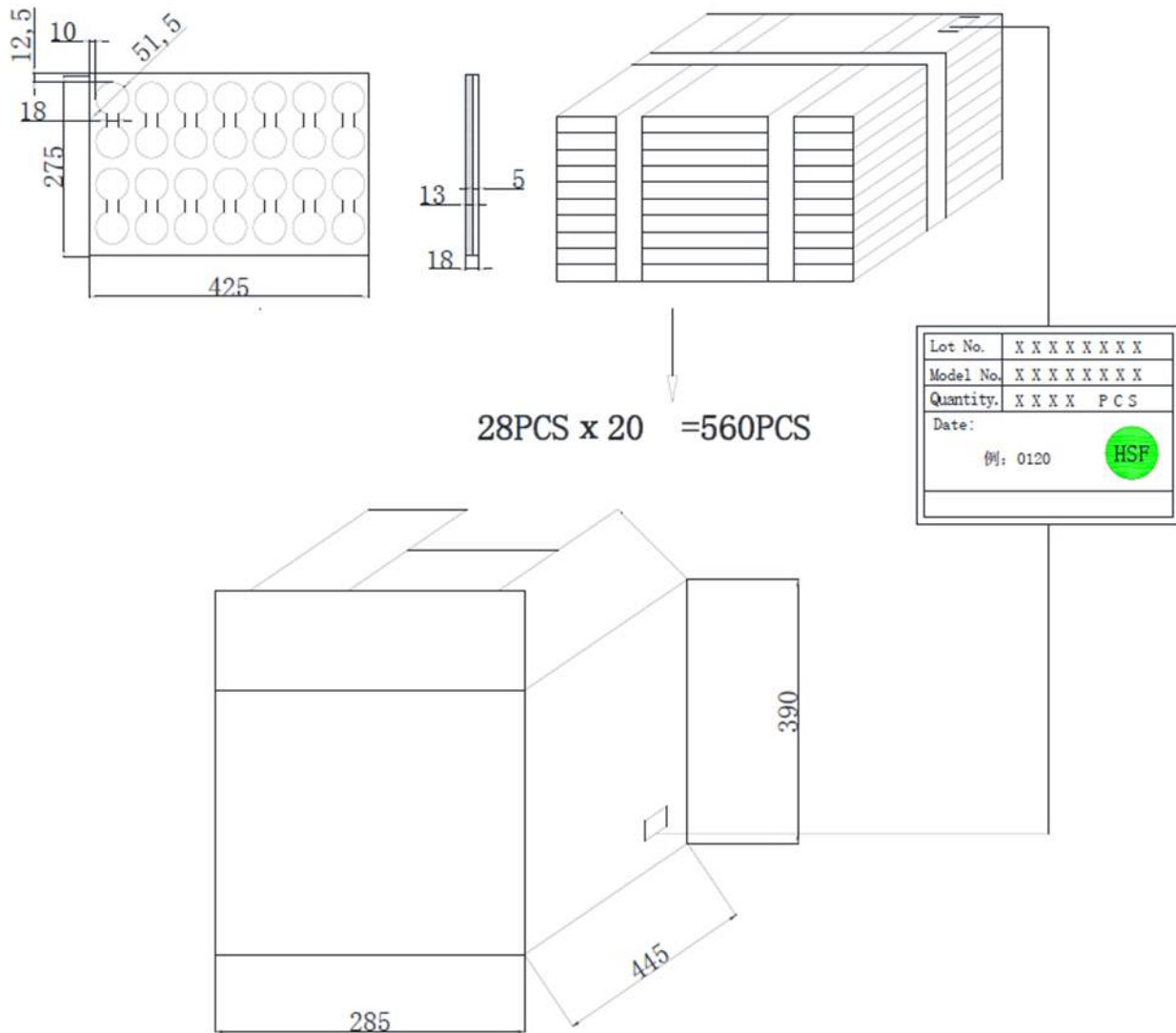
| Type of Test              | Test Specifications  |
|---------------------------|--|
| High Temperature Test     | 96 hours at 70°C   |
| Low Temperature Test      | 96 hours at -30°C  |
| Humidity Test             | 96 hours at 30°C with relative humidity at 90~95%  |
| Temperature Cycle Testing | <p>Subject to 5 cycles with each cycle consisting of:</p> <p>The diagram illustrates a temperature cycle testing profile. It starts at +60°C for a 2-hour dwell. Then, it ramps down to +25°C over a 0.5-hour period. It dwells at +25°C for 1 hour. Next, it ramps down to -20°C over another 0.5-hour period. Finally, it dwells at -20°C for 2 hours. The total duration of one cycle is 6 hours, indicated by a dashed line at the bottom.</p> |
| Vibration Test            | Speaker shall be measured after being applied vibration of amplitude of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours  |
| Drop Test                 | Drop the speakers contained in normal box onto the board 40mm thick 10 times from the height of 75cm   |
| Load Test                 | 2W White noise is applied for 96 hours, at room temp product   |

**Call out how pass/fail conditions are determined after the reliability testing is complete**

## Dimensions



## Packaging



|      |             |              |
|------|-------------|--------------|
| Tray | 425*275*18  | 28*1=28PCS   |
| Unit | 345*290*180 | 28*10=280PCS |
| Box  | 445*285*390 | 280*2=560PCS |

**Specifications Revisions**

| <b>Revision</b> | <b>Description</b>        | <b>Date</b> |
|-----------------|---------------------------|-------------|
| A               | Released from Engineering | 12/16/2022  |

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.