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**SoniCrest** Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Back Electret Condenser Microphone Component
Part Number : HBO0403D-58/1208

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|---|---|---|
| A1 - New issue created by Loki, Lo on 8 Jun., 2017 | | |
| A2 - Updated section 2 and 6 by Loki, Lo on 12 Jun., 2017 | | |
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## 1. Purpose and Scope

This document contains both general requirements, qualification requirements, and those specific electrical, mechanical requirements for this part.

## 2. Description

Ø4mm back electret condenser microphone with 10pF and 33pF capacitors, phase control, 75mm UL3302 AWG#32 wires, S/N >=65dB and tolerance +/-1.5dB, RoHS compliant.

## 3. Application

Telecommunication Equipment, Computers and Peripherals, etc.

## 4. Component Requirement

### 4.1. General Requirement

| | | |
|---|---|---|
| **4.1.1.** | Operating Temperature Range | : -20°C to +70°C |
| **4.1.2.** | Storage Temperature Range | : -40°C to +85°C |

### 4.2. Electrical Requirement

| | | |
|---|---|---|
| **4.2.1.** | Directivity | : Omnidirectional |
| **4.2.2.** | Sensitivity<br>(0dB = 1V/Pa, 1kHz, rated voltage, $R_L$ = 2.2KΩ) | : -38.5 ± 1.5 dB |
| **4.2.3.** | Phase<br>(0dB = 1V/Pa, 2V, $R_L$ = 2.2KΩ) | : 20° ~ 35° (30Hz)<br>132° ~ 138° (160Hz)<br>12° ~ 19° (1KHz) |
| **4.2.4.** | Rated Voltage | : 3V |
| **4.2.5.** | Operating Voltage Range | : 1 ~ 10V |
| **4.2.6.** | Current Consumption | : <=0.5mA |
| **4.2.7.** | Frequency Range | : 30 ~ 10KHz |
| **4.2.8.** | Output Impedance | : <=2.2KΩ |
| **4.2.9.** | S/N Ratio | : >=65dB |
| **4.2.10.** | Maximum input SPL (THD <3%) | : 110dB |
| **4.2.11.** | Sensitivity Variation (Vs:3V to 2V) | : Max. -3dB |

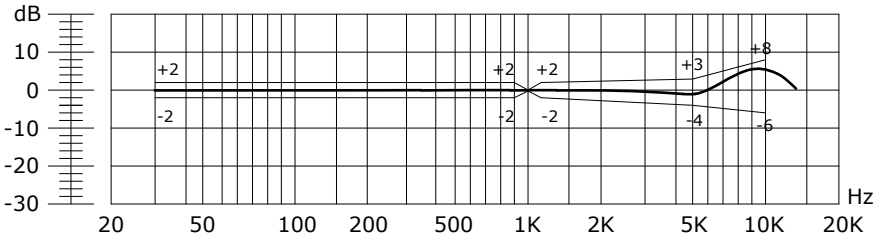


**Figure 1. Frequency Response**

### 4.3. Mechanical Requirement

**4.3.1.** Layout and Dimension : See section 6, figure 4

### 4.4. Test Setup

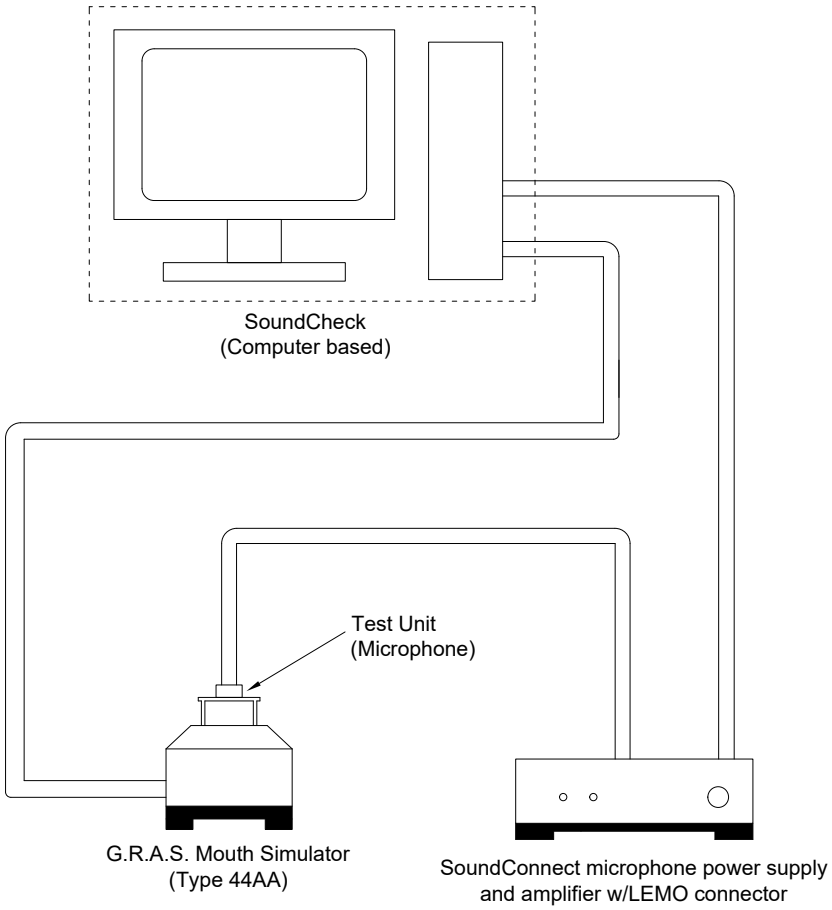


**Figure 2. Test Setup**

**Notes** : Apply sinusoidal wave from SoundCheck Audio Analyzer (Computer based) to speaker in G.R.A.S. Mouth Simulator Type 44AA. Measure sensitivity of test unit with specified driving circuit. The whole testing system should be calibrated based on calibration procedure recommended by the manufacturer before measurement. Measurement should be carried out in an excellent insulation from external noise environment.

### 4.5. Schematic Diagram

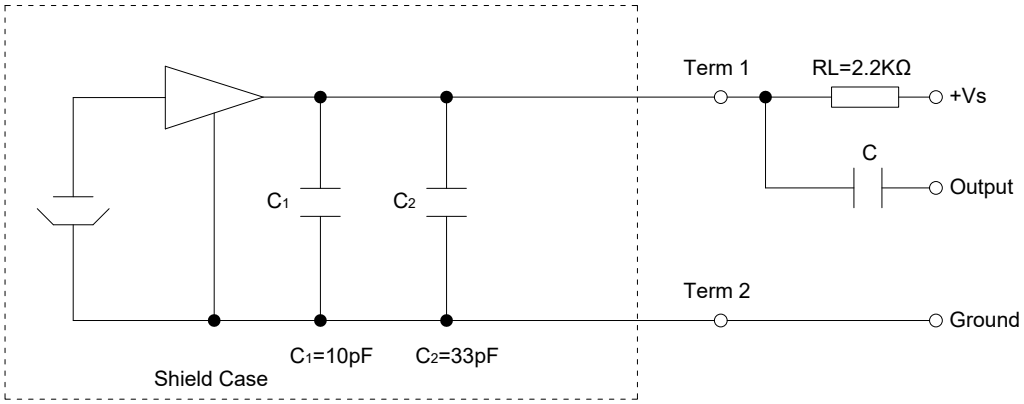


**Figure 3. Schematic Diagram**

## 5. Reliability Test

**5.1. High Temperature** : Subject samples to +70°C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.2. Low Temperature** : Subject samples to -20°C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.3. Static Humidity** : Precondition at +25°C for 1 hour. Then expose to +40°C with 90 to 95% relative humidity for 200 hours. Finally dry at room ambient for 2 hours before taking final measurement.

**5.4. Temperature Shock** : Each cycle shall consist of 30 minutes at -20°C, 20 minutes at +20°C, 30minutes at +70°C and 10 minutes at +20°C. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

## 6. Mechanical Layout

Unit : mm
Tolerance : Linear XX.X = ±0.3
XX.XX = ±0.05
Angular = ±0.25°
(unless otherwise specified)

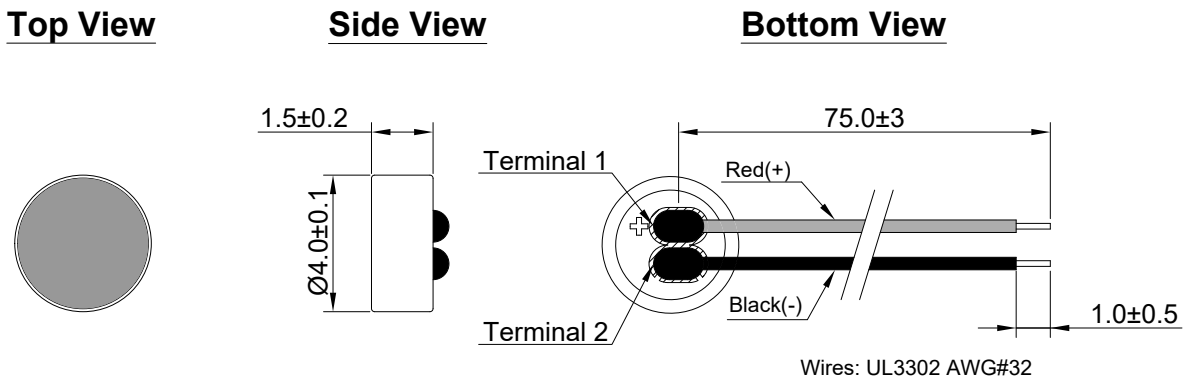


**Figure 4. HBO0403D-58/1208 Mechanical Layout**