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**SoniCrest** Brand Acoustic Components

[www.jlsonicrest.com](http://www.jlsonicrest.com)

Document Type : Specification  
Product Type : Back Electret Condenser Microphone Component  
Part Number : HBO0302C-58/1248

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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

Ø3mm back electret condenser with phase control and 50mm shielded wire, 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 : -38 ± 3 dB  
(0dB = 1V/Pa, 1kHz, rated voltage, RL = 2.2KΩ)  
-38.0 ~ -35.0dB (A)  
-41.0 ~ -38.0dB (B)

**4.2.3.** Phase : 30° ~ 45° (30Hz)  
(0dB = 1V/Pa, 2V, RL = 2.2KΩ) 135° ~ 145° (160Hz)  
18° ~ 28° (1KHz)

**4.2.4.** Rated Voltage : 2V

**4.2.5.** Operating Voltage Range : 1 ~ 10V

**4.2.6.** Current Consumption : ≤0.5mA

**4.2.7.** Frequency Range : 20 ~ 20KHz

**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:2V to 1.5V) : Max. -3dB

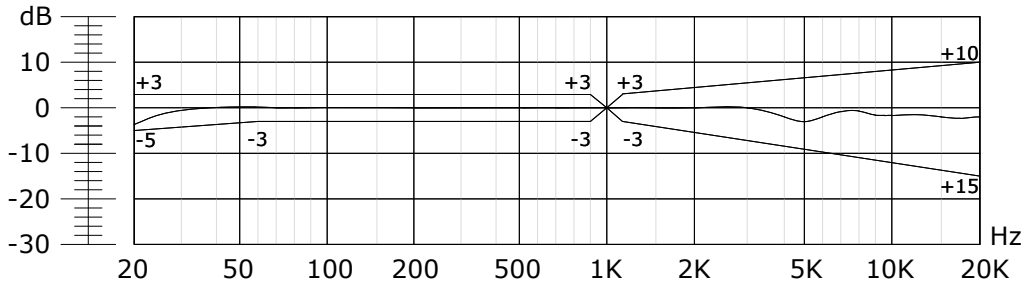


Figure 1. Frequency Response

4.3. Mechanical Requirement

4.3.1. Layout and Dimension

: See section 6, figure 4

4.4. Test Setup

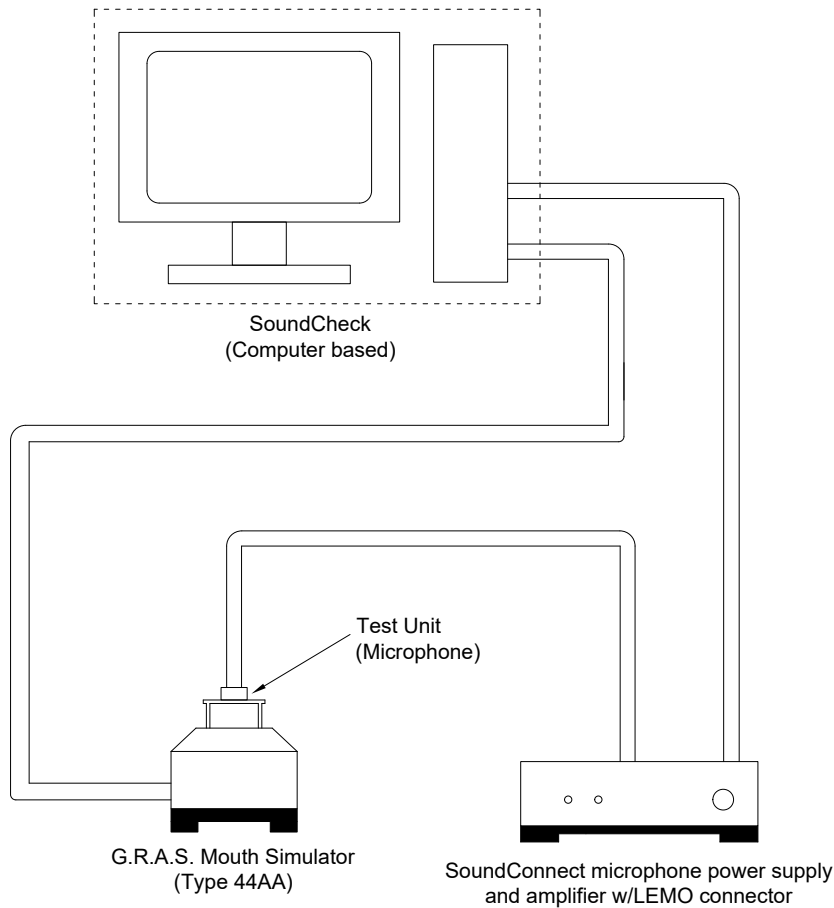


Figure 2. Test Setup

**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

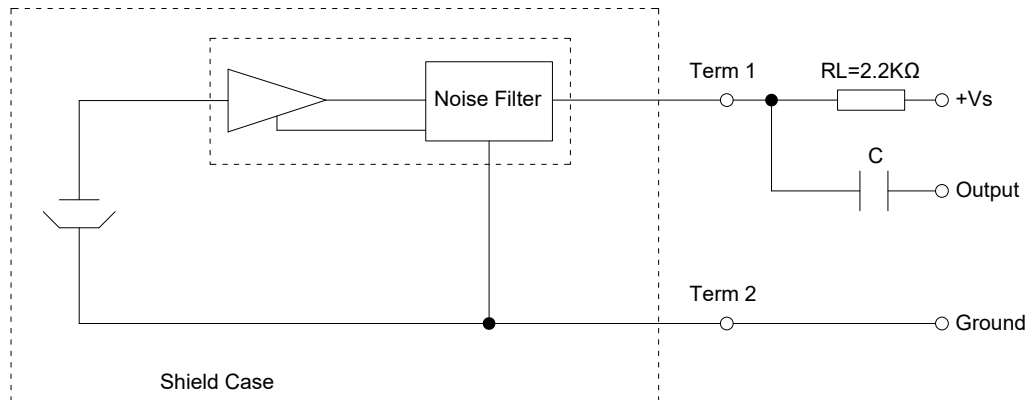


Figure 3. Schematic Diagram

#### 5. Reliability Test

- 5.1. High Temperature** : Subject samples to +85°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 -40°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 96 hours. Finally dry at room ambient for 2 hours before taking final measurement.

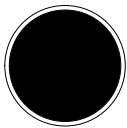
**6. Mechanical Layout**

Unit : mm

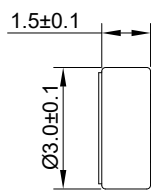
Tolerance : Linear    XX.X    = ±0.3  
    XX.XX    = ±0.05  
    Angular    = ±0.25°

(unless otherwise specified)

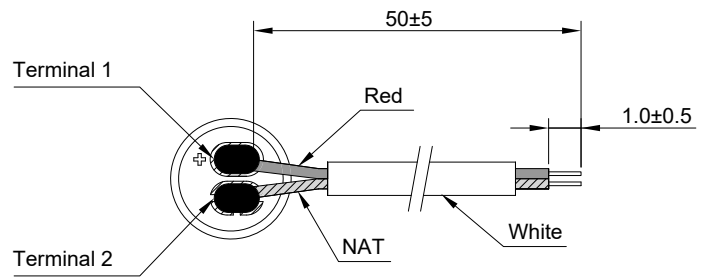
Top View



Side View



Bottom View



Wires: Ø0.8 shielded wire

**Figure 4. HBO0302C-58/1248 Mechanical Layout**