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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Back Electret Condenser Microphone Component
Part Number : HBO1003D-44/1134

A1 - New issue created by Loki, Lo on 22 Apr., 2016		

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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

Ø9.7mm back electret condenser microphone with 10pF and 33pF capacitors, phase control, S/N >=80dB, 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 (0dB = 1V/Pa, 1kHz, rated voltage, R_L = 2.2kΩ)	: -24 ± 3 dB
4.2.3.	Phase (0dB = 1V/Pa, rated voltage, R_L = 2.2kΩ)	: 0° ~ 15° (30Hz) -4.5° ~ 0.5° (160Hz) 0° ~ 5° (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	: 100 ~ 10KHz
4.2.8.	Output Impedance	: <=2.2kΩ
4.2.9.	S/N Ratio	: >=80dB
4.2.10.	Maximum input SPL (THD <3%)	: 110dB
4.2.11.	Sensitivity Variation (Vs:3V to 2V)	: Max. -3dB

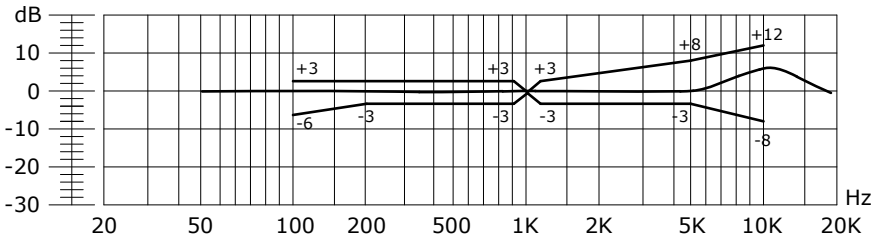

Figure 1. Frequency Response

4.3. Mechanical Requirement

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

4.4. Test Setup

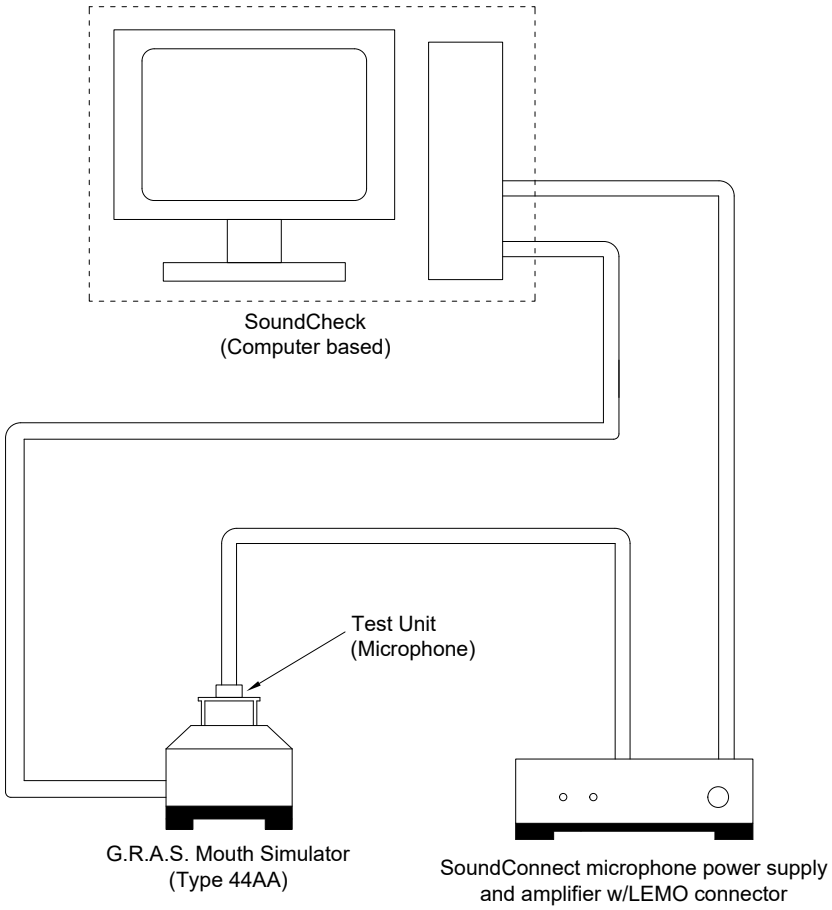

Figure 2. Test Setup

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

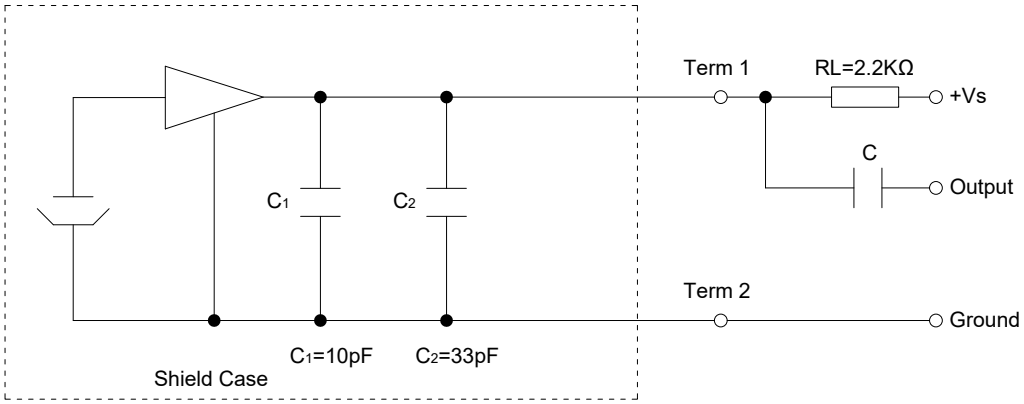

Figure 3. Schematic Diagram

5. Reliability Test

5.1. High Temperature : Subject samples to +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)

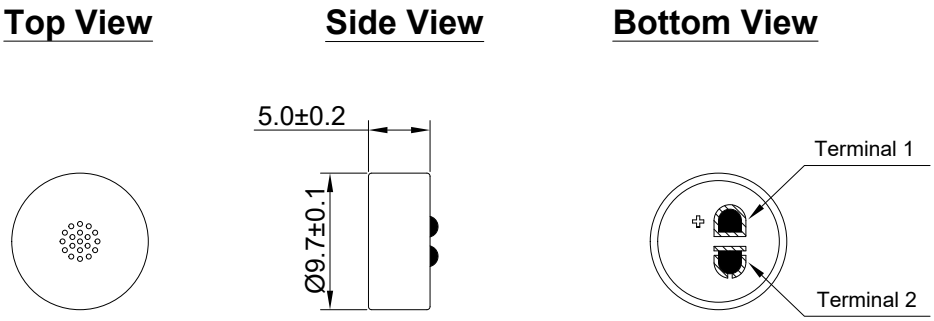

Figure 4. HBO1003D-44/1134 Mechanical Layout