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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Back Electret Condenser Microphone Component
Part Number : HBO0602Z-63/1274

A1 - New issue created by Loki, Lo on 12 Mar., 2018		

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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

Ø5.8mm back electret condenser microphone for automotive application, with phase control, S/N >=68dB and 2.9mm pins, RoHS compliant.

3. Application

Telecommunication Equipment, Computers and Peripherals, etc.

4. Component Requirement

4.1. General Requirement

4.1.1. Operating Temperature Range	: -40°C to +95°C
4.1.2. Storage Temperature Range	: -40°C to +106°C

4.2. Electrical Requirement

4.2.1. Directivity	: Omnidirectional
4.2.2. Sensitivity (0dB = 1V/Pa, 1kHz, rated voltage, R_L = 15kΩ)	: -43 ± 3 dB (1kHz) -43 +6/-5 dB (30Hz)
4.2.3. Phase (0dB = 1V/Pa, rated voltage, R_L = 15kΩ)	: -179 ± 15° (30Hz)
4.2.4. Rated Voltage	: 2V
4.2.5. Operating Voltage Range	: 1 ~ 5V
4.2.6. Current Consumption	: <=0.105mA
4.2.7. Frequency Range	: 30 ~ 10KHz
4.2.8. Output Impedance	: 1.0 ± 30% kΩ
4.2.9. S/N Ratio	: >=68dB
4.2.10. Maximum input SPL (THD <3%)	: 128dB
4.2.11. Sensitivity Variation (Vs:2V to 1V)	: Max. -3dB

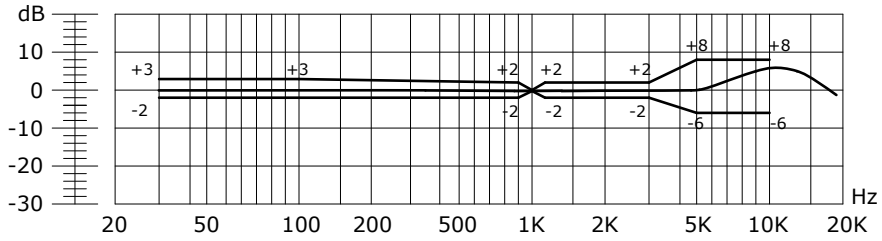


Figure 1. Frequency Response

4.3. Mechanical Requirement

4.3.1. Layout and Dimension : See section 5, figure 4

4.4. Test Setup

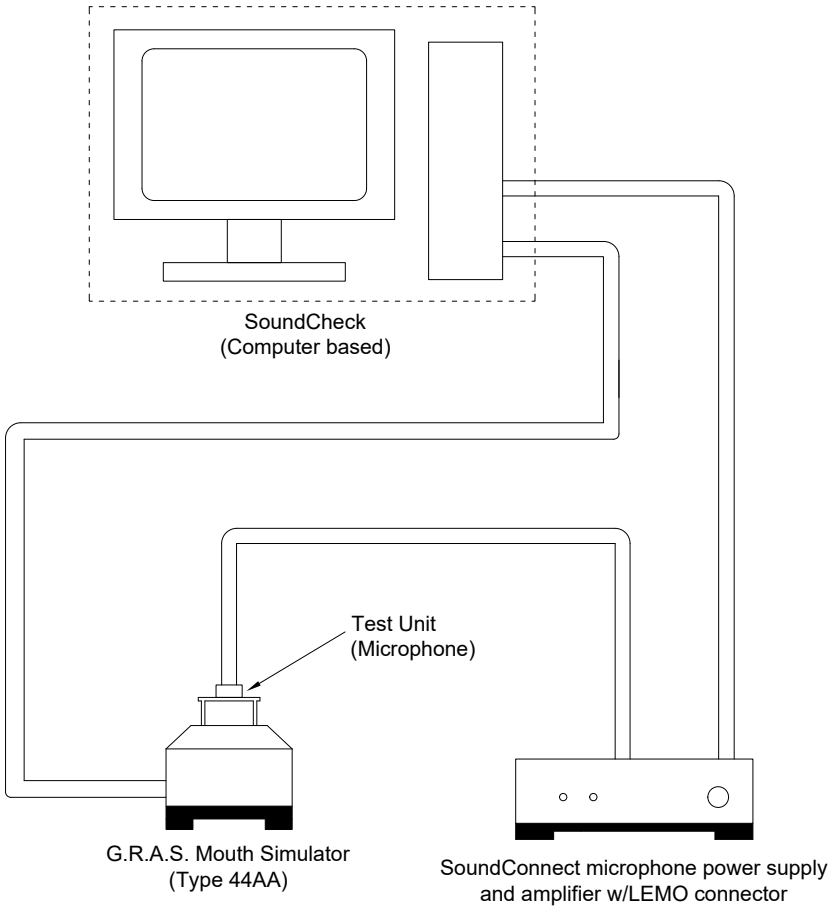


Figure 2. Test Setup

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

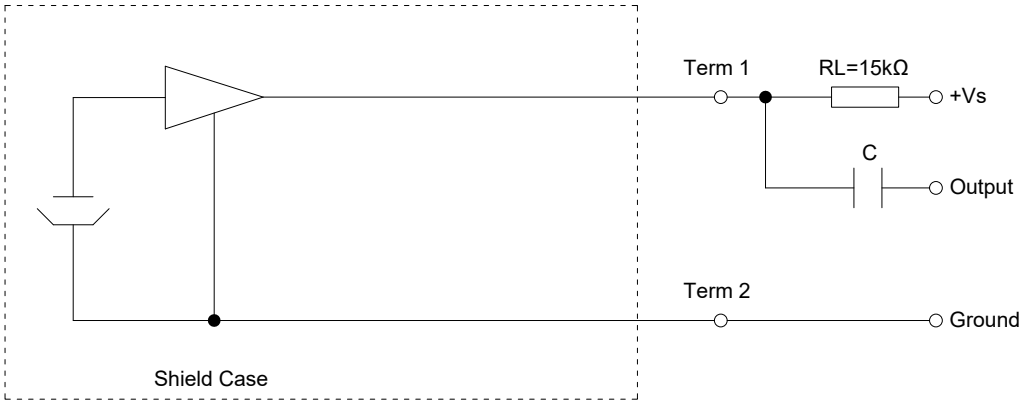


Figure 3. Schematic Diagram

5. Mechanical Layout

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

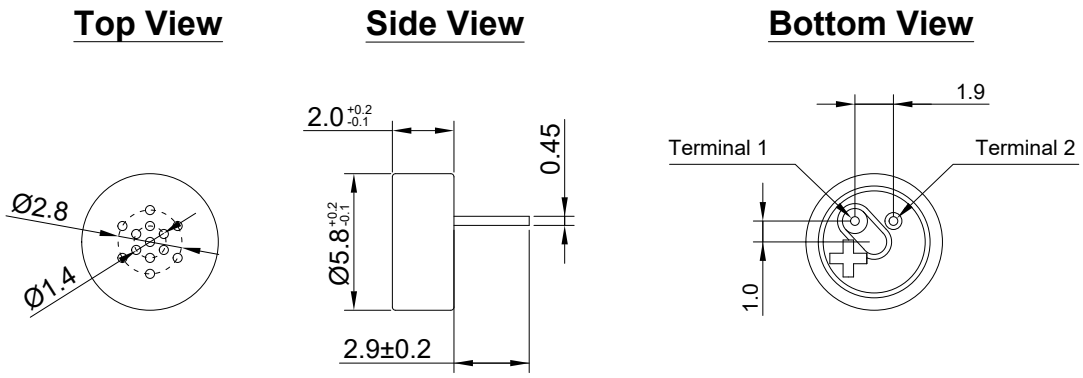


Figure 4. HBO0602Z-63/1274 Mechanical Layout

6. Reliability Test

6.1. High Temperature : Subject samples to +106°C for 240 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 6 hours soak.

6.2. Low Temperature : Subject samples to -40°C for 500 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 6 hours soak.

6.3. Humidified Thermo-Cycle : Each temperature cycle shall consist of 1 hour at +106°C, 1 hour at +20°C, 1 hour at -40°C and 1 hour at +20°C. Test duration is for 10 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 6 hours soak.

6.4. Thermal Shock : Each temperature cycle shall consist of 1 hour at +85°C and 1 hour at -40°C. Test duration is for 8 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 6 hours soak.

6.5. Static Humidity : Precondition at room temperature for 1 hour. Then expose to +70°C with 95% relative humidity for 240 hours. Finally dry at room ambient for 6 hours before taking final measurement.

6.6. Drop Test : Drop samples naturally from the height of 1m onto a hard wooden board 10 times in three directions.

6.7. Random Vibration : Secure samples in standard packing. Vibrated randomly 10 ~ 55Hz with 3mm peak amplitude and 55 ~ 150Hz with 2G acceleration in 3 directions (x, y and z). The test duration is 2 hours per plane, total 6 hours.

6.8. High Temperature Operating : Subject samples to +60°C and operate for 120 hours under 120dB SPL white noise. Components must be fully stabilized before data is taken, which may require up to a 6 hours soak.

6.9. Low Temperature Operating : Subject samples to -20°C and operate for 96 hours under 120dB SPL white noise. Components must be fully stabilized before data is taken, which may require up to a 6 hours soak.

6.10. High Temperature and Humidity Operating : Subject samples to +60°C wiith 95% relative humidity and operate for 96 hours under 120dB SPL white noise. Components must be fully stabilized before data is taken, which may require up to a 6 hours soak.

6.11. Load Test : Subject samples to room condition and operate for 1000 hours under 120dB SPL white noise. Components must be fully stabilized before data is taken, which may require up to a 6 hours soak.

7. Standard Packing Requirements

7.1. Packing Quantity : 100 pieces per pack, 10 pack per unit, 10 unit per inner box
2 inner boxes per carton (Total 20000 pieces)

7.2. Tray & Carton Layout

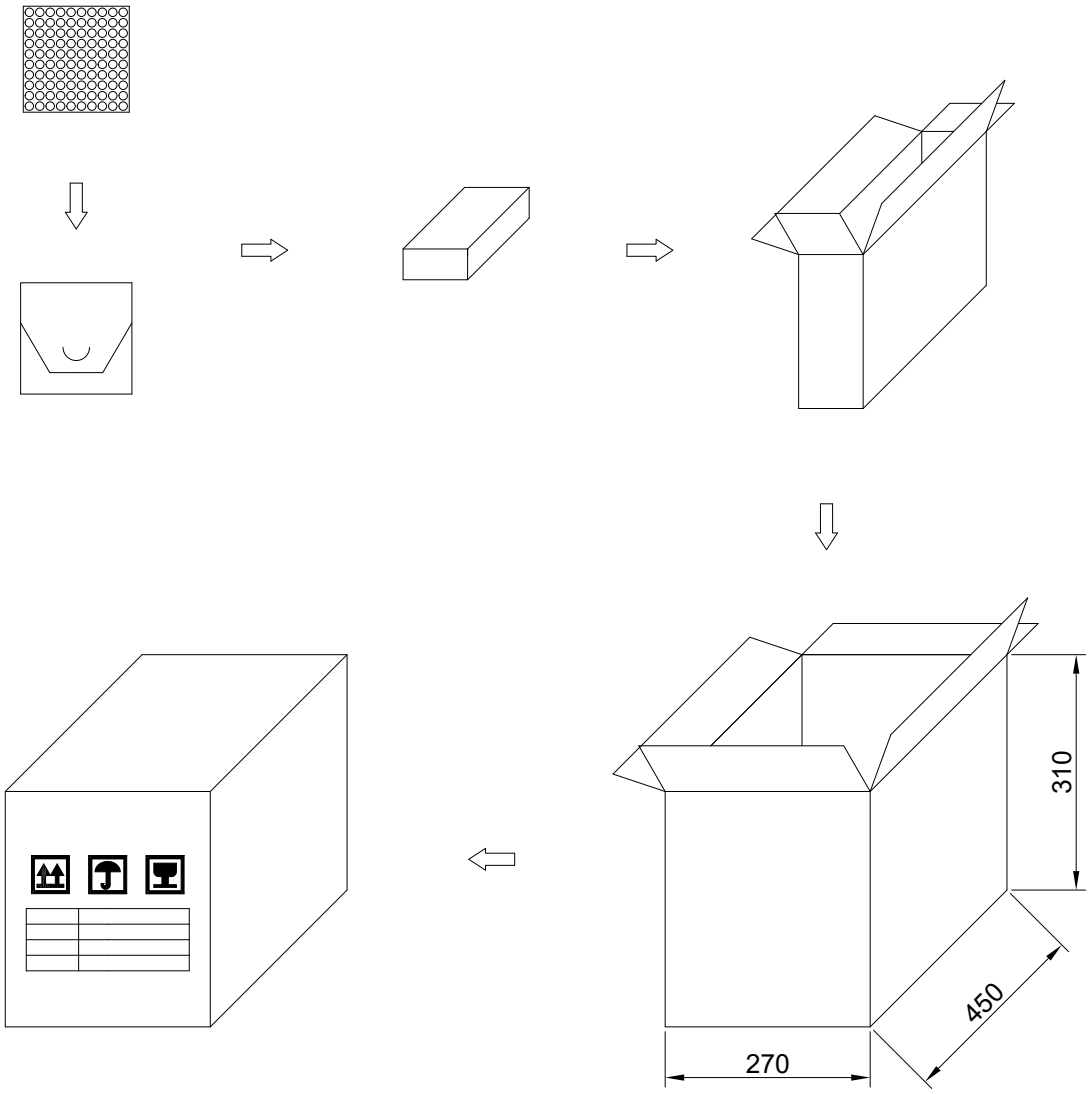


Figure 5. Tray and Carton Layout