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**SoniCrest** Brand Acoustic Components[www.jlsonicrest.com](http://www.jlsonicrest.com)

Document Type : Specification  
Product Type : Speaker Sound Generator Component  
Part Number : HSP2035A-8

A1 - New issue created by Leo Sin on 19 Aug., 1999	A5 - Updated RoHS version by Leo Sin on 16 Feb., 2006	
A2 - Updated layout and format by Leo Sin on 17 Nov., 2000	A6 - Updated section 4 - 7 by Loki, Lo on 11 Apr., 2014	
A3 - Updated general spec. by Leo Sin on 11 Dec., 2000		
A4 - Updated reliability test by Leo Sin on 13 Sept., 2001		

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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

20 x 35 mm speaker sound generator , RoHS compliant.

## 3. Application

Telecommunication Equipment, Computers and Peripherals, etc.

## 4. Component Requirement

### 4.1. General Requirement

**4.1.1.** Operating Temperature Range : -30°C to +70°C

**4.1.2.** Storage Temperature Range : -40°C to +80°C

**4.1.3.** Weight : Approx. 7g

### 4.2. Electrical Requirement

**4.2.1.** Coil Impedance :  $8 \pm 15\% \Omega$

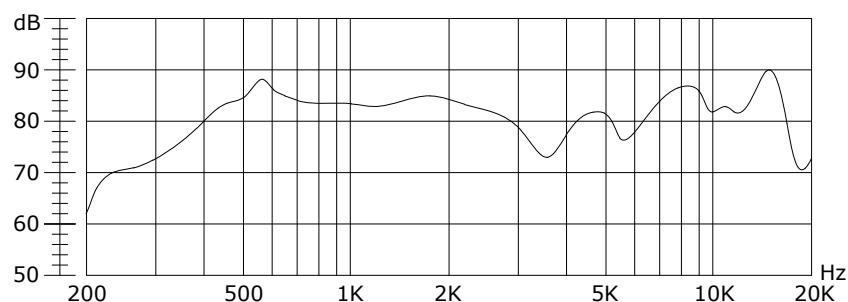
**4.2.2.** Rated Power : 1W

**4.2.3.** Maximum Input Power : 2W

**4.2.4.** Resonance Frequency :  $500 \pm 20\%$  Hz

**4.2.5.** Frequency Range :  $f_0 \sim 20\text{KHz}$

**4.2.6.** Sound Pressure Level at 0.5m, 1W :  $84 \pm 3 \text{ dB}$   
(0.8, 1.0, 1.2, 1.5KHz average)

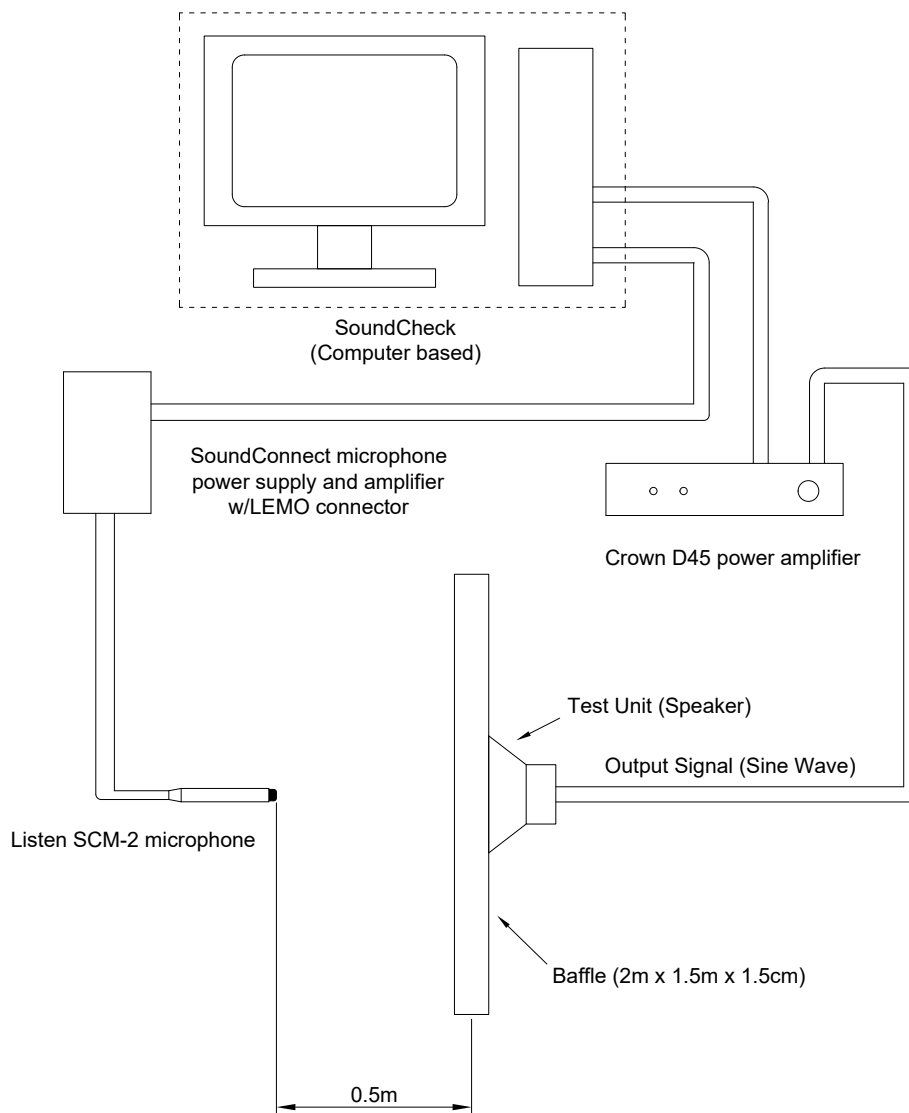


**Figure 1. Frequency Response**

### 4.3. Mechanical Requirement

**4.3.1.** Layout and Dimension : See Section 6, Figure 3

#### 4.4. Test Setup



**Figure 2. Test setup**

**Notes :** Apply rated signal from Crown D45 Power Amplifier. Measure SPL with microphone 0.5m from the test unit with baffle (2m x 1.5m x 1.5cm). Microphone to be in accordance with Listen SCM-2 Microphone. The microphone should be calibrated on a daily basis using an acoustic calibrator recommended by the manufacturer. Measurement should be carried out in a free field environment.

## 5. Reliability Test

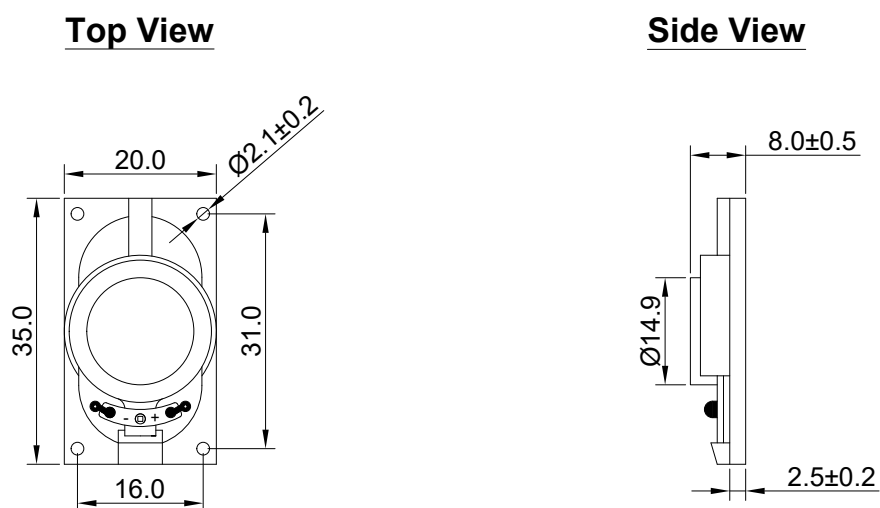
- 5.1. High Temperature** : Subject samples to +80°C and operate for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 3 hours soak.
- 5.2. Low Temperature** : Subject samples to -40°C and operate for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 3 hours soak.
- 5.3. Static Humidity** : Subject samples to +40 ± 2 °C with 95% relative humidity for 96 hours. Finally dry at room ambient for 3 hours before taking final measurement.
- 5.4. Temperature Shock** : Each temperature cycle shall consist of 30 minutes at -40°C and 30 minutes at +80°C. Test duration is for 96 cycles.
- 5.5. Drop Test** : Drop samples naturally from the height of 1m onto a 20mm thickness board 1 time in each directions, total of 6 times.
- 5.6. Load Test** : Subject samples to room condition for 96 hours under rated power, white noise.
- 5.7. Terminal Strength** : Applied 1kg static load to the terminals for 15s in any direction.
- 5.8. Maximum Power** : Each cycle shall consist of 1 minute ON and 2 minutes OFF under maximum power. Test duration is for 10 cycles.
- 5.9. Random Vibration** : Secure samples. Vibrated on 10 ~ 55 ~ 10Hz sin-wave with 5G acceleration and 15 minutes sweep duration. The test duration is 2 hours per plane (x, y, z), total 6 hours.

## 6. Mechanical Layout

Unit : mm

Tolerance : Linear    XX.X    =  $\pm 0.3$   
                             XX.XX   =  $\pm 0.05$   
                             Angular   =  $\pm 0.25^\circ$

(unless otherwise specified)

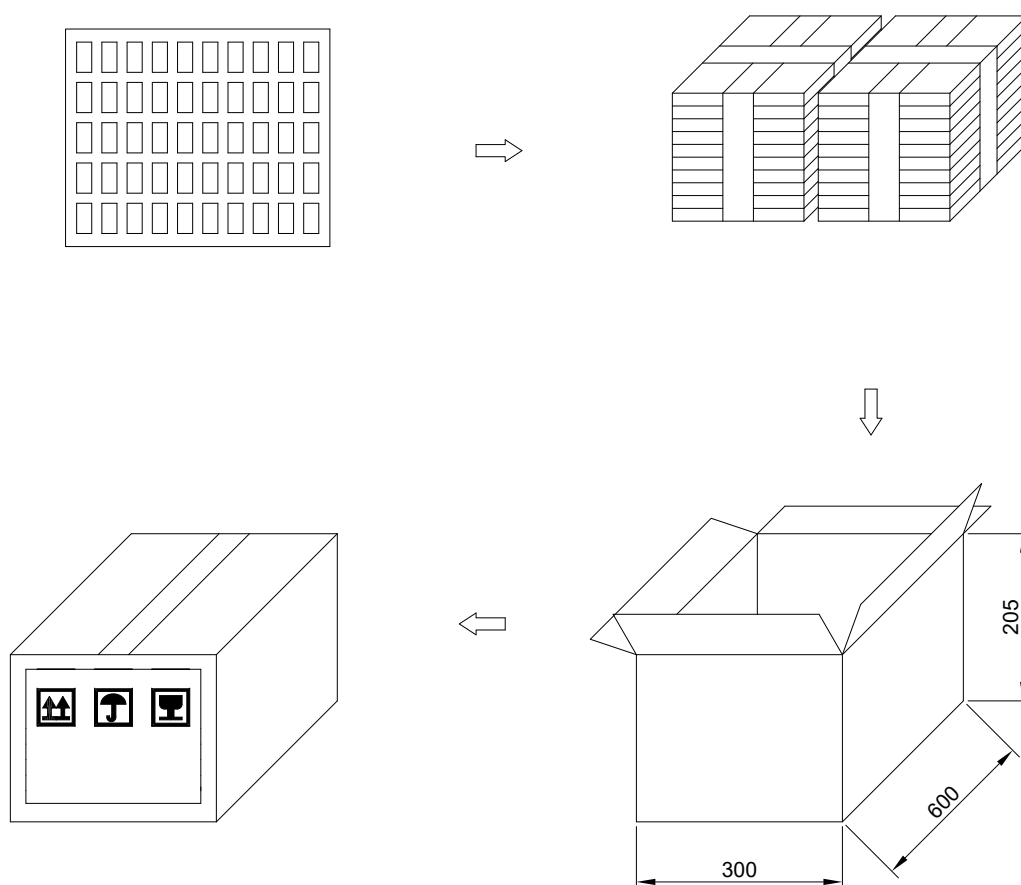


**Figure 3. HSP2035A-8 Mechanical Layout**

## 7. Standard Packing Requirements

**7.1. Packing Quantity :** 50 pieces per tray, 10 trays per unit, 2 units per carton  
(Total 1000 pieces)

### 7.2. Tray & Carton Layout



**Figure 4. Tray and Carton Layout**