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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Speaker Sound Generator Component
Part Number : HSP3040A-8

A1 - New issue created by Leo, Sin on 26 Aug., 1999	A5 - Updated RoHS version by Leo, Sin on 20 Oct., 2005	
A2 - Updated layout and format by Leo, Sin on 17 Nov., 2000	A6 - Updated section 4 - 6 by Loki, Lo on 26 Feb., 2014	
A3 - Updated reliability test and mechanical layout by Leo, Sin on 6 Apr., 2001		
A4 - Updated reliability test by Leo, Sin on 13 Sept., 2001		

1. Purpose and Scope

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

2. Description

28.3 x 40 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	: -20°C to +60°C
4.1.2.	Storage Temperature Range	: -30°C to +70°C
4.1.3.	Weight	: Approx. 11g

4.2. Electrical Requirement

4.2.1.	Coil Impedance	: 8 ± 15% Ω
4.2.2.	Rated Power	: 1W
4.2.3.	Maximum Input Power	: 2W
4.2.4.	Resonance Frequency	: 450 ± 20% Hz
4.2.5.	Frequency Range	: f0 ~ 20KHz
4.2.6.	Sound Pressure Level at 0.5m, 1W (1.0, 1.2, 1.5, 2.0KHz average)	: 84 ± 3 dB
4.2.7.	Total Harmonic Distortion at 1KHz, 1W	: <= 10%

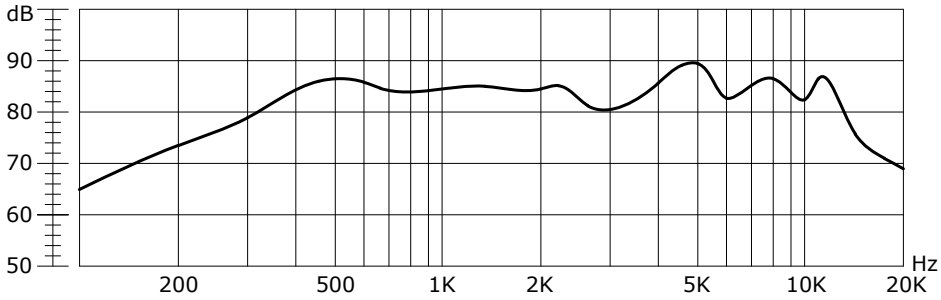

Figure 1. Frequency Response

4.3. Mechanical Requirement

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

4.4. Test Setup

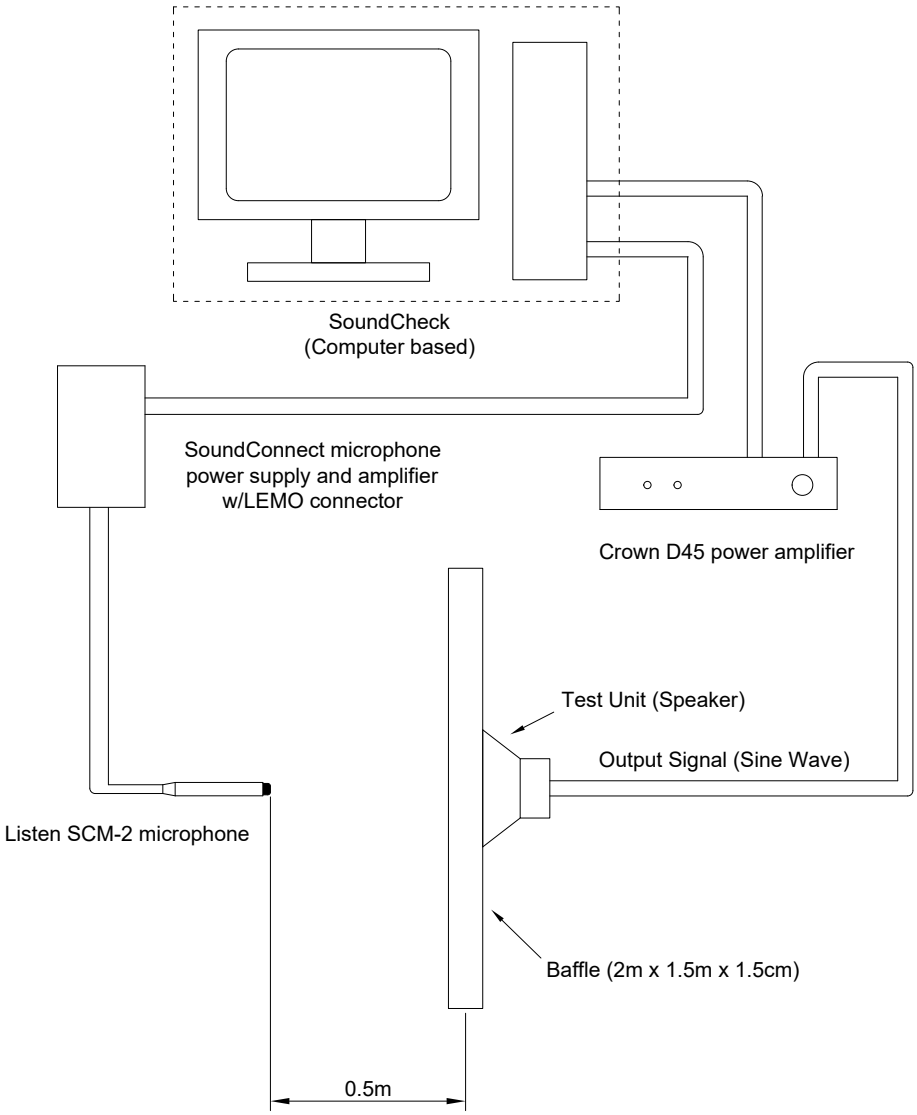

Figure 2. Test setup

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 +60°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 -30°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 : Precondition at room temperature for 1 hour. Then expose to +40°C±3°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 -30±3°C and 30 minutes at +60±3°C. Test duration is for 5 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.5. Random Vibration : Secure samples. Vibrated randomly 10 ~ 55 ~ 10Hz with 1.5mm peak amplitude in 3 directions (x, y and z). The test duration is 2 hours per plane.

5.6. Drop Test : Drop samples naturally from the height of 1m onto a 20mm thickness wooden board in 6 directions (x, y and z).

5.7. Load Test : Subject samples to room condition for 96 hours under rated power white noise.

6. Mechanical Layout

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

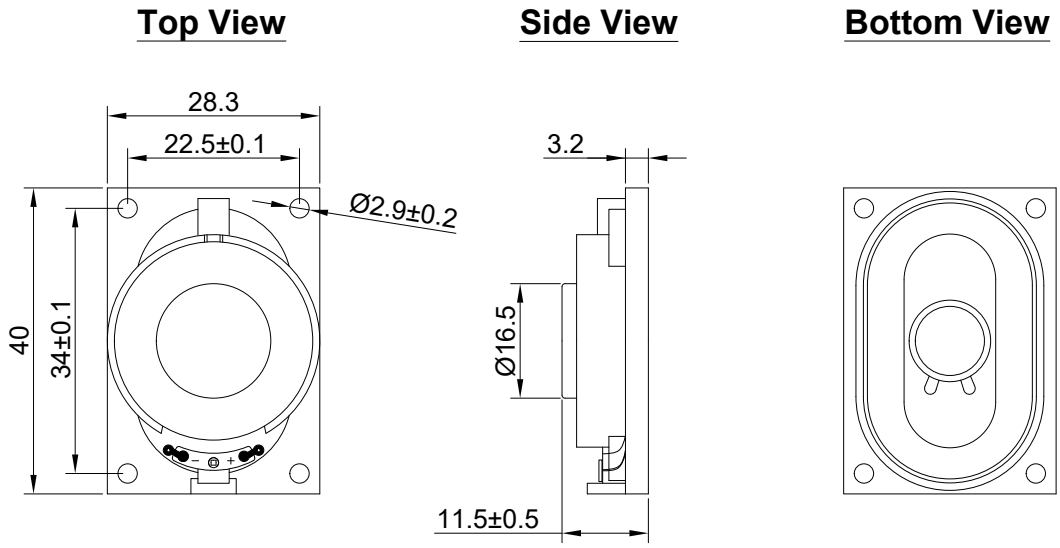

Figure 3. HSP3040A-8 Mechanical Layout