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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HC0905A

A3 - Updated format and layout by Leo Sin on 29 Dec., 2003		
A4 - Updated RoHS version by Leo Sin on 17 May, 2006		
A5 - Updated section 6 by Loki, Lo on 29 Aug., 2013		

1. Purpose and Scope

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

2. Description

Ø9.5mm electro-magnetic sound generator, RoHS compliant.

3. Application

Telecommunication Equipment, Computers and Peripherals, Portable Equipment, Automobile Electronics, POS System, 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. 1g

4.2. Electrical Requirement

4.2.1.	Rated Voltage	: 5V
4.2.2.	Operating Voltage	: 4V to 7V
4.2.3.	Rated Current	: <=80mA
4.2.4.	Coil Resistance	: 40 ± 4 Ω
4.2.5.	Sound Pressure Level at 10cm (Applying rated voltage)	: >=85dB
4.2.6.	Rated Frequency	: 3200Hz

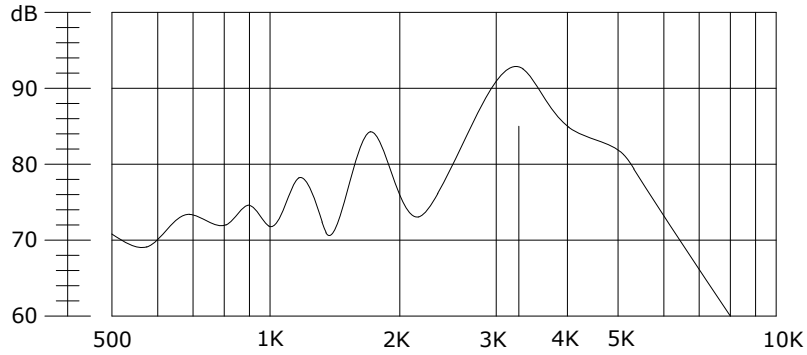

Figure 1. Frequency Response

4.3. Mechanical Requirement

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

4.4. Test Setup

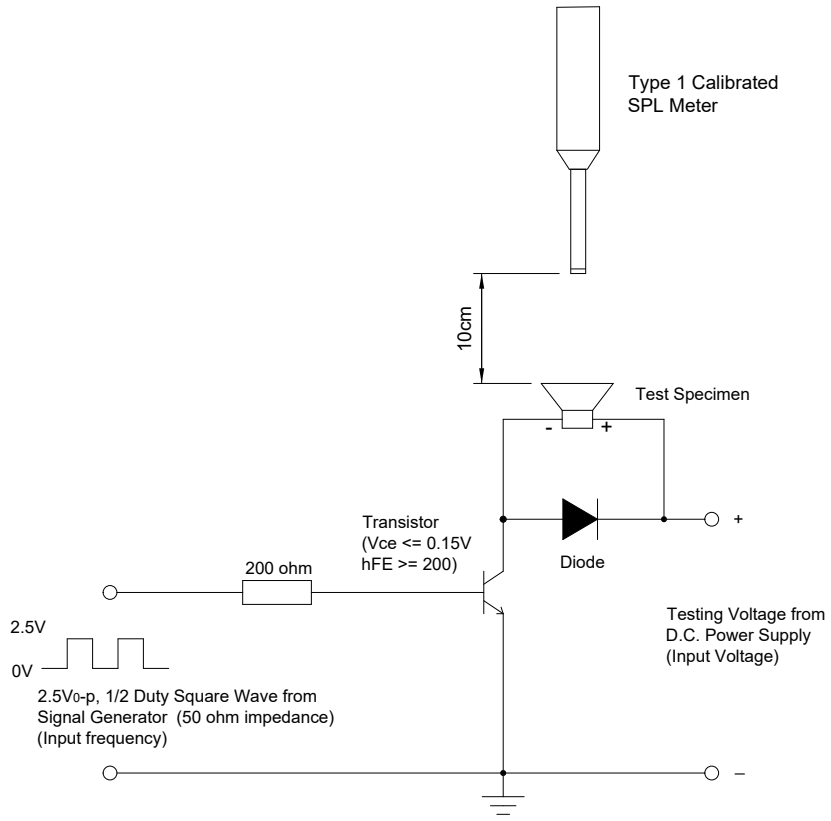

Figure 2. Test Setup

Notes : Apply 2.5V0-p from Signal Generator, set rated signal from Signal Generator. Measure SPL using a calibrated SPL meter 10cm from the sound port. Sound level meter to be in accordance with IEC651 (1979) Type 1 and/or ANSI S1.4-1983. The meter must be checked on a daily basis using a calibrated acoustic calibrator recommended by the manufacturer. Measurement should be carried out in a free field environment or at least 40cm from any surface.

5. Reliability Test

5.1. High Temperature : Subject samples to +60 ± 3 °C and operate 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 -20 ± 3 °C and operate 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. Temperature Shock : Each temperature cycle shall consist of 1 hour at -20°C followed by 1 hour at +60°C with a 20 seconds maximum transition time between temperature extremes. Test duration is for 32 cycles.

5.4. 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.

5.5. Random Vibration : Secure samples. Vibrated randomly 10Hz ~ 50Hz ~ 10Hz with 0.75mm peak amplitude and 30Hz ~ 50Hz ~ 30Hz with 0.15mm peak amplitude. The test duration is 30 minutes per plane.

5.6. Mechanical Shock : Secure samples as required. Then subject samples to half sine wave pules (100m/s² for 16ms) for a total of 1000 ± 10 shocks.

5.7. Drop Test : Drop samples naturally from the height of 1mm onto a wooden board six times.

6. Mechanical Layout

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

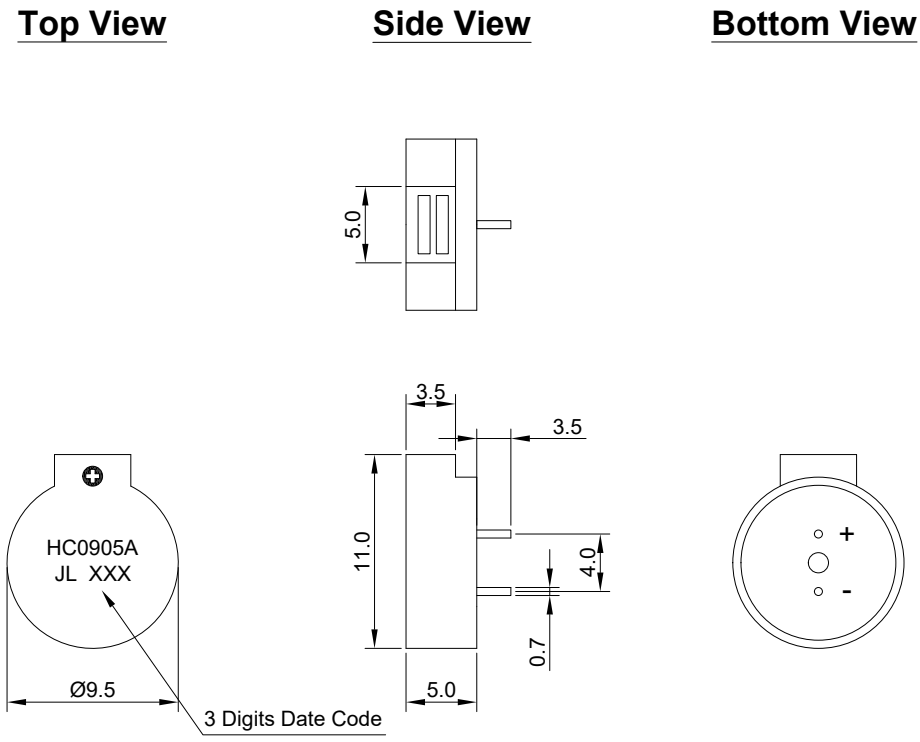

Figure 3. HC0905A Mechanical Layout