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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HC0903F

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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

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

3. Application

Computers and Peripherals, Portable Equipment, Automobile Electronics, 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. Housing Material : Noryl SE1

4.1.4. Weight : Approx. 1g

4.2 Electrical Requirement

4.2.1. Rated Voltage : 3V

4.2.2. Operating Voltage : 2 ~ 4 V

4.2.3. Rated Current : <=80mA
(Applying rated voltage and rated frequency)

4.2.4. Coil Resistance : 25 ± 4 Ω

4.2.5. Sound Pressure Level at 10cm : >=82dB
(Applying rated voltage and rated frequency)

4.2.6. Rated Frequency : 3200Hz

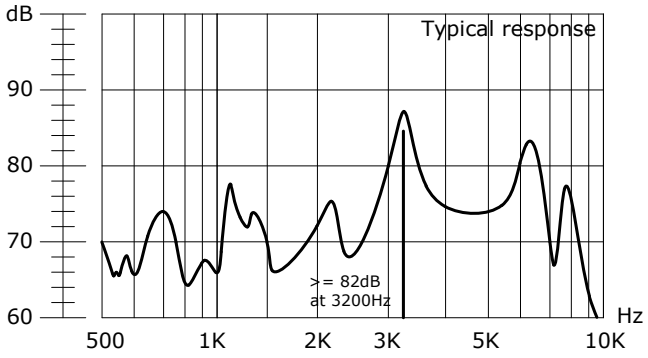


Figure 1. Frequency Response

4.3 Mechanical Requirement

4.3.1. Layout and Dimension : See Section 7, Figure 3

4.4 Test Setup

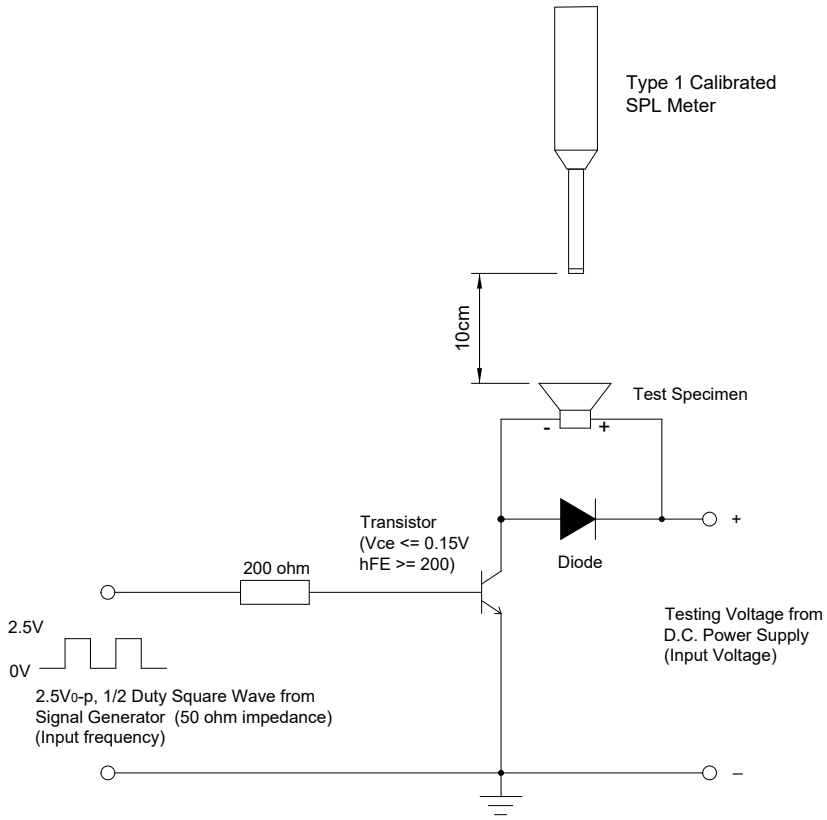


Figure 2. Test Setup

Notes : Apply 3V from DC power supply, set 3200Hz from Signal Generator. Measure SPL using a calibrated SPL meter 10cm from the alert 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. **Operating Life** : Subject samples to room condition for 96 hours with rated power and resonance frequency. Components must be fully stabilized before data is taken, which may require up to a 2 hours soak.

5.2. **High Temperature** : Subject samples to +60°C and operate for 96 hours with rated power and resonance frequency. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.3. **Low Temperature** : Subject samples to -20°C and operate for 96 hours with rated power and resonance frequency. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.4. **Temperature Cycle** : Each temperature cycle shall consist of 30 minutes at -20°C, 15 minutes at +20°C, 30 minutes at +60°C and 15 minutes 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 2 hours soak.

5.5. **Static Humidity** : Precondition at room temperature for 1 hour. Then expose to +40°C with 90 to 95% relative humidity for 96 hours. Finally dru at room ambient for 2 hours before taking final measurement.

5.6. **Random Vibration** : Secure samples. Vibrated randomly 10Hz ~ 50Hz ~ 10Hz with 1.52mm peak amplitude and 1 minute sweep duration. The test duration is 2 hours per plane.

5.7. **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.

5.8. **Drop Test** : Drop samples with package naturally from the height of 1m onto a wooden board three times.

6. Mechanical Layout

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

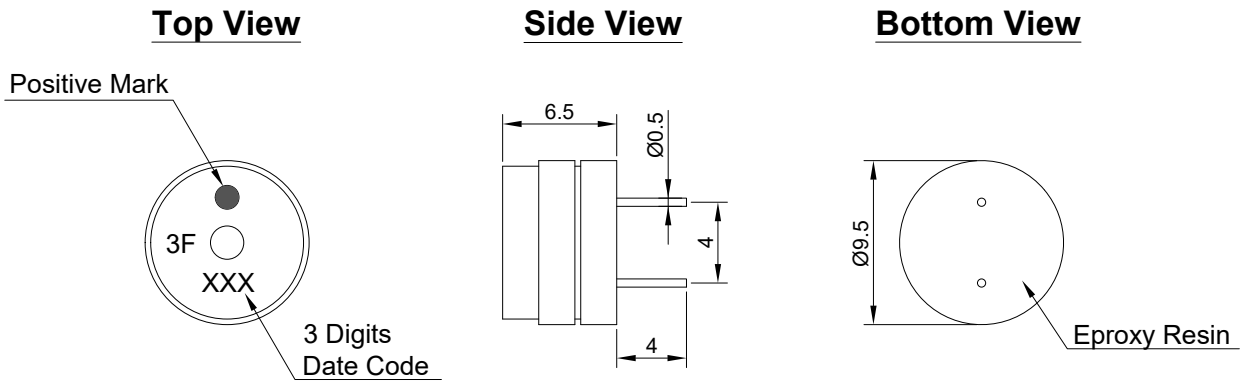


Figure 3. HC0903F Mechanical Layout