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**SoniCrest** Acoustic Components

Document Type : Specification  
Product Type : Electro-magnetic Sound Generator Component  
Part Number : HC0905F

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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.

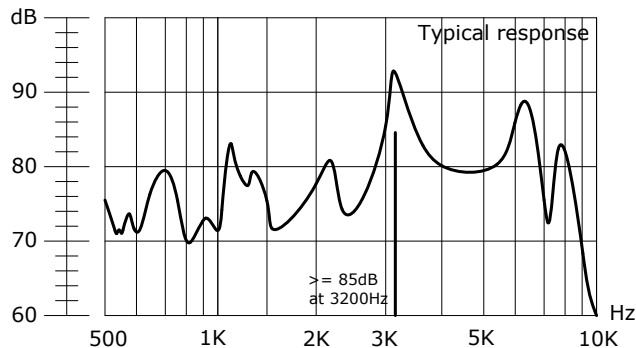
**4. Component Requirement**

**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 : 5V
- 4.2.2. Operating Voltage : 4 ~ 7 V
- 4.2.3. Rated Current : <=80mA  
(Applying rated voltage and rated frequency)
- 4.2.4. Coil Resistance : 40 ± 4 Ω
- 4.2.5. Sound Pressure Level at 10cm : >=85dB  
(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 6, Figure 3

4.4. Test Setup

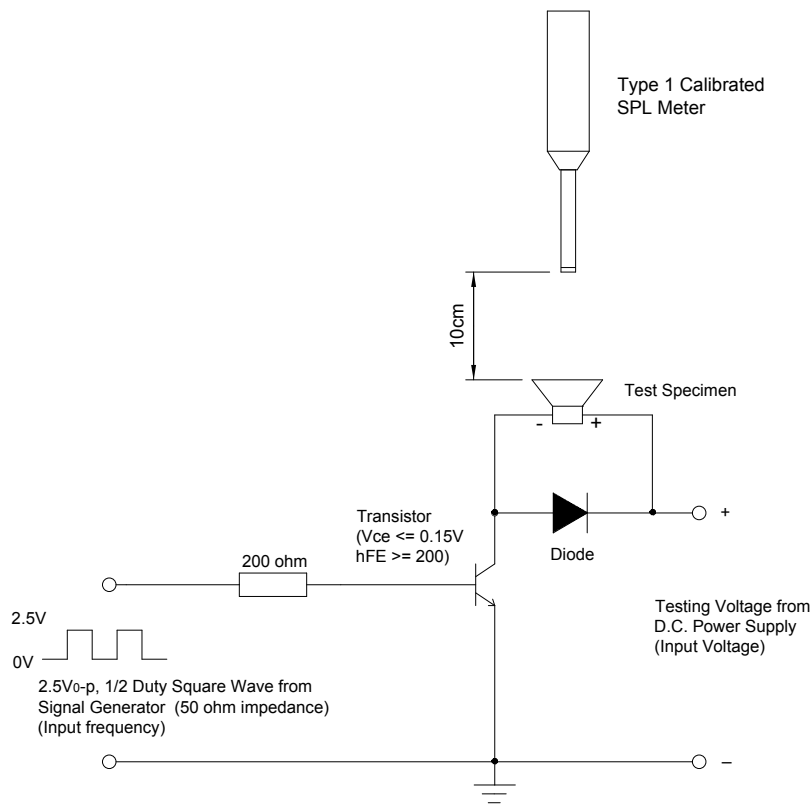


Figure 2. Test Setup

**Notes :** Apply 5V 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 drru 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/s<sup>2</sup> 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)

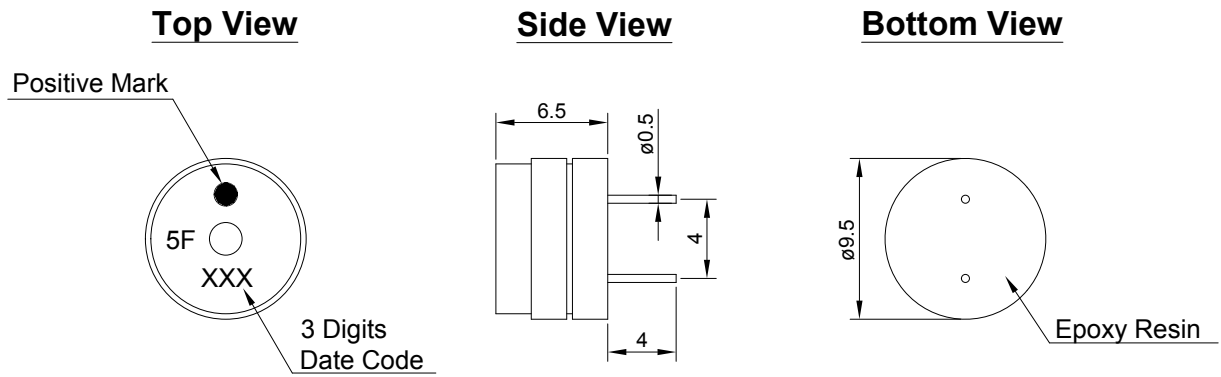


Figure 3. HC0905F Mechanical Layout