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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Electro-Magnetic Sound Generator Component
Part Number : HCM0903AX

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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

ø9mm electro-magnetic sound generator with built-in oscillation circuit.

3. Application

Computers and Peripherals, Portable Equipment, Automobile Electronics, POS System, Household Appliances, etc.

4. Component Requirement

4.1. General Requirement

4.1.1.	Operating Temperature Range	: -40°C to +85°C
4.1.2.	Storage Temperature Range	: -40°C to +85°C
4.1.3.	Weight	: 0.8g
4.1.4.	Masking Label	: Yes

4.2. Electrical Requirement

4.2.1.	Rated Voltage	: 3V
4.2.2.	Operating Voltage	: 2V to 5V
4.2.3.	Rated Current (applying Rated Voltage)	: ≤ 30mA
4.2.4.	Sound Pressure Level at 10cm (applying Rated Voltage)	: ≥ 82dBA
4.2.5.	Generated Frequency (applying Rated Voltage)	: 3200Hz ± 300Hz

4.3. Mechanical Requirement

4.3.1.	Layout and Dimension	: See Section 6, Figure 3
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4.4. Test Setup of SPL and Frequency

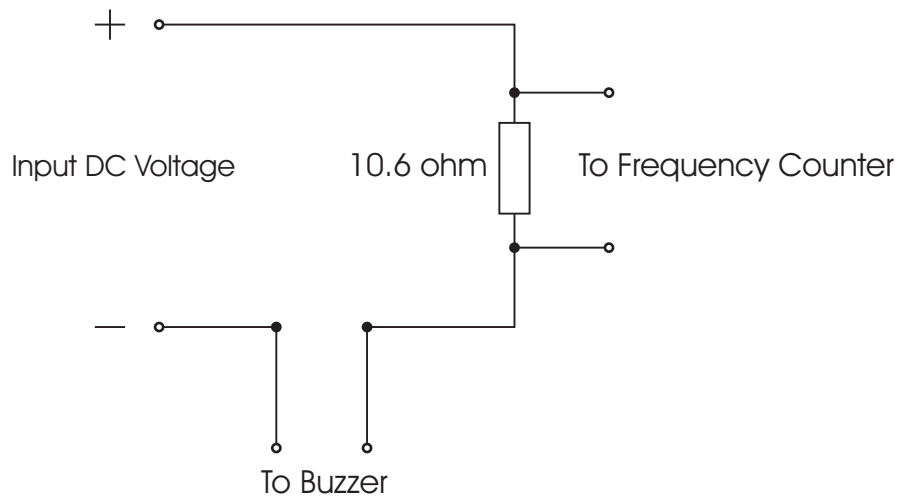


Figure 1. Frequency Testing Circuit

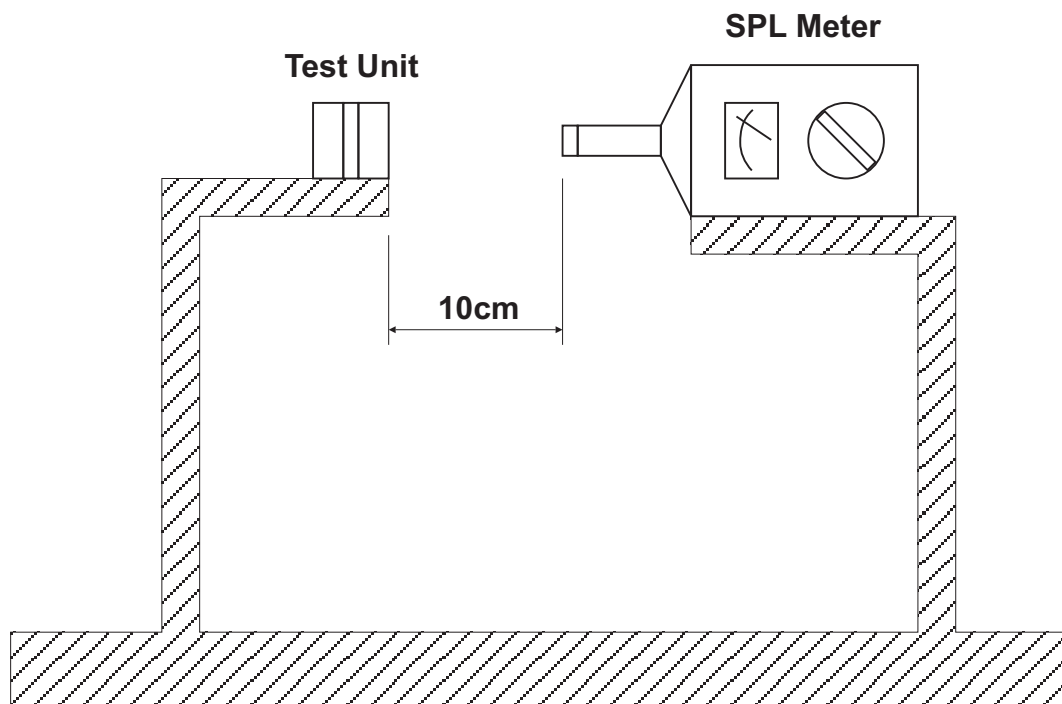


Figure 2. SPL Inspection Test Fixture

Notes : Input 3V DC into samples. 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

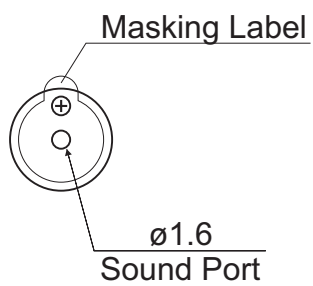
- 5.1. Operating Life** : Subject samples to room condition for 1000 hours with rated voltage. Components must be fully stabilized before data is taken, which may require up to a 2 hours soak.
- 5.2. High Temperature** : Subject samples to +85°C and operate for 96 hours with rated voltage. Components 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 -40°C and operate for 96 hours with rated voltage. 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 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. Static Humidity** : Precondition at room temperature for 1 hour. Then expose to +65°C with 90 to 95% relative humidity for 12 hours. Finally dry at room ambient for 2 hours before taking final measurement.
- 5.6. Drop Test** : Drop samples naturally from the height of 0.7m onto a wooden board six times (three direction).

6. Mechanical Layout

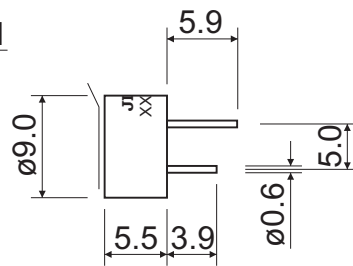
Unit : mm

Tolerance : Linear XX.X = ± 0.3
 XX.XX = ± 0.05
 Angular = $\pm 0.25^\circ$
 (unless otherwise specified)

Top View



Side View



Bottom View

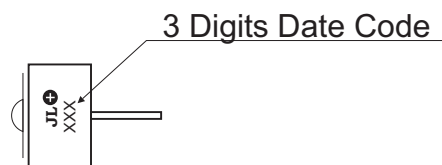
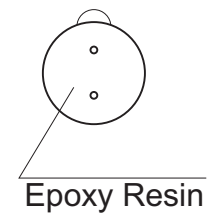


Figure 3. HCM0903AX Mechanical Layout