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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HCS0903AC

A1 - New issue created by Ting Lok, Ngan on 20 Feb., 2013		

1. Purpose and Scope

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

2. Description

9mm SMD 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 : -40°C to +85°C

4.1.2. Storage Temperature Range : -40°C to +85°C

4.1.3. Weight : Approx. 0.6g

4.2 Electrical Requirement

4.2.1. Rated Voltage : 3V

4.2.2. Operating Voltage : 2 ~ 4 V

4.2.3. Rated Current : <=100mA

4.2.4. Rated Frequency : 2730Hz

4.2.4. Coil Resistance : 16 ± 3 Ω

4.2.5. Sound Pressure level at 10cm (Applying rated voltage and rated frequency) : >=85dB

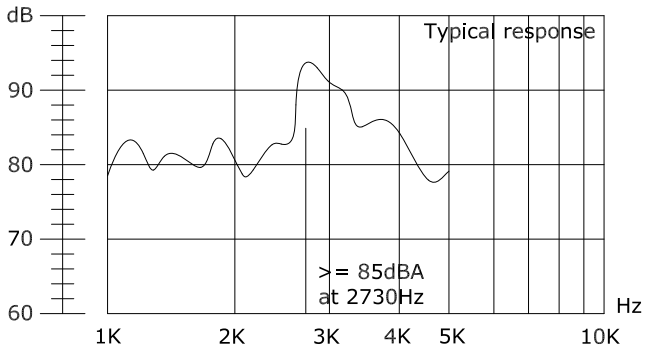

Figure 1. Frequency Response

4.3 Mechanical Requirement

4.3.1. Layout and Dimension : See Section 7, Figure 4

4.4 Test Setup

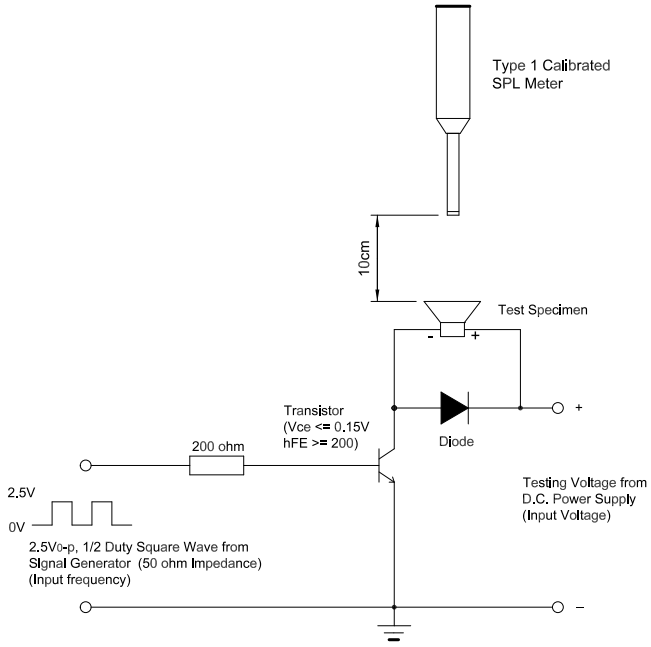

Figure 2. Test Setup

Notes : Apply 2.5V0-p from Signal Generator, set 2730Hz 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 1000 hours under rated voltage and rated frequency.

5.2. High Temperature : Subject samples to +85°C for 48 hours. 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 for 48 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.4. Temperature Shock : Each temperature cycle shall consist of 30 minutes at -40°C, 15 minutes at +20°C, 30 minutes at +85°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 +40°C with 93% relative humidity for 48 hours. Finally dry at room ambient for 2 hours before taking final measurement.

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

5.7. Drop Test : Drop samples naturally from the height of 70cm onto a 10mm thickness wooden board in 3 directions (x, y and z).

5.8. Solderability : Immerse solder pads into molten solder at 250 ± 5 °C for 3 ± 0.5 seconds. After testing covered area of pins should be >=95% with a continuous coating of bright solder.

6. Recommended Reflow Process Condition

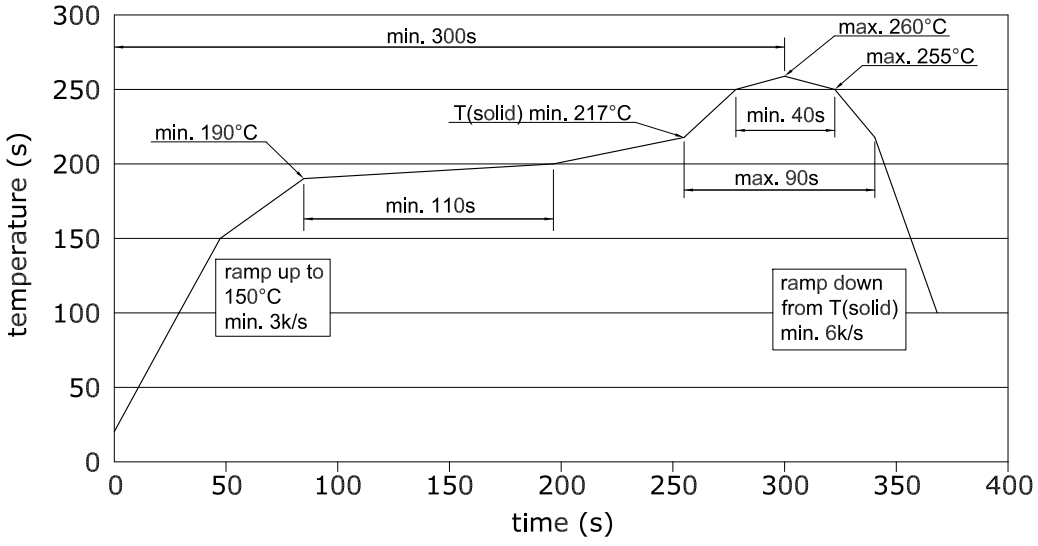

Figure 3. Recommended reflow oven temperature profile

7. Mechanical Layout

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

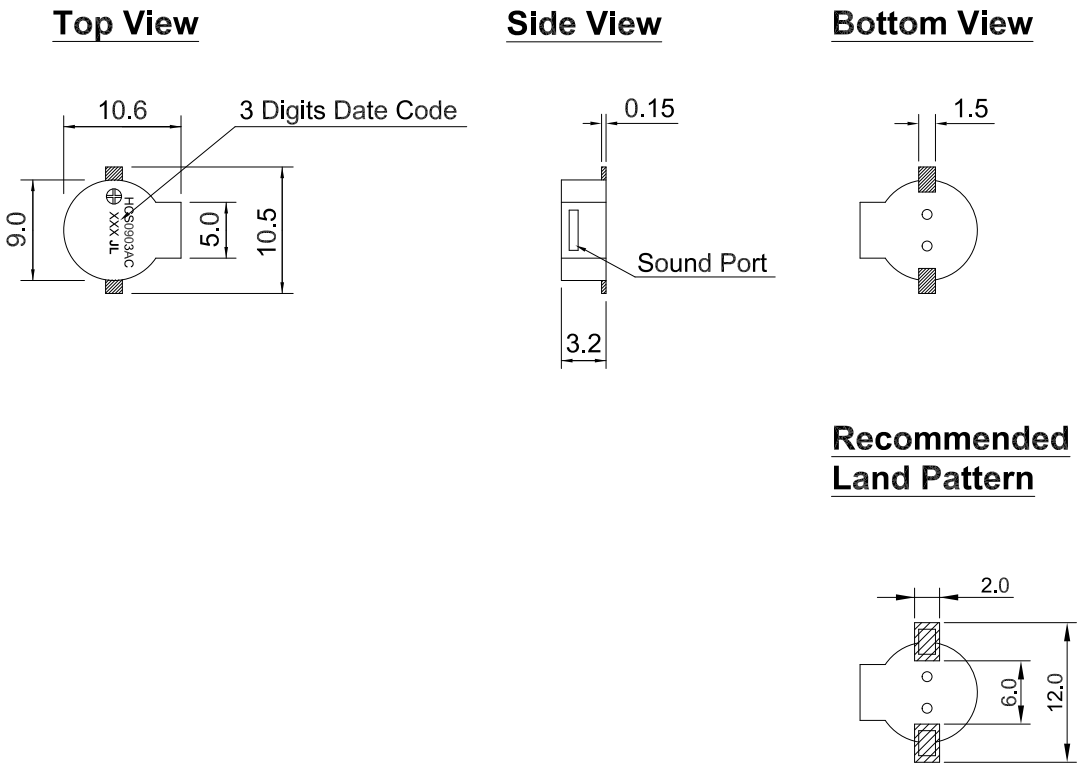

Figure 4. HCS0903AC Mechanical Layout

8. Standard Packing Layout

8.1 Packing Quantity : 800 pieces per reel
5 reels per box (Total 4000 pieces)
(Box volume: 38 x 28 x 37 cm)

8.2 Tape & Reel Layout

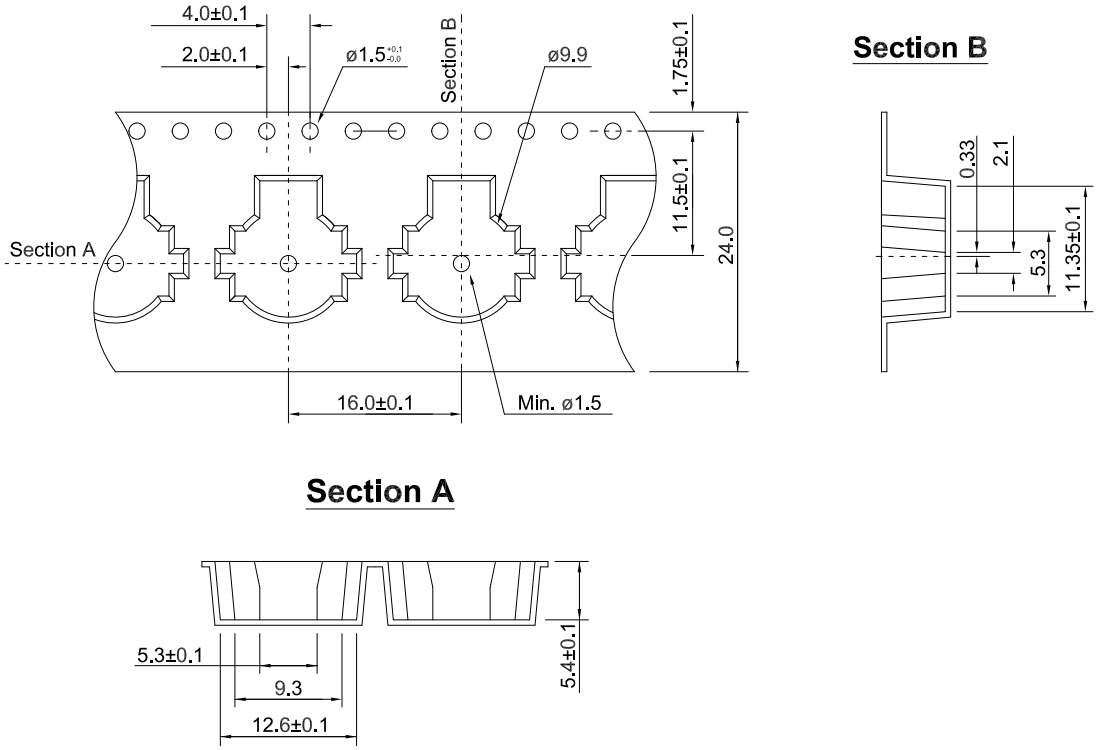

Figure 5. Tape Layout

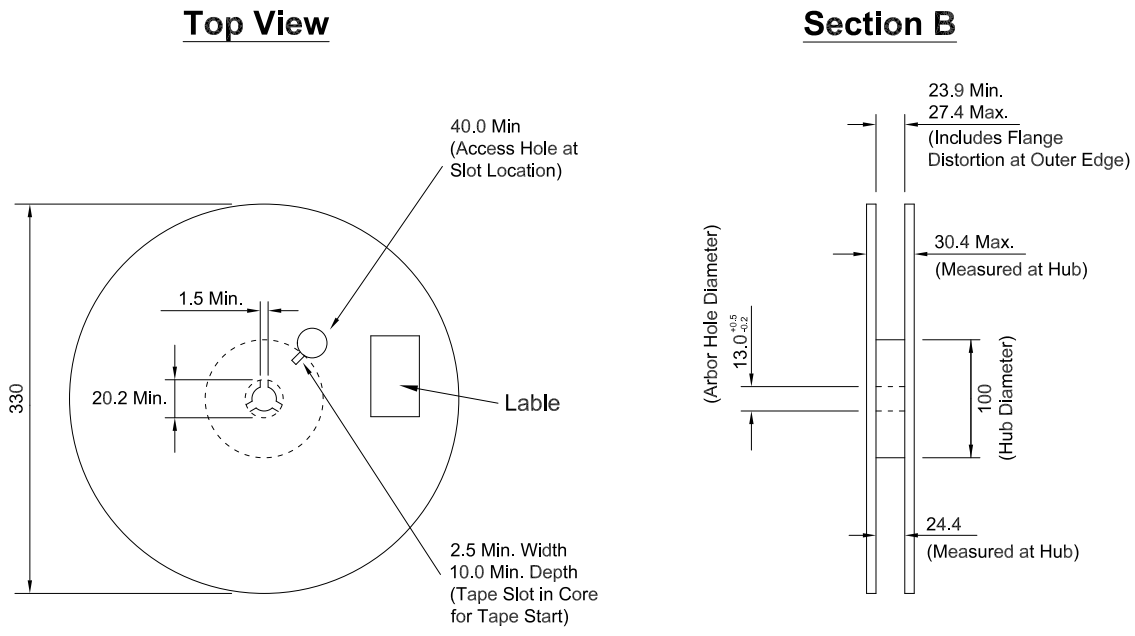

Figure 6. Reel Layout