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**SoniCrest** Acoustic Components

Document Type : Specification  
Product Type : Electro-magnetic Sound Generator Component  
Part Number : HCS0905Z/1388

A1 - New issue created by Hermes, Shum on 9 Dec., 2019		

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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

8.5 x 8.5 mm SMD electro-magnetic sound with rated frequency at 2350Hz, SPL  $\geq$  85dB and sound hole indication, 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. 0.8g

### 4.2. Electrical Requirement

- 4.2.1. Rated Voltage : 5V
- 4.2.2. Operating Voltage : 4 ~ 6 V
- 4.2.3. Rated Current :  $\leq$ 80mA
- 4.2.4. Rated Frequency : 2350Hz
- 4.2.5. Coil Resistance :  $32 \pm 5 \Omega$
- 4.2.6. Sound Pressure level at 10cm  
(Applying rated voltage and rated frequency) :  $\geq$ 85dB

### 4.3. Mechanical Requirement

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

4.4. Test Setup

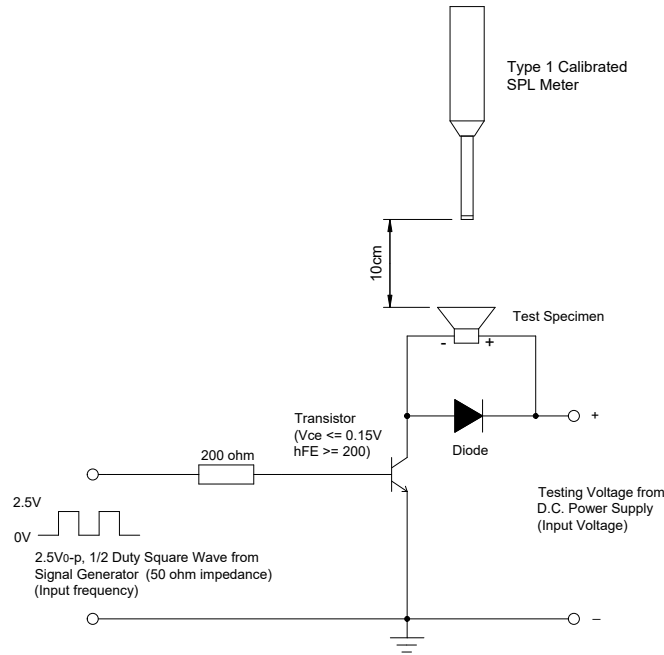


Figure 1. Test Setup

**Notes :** Apply 2.5V<sub>0-p</sub> from Signal Generator, set 2350Hz 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. Recommended Reflow Process Condition

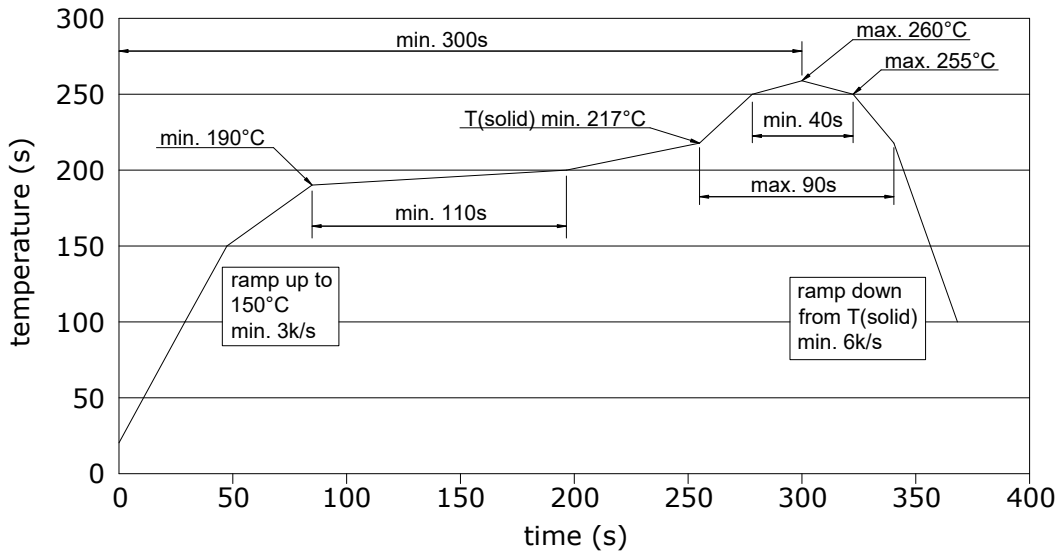


Figure 2. Recommended reflow oven temperature profile

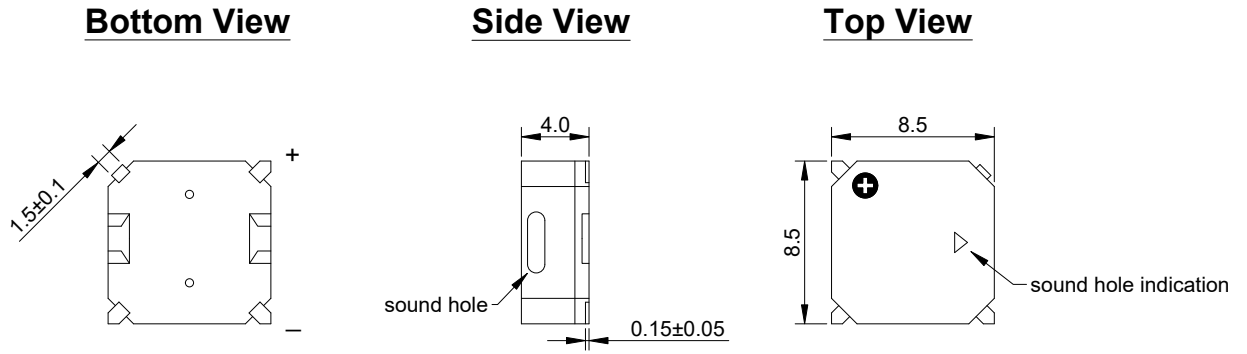
## 6. Reliability Test

- 6.1. **Operating Life** : Subject samples to room condition for 96 hours under rated voltage and rated frequency.
- 6.2. **High Temperature** : Subject samples to +85°C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 4 hours soak.
- 6.3. **Low Temperature** : Subject samples to -40°C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 4 hours soak.
- 6.4. **Temperature Shock** : Each temperature cycle shall consist of 30 minutes at -40°C, 15 minutes at +25°C, 30 minutes at +85°C and 15 minutes at +25°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 4 hours soak.
- 6.5. **Humidity Cycle** : Each humidity cycle shall consist of 12 hours at +25°C and 12 hours at +65°C with 1 hour transition time between temperature extremes with 90 ~ 95% relative humidity. Test duration is for 5 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 4 hours soak.
- 6.6. **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, total of 6 hours.
- 6.7. **Free Drop Test** : Drop samples naturally from the height of 75cm onto concrete floor 1 time in each directions, total of 6 times.
- 6.8. **Solderability** : Immerse solder pads into molten solder at 255±5°C for 3±0.5 seconds.

**7. Mechanical Layout**

Unit : mm

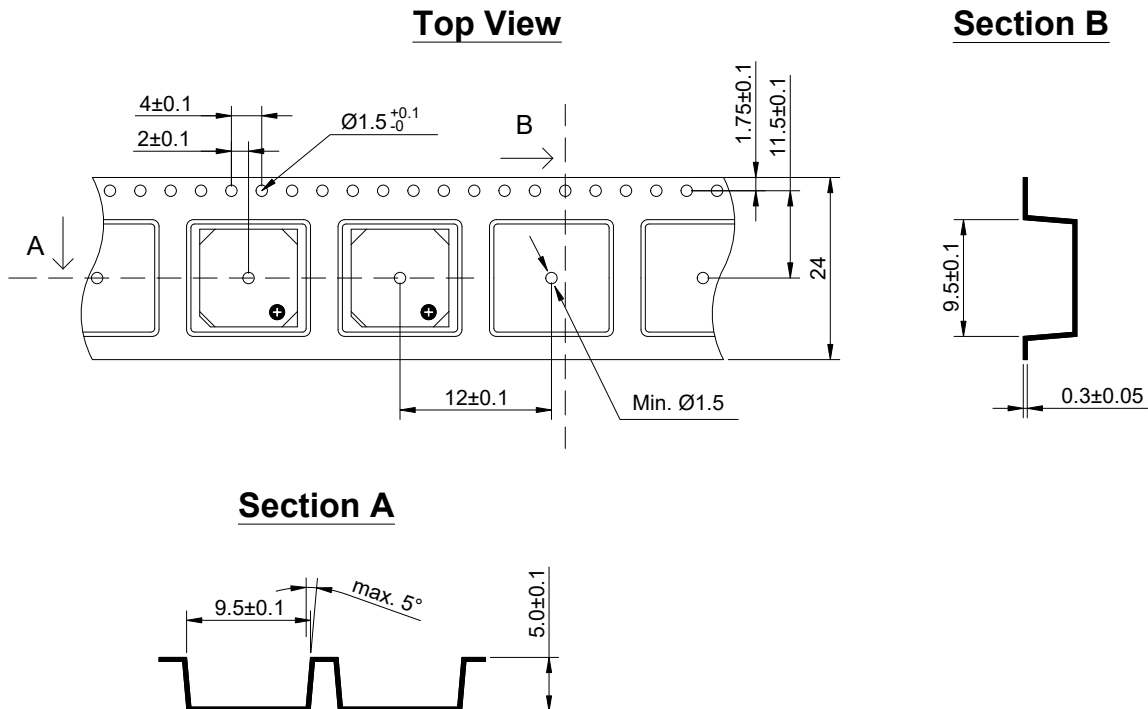
Tolerance : Linear    XX.X    = ±0.5  
                              XX.XX    = ±0.05  
                              Angular    = ±0.25°  
 (unless otherwise specified)



**Figure 3. HCS0905Z/1388 Mechanical Layout**

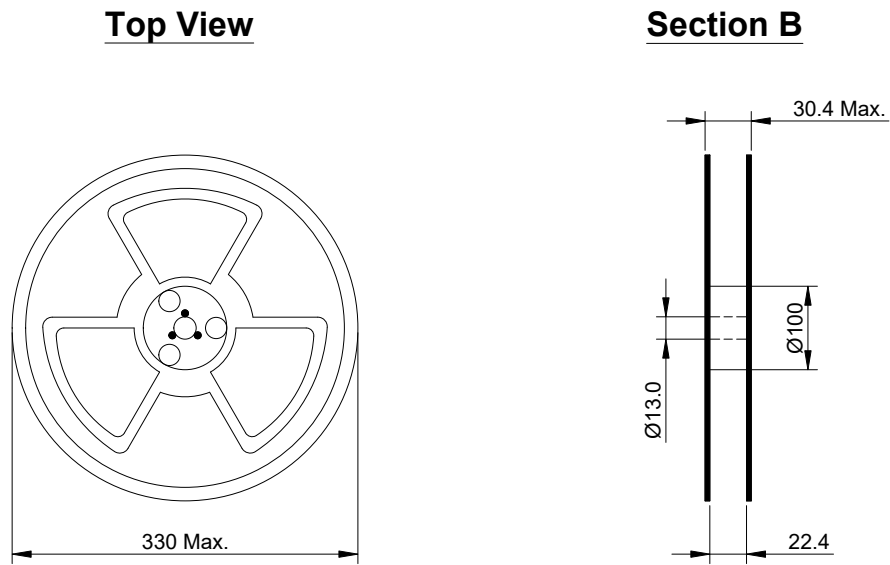
**8. Standard Packing Layout**

**8.1. Tape Layout**



**Figure 4. Tape Layout**

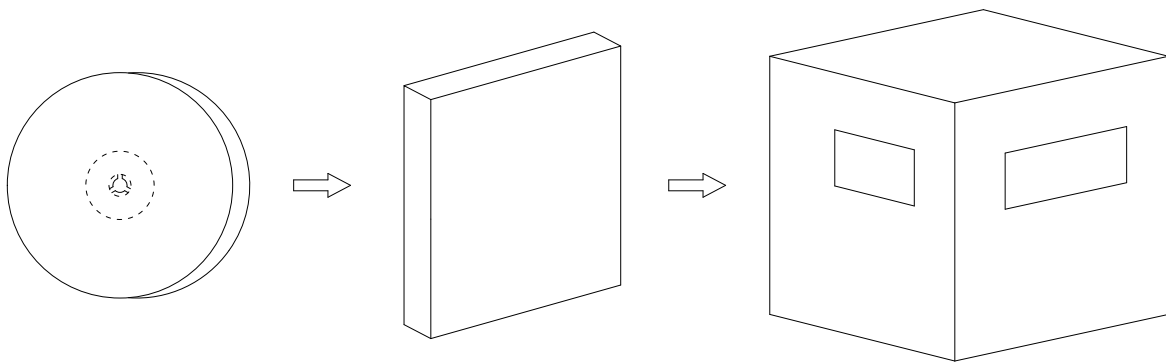
**8.2. Reel Layout**



**Figure 5. Reel Layout**

**8.3. Packing Quantity :** 1000 pieces per reel, 5 reels per carton (Total 5000 pieces)

**8.4. Carton Size :** 38 x 37 x 28cm



**Figure 6. Reels Installation**