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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HCS0905Z/1196

A1 - New issue created by Loki, Lo on 27 Mar., 2017		
A2 - Updated section 4, 7 and 8 by Loki, Lo on 25 Sept., 2017		
A3 - Updated section 7 by Ting Lok, Ngan on 10 June, 2021		
A4 - Updated section 7 & 8 by Ting Lok, Ngan on 9 July, 2021		

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 and SPL >= 85dB, 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	: <=80mA
4.2.4.	Rated Frequency	: 2350Hz
4.2.5.	Coil Resistance	: 32 ± 5 Ω
4.2.6.	Sound Pressure level at 10cm (Applying rated voltage and rated frequency)	: >=85dB

4.3. Mechanical Requirement

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

4.4. Test Setup

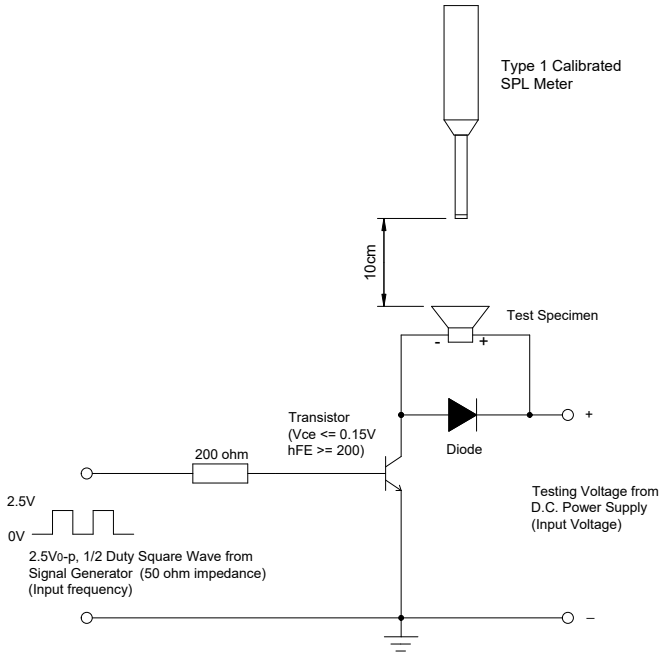

Figure 1. Test Setup

Notes : Apply 2.5V0-p 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

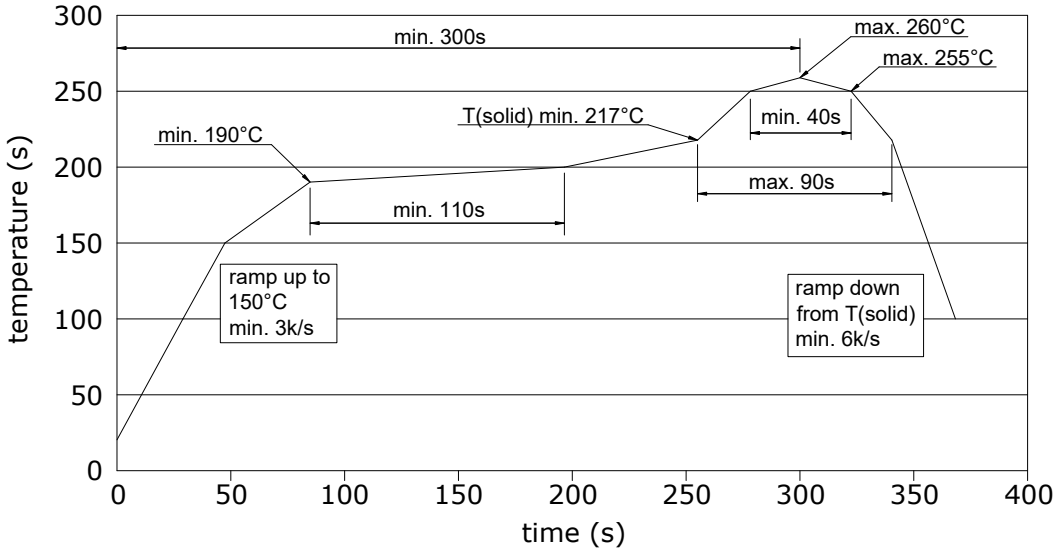

Figure 2. Recommended reflow oven temperature profile

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. Operating Life in High Temperature : Subject samples to +85°C under rated voltage and operate for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 4 hours soak.

6.5. Operating Life in Low Temperature : Subject samples to -40°C under rated voltage and operate for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 4 hours soak.

6.6. 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.

6.7. 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.

6.8. 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.

6.9. Free Drop Test : Drop samples naturally from the height of 75cm onto concrete floor 1 time in each directions, total of 6 times.

6.10. 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)

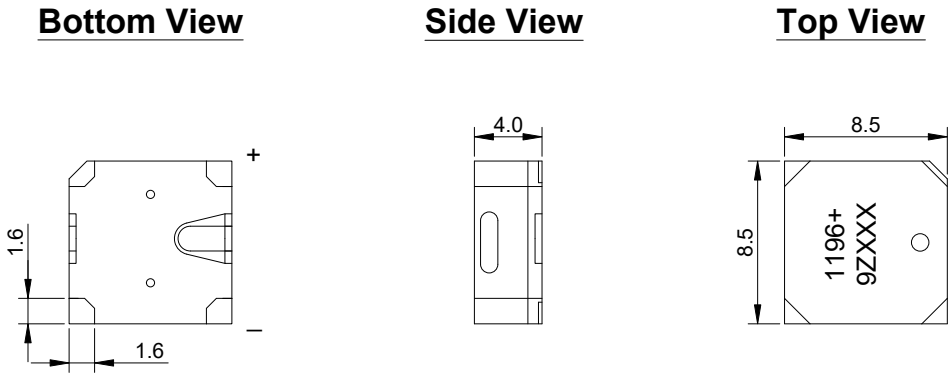

Figure 3. HCS0905Z/1196 Mechanical Layout

8. Standard Packing Layout

8.1. Tape Layout

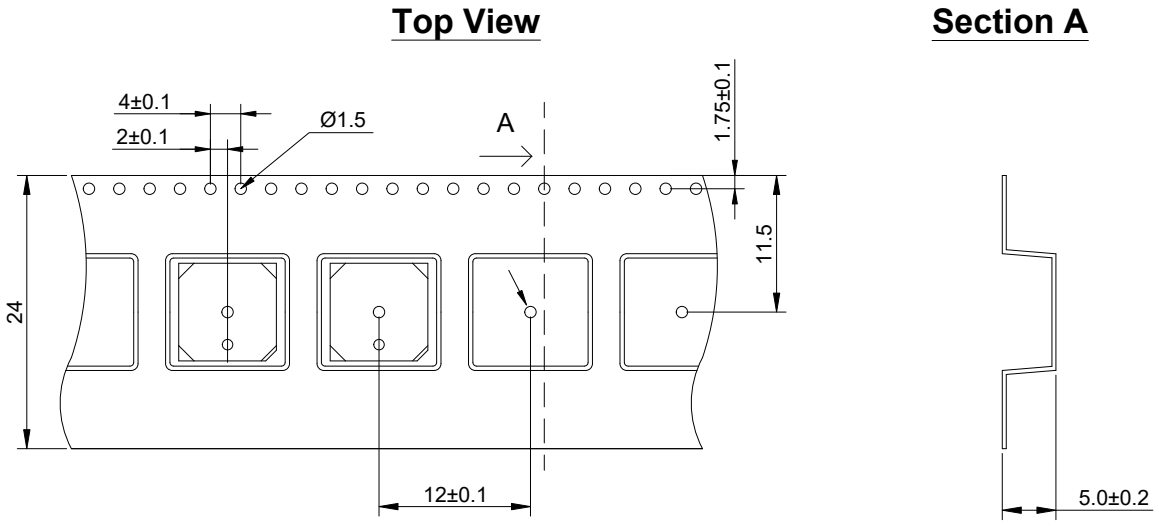

Figure 4. Tape Layout

8.2. Reel Layout

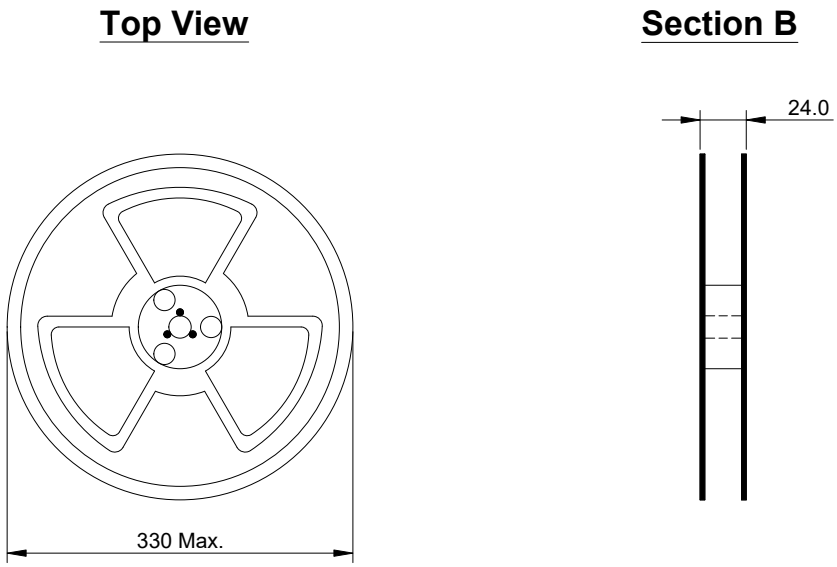

Figure 5. Reel Layout

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

8.4. Carton Size : 35 x 18 x 35cm

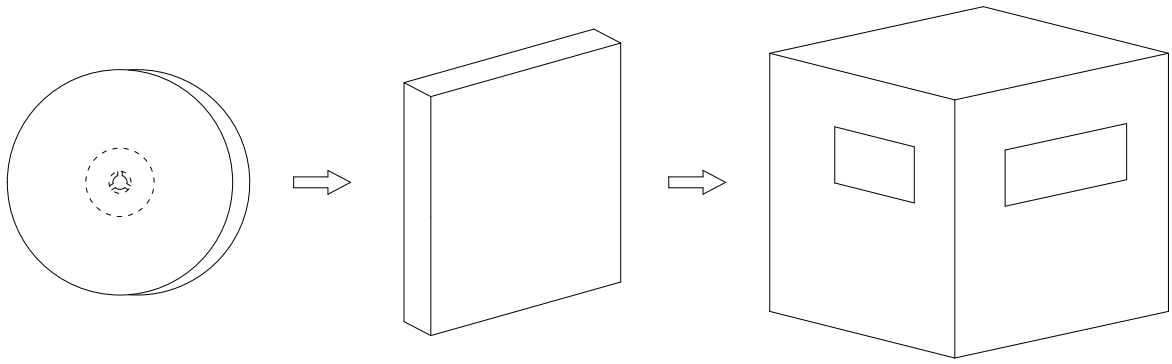

Figure 6. Reels Installation