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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : SMD Piezo Sound Generator Component
Part Number : HPS0911A

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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

9 x 11 mm SMD piezo 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 +105°C

4.1.2. Storage Temperature Range : -40°C to +120°C

4.1.3. Weight : Approx. 1.6g

4.2 Electrical Requirement

4.2.1. Rated Voltage : 5Vp-p

4.2.2. Operating Voltage : 1 ~ 20 Vp-p

4.2.3. Rated Current : <=4.5mA

4.2.4. Capacitance at 120Hz : 10 ± 30% nF

4.2.5. Sound Pressure level at 10cm (Applying rated voltage and rated frequency) : >=70dB

4.2.6. Rated Frequency : 4100Hz

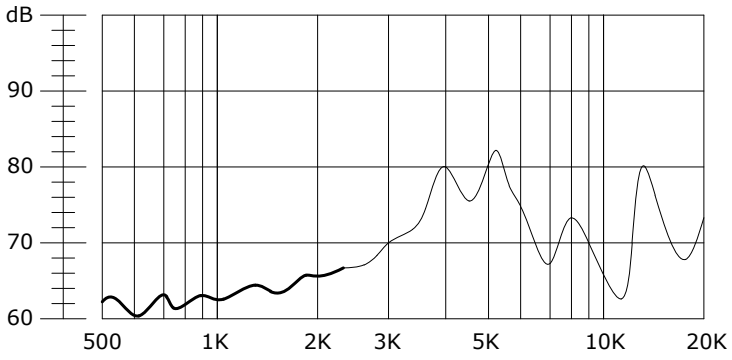


Figure 1. Frequency Response

4.3 Mechanical Requirement

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

4.4 Test Setup

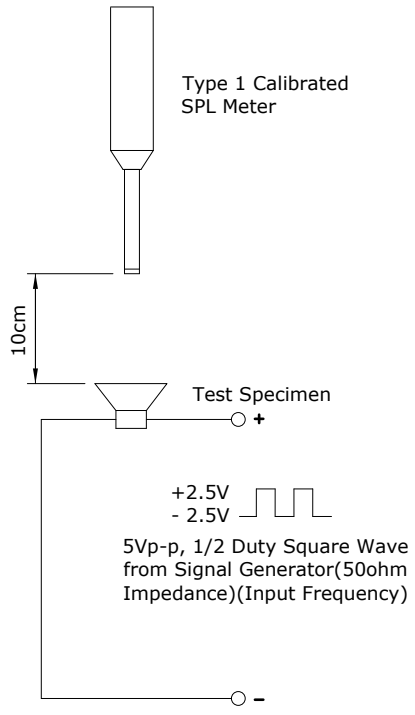


Figure 2. Test Setup

Notes : Apply 5Vp-p from Signal Generator, set 4100Hz 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 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 +105°C and operate for 240 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 and operate for 240 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.4. Static Humidity : Precondition at room temperature for 5 hour. Then expose to +55°C with 90 ~ 95% relative humidity for 6 hours. Finally dry at room ambient for 3 hours before taking final measurement.

5.5. Temperature Shock : Each temperature cycle shall consist of 30 minutes at -30°C, 15 minutes at +20°C, 30 minutes at +105°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.

5.6. Random Vibration : Secure samples. Vibrated randomly 10 ~ 55Hz with 1.52mm 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 255 ± 5 °C for 3 ± 0.5 seconds. After testing covered area of pins should be >= 95% with a continuous coating of bright solder.

5.9. Solder Heat Resistance : Subject samples put through reflowing soldering oven twice.

6. Recommended Reflow Process Condition

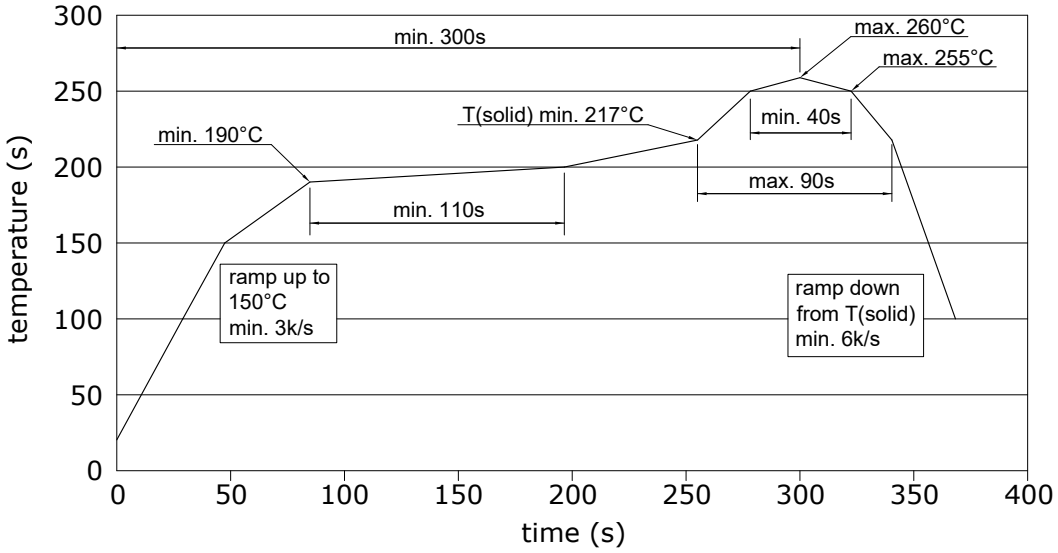


Figure 3. Recommended reflow oven temperature profile

7. Mechanical Layout

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

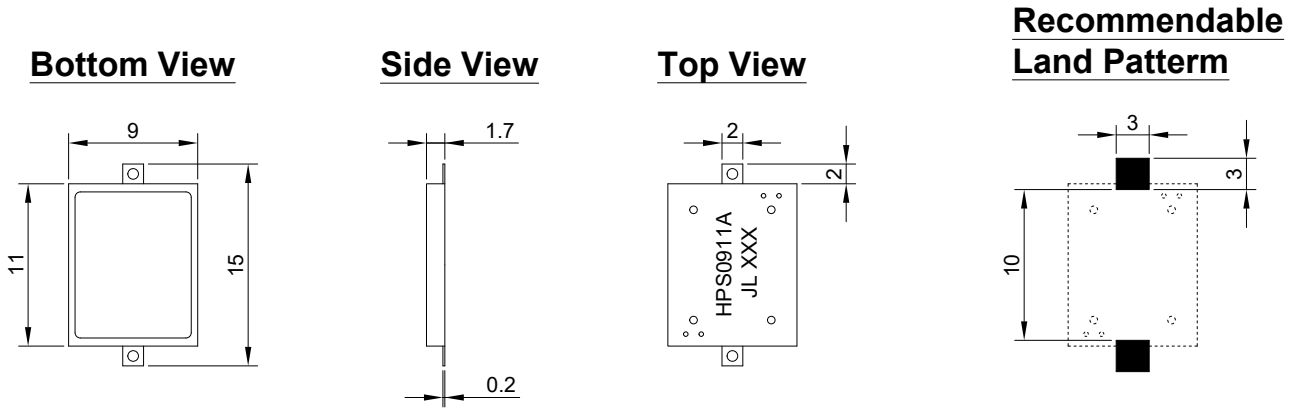


Figure 4. HPS0911A Mechanical Layout

8. Standard Packing Layout

8.1. Tape Layout

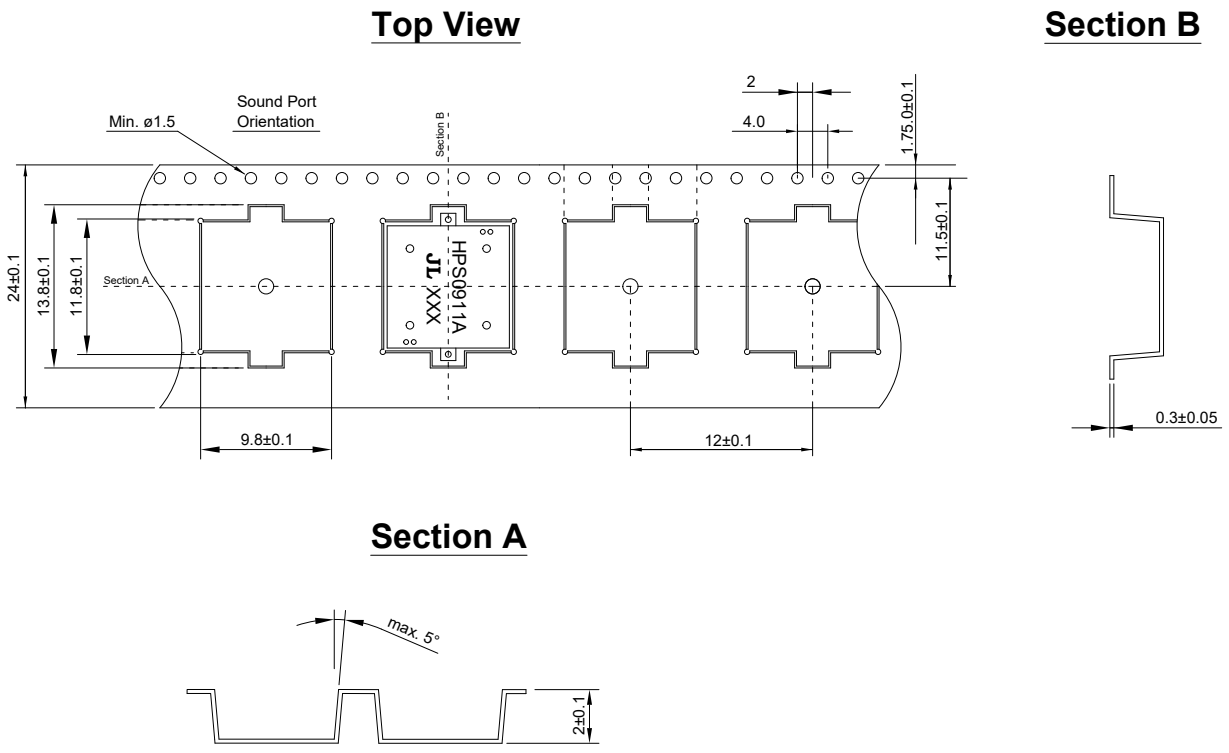


Figure 5. Tape Layout

8.2 Reel Layout

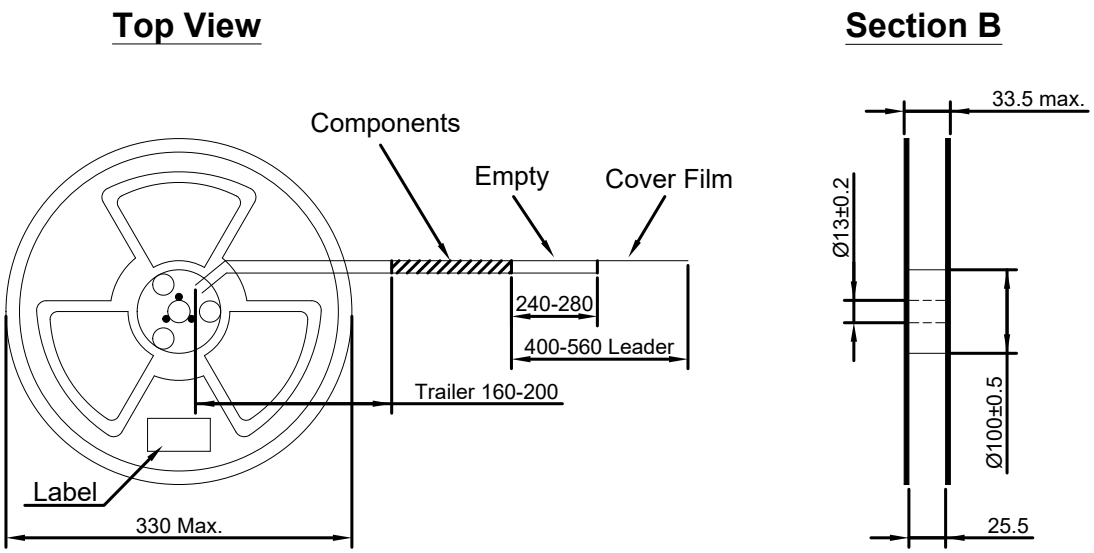


Figure 6. Reel Layout

8.3. Packing Quantity : 2500 pieces per reel, 5 reels per carton (Total 12500 pieces)

8.4. Carton Size : 38 x 28 x 37 cm

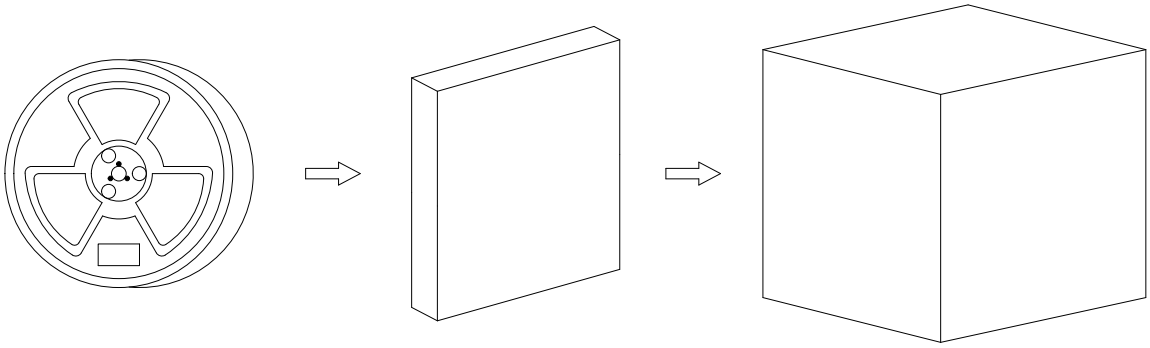


Figure 7. Reels Installation