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SoniCrest Brand Acoustic Componentswww.jlsoniccrest.com

Document Type : Specification
Product Type : SMD Piezo Sound Generator Component
Part Number : HPS12L

A1 - New issue created by Loki, Lo on 7 Nov., 2013		

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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

12 x 12 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 | : -30°C to +70°C |
| 4.1.2. Storage Temperature Range | : -40°C to +85°C |
| 4.1.3. Weight | : Approx. 0.4g |

4.2. Electrical Requirement

- | | |
|---|----------------|
| 4.2.1. Rated Voltage | : 5Vp-p |
| 4.2.2. Operating Voltage | : 1 ~ 25 Vp-p |
| 4.2.3. Resonant Frequency | : 4000 ± 500Hz |
| 4.2.4. Rated Current | : ≤5mA |
| 4.2.5. Capacitance at 120Hz | : 16 ± 30% nF |
| 4.2.6. Sound Pressure level at 10cm
(Applying rated voltage and rated frequency) | : ≥81dB |

4.3. Mechanical Requirement

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

4.4. Test Setup

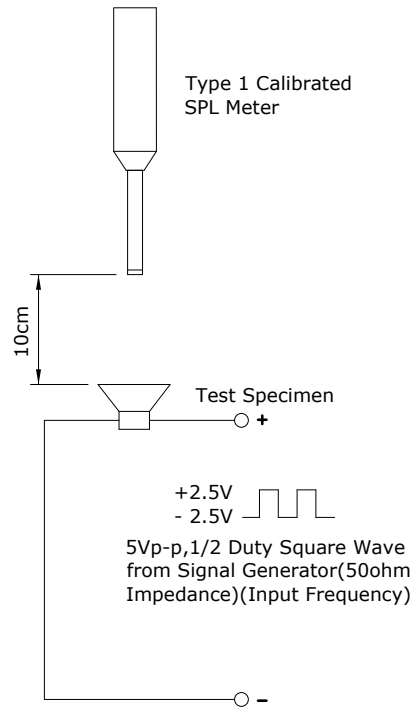


Figure 1. Test Setup

Notes : Apply 5Vp-p from Signal Generator, set 4000Hz 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. High Temperature** : Subject samples to $+85 \pm 2^{\circ}\text{C}$ for 240 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.
- 5.2. Low Temperature** : Subject samples to $-40 \pm 2^{\circ}\text{C}$ 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. Static Humidity** : Subject samples to $+40 \pm 2^{\circ}\text{C}$ with 90 ~ 95% relative humidity for 96 hours. Finally dry at room ambient for 2 hours before taking final measurement.
- 5.4. Temperature Shock** : Each temperature cycle shall consist of 30 minutes at -30°C , 15 minutes at $+20^{\circ}\text{C}$, 30 minutes at $+80^{\circ}\text{C}$ and 15 minutes at $+25^{\circ}\text{C}$. 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. Random Vibration** : Secure samples. Vibrated randomly 10 ~ 55Hz with 1.5mm peak amplitude and 9g acceleration in 3 directions (x, y and z). The test duration is 2 hours per plane.
- 5.6. Drop Test** : Drop samples naturally from the height of 100cm onto a 10mm thickness wooden board in 3 directions (x, y and z).
- 5.7. Solderability** : Immerse solder pads into molten solder at $260 \pm 5^{\circ}\text{C}$ for 3 ± 0.5 seconds. After testing covered area of pins should be $\geq 95\%$ with a continuous coating of bright solder.

6. Recommended Reflow Process Condition

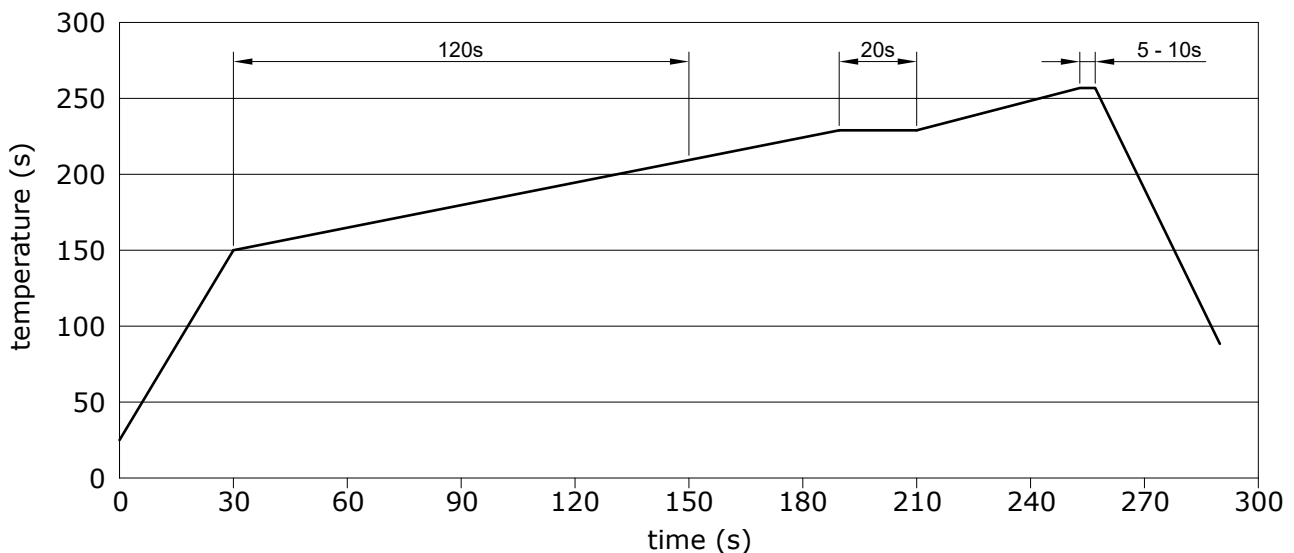


Figure 2. Recommended reflow oven temperature profile

7. Mechanical Layout

Unit : mm
Tolerance : Linear XX.X = ±0.2
 XX.XX = ±0.05
 Angular = ±0.25°
(unless otherwise specified)

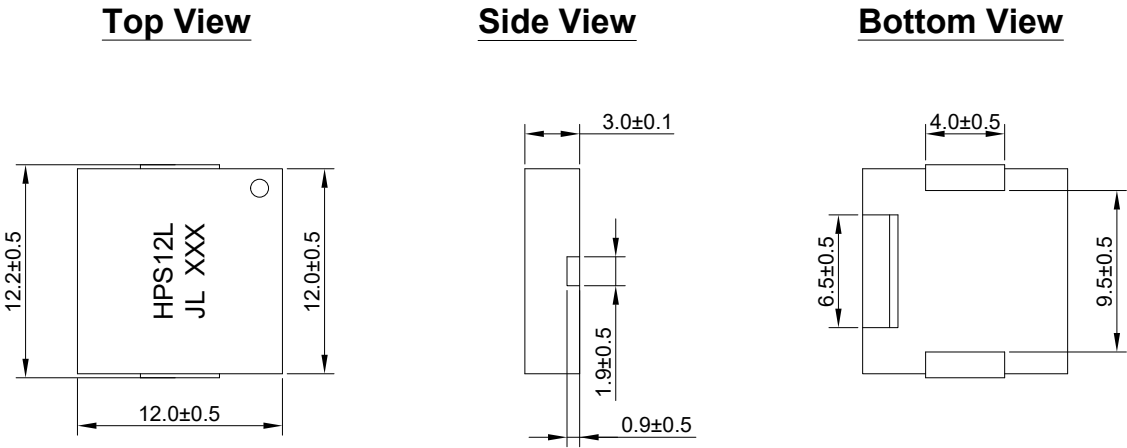


Figure 3. HPS12L Mechanical Layout

8. Standard Packing Layout

8.1. Tape Layout

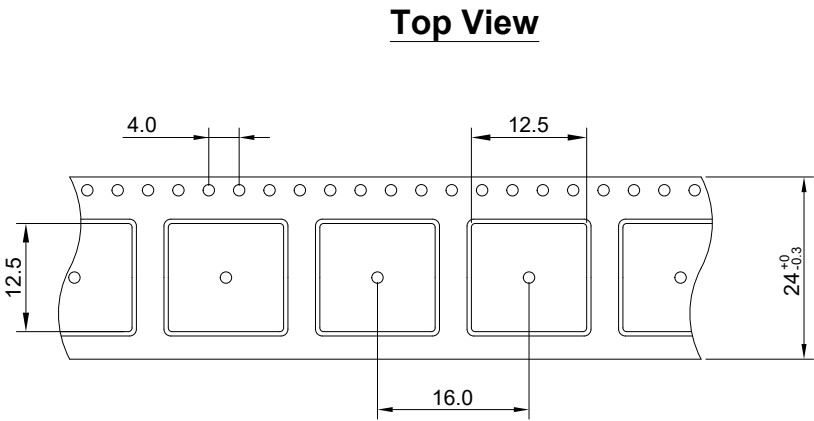


Figure 4. Tape Layout

8.2. Packing Quantity : 1000 pieces per reel, 5 reels per box, 2 boxes per carton
(Total 10000 pieces)

8.3. Carton Size : 358 x 358 x 615 mm

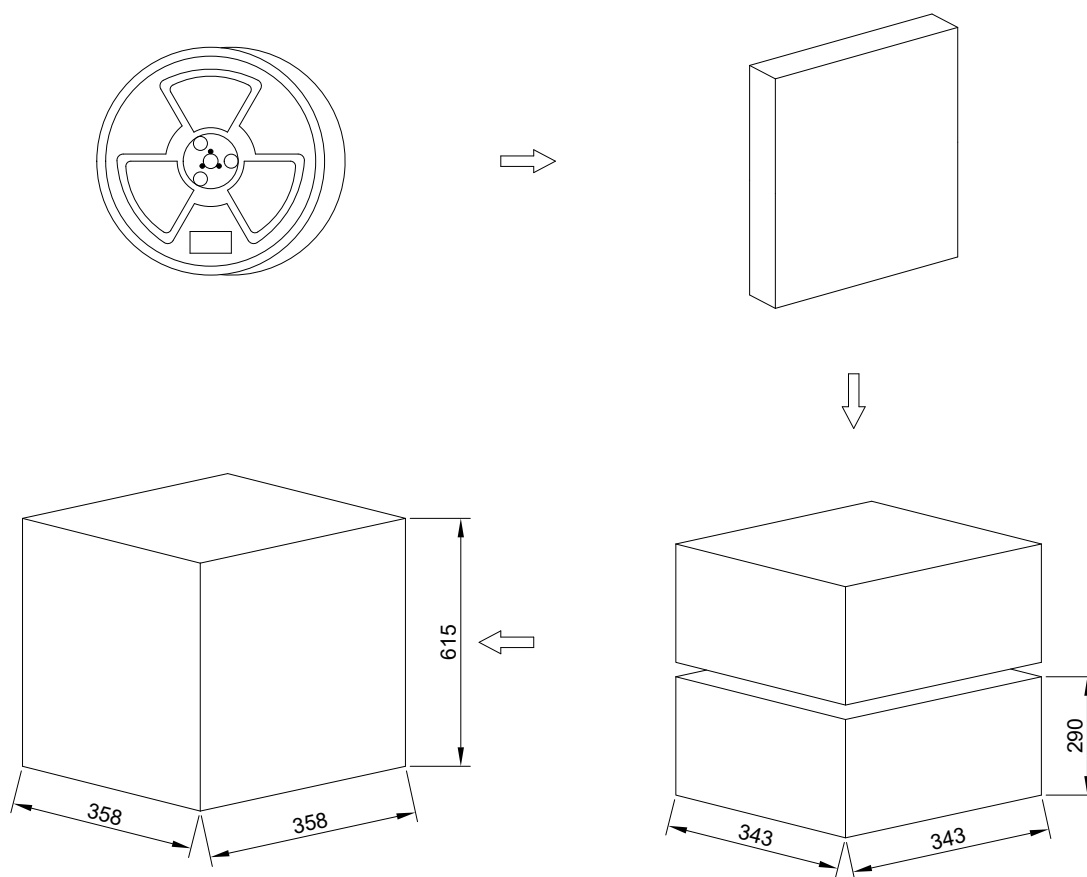


Figure 5. Reels Installation