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# **SoniCrest** Brand Acoustic Components

www.jlsonicrest.com

Document Type : Specification

Product Type : SMD Piezo Sound Generator Component

Part Number : HPS22A

A1 - New issue created by Holmes, Poon on 20 Oct., 2008	A5 - Updated section 4 ~ 7 by Loki, Lo on 29 Jul., 2015	
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A4 - Updated section 4 by Holmes, Poon on 18 Oct., 2011		

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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

Ø22mm 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 : -20°C to +85°C

**4.1.2.** Storage Temperature Range : -30°C to +90°C

**4.1.3.** Housing material : PPS

## 4.2. Electrical Requirement

**4.2.1.** Rated Voltage : 9Vp-p

**4.2.2.** Operating Voltage : 2 ~ 30 Vp-p

**4.2.3.** Rated Current : <=5mA

**4.2.4.** Capacitance at 1KHz :  $20 \pm 30\%$  nF

**4.2.5.** Sound Pressure level at 10cm : >=100dB

(Applying rated voltage and 4000Hz)

**4.2.6.** Resonant Frequency :  $4000 \pm 500$ Hz

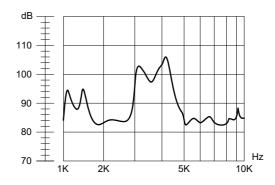


Figure 1. Frequency Response

#### 4.3. Mechanical Requirement

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

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#### 4.4. Test Setup

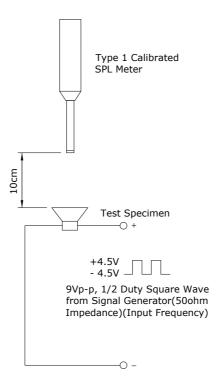


Figure 2. Test Setup

**Notes**: Apply 9Vp-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°C for 4 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°C for 4 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.
- **5.3. 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.
- **5.4. Static Humidity**: Precondition at room temperature for 1 hour. Then expose to +40°C with 90 ~ 95% relative humidity for 24 hours. Finally dry at room ambient for 2 hours before taking final measurement.
- **5.5.** Random Vibration : Secure samples. Vibrated randomly  $10 \sim 55$ Hz with 1.5mm peak amplitude 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 80cm onto a 5cm thickness wooden board in 3 directions (x, y and z).
- **5.7. Solderability**: Immerse solder pads into molten solder at  $250 \pm 5$  °C for  $10 \pm 1$  second. After testing covered area of pins should be >=90% with a continuous coating of bright solder.

#### 6. Recommended Reflow Process Condition

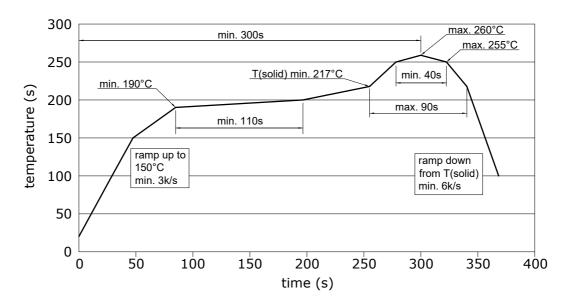


Figure 3. Recommended reflow oven temperature profile

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# 7. Mechanical Layout

Unit: mm

Tolerance : Linear  $XX.X = \pm 0.3$  $XX.XX = \pm 0.05$ 

Angular =  $\pm 0.25^{\circ}$ 

(unless otherwise specified)

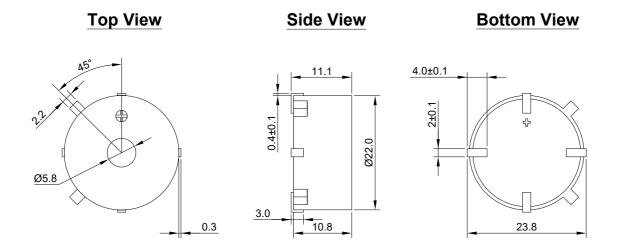


Figure 4. HPS22A Mechanical Layout

## 8. Standard Packing Layout

## 8.1. Tape Layout

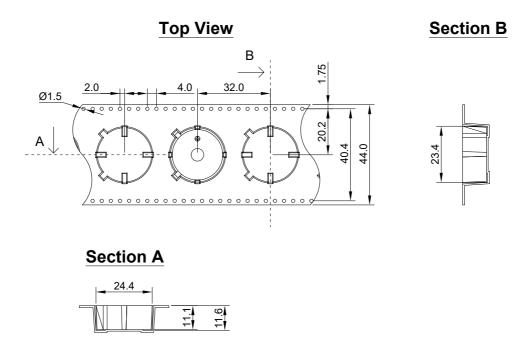


Figure 5. Tape Layout

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## 8.2. Reel Layout

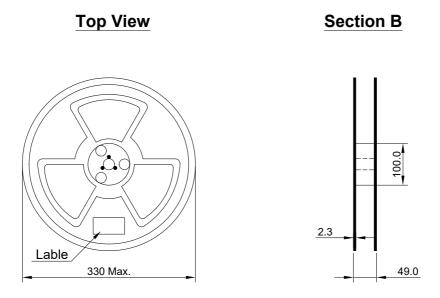


Figure 6. Reel Layout

**8.3.** Packing Quantity: 150 pieces per reel, 3 reels per carton (Total 450 pieces)

**8.4.** Carton Size: 37.5 x 37.5 x 23.5 cm

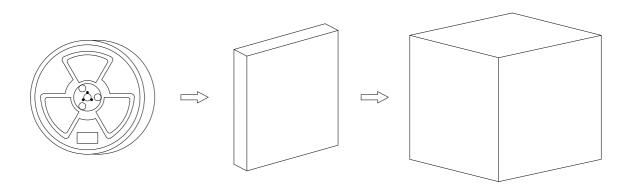


Figure 7. Reels Installation