



JL World Corporation Limited

Tel : (+852) 25650319 Fax : (+852) 25656979 Web : www.jlworld.com

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Prepare by : Hermes, Shum
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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Piezo Sound Generator Component
Part Number : HPA22D/323

A1 - New issue created by Hermes, Shum on 11 Sep., 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

Ø22mm piezo sound generator with 3mm pins length, 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 +85°C

4.1.2. Storage Temperature Range : -40°C to +90°C

4.2 Electrical Requirement

4.2.1. Rated Voltage : 10Vp-p

4.2.2. Operating Voltage : 1 ~ 30 Vp-p

4.2.3. Rated Current : <=3mA

4.2.4. Capacitance : 12 ± 30% nF

4.2.5. Sound Pressure Level at 10cm
(Applying rated voltage and rated frequency) : >=90dB

4.2.6. Resonance Frequency : 4000 ± 500 Hz

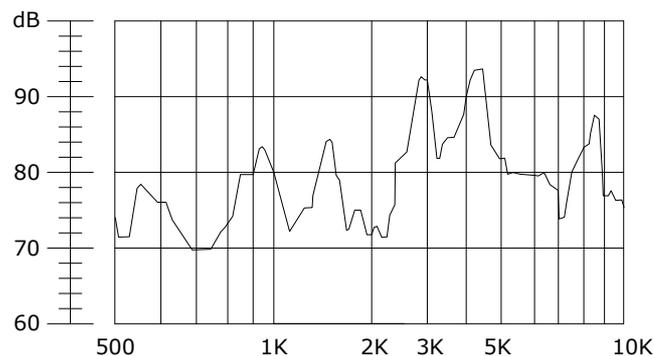


Figure 1. Frequency Response

4.3 Mechanical Requirement

4.3.1. Layout and Dimension : See Section 6, Figure 3

4.4 Test Setup

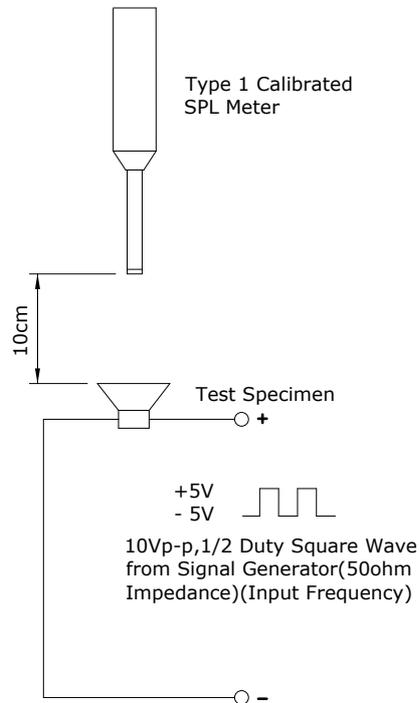


Figure 2. Test Setup

Notes : Apply 10Vp-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 +90°C±2°C and operate for 96 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±2°C and operate for 96 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** : Precondition at room temperature for 1 hour. Then expose to +40 ± 2 °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 -40°C, 15 minutes at +20°C, 30 minutes at +90°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.
- 5.5. Solderability** : Immerse pins into molten solder at 270 ± 5°C for 3 ± 1 seconds.
- 5.6. Soldering Heat Resistance** : Immerse pins into solder bath at 260 ± 5°C for 10 ± 1 seconds.
- 5.7. 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.
- 5.8. Drop Test** : Drop samples naturally from the height of 75cm onto a 10mm thickness wooden board in 3 directions (x, y and z).

6. Mechanical Layout

Unit : mm

Tolerance : Linear XX.X = ±0.3
 XX.XX = ±0.05
 Angular = ±0.25°

(unless otherwise specified)

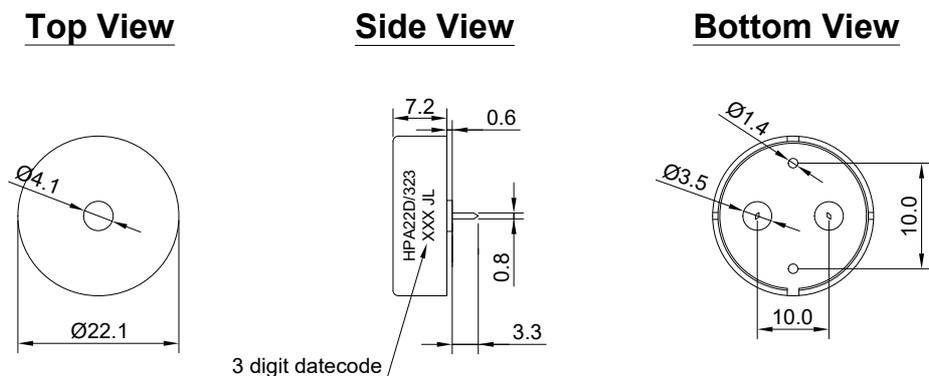


Figure 3. HPA22D/323 Mechanical Layout

7. Standard Packing Requirements

7.1. Packing Quantity : 100 pieces per unit, 20 units per carton
(Total 2000 pieces)

7.2. Carton Layout : 495 x 345 x 190 mm