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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Piezo Sound Generator Component
Part Number : HPA22D

A1 - New issue created by Leo, Sin on 21 Mar., 2001	A5 - Updated section 6 by Holmes, Poon on 26 Aug., 2010	
A2 - Update format by Leo, Sin on 25 Oct., 2002	A6 - Updated section 4, 5 and 6 by Loki, Lo on 9 Aug., 2012	
A3 - Update electrical requirement by Leo, Sin on 11 Feb., 2003		
A4 - Update RoHS version Leo, Sin on 25 Jan., 2006		

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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, 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 +60°C

4.1.2. Storage Temperature Range : -30°C to +70°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 : 15 ± 30% nF

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

4.2.6. Resonant Frequency : 4000 ± 500 Hz

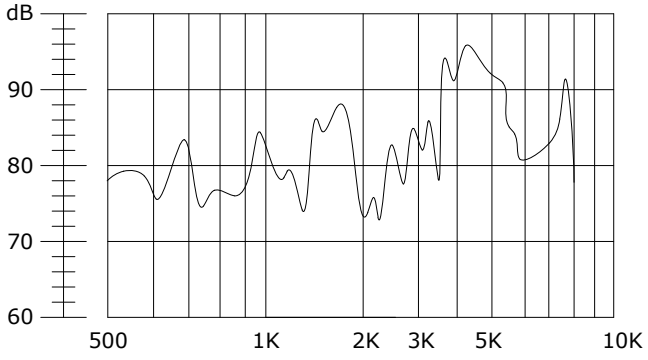


Figure 1. Frequency Response

4.3 Mechanical Requirement

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

4.4 Test Setup

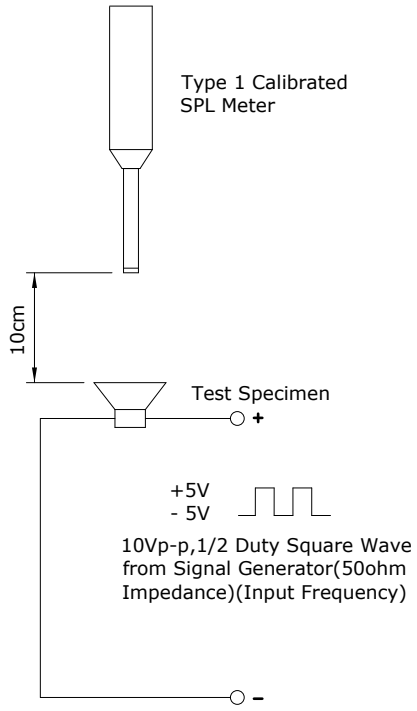


Figure 2. Test Setup

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 +60°C±2°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.

5.2. Low Temperature : Subject samples to -20°C±2°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. Static Humidity : Precondition at room temperature for 1 hour. Then expose to +40 ± 2 °C with 90 ~ 95% relative humidity for 240 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 -20°C, 15 minutes at +20°C, 30 minutes at +60°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. Terminal Strength : Apply 9.8N to pins for 10 seconds.

5.6. Solderability : Immerse pins into molten solder at 230 ± 5°C for 3 ± 0.5 seconds.

5.7. 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.

6. Mechanical Layout

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

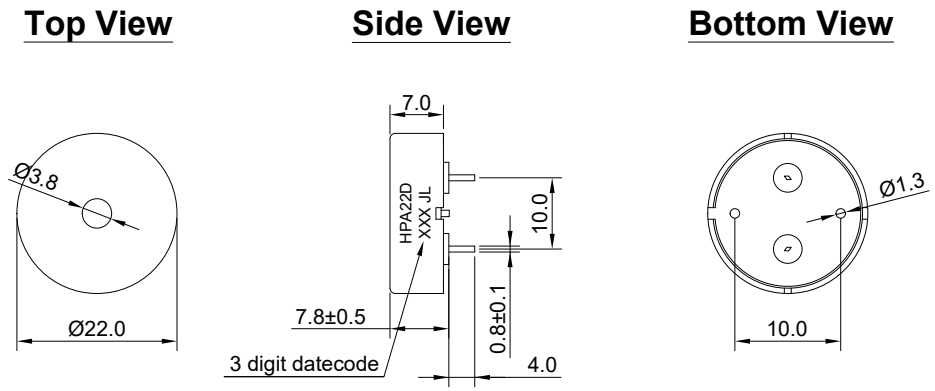


Figure 3. HPA22D Mechanical Layout