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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Piezo Sound Generation Component
Part Number : HPA22F

A1 - new version created by Leo Sin on 7 Nov., 2007		

1. Purpose and Scope

This document contains both general requirements, qualification requirements, and those specific electrical, mechanical requirements for this part.

2. Description

ø22 mm piezo sound generator, RoHS compliant.

3. Application

Telecommunication Equipment, Computers and Peripherals, POS system, Portable Equipment, etc.

4. Component Requirement

4.1. General Requirement

4.1.1.	Operating Temperature Range	:	-20°C to +70°C
4.1.2.	Storage Temperature Range	:	-25°C to +85°C
4.1.3.	Weight	:	Approx. 3g

4.2. Electrical Requirement

4.2.1.	Rated Voltage	:	10Vp-p
4.2.2.	Operating Voltage	:	1 ~ 30Vp-p
4.2.3.	Rated Current	:	<= 6mA
4.2.4.	Capacitance	:	12nF ± 30%
4.2.5.	Sound Pressure Level at 10cm (Applying rated voltage and rated frequency)	:	>= 84dBA
4.2.6.	Rated Frequency	:	4000Hz ± 500Hz

4.3. Mechanical Requirement

4.3.1.	Layout and Dimension	:	See Section 6, Figure 2

4.4. Test Setup of SPL

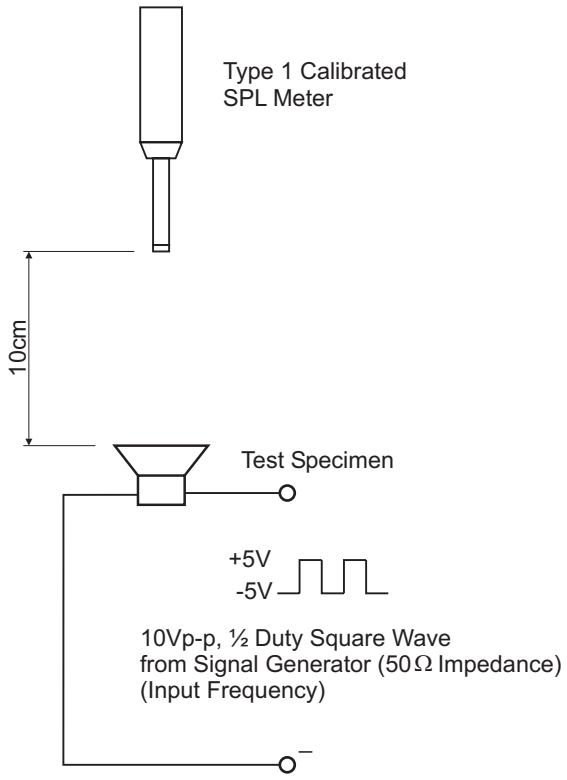

Figure 1. SPL Inspection Test Fixture

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 +80°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 -30°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. **Temperature Cycle** : Each temperature cycle shall consist of 30 minutes at -30°C, 15 minutes at +20°C, 30 minutes at +80°C and 15 minutes at +20°C. Test duration is for 5 cycles.

5.4. **Static Humidity** : Precondition at +25°C for 1 hour. Then expose to +40°C with 90 to 95% relative humidity for 48 hours. Finally dry at room ambient for 2 hours before taking final measurement.

5.5. **Random Vibration** : Secure samples. Vibrated randomly 10Hz ~ 55Hz with 1.5mm peak amplitude. The test duration is 2 hours per plane (x, y, z).

5.6. **Drop Test** : Drop samples naturally from the height of 70cm onto a wooden board (10mm thickness) three directions.

5.7. **Solderability** : 230°C±5°C for 3±0.5 seconds.

6. Mechanical Layout

Unit : mm

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

(unless otherwise specified)

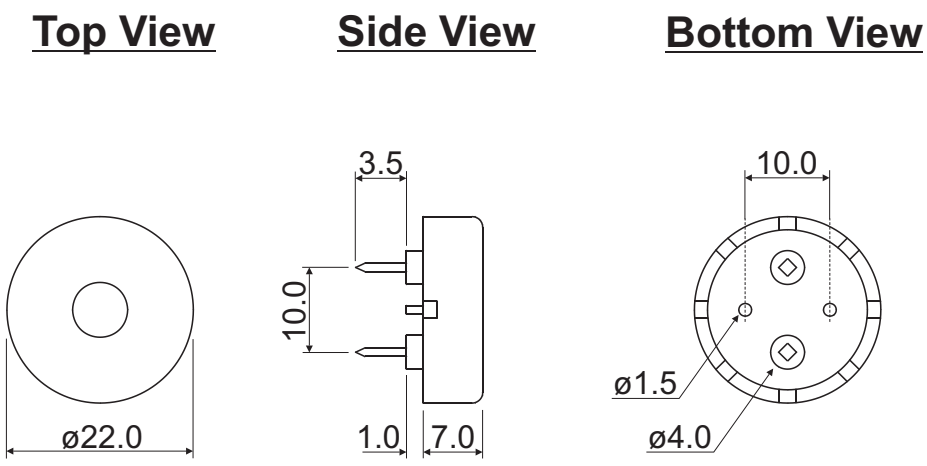

Figure 2. HPA22F Mechanical Layout