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Document Number : 0505-20
Revision : A3
Total Pages : 4
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Date : 12 December, 2013

SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Piezo Sound Generator Component
Part Number : HPA17F

A1 - New issue created by Leo Sin on 4 May, 2005		
A2 - Updated RoHS version by Leo Sin on 29 Nov, 2005		
A3 - Updated section 4 by Loki, Lo on 12 Dec., 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

Ø17mm 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

4.2. Electrical Requirement

4.2.1. Rated Voltage : 5Vp-p

4.2.2. Operating Voltage : 1 ~ 30 Vp-p

4.2.3. Rated Current : <=2mA

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. Rated Frequency : 4000 ± 500 Hz

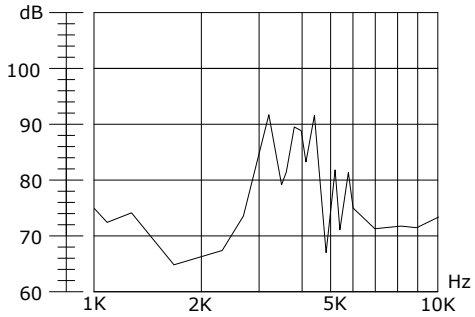

Figure 1. Frequency Response

4.3. Mechanical Requirement

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

4.4. Test Setup

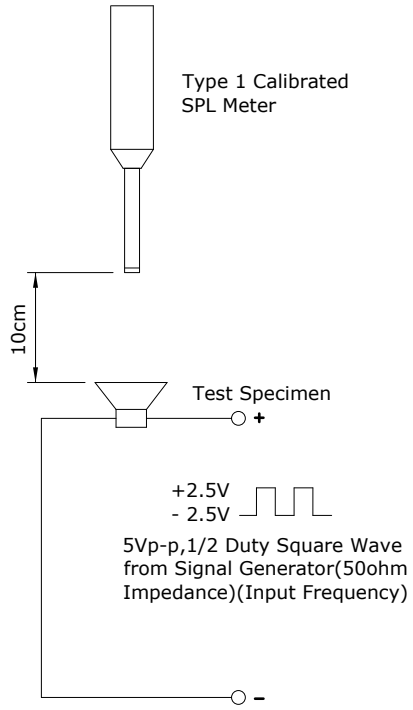

Figure 2. Test Setup

Notes : Apply 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°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 -40°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. 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.

5.4. Static Humidity : Precondition at +25°C for 1 hour. Then expose to +40°C with 90 to 95% relative humidity for 240 hours. Finally dry at room ambient for 3 hours before taking final measurement.

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

5.6. Mechanical Shock : Secure samples as required. Then applied shock (980m/s²) for each 3 mutually perpendicular directions to each of 3 times by half sine wave.

5.7. Solderability : Pins shall be immersed in molten solder maintained at +230°C±5°C for a period of 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)

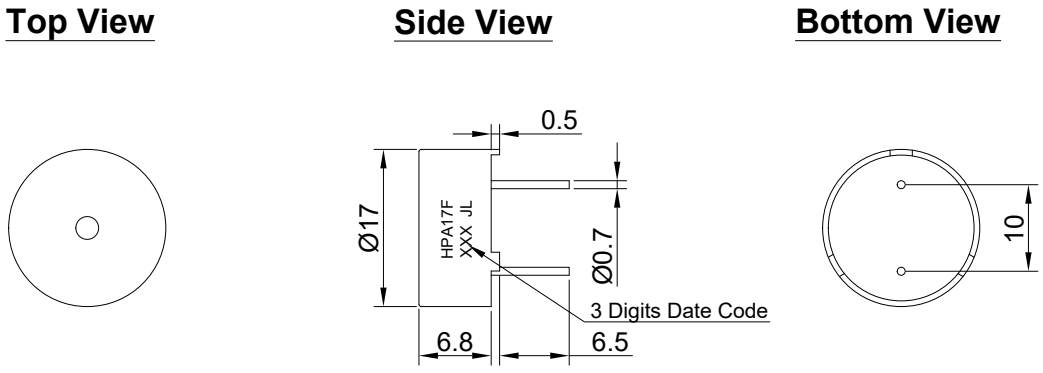

Figure 3. HPA17F Mechanical Layout