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SoniCrest Acoustic Components

Document Type : Specification
Product Type : Electro-Magnetic Sound Generator Component
Part Number : HCM1205X

A2 - update layout and format by Leo Sin on 30 Apr., 2008		

1. Purpose and Scope

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

2. Description

ø12mm electro-magnetic sound generator with built-in oscillation circuit, RoHS complaint.

3. Application

Computers and Peripherals, Portable Equipment, Automobile Electronics, POS System, Household Appliances, 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 : -30°C to +80°C

4.1.3. Weight : Approx. 1g

4.2. Electrical Requirement

4.2.1. Rated Voltage (DC) : 5V

4.2.2. Operating Voltage (DC) : 4V to 7V

4.2.3. Rated Current : <= 30mA
(applying Rated Voltage)

4.2.4. Sound Pressure Level at 10cm : >= 85dBA
(applying Rated Votlage)

4.2.5. Generated Frequency : 2300Hz ± 300Hz
(applying Rated Voltage)

4.3. Mechanical Requirement

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

4.4.   Test Setup of SPL and Frequency

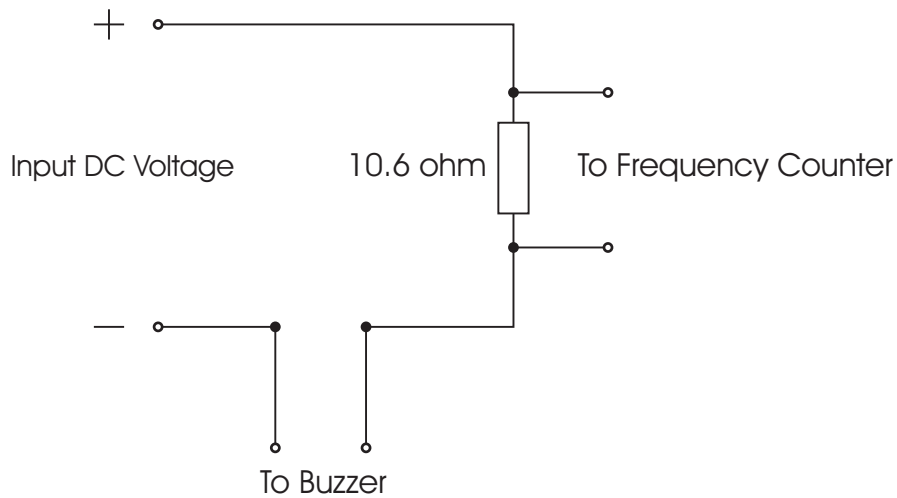Input DC Voltage   10.6 ohm   To Frequency Counter

To Buzzer

Figure 1. Frequency Testing Circuit

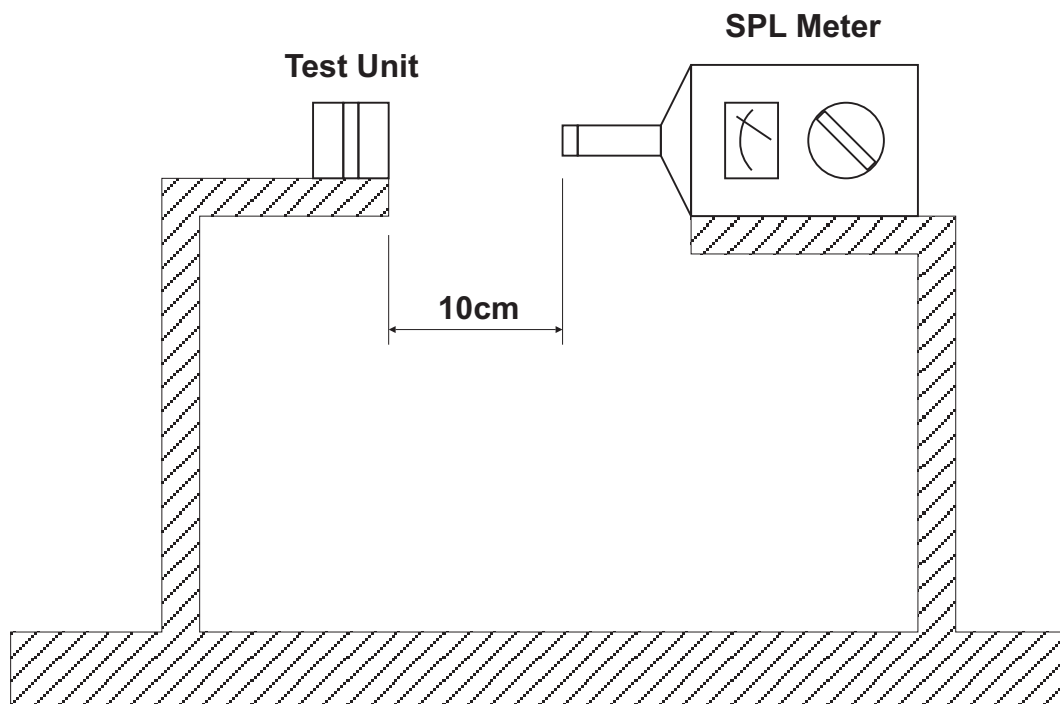**Test Unit**   **SPL Meter**

10cm

Figure 2. SPL Inspection Test Fixture

Notes : Input 5V DC into samples. 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. Operating Life : Subject samples to room condition for 1000 hours with rated voltage. Components must be fully stabilized before data is taken, which may require up to a 2 hours soak.

5.2. High Temperature : Subject samples to +80°C 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. Low Temperature : Subject samples to -30°C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.4. 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. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

5.5. Static Humidity Cycle : Each cycle shall consist of +25°C with 90 to 95% relative humidity for 10 hours and +65°C with 90 to 95% relative humidity for 12 hours. Test duration is for 5 cycles. Finally dry at room ambient for 2 hours before taking final measurement.

5.6. Drop Test : Drop samples naturally from the height of 0.7m onto a wooden board (10mm thickness) each direction (x, y, z).

5.7. Solderability Test : Temperature at +255°C for 3 seconds.

6. Mechanical Layout

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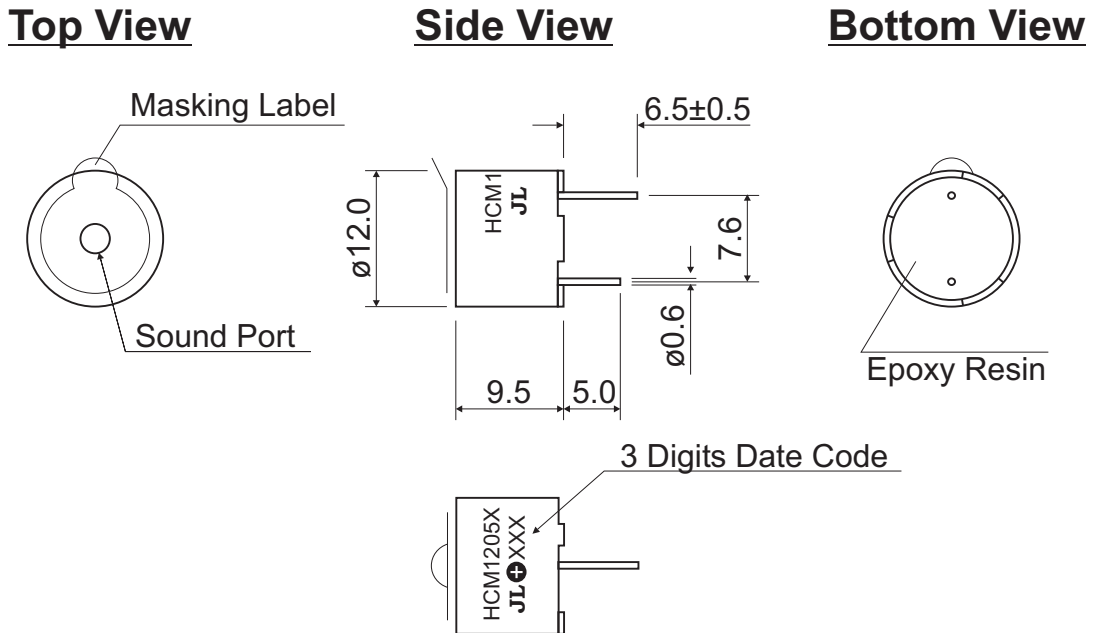   Angular   = ±0.25°
(unless otherwise specified)

Top View   Side View   Bottom View

Figure 3. HCM1205X Mechanical Layout

7. Standard Packing Layout

7.1. Packing Quantity : 100 pieces per tray
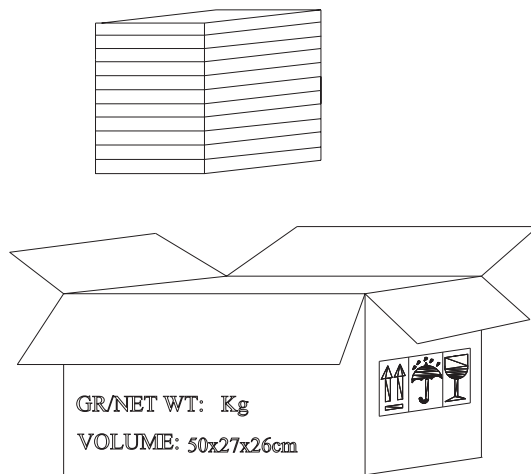30 trays per carton (Total 3000 pieces)
Carton Size : 50 x 27 x 26 cm

Figure 4. Packing Layout