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SoniCrest Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HCM1606X

A2 - Updated format and layout by Leo Sin on 1 Mar., 2006		
A3 - Updated section 4 - 7 by Loki, Lo on 29 Jun., 2015		

1. Purpose and Scope

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

2. Description

Ø16mm electro-magnetic sound generator with built-in oscillation circuit, RoHS compliant.

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	: -40°C to +85°C
4.1.2.	Storage Temperature Range	: -40°C to +85°C
4.1.3.	Weight	: Approx. 5g

4.2. Electrical Requirement

4.2.1.	Rated Voltage (DC)	: 6V
4.2.2.	Operating Voltage (DC)	: 3 ~ 9 V
4.2.3.	Rated Current	: <=30mA
4.2.4.	Generated Frequency	: 2300 ± 300Hz
4.2.5.	Sound Pressure Level at 10cm (Applying rated voltage)	: >=85dB

4.3. Mechanical Requirement

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

4.4. Test Setup of SPL and Frequency Measurement

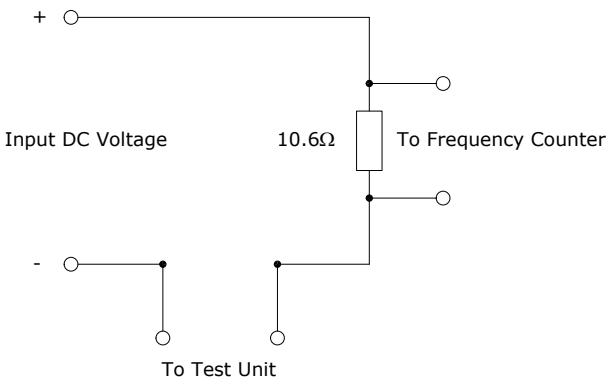

Figure 1. Frequency Testing Circuit

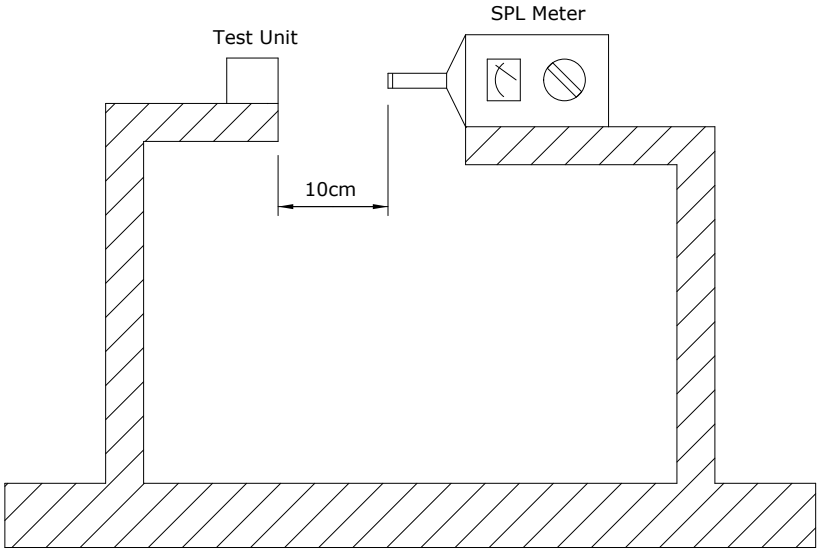

Figure 2. SPL Inspection Test Setup

Notes : Input 12V 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. **High Temperature** : Subject samples to +80 ± 2 °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 ± 2 °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 Shock** : 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.

5.4. **Static Humidity** : Precondition at room temperature for 1 hour. Then expose to +40°C with 90 ~ 95% relative humidity for 96 hours. Finally dry at room ambient for 2 hours before taking final measurement.

5.5. **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.

5.6. **Drop Test** : Drop samples naturally from the height of 100cm onto a 10mm thickness wooden board in 3 directions (x, y and z).

5.7. **Solderability** : Immerse solder pads into molten solder at 260 ± 5 °C for 3 ± 0.5 seconds. After testing covered area of pins should be >= 95% with a continuous coating of bright solder.

6. Mechanical Layout

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

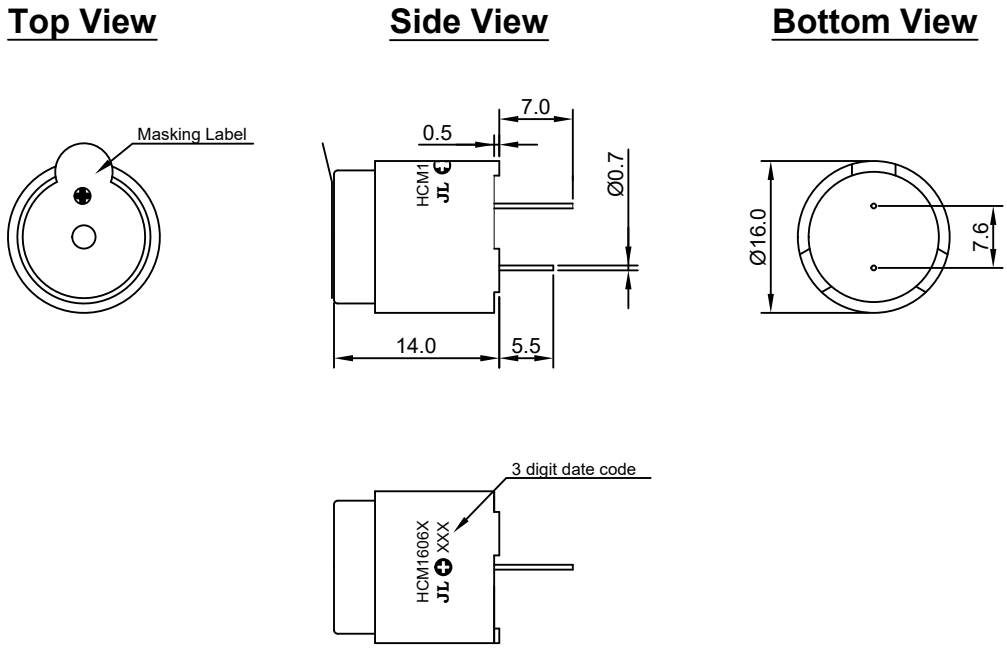

Figure 3. HCM1606X Mechanical Layout

7. Standard Packing Requirements

7.1. Packing Quantity : 50 pieces per tray, 10 trays per unit, 4 units per carton
(Total 2000 pieces)

7.2. Carton Layout

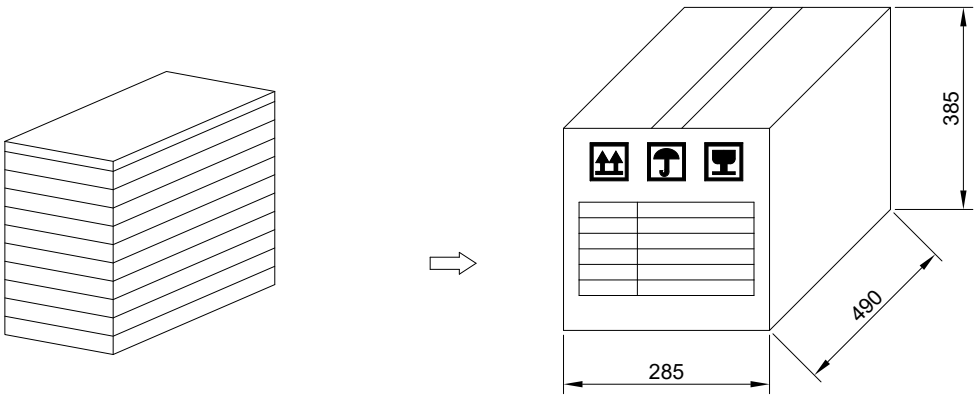

Figure 4. Tray and Carton Layout