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**SoniCrest** Brand Acoustic Components
www.jlsonicrest.com
Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HCM1612G/603

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| A1 - New issue created by Loki, Lo on 10 Apr., 2014 | | |
| A2 - Updeated section 6 by Loki, Lo on 20 May, 2014 | | |
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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

Ø16mm electro-magnetic sound generator for automotive application, 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 : -40°C to +100°C

**4.1.2.** Storage Temperature Range : -40°C to +100°C

**4.1.3.** Weight : Approx. 7g

### 4.2. Electrical Requirement

**4.2.1.** Rated Voltage : 12V

**4.2.2.** Operating Voltage : 6 ~ 18 V

**4.2.3.** Rated Current : <=40mA

**4.2.4.** Coil Resistance : 115 ± 15 Ω

**4.2.5.** Coil Impedance : 200Ω

**4.2.6.** Rated Frequency : 2048Hz

**4.2.7.** Sound Pressure Level at 10cm (Applying rated voltage, rated frequency) : 98 ± 3 dB

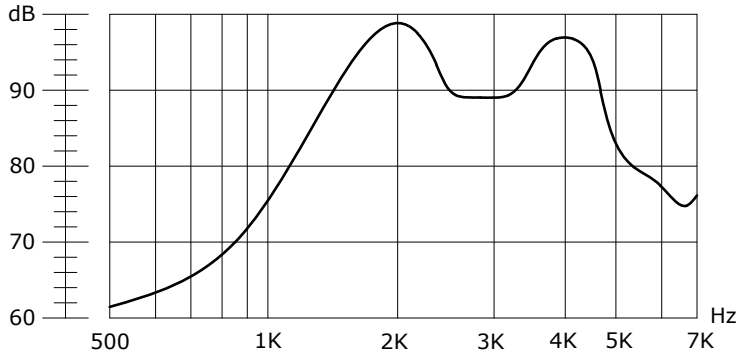


**Figure 1. Frequency Response**

### 4.3. Mechanical Requirement

**4.3.1.** Layout and Dimension : See Section 6, Figure 4

### 4.4. Test Setup

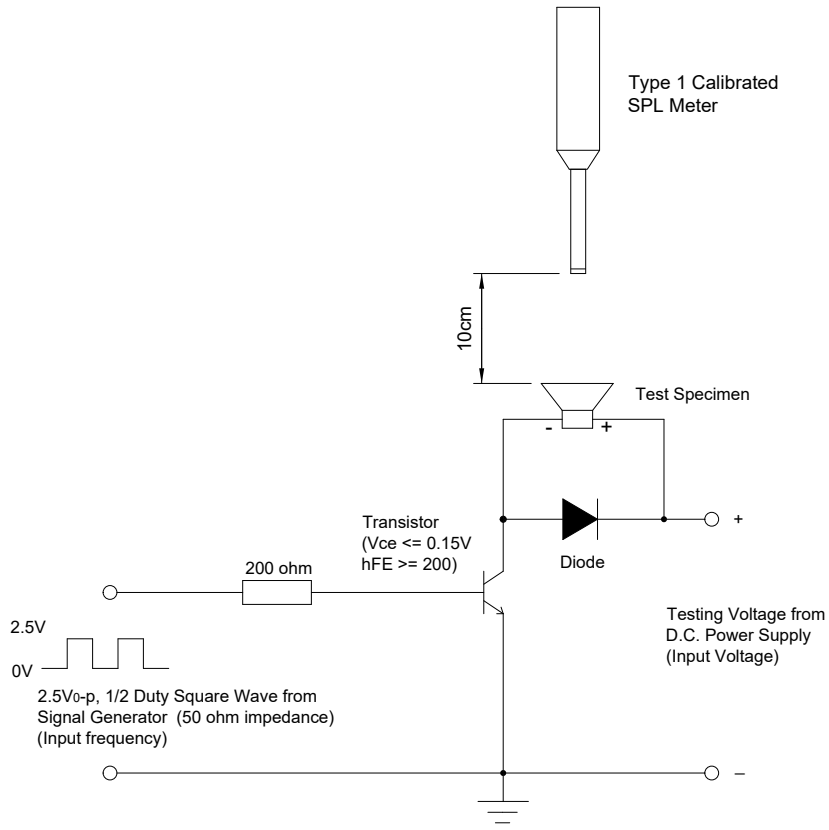


**Figure 2. Test Setup**

**Notes** : Apply rated signal from Signal Generator. Measure SPL using a calibrated SPL meter 10cm from the sound 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 under rated voltage and rated frequency. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.2. High Temperature Storage** : Subject samples to +100°C and storage 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 Storage** : Subject samples to -40°C and storage 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. Operating Life in High Temperature** : Subject samples to +90°C under 18V and operate for 500 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.5. Operating Life in Low Temperature** : Subject samples to -40°C under 12V and operate for 500 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.6. Temperature Shock** : Each temperature cycle shall consist of 30 minutes at -40°C and 30 minutes at +100°C . Test duration is for 10 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

**5.7. Humidity Cycle** : Total 10 cycles. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.

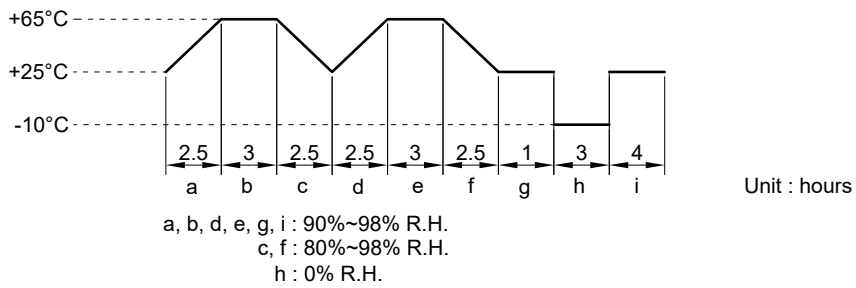


**Figure 3. Humidity Cycle Test**

**5.8. 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.

**5.9. Pin Lead Strength** : Apply 10N load to samples for 10±1 seconds.

**5.10. Drop Test** : Drop samples naturally from the height of 0.7m onto a wooden board (40mm thickness) one time in each directions (x, y and z).

**5.11. Solderability** : Immerse solder pads into molten solder at 235±5°C for 2±0.5 seconds.

**5.12. Solder Heat Resistance** : Maximum solder limit at 350±10°C for 3.5±0.5 seconds.

**5.13. Washability** : Wash samples with 55±10°C denlzed water for 5±0.5 seconds.

## 6. Mechanical Layout

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

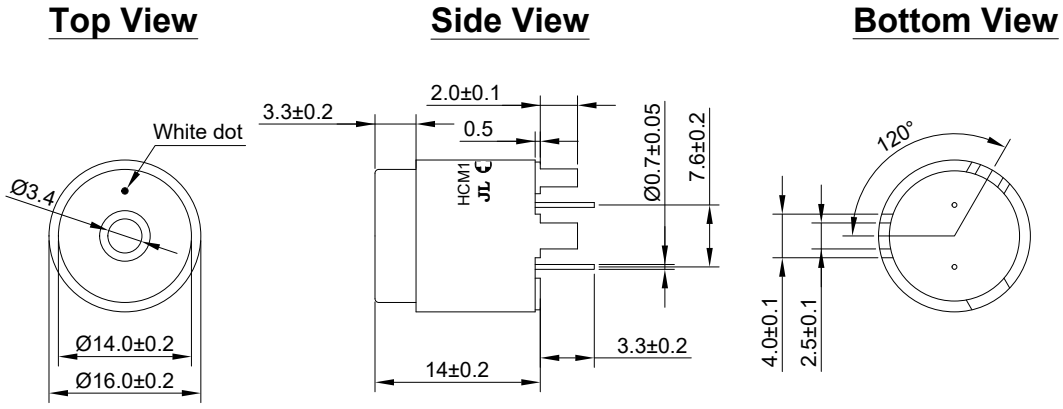


**Figure 4. HCM1612G/603 Mechanical Layout**

## 7. Standard Packing Requirements

**7.1. Packing Quantity :** 50 pieces per tray, 40 trays per unit, 1 unit per carton
(Total 2000 pieces)

**7.2. Carton Layout**

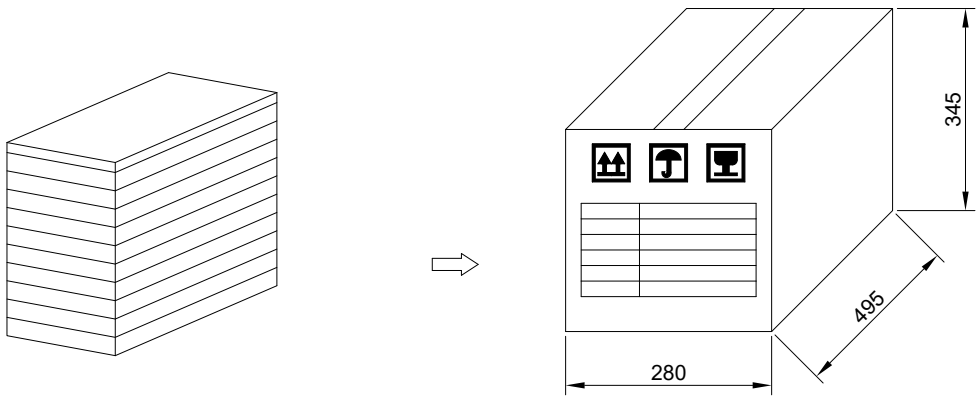


**Figure 5. Tray and Carton Layout**