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SoniCrest Brand Acoustic Components

www.jlsonicrest.com

Document Type : Specification
Product Type : Electro-magnetic Sound Generator Component
Part Number : HCM2505B

A1 - New issue created by Leo, Sin on 28 Nov., 2005		
A2 - Updated section 2 - 6 by Loki, Lo on 28 Oct., 2015		
A3 - Updated Mechanical Layout by Loki, Lo on 29 Oct., 2015		

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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

Ø25mm electro-magnetic sound generator, RoHS compliant.

3. Application

Telecommunication Equipment, Computers and Peripherals, Portable Equipment, Automobile Electronics, 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 +85°C
- 4.1.3. Weight : Approx. 10g
- 4.1.4. Housing Material : NORYL

4.2. Electrical Requirement

- 4.2.1. Rated Voltage : 5V
- 4.2.2. Operating Voltage : 3 ~ 8 V
- 4.2.3. Rated Current : <=70mA
- 4.2.4. Coil Resistance : 36 ± 5 Ω
- 4.2.5. Rated Frequency : 1000 ~ 1500Hz
- 4.2.6. Sound Pressure Level at 10cm
(Applying 1000 ~ 1500Hz) : >=80dB

4.3. Mechanical Requirement

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

4.4. Test Setup

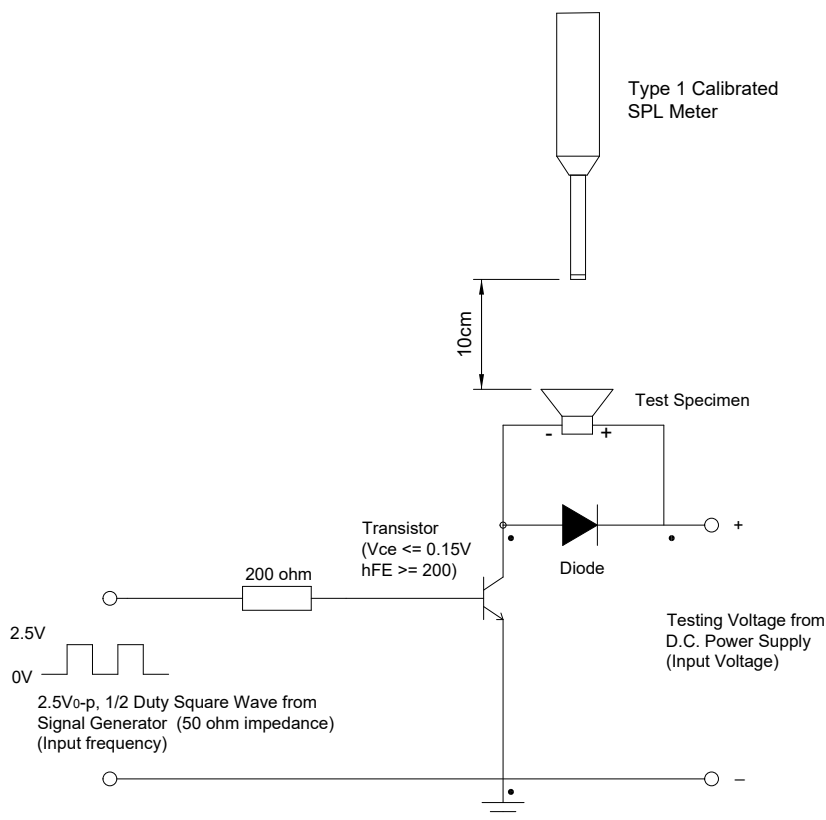


Figure 1. Test Setup

Notes : Apply 2.5V_{0-p} from Signal Generator, set 1000Hz 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 96 hours under rated voltage
- 5.2. High Temperature** : Subject samples to $+70 \pm 3$ °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 -20 ± 3 °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 Shock** : Each temperature cycle shall consist of 1 hour at -20°C followed by 1 hour at $+70^{\circ}\text{C}$ with a 20 seconds maximum transition time between temperature extremes. Test duration is for 32 cycles.
- 5.5. Static Humidity** : Precondition at room temperature for 1 hour. Then expose to $+40^{\circ}\text{C}$ with 90% to 95% relative humidity for 96 hours. Finally dry at room ambient for 2 hours before taking final measurement.
- 5.6. Drop Test** : Drop samples naturally from the height of 1.5m onto a 10mm thickness wooden board in 3 directions (x, y and z).
- 5.7. 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.

6. Mechanical Layout

Unit : mm

Tolerance : Linear XX.X = ± 0.3
 XX.XX = ± 0.05
 Angular = $\pm 0.25^{\circ}$

(unless otherwise specified)

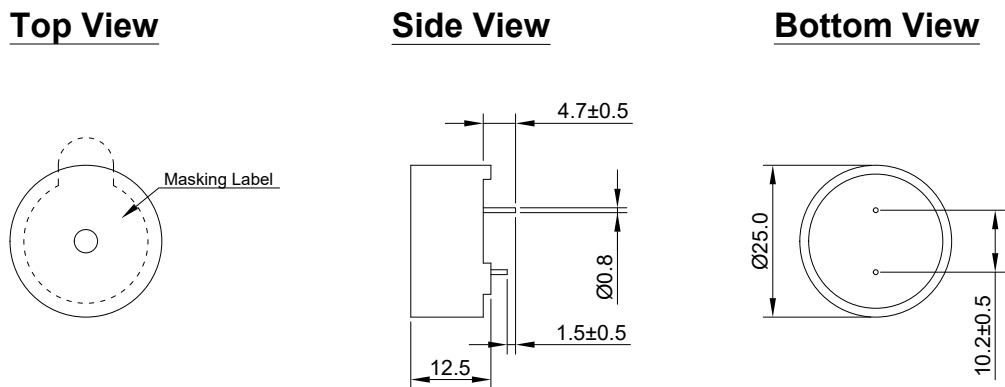


Figure 2. HCM2505B Mechanical Layout