



**BeStar Technologies Inc.**

Address: 761 N. 17th Street Unit 4, St. Charles, IL 60174

Tel : 847-261-2850 E-mail : sales@bestartech.com Web : www.bestartech.com

Document Number : 0511-70  
Revision : A3  
Total Pages : 4  
Prepare by : Loki, Lo  
Date : 29 October, 2015

## **SoniCrest** Brand Acoustic Components

[www.jlsonicrest.com](http://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		

This material is the property of BeStar Technologies Inc.  
Unauthorized copying or use of this material is prohibited.

## 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 :  $36 \pm 5 \Omega$
- 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

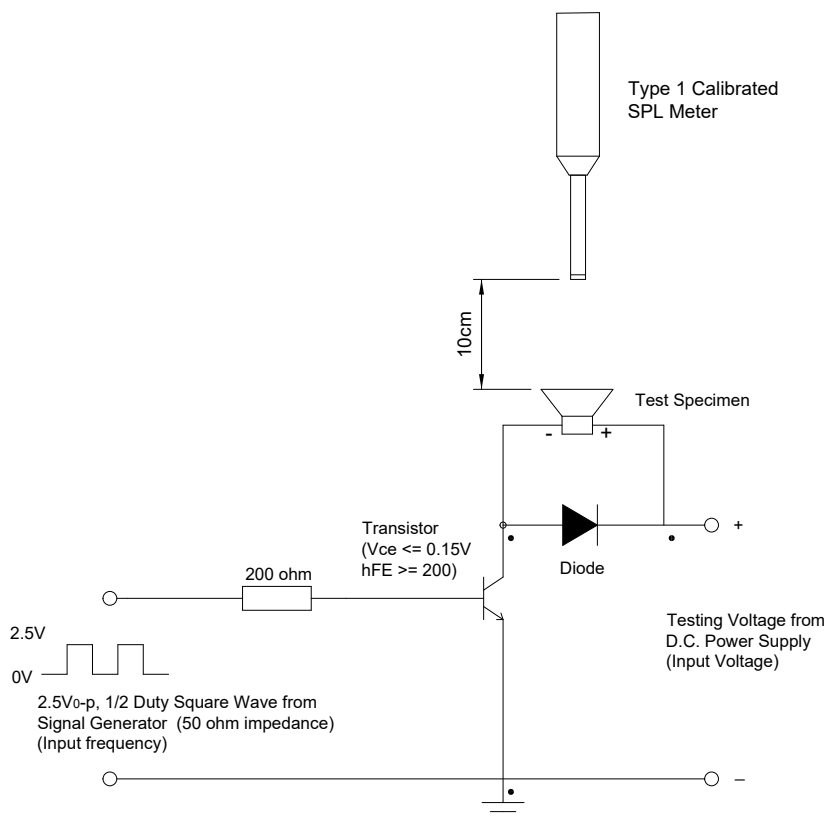


Figure 1. Test Setup

**Notes :** Apply 2.5V<sub>0-p</sub> 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**

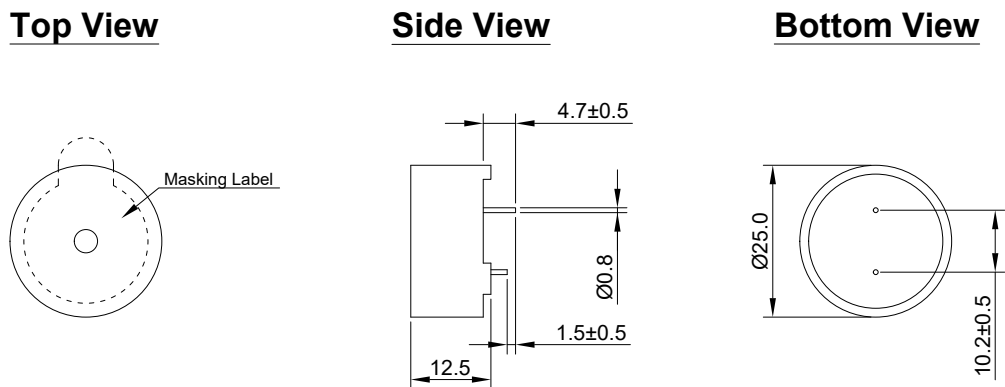
- 5.1. Operating Life** : Subject samples to room condition for 96 hours under rated voltage
- 5.2. High Temperature** : Subject samples to  $+70 \pm 3$  °C for 96 hours. Components must be fully stabilized at temperature extremes before data is taken, which may require up to a 2 hours soak.
- 5.3. Low Temperature** : Subject samples to  $-20 \pm 3$  °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.
- 5.4. Temperature Shock** : Each temperature cycle shall consist of 1 hour at  $-20^{\circ}\text{C}$  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    =  $\pm 0.3$   
                               XX.XX    =  $\pm 0.05$   
                               Angular    =  $\pm 0.25^{\circ}$

(unless otherwise specified)



**Figure 2. HCM2505B Mechanical Layout**