soberton inc.

ELECTRO MAGNETIC BUZZER

Acoustic Product Specification

Product Number: ST-0502T

Release | Revision: A/2022

CONTENTS

This document contains the technical specifications for the electromagnetic buzzer.

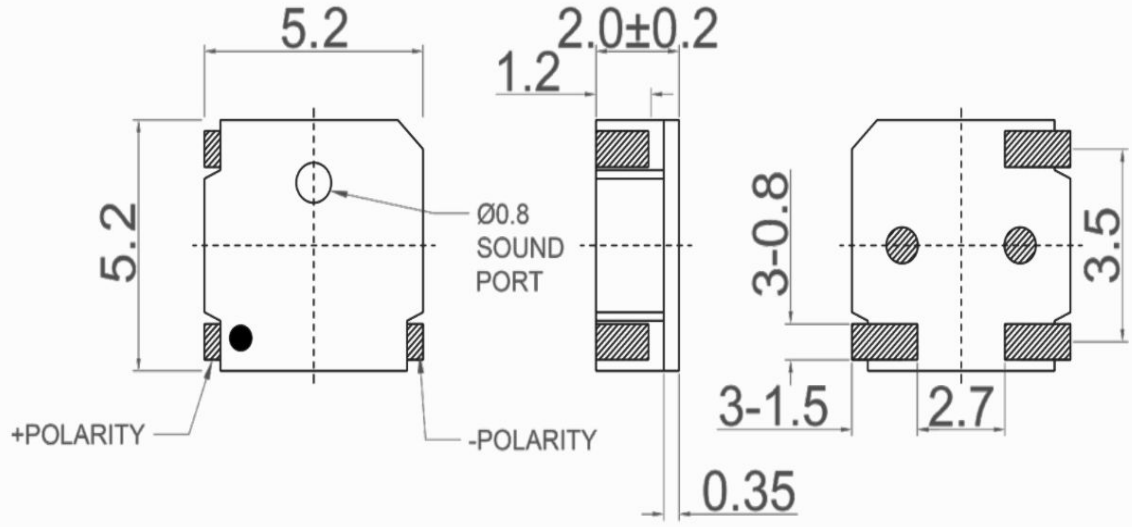
Specifications

Item	Unit	Specification	Condition
Oscillation Frequency	Hz	4000	
Operating Voltage	Vo-p	2 ~ 5	
Rated Voltage	Vo-p	3	
Current Consumption	mA	Max. 100	at Rated Voltage
Sound Pressure Level	dB	Min. 75	at 10cm at Rated Voltage
Coil Resistance	Ω	12±3	
Operating Temperature	℃	-40 ~ +85	
Storage Temperature	℃	-40 ~ +85	
Dimensions	mm	5.2 × 5.2 ×H2.0	
Weight	gram	0.1	
Housing Material		Black LCP	
Leading Pin		Tin Plated Brass (Sn)	
Terminal		SMD	
Environmental Protection Regulation		RoHS 2.0	

Measuring Condition:
Temperature: 5~35℃ **Humidity:** 45%~85%R.H **Atmospheric Pressure:** 860 ~1060hPa

Dimensions

Unit: mm
Tolerance: ±0.5mm, except where specified



Housing Material: Black LCP
Terminal Plate: 3 soldering pads, Tin Plating Brass

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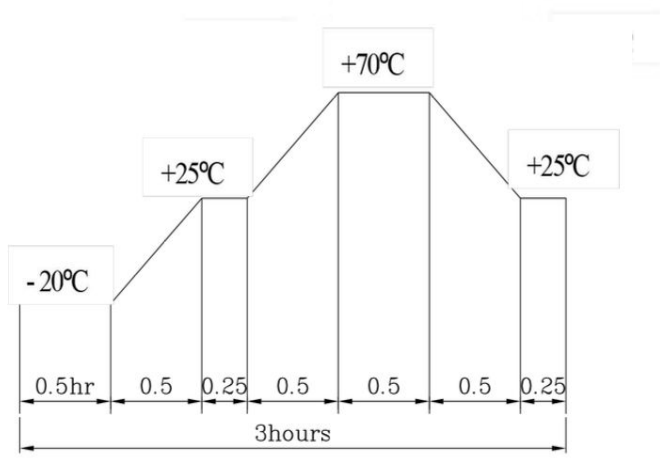
Reliability Test

Item	Test condition
High Temperature Test (Storage)	After being placed in a chamber with 85±2°C for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: ±10dB.
Low Temperature Test (Storage)	After being placed in a chamber with -40±2°C for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test: ±10dB.
Humidity Test	After being placed in a chamber with 90-95% R.H. at 40±2°C for 96 hours and then being placed in normal condition for 2 hours. Allowable variation of SPL after test:±10dB.
Temperature Cycle Test	The part shall be subjected to 5 cycles. One cycle shall consist of: 
Drop Test	Drop on a hardwood board of 4cm thick, 6 times, at a height of 75cm. Allowable variation of SPL after test: ±10dB.
Vibration Test	Apply a vibration at an amplitude of 1.5mm with 10 to 55 Hz frequency to each of 3 perpendicular directions for 2 hours . Allowable variation of SPL after test: ±10dB.
Solderability Test	Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of +300±5°C for 3±1 seconds. 90% min. lead terminals shall be wet with solder (Except the edge of terminals).
Terminal Strength Pulling Test	The force of 9.8N(1.0kg) is applied to each terminal in axial direction for 10 seconds. No visible damage.
Standard Test Condition	a) Temperature : +5 ~ +35°C b) Humidity : 45-85% c) Pressure : 860-1060 mbar

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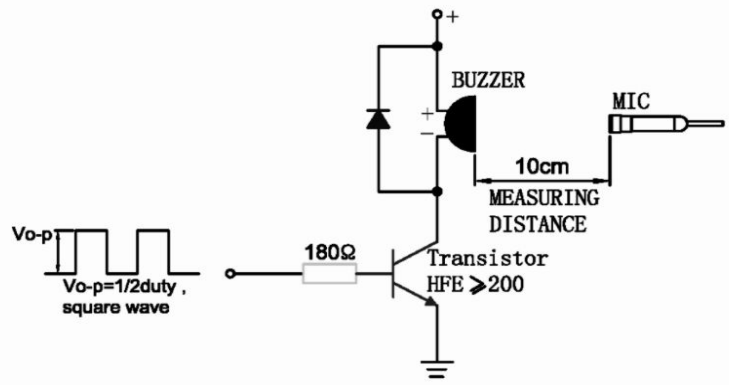
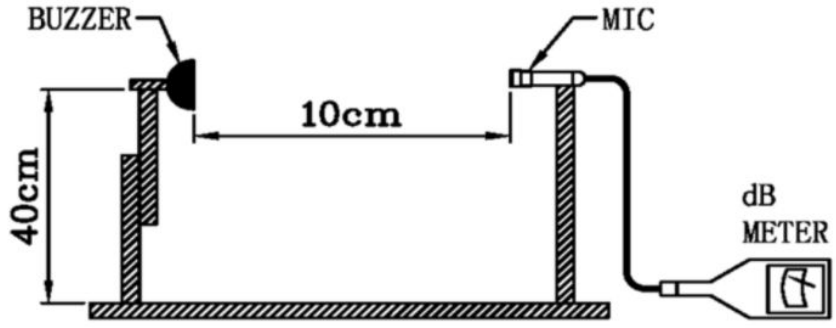
Testing Method

Acoustic Characteristics:
The oscillation frequency, current consumption and sound pressure are measured by the measuring instruments shown below;

Recommended Driving Circuit



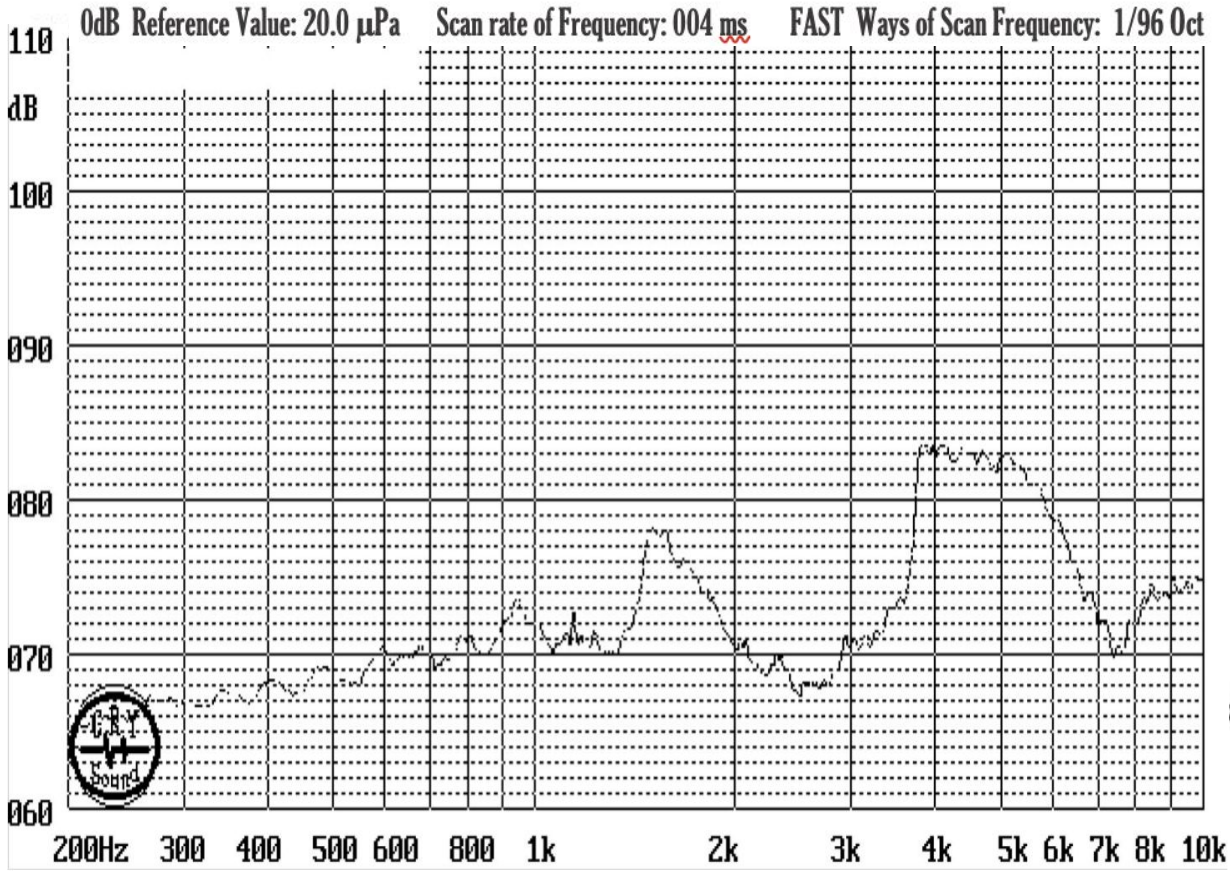
In the measuring test, buzzer is placed as follows:



Standard Measurement Conditions:
Temperature: 25±2°C Humidity: 45 ~ 65%

Typical Frequency Response Curve

3 Vo-p, 50% duty cycle, square wave, 10cm



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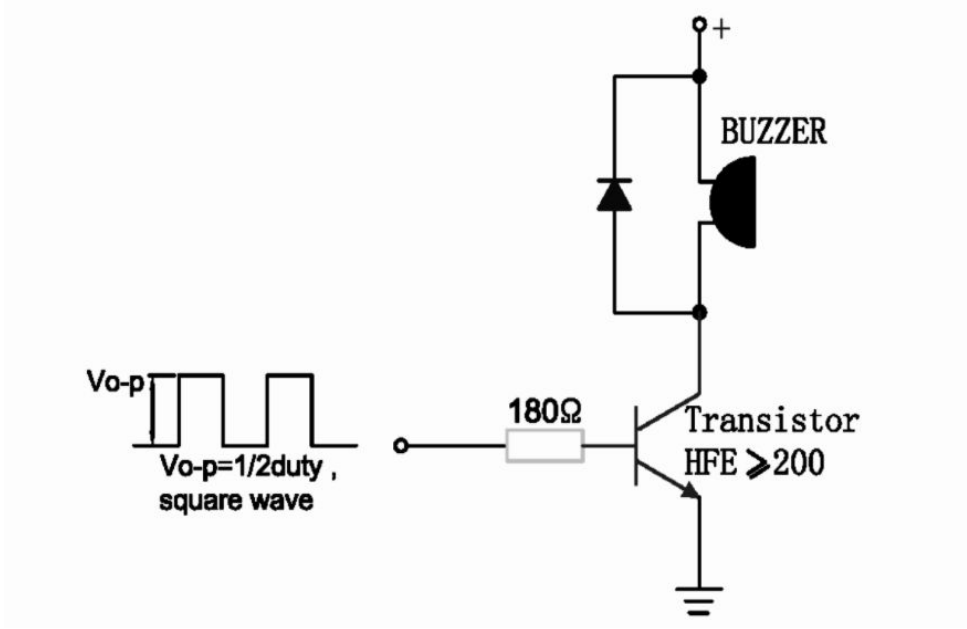
Recommended Driving Circuit

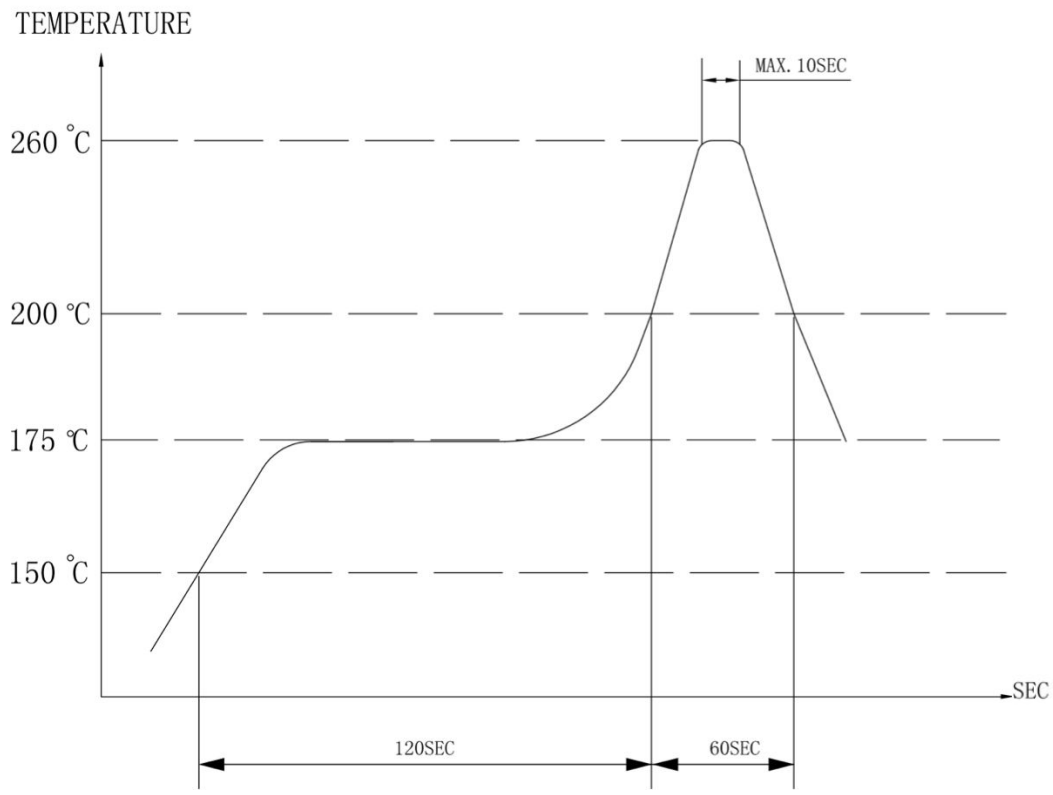
The base current Ib should high enough so that it saturates the collector current of the transistor with the CB load.



Soldering Condition

Recommended reflow soldering condition is as follows;

1. Reflow soldering is 2-step.
   It is requested that reflow soldering should be executed after heat of product goes down to normal.
2. Manual soldering: Manual soldering temperature at 350°C within 5 sec.



Heat resistant line (Used when heat resistant reliability test is performed)

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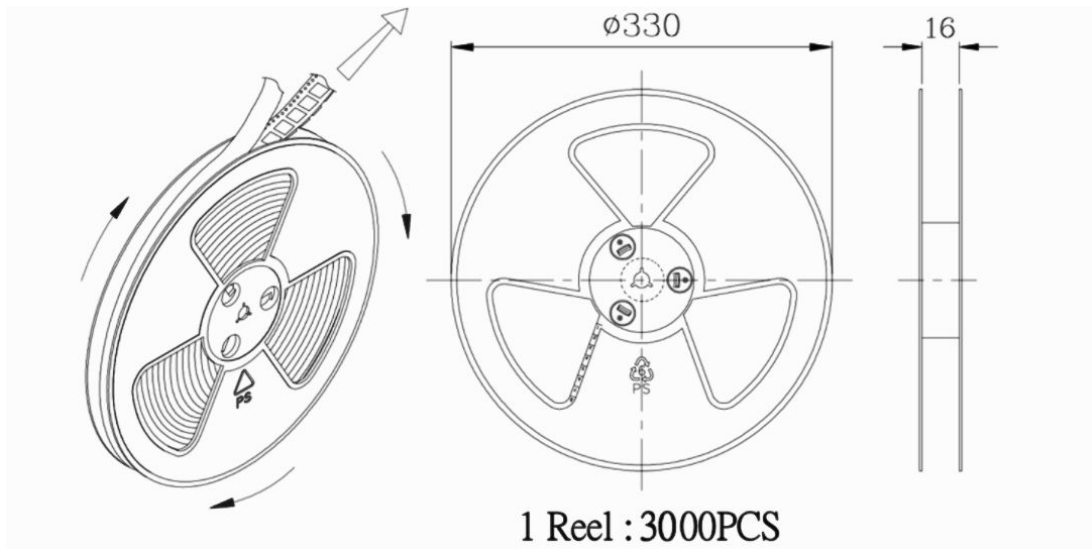
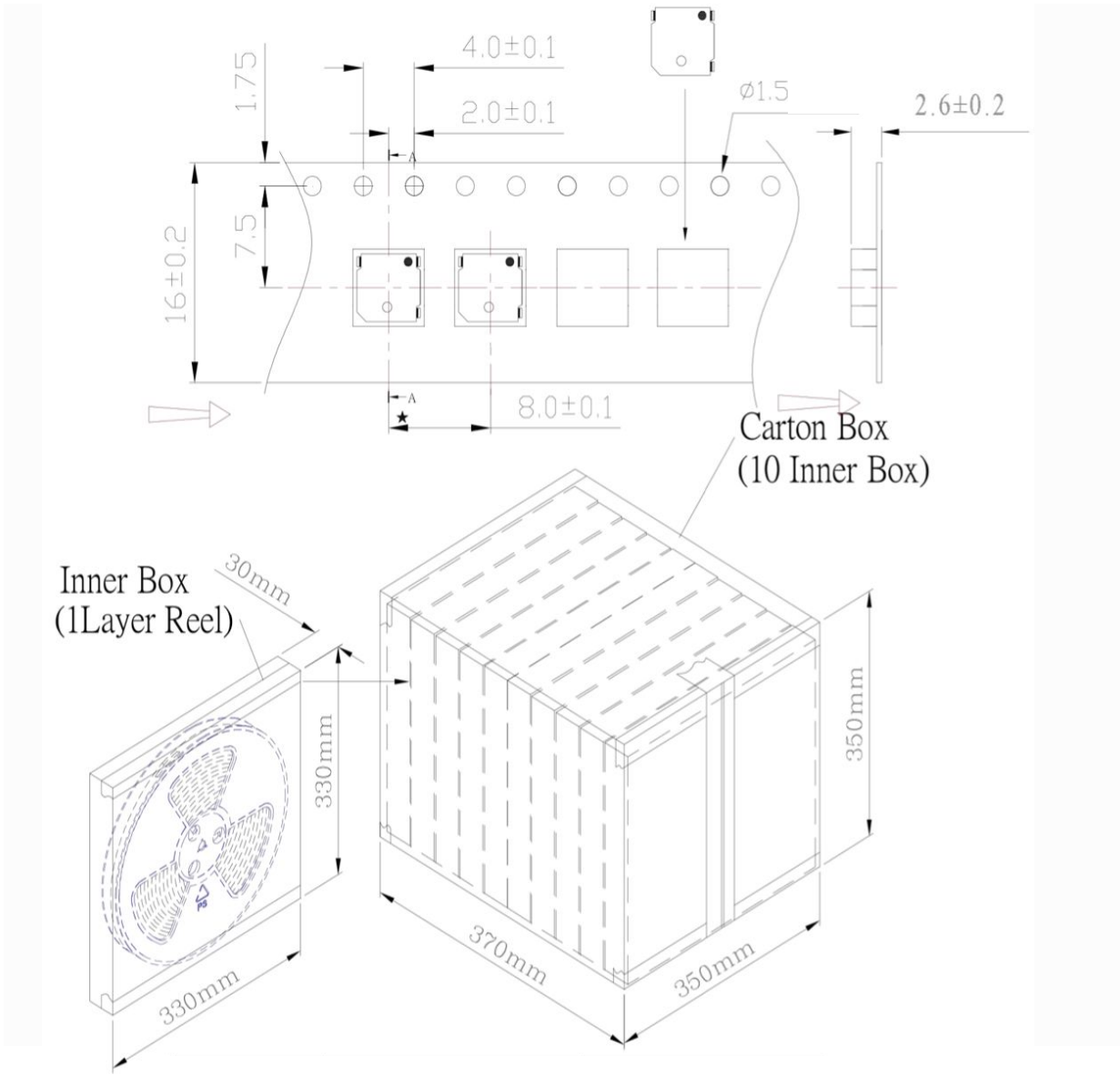
Packing





Packing Order:

Inner Box	330 x 330 x 30mm	1 x 3000 = 3,000pcs
Carton Box	370 x 350 x 350mm	10 x 3000 = 30,000pcs