

SPECIFICATION FOR APPROVAL

CUSTOMER:

PRODUCTS: MAGNETIC TRANSDUCER

MODEL: ST-0503

DIMENSIONAL: 5.0×5.0×3.0

CUSTOMER	CHECKED BY	APPROVED BY

Soberton Inc.

211 N. First Street
Minneapolis, MN. 55401
612-849-6205

www.soberton.com

SPECIFICATIONS FOR TRANSDUCER

The Specification is confidential.



1.0 DESCRIPTION AND APPLICATION

This is a miniature electro-magnetic transducer. The transducer is recommended to be used for clock, telephone, modem, etc; this transducer is ROHS compliant.

2.0 SPECIFICATIONS

NO.	ITEMS	SPECIFICATIONS
2-1	Rated Voltage	3.0 VDC
2-2	Operating Voltage	2.0 ~ 4.0 VDC
2-3	* Rated Current	100 mA (Max.)
2-4	Coil DC Resistance	12±2
2-5	* Sound Output at 10 cm	78 dBA(Min.)
2-6	Rated Frequency	4000 Hz
2-7	Housing Material	LCP
2-8	Weight	0.1 g
2-9	Operating temperature range	-30 to +70
2-10	Storage temperature range	-40 to +85

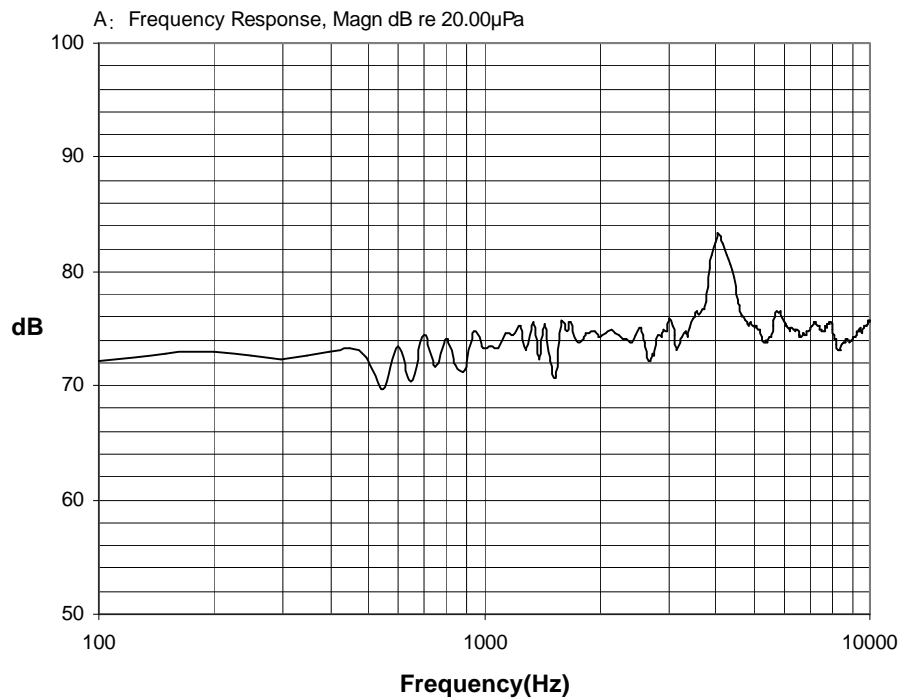
*Measure value at rated voltage (3.0VDC) and rated frequency (4000 Hz, 1/2 duty square wave.).

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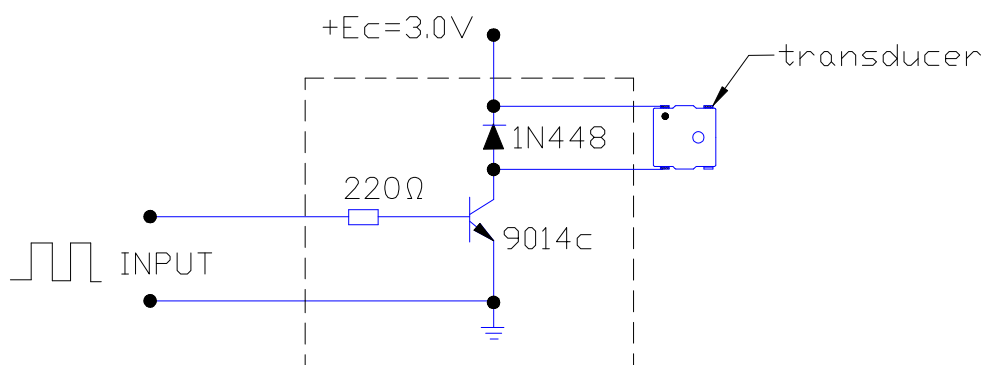
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3.0 FREQUENCY RESPONSE



4.0 STRANDARD DRIVE CIRCUIT

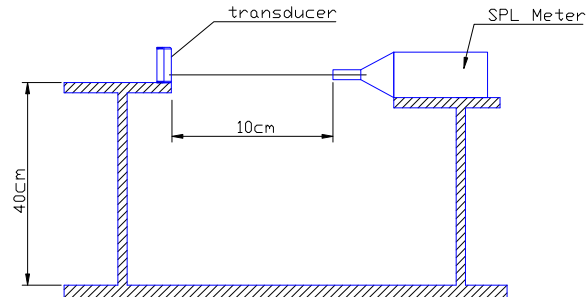


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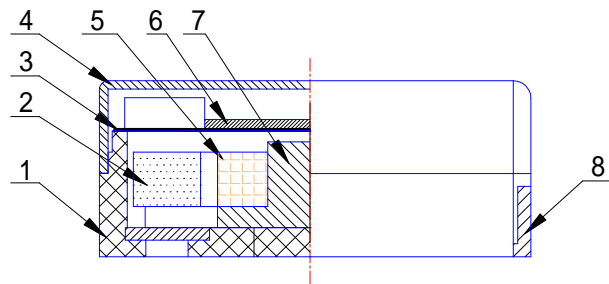
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5.0 INSPECTION TEST FIXTURE



6.0 FRAMEWORK AND MATERIAL



NO.	NAME	MATERIAL
1	BASE	LCP
2	MAGNET	SmCo
3	DIAPHRAGM	ALLOY OF IRON & NICKEL
4	UPPER COVER	STAINLESS STEEL
5	COIL	ENAMELLED WIRE
6	WEIGHT	Fe
7	IRON CORE	Fe
8	TERMINAL PAD	Cu

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7.0 RELIABILITY TEST

No	Item	Condition
7-1	Low temperature storage	Storage in -40 test box for 96 hours, then expose to room temperature for 2 to 4 hours.
7-2	High temperature storage	Storage in +85 test box for 96 hours, then expose to room temperature for 2 to 4 hours.
7-3	Temperature Cycle	<div style="text-align: center;"> <p style="margin: 0;">-40°C +85°C</p> <p style="margin: 0;">30min 30min 32 cycles</p> <p style="margin: 0;">60 min at 1 cycle</p> </div> <p>20 second Max. Transition time between Temp. extremes</p>
7-4	Static Humidity	Precondition at +25 for 1 hour. Then expose to +70 with 90 to 95% relative humidity for 240 hours. Finally allow to dry at room ambient for 2 to 4hours before taking final measurements.
7-5	Random Vibration	Vibrate randomly from 20 to 2000Hz using the following PSD profile. It is a +3 dB/octave from 20Hz to 80Hz,then $0.053 \text{ g}^2/\text{Hz}$ from 80Hz to 350Hz,and finally at -3dB/octave from 350Hz to 2000Hz.The PSD tolerance is $\pm 3\text{dB}$ from 20 to 1000Hz and $\pm 6\text{dB}$ above 1000Hz.The Analyzer Bandwidth to be set at 25Hz BW from 20 to 200Hz, 50Hz BW to 1000Hz, and finally 100Hz BW to 2000Hz.The test time is 15 minutes per plane.
7-6	Drop Test	The Buzzer that is attached to a 100 gram fixture is dropped to concrete floor from 1.5 meters height. Drop three times in each of the six planes.
7-7	Operating Life	Subject samples to +85 for 1000 hours under rated power.
7-8	Lead Pull Test	Subject test leads to an increasing pull force between the lead and the transducer until destruction occurs. Record the point of destruction .The minimum pull strength is 1000 grams.

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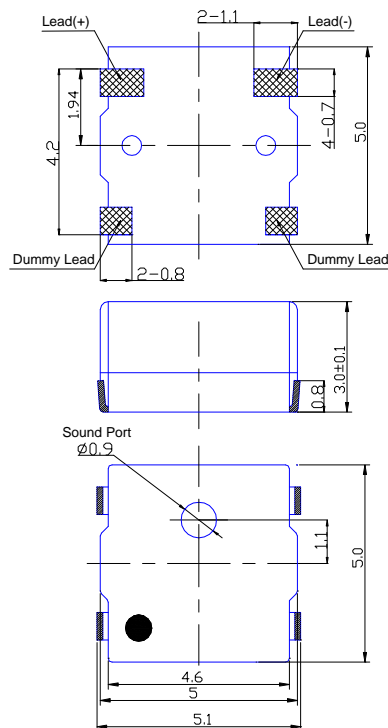
7-9	Reflow Soldering	<p>Recommendable reflow condition :</p>
7-10	Judgment At reliability	<ol style="list-style-type: none"> 1 Change in sound output should be within ± 75 dB and tone quality is allowed. 2 No significant change both in appearance and structure .

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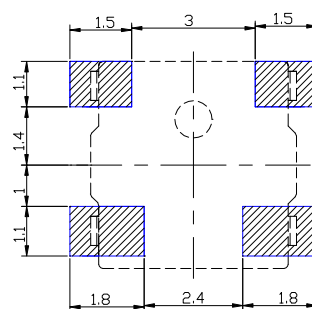
8.0 MECHANICAL DRAWING



All dimensions are in mm

Tolerance: ± 0.2 mm

9.0 SOLDERING PATTERN



All dimensions are in mm,

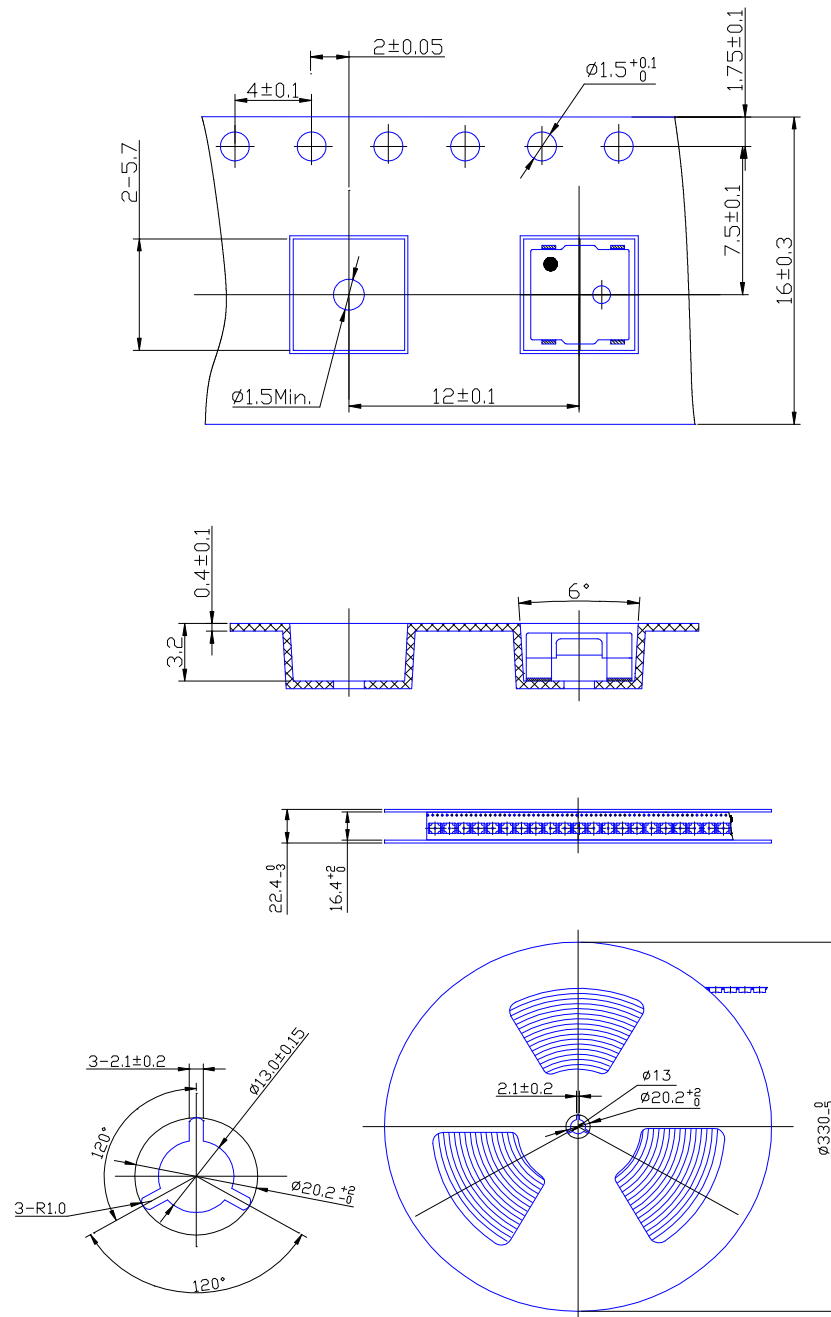
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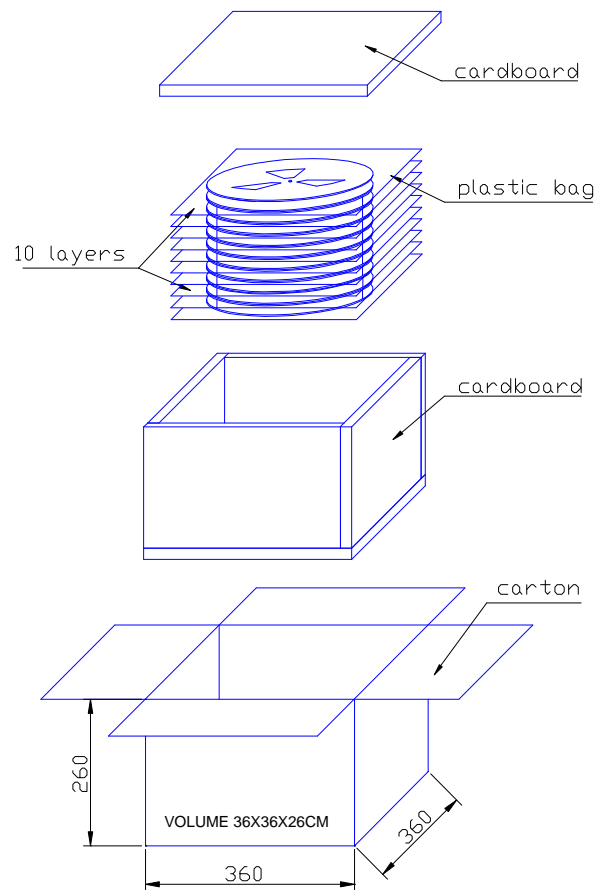


10.0 PACKING REQUIREMENTS



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List of packing

1 reel	1 CARTON
1000 PCS PRODUCTS	10000 PCS PRODUCTS