



请承认书

Version No.: V2.0

常州昊翔电子有限公司  
**Changzhou HaoXiang Electronic Co., LTD**

客户名称

**CUSTOMER NAMED :** \_\_\_\_\_

产品名称

**COMMODITY :** PIEZO BUZZER

产品型号

**MODEL NO :** TDA-15210-12VDC

客户料号

**PART NO :** \_\_\_\_\_

审核	秦皓	主办	唐俐雅 Aug.8,2018
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客户承认栏			
承认		拒收	

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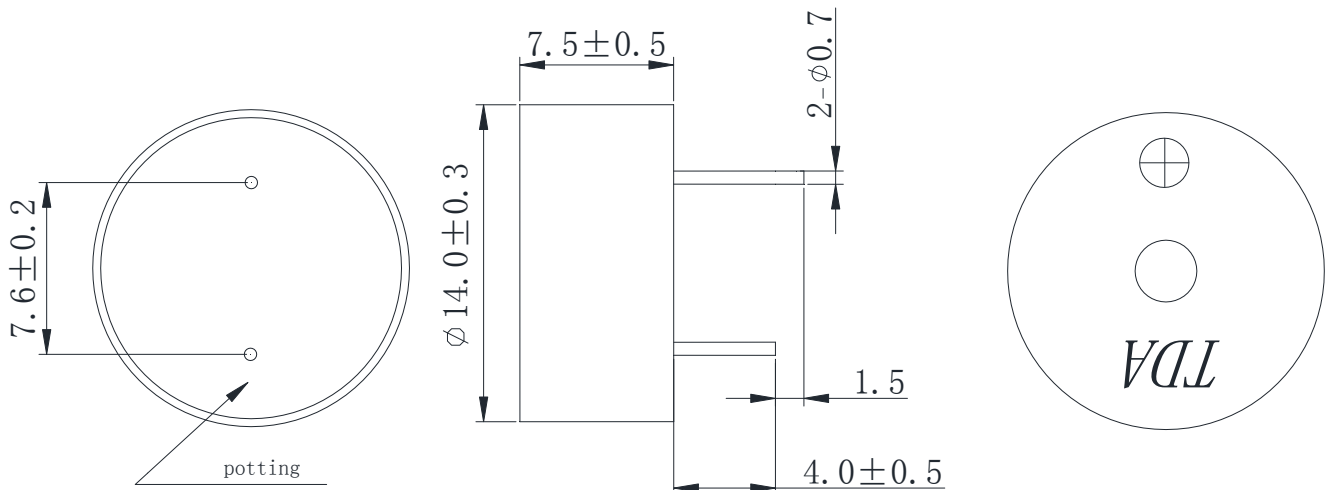
## A. SCOPE

This specification applies piezo buzzer, **TDA-15210-12VDC**

## B. SPECIFICATION

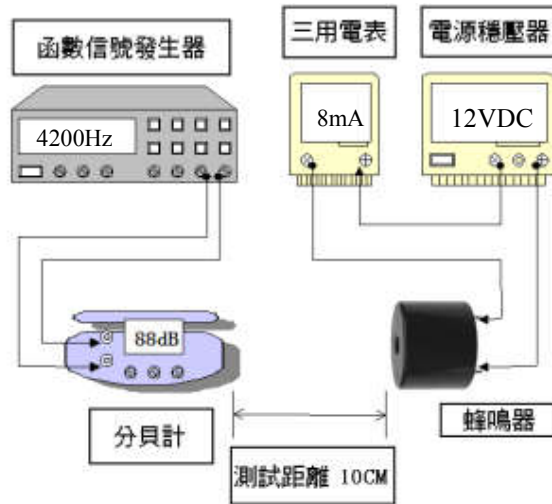
No.	Item	Unit	Specification	Condition
1	Oscillation Frequency	Hz	4100±500	square wave
2	Operating Voltage	Vdc	3~25	
3	Rated Voltage	Vdc	12	
4	Current Consumption	mA	MAX. 15	at 12Vdc
5	Sound Pressure Level	dB	MIN. 85	at 10cm 12Vdc
6	Operating Temperature	°C	-20 ~ +70	
7	Storage Temperature	°C	-40 ~ +80	
8	Dimension	mm	Ø14.0xH7.5	See appearance drawing
9	Weight (MAX)	gram	1.1	
10	Housing Material		PBT( Black )	
11	Leading Pin		Tin Plated Brass(Sn)	See appearance drawing
12	Environmental Protection Regulation		RoHS	

## C. APPEARANCE DRAWING



**Unit:mm Tolerance :  $\pm 0.5$ mm**

## D. RECOMMEND DIRIVING CIRCUIT



## E. MECHANICAL CHARACTERISTICS

NO	Item	Test Condition	Evaluation standard
1	Solderability	Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $270\pm 5^{\circ}\text{C}$ for $3\pm 0.5$ seconds.	90%min stripped wires shall be wet with solder.(except the edge of terminal)
2	Soldering Heat Resistance	Stripped wires are immersed up to 1.5mm from insulation in solder bath of $300\pm 5^{\circ}\text{C}$ for $\pm 0.5$ seconds or $260\pm 5^{\circ}\text{C}$ for $10\pm 1$ seconds.	No interference in operation
3	Terminal Strength Pulling	The force $10\pm 1$ seconds of 9.8N is applied to each terminal in axial direction	No damage and cutting off
4	Vibration	Buzzer shall be measured after being applied vibration of 1.5mm with 10 to 55Hz band of vibration frequency to each of 3 per-pendicular directions for 2 hours.	The value of oscillation frequency and current consumption should be in $\pm 10\%$ compared with initial ones.
5	Drop test	Dropped naturally from 80cm height onto the surface of 40mm thick wooden board of 3 directions for 1times.	The SPL should be in $\pm 10\text{dB}$ compared with initial one.

## F. ENVIRONMENT TEST

NO	Item	Test Condition	Evaluation standard
1	High temp. test	After being placed in a chamber at $80^{\circ}\text{C}$ for 96 hours	Being placed for 4 hours at $25^{\circ}\text{C}$ , buzzer shall be measured. The value of oscillation frequency and current consumption should be in $\pm 10\%$ compared with initial one. The SPL should be in $\pm 10\text{dB}$ compared with initial one.
2	Low temp. test	After being placed in a chamber at $-40^{\circ}\text{C}$ for 96 hours	
3	Humidity test	After being placed in a chamber at $40^{\circ}\text{C}$ and $85\pm 5\%$ relative humidity for 96hours	
4	Temp. cycle test	<p>The part shall be subjected to 5 cycles. One cycle shall be consist of:</p> <p style="text-align: center;">3hours</p>	

## G. RELIABILITY TEST

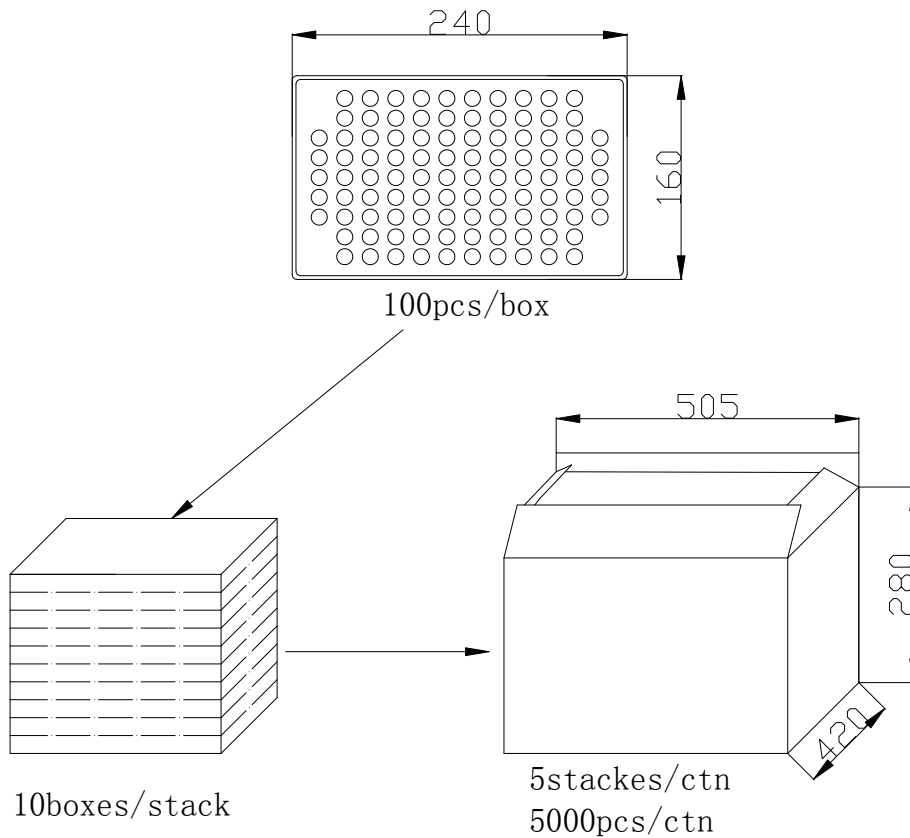
NO	Item	Test condition	Evaluation standard
1	Operating life test	<ol style="list-style-type: none"> <li>1. Continuous life test 96 hours continuous operation at 60°C with maximum rated voltage applied.</li> <li>2. Intermittent life test A duty cycle of 1 minute on, 5 minutes off, a minimum of 1000 times at room temp. (25±2°C) and maximum rated voltage applied</li> </ol>	Being placed for 4 hours at 25°C, buzzer shall be measured. The value of oscillation frequency and current consumption should be in ±10% compared with initial one. The SPL should be in ±10dB compared with initial one.

### TEST CONDITION

**Standard Test Condition :** a) Temperature : +5 ~ +35°C    b) Humidity : 45-85%    c) Pressure : 860-1060mbar

**Judgment Test Condition:** a) Temperature : +25±2°C    b) Humidity : 60-70%    c) Pressure : 860-1060mbar

## H. PACKING STANDARD



## I. NOTE CAUTIONS

- a. Can not be applied DC bias voltage and a sounding body or pronunciation elements, otherwise its insulation resistance will decrease and the use of performance degradation.
- b. Can not be imposed over pronunciation body or pronunciation components allows the use of voltage range of the voltage on the.
- c. Please pay attention in welding process, don't let soldering flux invasion into the sound chamber , otherwise flux can cause defect conduction.
- d. Use should handle with care, avoiding direct pressure contact, or inadvertently falling down, to prevent the occurrence of fault, or the generation characteristics of abnormal movements.

## J. NOTICE ON PRODUCT STORAGE

- a. Please store the products in room where the temperature / humidity is stable. And avoid such places where there are large temperature changes. Please store the products under the following conditions :
  - Temperature : -10 to +40 (degree C)
  - Humidity : 15 to 85% R.H.
- b. Expire date (Shelf life) of the products is 6 months after delivery under the conditions of a sealed and an unopened package. Please use the products within 6 months after delivery.If you store the products for a long time (more than 6months), use carefully because the products may be degraded in the solder-ability and/or rusty. Please confirm solder-ability and characteristics for the products regularly.
- c. Please use the products immediately after the package is opened, because the characteristics may be reduced in quality, and/or be degraded in the solder-ability due to storage under the poor condition.

## K. REVISION

No.	DATE	DESCRIPTION	REMARK	VERSION
1	Jun.10,2015	Initial condition	TDA-15210	V1.0
2	Jan.1,2018	Update appearance drawing	TDA-15210	V1.1
3	Aug.8,2018	Version upgrade	TDA-15210-12VDC	V2.0