



soberton inc.

# PB PIEZO AUDIO BUZZER

Acoustic Product Specification

Product Number: PB-2312NL



Release | Revision: C/2018

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## Specifications

Item	Unit	Specification	Condition
Rated Voltage	VDC	12.0	
Operating Volt	VDC	8.0 ~ 15.0	
Current Consumption	mA	15 Max.	At 12.0 VDC
Sound Output	dBa	88	At 30cm at rated voltage
Resonant Frequency	Hz	3300 ± 500	
Operating Temp	°C	-20 ~ +60	
Storage Temp	°C	-20 ~ +70	
Dimension	mm	ø22.7 x H12.1	See dimension
Weight	gram	8	
Material		ABS (black)	
Terminal		Wire type	Wire 100mm (UL1007/AWG26#)
Environmental Protection Regulation		RoHS	

### Test condition:

Temperature: +25±2 °C    Related humidity: 65±5%    Air Pressure: 86~106KPa

## Mechanical Characteristics

Item	Test condition	Evaluation standard
Lead Wire Pull Strength	The pull force shall be applied to double lead wire: Horizontal: 3.0N(0.306kg) for 30 seconds. Vertical: 2.0N(0.204kg) for 30 seconds.	No damage and cutting off.
Vibration	Buzzer shall be measured after a vibration of amplitude of 1.5mm with 10Hz to 55Hz band of vibration frequency is applied to each of 3 perpendicular directions for 2 hours.	The value of oscillation frequency current consumption should be in ±10% compared with initial ones.
Drop Test	The part is dropped from a height of 70cm onto a 40mm thick wooden board 3 times in 3 axes(X,Y,Z). A total of 9 times.	The SPL should be in ±10dB compared with initial one.



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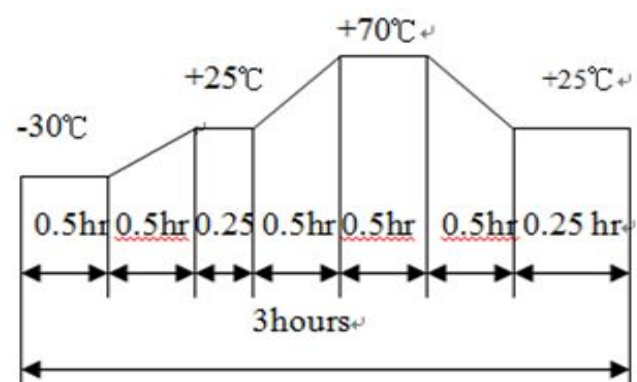
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## Environment Test

Item	Test condition	Evaluation standard
High temp. test	The part is placed in a chamber at +70°C for 96 hours.	Being placed for 4 hours at +25°C, the buzzer shall be measured.
Low temp. test	The part is placed in a chamber at -30°C for 96 hours.	The value of oscillation, frequency / current consumption should be in $\pm 10\%$ compared with initial ones.
Humidity test	The part is placed in a chamber at +70°C and $90\pm 5\%$ relative humidity for 96 hours.	The SPL should be in $\pm 10\text{dB}$ compared with initial one.
Temp cycle test	The part shall be subjected to 5 cycles. Each cycle shall consist of:	



## Reliability Test

Item	Test condition	Evaluation standard
Operating Life Test	<p><b>1. Continuous life test</b> 48 hours of continuous operation at +55°C with the maximum rated voltage applied.</p> <p><b>2. Intermittent life test</b> A duty cycle of 1 minute on, 1 minutes off, a minimum of 1000 times at <math>+25\pm 2^\circ\text{C}</math> and the maximum rated voltage applied.</p>	<p>After the test, the part shall meet specifications without any degradation in appearance and performance except SPL.</p> <p>After 4 hours at +25°C, the SPL should be in <math>\pm 10\text{dBA}</math> compared with initial one.</p>

### Standard test condition:

- a) Temperature: +5~+35°C
- b) Humidity: 45~85%
- c) Pressure: 86~106KPa



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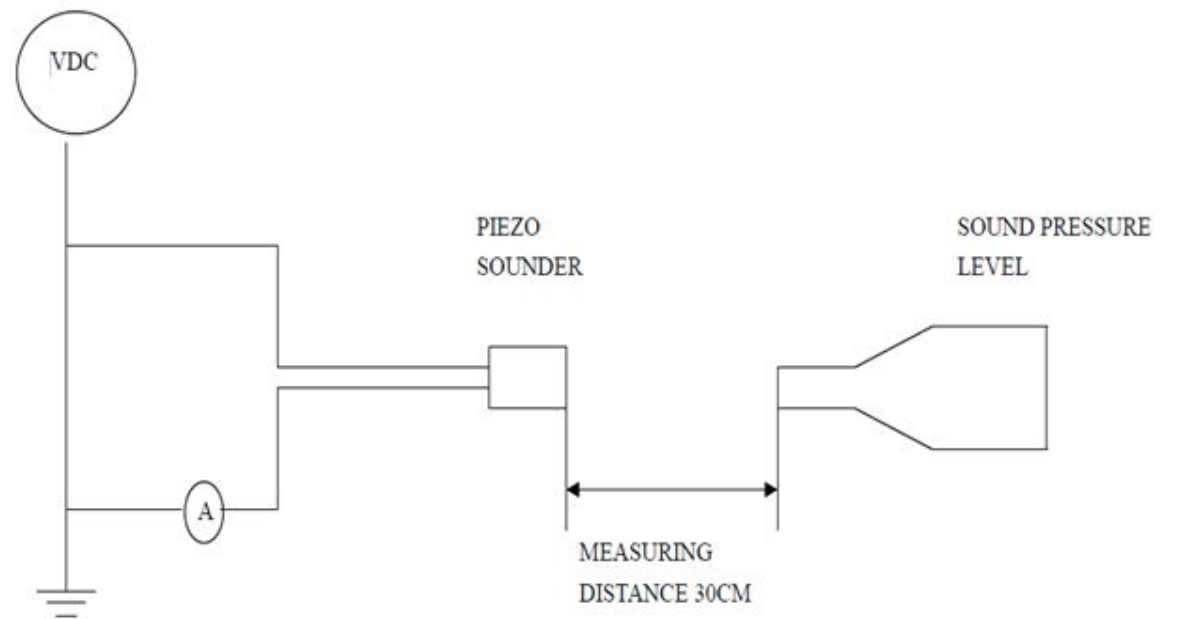
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## Measuring Method (Speaker Mode)

### S.P.L Measuring Circuit

Input Signal: 12.0 VDC



MIC: S.P.L meter TES1351B or equivalent



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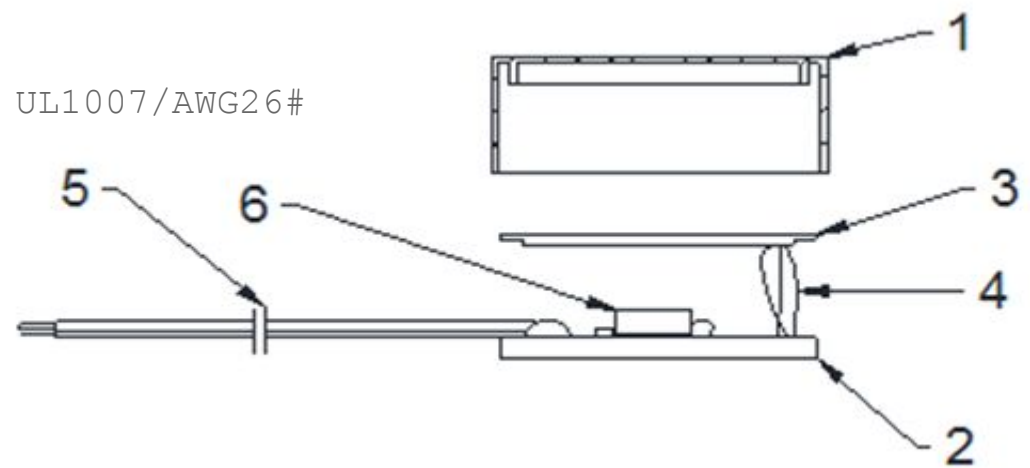
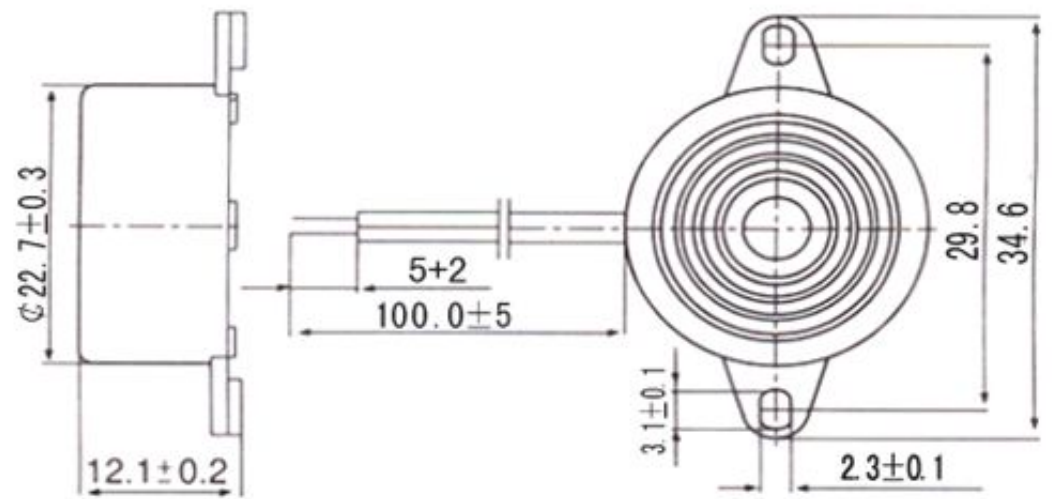
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## Dimensions

Tolerance:  $\pm 0.5$  (unit: mm)



No.	Part Name	Material	Quantity
1	Case	ABS	1
2	Cover/PCB	Epoxy	1
3	Piezo	Brass + Ceramic	1
4	Wire	Copper	3
5	Wire (100mm)	UL1007/AWG26#	2
6	Transistor	Epoxy + Copper	2



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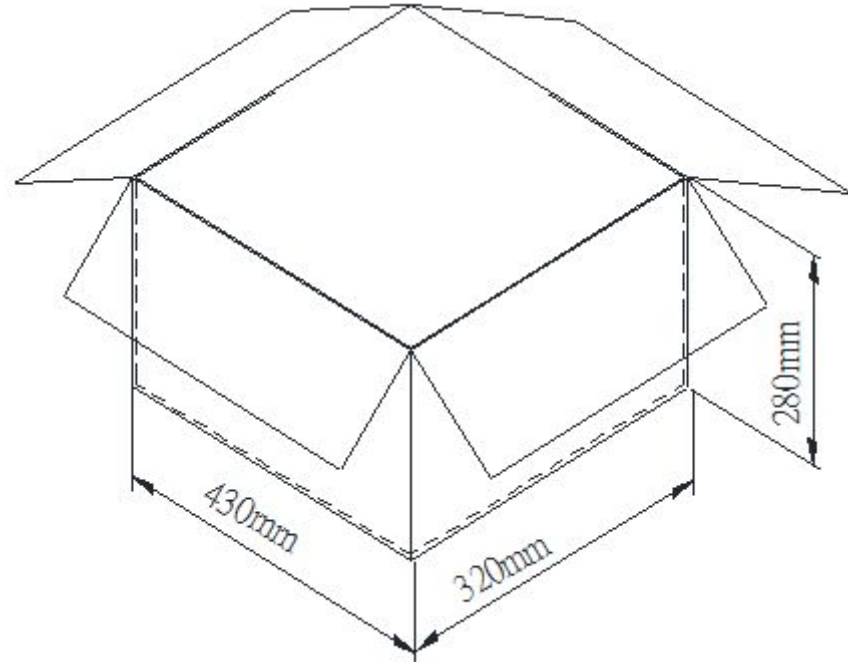
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## Details

	Size (mm)	Quantity (pcs)
Carton	430 x 320 x 280	2,000