



soberton inc.

# ST BUZZER

## Acoustic Product Specification

Product Number: ST-1411



Release | Revision: D/2018

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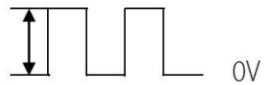
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## Specifications

Item	Unit	Specification	Condition
Rated Voltage	Vo-p	3.0	Vo-p 
Operating Voltage	Vo-p	2.0 ~ 4.0	
Mean Current	mA	80 Max.	At rated voltage, 3200 Hz square wave, 1/2 duty
Coil Resistance	Ω	18 ±3	
Sound Output	dB	87	At 10cm(A-weight free air), at rated voltage 3200Hz, square wave, 1/2 duty
Rated Frequency	Hz	3200	
Operating Temp	°C	-30 ~ +80	
Storage Temp	°C	-40 ~ +85	
Dimension	mm	L14.0×W11.0 × H3	See attached drawing
Weight	gram	1.0	
Material		LCP (Black)	
Terminal		SMD type (Plating Sn)	See attached drawing
Environmental Protection Regulation		RoHS	

### Test Condition

Temperature : +25±2 °C Relative Humidity: 65±5% Air Pressure: 86-106KPa

## Mechanical Characteristics

Item	Test condition	Evaluation standard
Solderability	Lead terminals are immersed in the solder bath at +250±5°C for 3±1 seconds.	90% min. lead terminals shall be wet with solder No interference in operation.
Soldering Heat Resistance	The product follows the reflow temperature curve to test its reflow thermal stability.	
Terminal Mechanical Strength	Lead pads shall be soldered on the pc board, and the force of 9.8N (1.0Kg) shall be applied to the part for 10 seconds.	No damage and cutting off
Vibration	The part shall be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude shall be 1.52mm(9.3G). The vibration test shall consist of 2 hours per axis in each three axes (X,Y,Z). Total 6 hours.	After the test, the part shall meet specifications without any damage in appearance and performance except SPL. The SPL should be in ±10dBA compared with initial one.
Drop Test	The part is dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes (X,Y,Z). Total of 9 times.	



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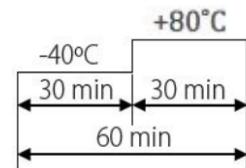
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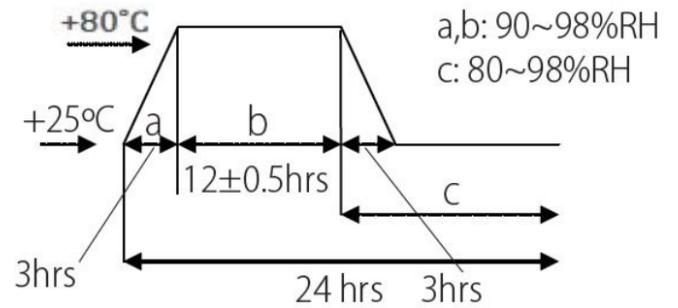
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## Environment Test

Item	Test condition	Evaluation standard
High Temp. Test	The part is placed in a chamber at +80°C for 48 hours	After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25°C, the SPL will be in ±10dBA compared with initial one.
Low Temp. Test	The part is placed in a chamber at -40°C for 48 hours	
Thermal Shock	The part shall be subjected to 10 cycles. Each cycle shall consist of: 	

Temp./Humidity Cycle

The part shall be subjected to 10 cycles. One cycle shall be 24 hours and consist of:



## Reliability Test

Item	Test condition	Evaluation standard
Operating Life Test	<b>Ordinary Temperature</b> The part shall be subjected to 96 hours of continuous operation at +25°C±10°C.	After the test, the part shall meet specifications without any degradation in appearance and performance except SPL. After 4 hours at +25°C, the SPL should be in±10dBA compared with initial one.
	<b>High Temperature</b> The part shall be subjected to 72 hours of continuous operation at +80°C at 3.0V, 3200Hz applied.	
	<b>Low Temperature</b> The part shall be subjected to 72 hours of continuous operation at -30°C at 3.0V, 3200Hz applied.	

### Standard test condition:

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



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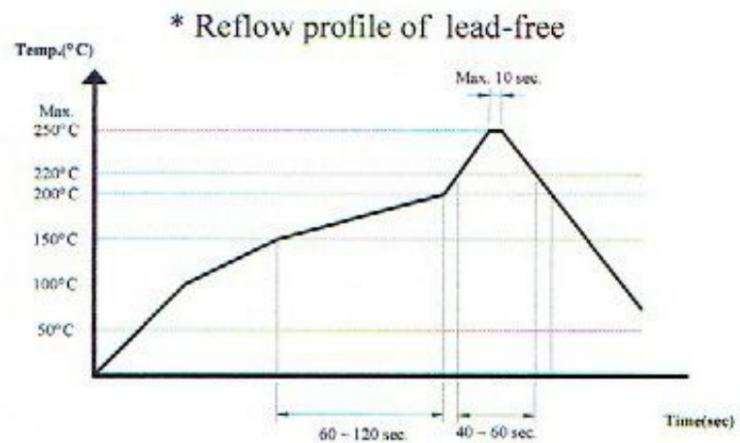
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## Recommended Temperature Profile for Reflow Oven

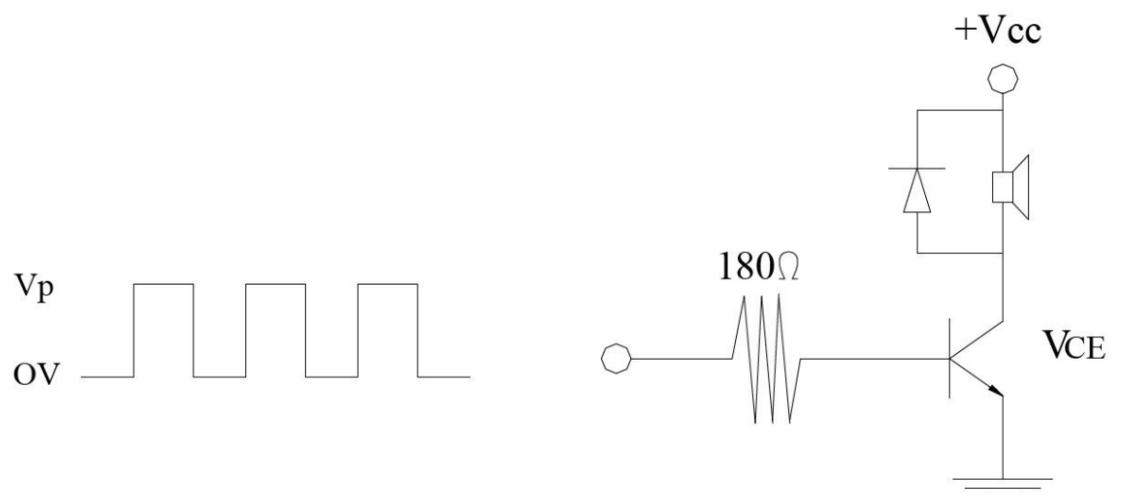
Recommendable wave soldering condition is as follows:

**Note 1:** It is requested that reflow soldering should be executed after heat of product goes down to normal temperature.

**Note 2:** Peak reflow temperature of 250°C maximum of 10 seconds, with a maximum duration of 40-60 seconds between 220°C and 250°C



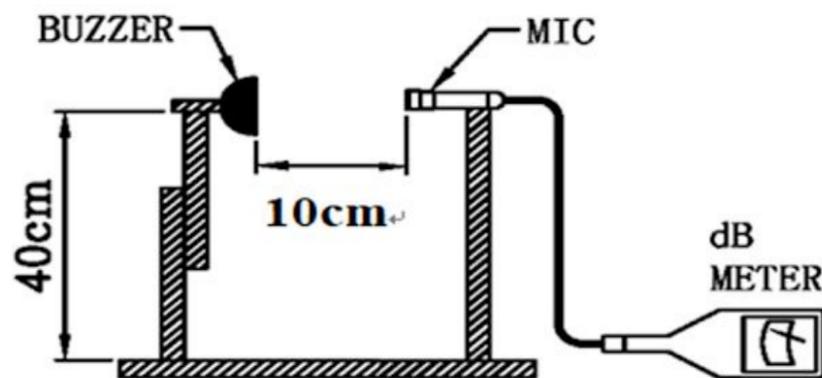
## Measurement Test Circuit



## Measurement Method

S.P.L Measuring Circuit

Input Signal: 3.0 Vo-p, square wave, 1/2 duty, 3200Hz



Mic: RION S.P.L meter UC30 or equivalent

S.G: Hewlett Packard 33120A Function Generator or equivalent



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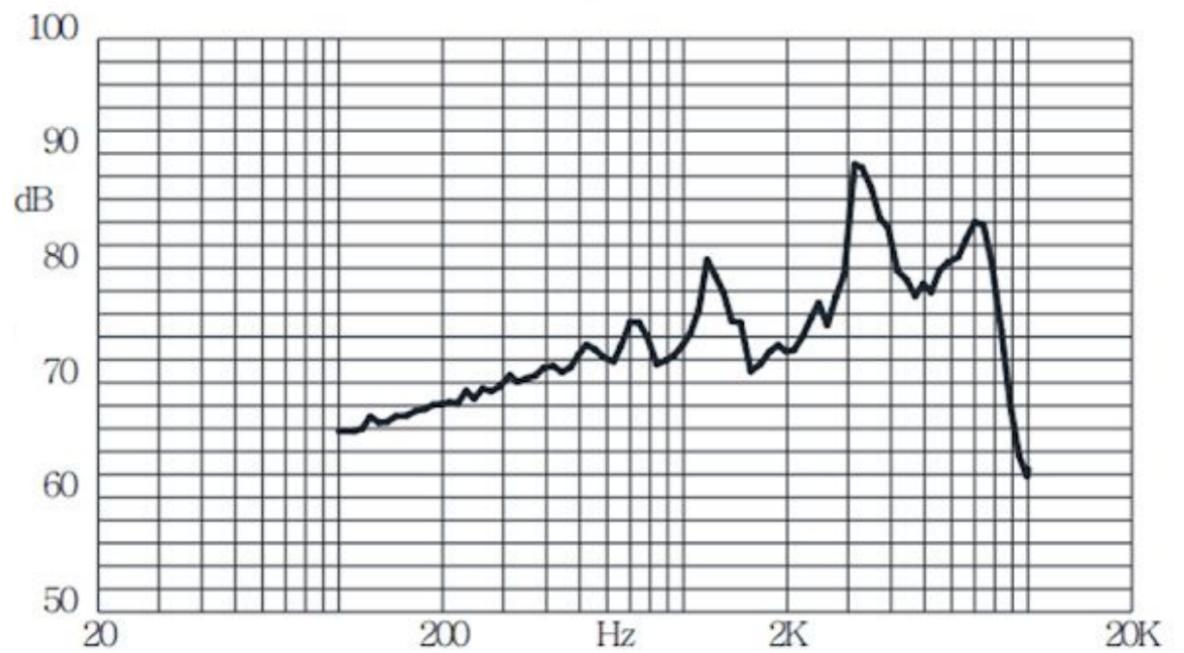
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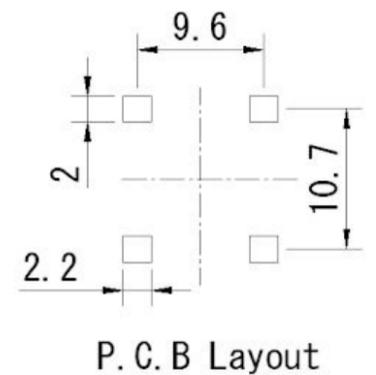
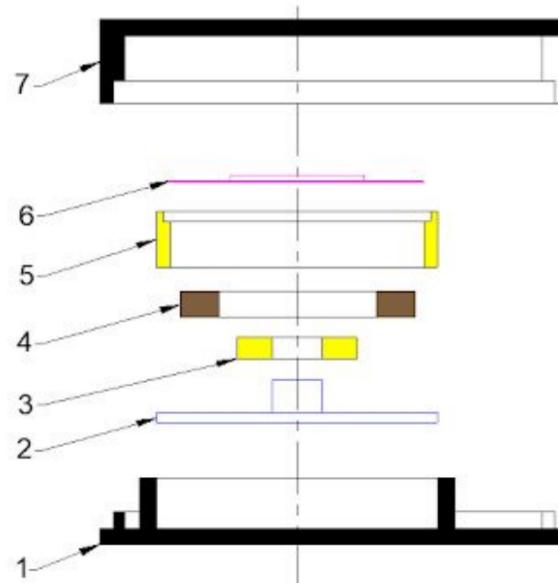
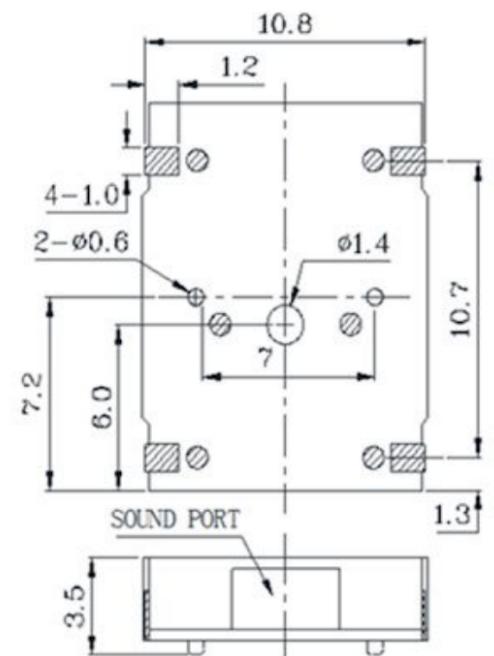
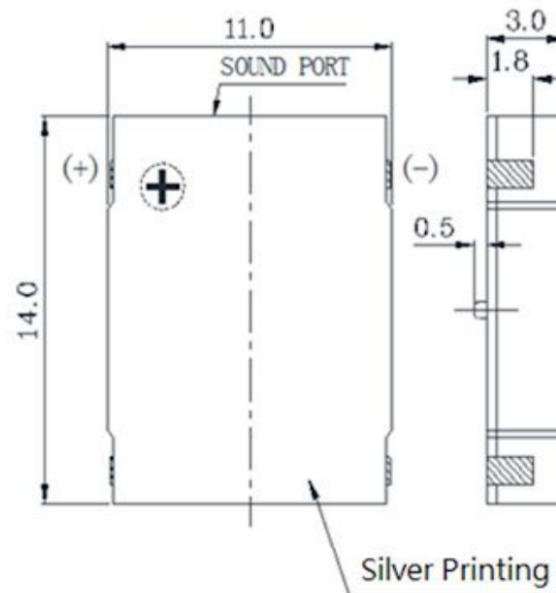
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## Dimensions

Tolerance:  $\pm 0.3$  (unit: mm)



No.	Part Name	Material	Quantity
1	Case	LCP	1
2	Frame	Ferrum	1
3	Coil	Copper	1
4	Magnet	Poly + Ferrite	1
5	Copper Collar	Copper	1
6	Diaphragm	Ferrum	1
7	Case	LCP	1



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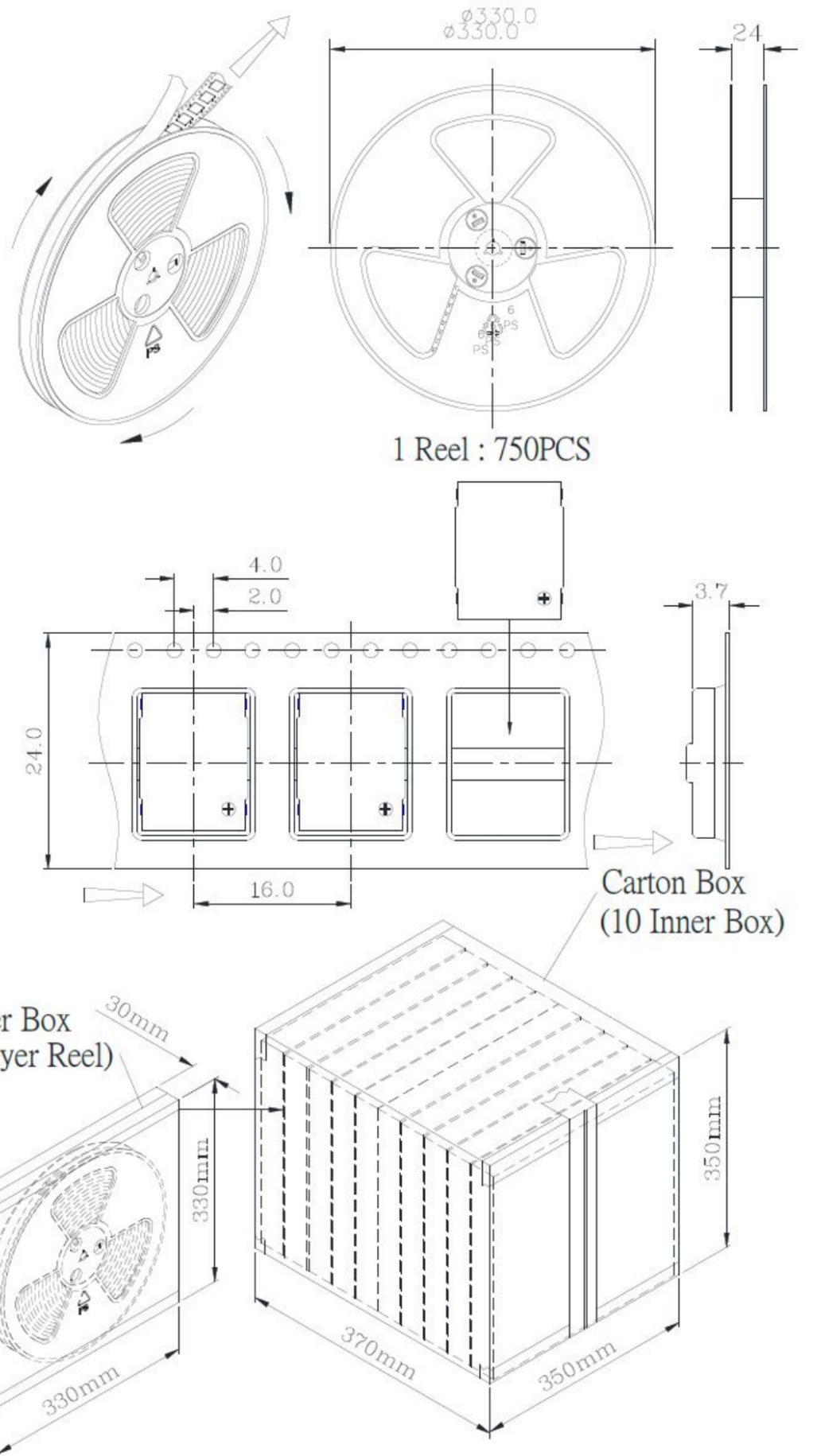
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## Packing



Packing Job	L x W x H (mm)	Pieces
Inner Box	330 x 330 x 30	1 x 750 = 750pcs
Carton Box	370 x 350 x 350	10 x 750 = 7,500pcs