

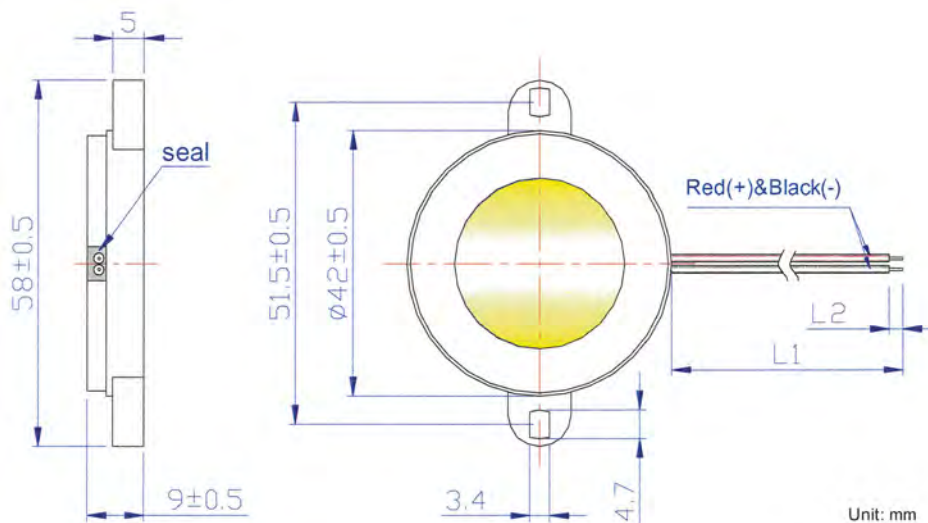
## A. SCOPE

This specification applies active piezoelectric buzzer (waterproof function),  
 ICC/INTERVOX P/N: **BRP4209L-12-C-WP**

## B. CHARACTERISTICS

#	Item	Unit	Specification	Remark
1	Resonant Frequency	KHz	3.5 ± 0.5	
2	Operating Voltage	V	3 ~ 15	DC
3	Rated Voltage	V	12	DC
4	Current Consumption	mA	Max 30	
5	Sound Pressure Level	dB	Min 95	30cm, A Weighted
6	Operating Temperature	°C	-30 ~ +70	
7	Storage Temperature	°C	-40 ~ +70	
8	Dimension	mm	Φ42 x H9	Refer mechanical specification
9	Weight (max)	gram	7	
10	Housing Material	/	ABS(Black)	UL94HB
11	Leading Wire	/	AWG24	UL1007, L1=100±5, L2=3±1
12	Tone/ Pulse Rate	/	Constant	
13	IP Protection Level	/	IP67	
14	GP Compliance	/	RoHS	

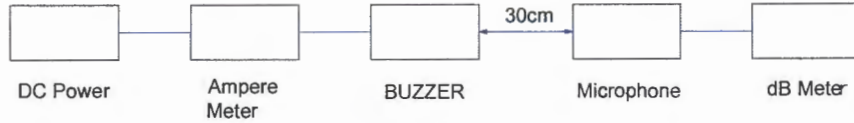
## C. MECHANICAL DIMENSION



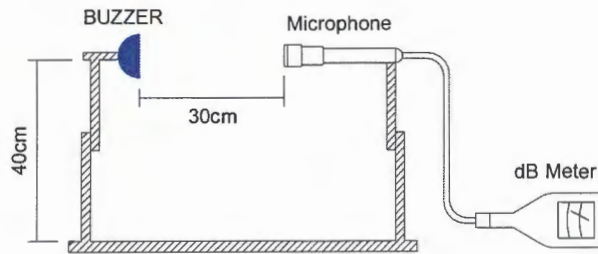
### D. FUNCTION TEST – BRP4209L-12-C-WP

Environment Conditions: Temperature:  $25 \pm 2^\circ$  Humidity: 45-60%

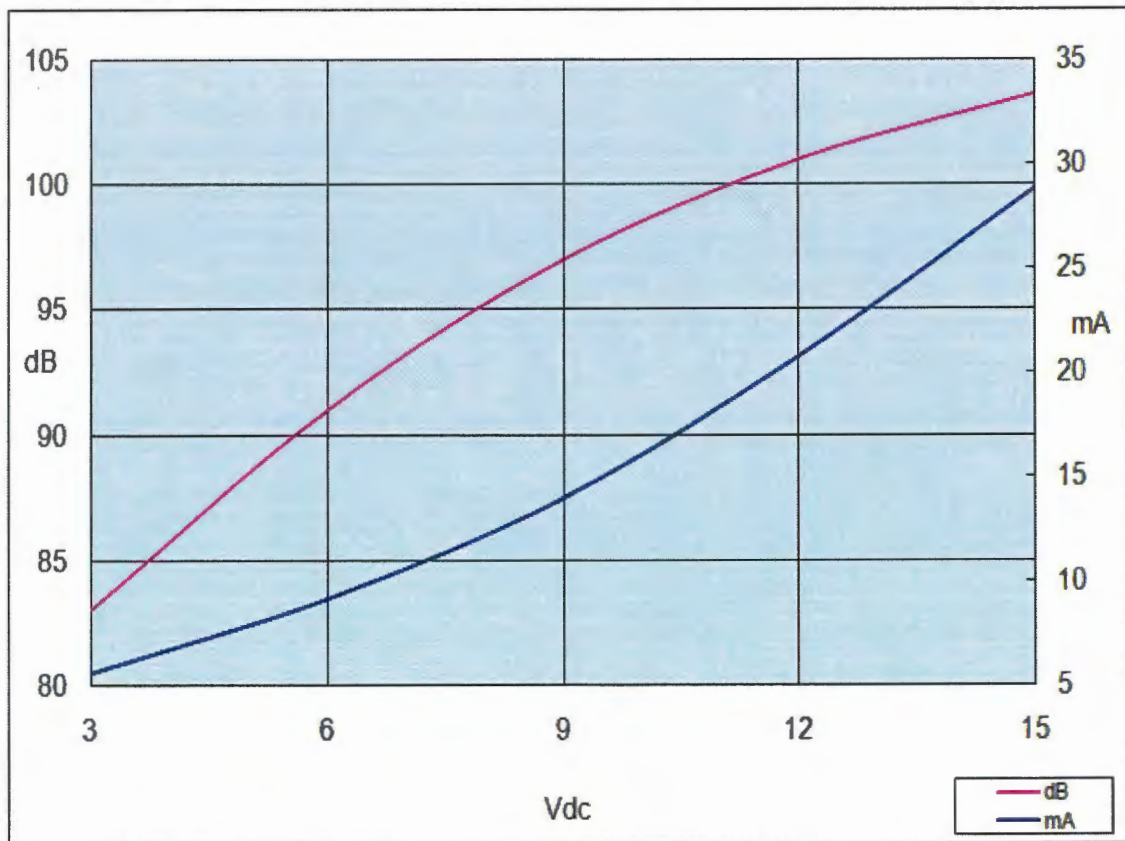
Acoustic Characteristics: The oscillation frequency, current consumption and sound pressure are tested by the testing instruments shown below



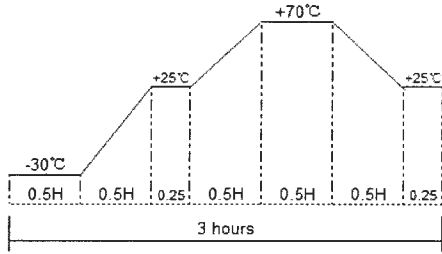
in this test, buzzer is placed as below:



### E. VOLTAGE/ CURRENT/ SOUND PRESURE CURVE



### F. RELIABILITY TEST – BRP4209L-12-C-WP

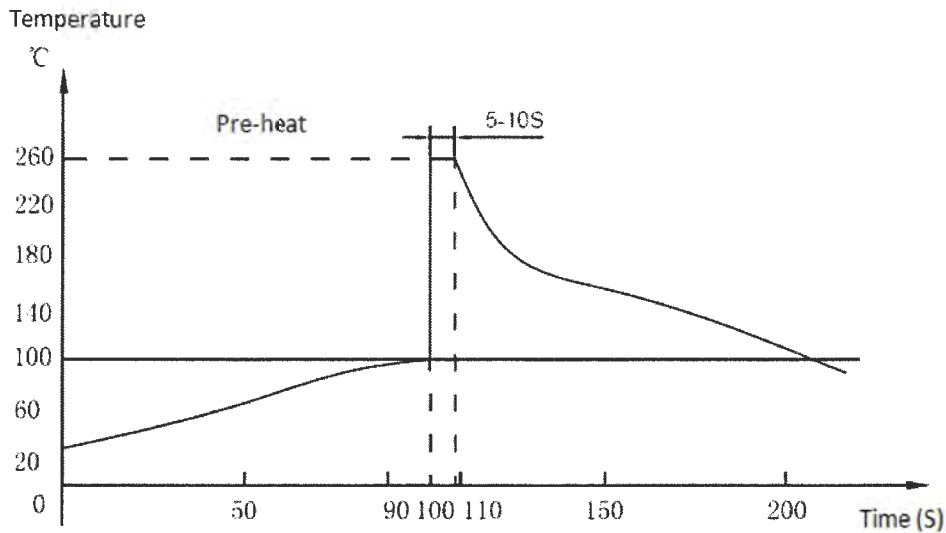
#	ITEM	TEST CONDITION AND REQUIREMENT
1	High Temperature Test (Storage)	Place the test samples in a chamber with $+70\pm 2^{\circ}\text{C}$ for 96 hours and then place the samples in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
2	Low Temperature Test (Storage)	Place the test samples in a chamber with $-40\pm 2^{\circ}\text{C}$ for 96 hours and then place the samples in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
3	Humidity Test	Place the test samples in a chamber with 90-95% R.H. at $+40\pm 2^{\circ}\text{C}$ for 96 hours and then place the samples in normal condition for 2 hours. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
4	Temperature Cycle Test	<p>The buzzers shall be subjected to 5 cycles. One cycle should include:</p>  <p>Allowable variation of SPL after test: <math>\pm 10\text{dB}</math>.</p>
5	Drop Test	Drop on a hard wood board of 4cm thick, any directions 6 times, at the height of 75cm. Allowable variation of SPL after test: $\pm 10\text{dB}$ .
6	Vibration Test	Being applied the amplitude of 1.5mm (peak to peak) with the frequency of 10Hz to 55Hz (linear sweep) to each of 3 perpendicular directions for 1 hour. Allowable variation of SPL after the test: $\pm 10\text{dB}$ .
7	Waterproof Test	Put the samples into the depth of 100cm water for 0.5 hour (30 minutes). No water inflow the buzzer. Allowable variation of SPL after the test: $\pm 5\text{dB}$ .

Standard Mode: a) Temperature:  $+5 \sim +35^{\circ}\text{C}$   
 b) Humidity: 45-85%  
 c) Pressure: 860-1060 mbar

Judgment Mode: a) Temperature:  $+25 \pm 2^{\circ}\text{C}$   
 b) Humidity: 60-70%  
 c) Pressure: 860-1060 mbar

## G. RECOMMENDED WAVE SOLDERING PROFILE

Profile Feature	Pb-Free Wave Soldering
Pre-heat	
-Temperature	From 20°C to 120°C
-Time	30~120 seconds
Temperature Ramp-up	Max 3°C per second
Soldering Stage	
-Temperature	260+5/-10°C (250°C~265°C)
-Time	5~10 seconds
Ramp Down Rate	Max 6°C per second
Temperature Gradient (Peak with Pre-heat)	Max 150°C



Lead Free Wave Soldering Profile

**Notes:**

- 1) The max temperature of transparent PVC is 70°C;
- 2) If hand welding is required in production, the recommended electric soldering iron temperature is 380±20 °C, less than 2 seconds;