

**PART NUMBER:** CPE-522

**DESCRIPTION:** piezo audio indicators

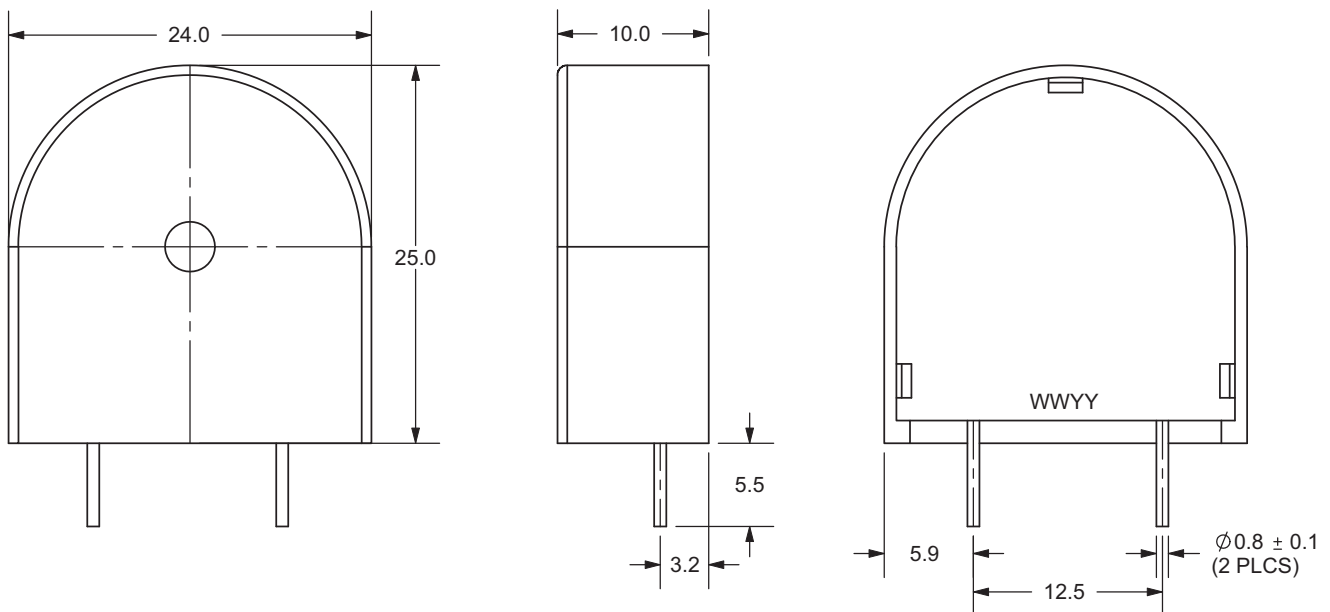
**SPECIFICATONS**

|                         |                          |                  |
|-------------------------|--------------------------|------------------|
| operating frequency     | 3.2 ± 0.5 KHz            |                  |
| operating voltage range | 3 ~ 20 V DC              |                  |
| current consumption     | 10 mA max.               | at 12 V DC       |
| sound pressure level    | 75 db min.               | at 30 cm/12 V DC |
| rated voltage           | 12 V DC                  |                  |
| tone                    | continuous               |                  |
| operating temperature   | -30 ~ +115° C            |                  |
| storage temperature     | -40 ~ +125° C            |                  |
| dimensions              | L25.0 x W24.0 x H10.0 mm |                  |
| weight                  | 3.7 g max.               |                  |
| material                | PC+10% glass (black)     |                  |
| terminal                | pin type (Au plating)    |                  |
| RoHS                    | yes                      |                  |

**APPEARANCE DRAWING**

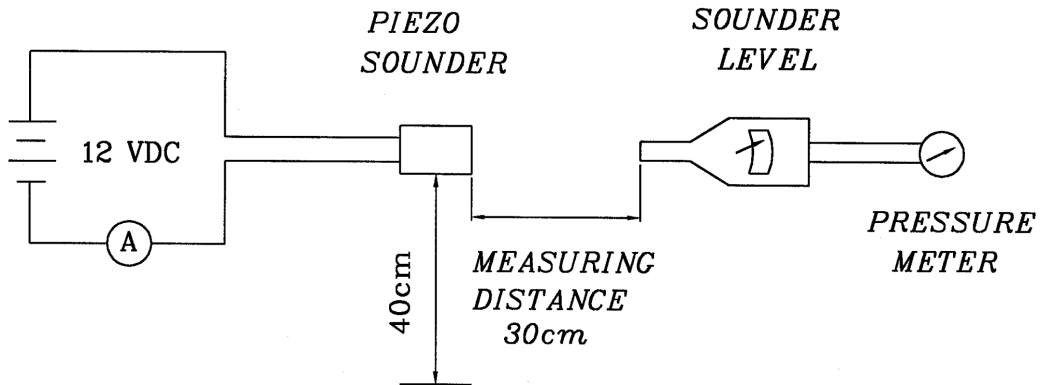
tolerance: ±0.5

units: mm

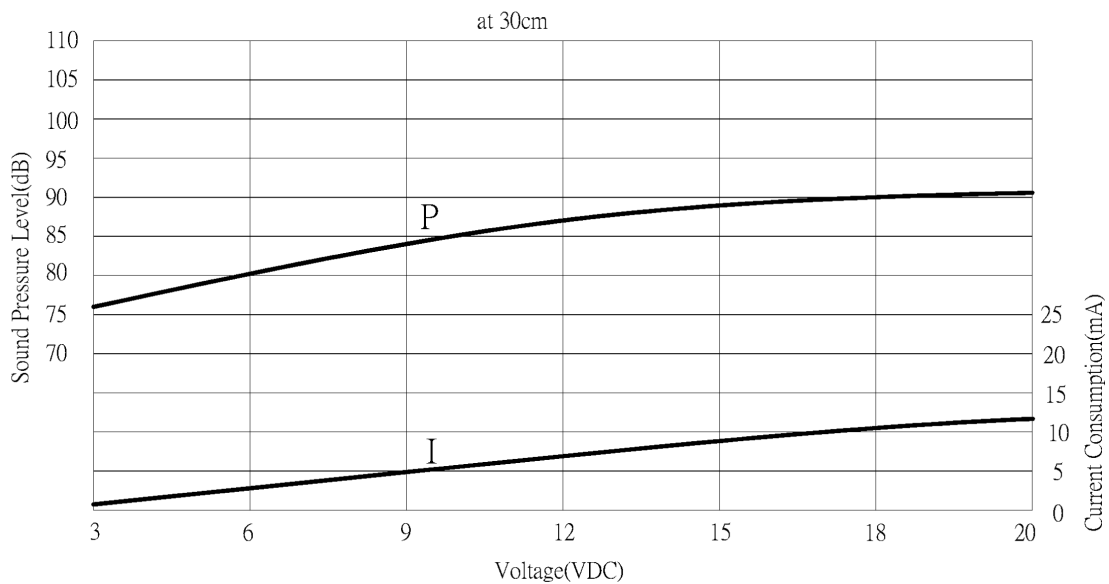


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**MEASUREMENT METHOD**


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

**CURRENT CONSUMPTION/SOUND PRESSURE LEVEL**


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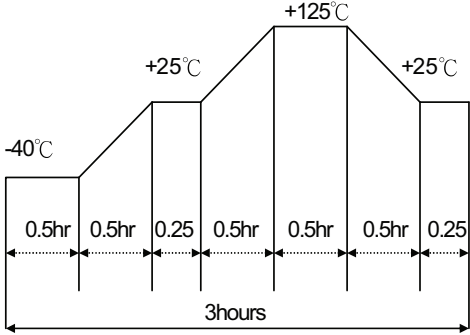
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**MECHANICAL CHARACTERISTICS**

| item                       | test condition  | evaluation standard  |
|----------------------------|---|--|
| solderability              | Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of $270 \pm 5^\circ\text{C}$ for $3 \pm 1$ seconds.   | 90% min. of the lead terminals will be wet with solder (except the edge of the terminal).  |
| soldering heat resistance  | Lead terminals are immersed up to 1.5mm from buzzer's body in solder bath of $300 \pm 5^\circ\text{C}$ for $3 \pm 0.5$ seconds or $260 \pm 5^\circ\text{C}$ for $10 \pm 1$ seconds. | No interference in operation.  |
| terminal strength pulling  | For 10 seconds, the force of 300g is applied to each terminal in axial direction.   | No damage or cutting off.  |
| vibration                  | The buzzer shall be measured after applying a vibration amplitude of 1.5 mm with 10 to 55 Hz band of vibration frequency to each of the 3 perpendicular directions for 2 hours.     | The value of oscillation frequency/current consumption should be $\pm 10\%$ of the initial measurements. The SPL should be within $\pm 10\text{dB}$ compared with the initial measurement. |
| drop test                  | The part will be dropped from a height of 75 cm onto a 40 mm thick wooden board 3 times in 3 axes (X, Y, Z) for a total of 9 drops.   |  |
| inside lead wire pull test | For 10 seconds, the force of 400g is applied to each terminal in axial direction.   | No damage or cutting off.  |
| strength pulling           | For 1 minute, the force of 5 kg at room temperature ( $+25 \pm 5^\circ\text{C}$ ) is applied to case A and B.   | No damage or cutting off.  |

**ENVIRONMENT TEST**

| item             | test condition   | evaluation standard   |
|------------------|--|---|
| high temp. test  | After being placed in a chamber at $+125^\circ\text{C}$ for 240 hours.                                   | The buzzer will be measured after being placed at $+25^\circ\text{C}$ for 4 hours. The value of the oscillation frequency/current consumption should be $\pm 10\%$ compared to the initial measurements. The SPL should be within $\pm 10\text{dB}$ compared to the initial measurements. |
| low temp. test   | After being placed in a chamber at $-40^\circ\text{C}$ for 240 hours.                                    |   |
| humidity test    | After being placed in a chamber at $+40^\circ\text{C}$ and $90 \pm 5\%$ relative humidity for 240 hours. |   |
| temp. cycle test | The part shall be subjected to 5 cycles. One cycle will consist of:                                      |   |



The diagram illustrates a temperature cycle over a total duration of 3 hours. It starts at  $-40^\circ\text{C}$  for a 0.5-hour dwell. The temperature then ramps up to  $+25^\circ\text{C}$  over 0.5 hours, where it dwells for 0.25 hours. It then ramps up to  $+125^\circ\text{C}$  over 0.5 hours, dwells for 0.5 hours, and ramps down to  $+25^\circ\text{C}$  over 0.5 hours. Finally, it dwells at  $+25^\circ\text{C}$  for 0.25 hours before the cycle repeats.

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**RELIABILITY TEST**

| <b>item</b>           | <b>test condition</b>   | <b>evaluation standard</b>  |
|-----------------------|---|---|
| operating (life test) | 1. Continuous life test:<br>The part will be subjected to 2 hours of continuous operation at +105°C with 15 V applied.<br><br>2. Intermittent life test:<br>A duty cycle of 1 minute on, 5 minutes off, a minimum of 10,000 times at room temp (+25 ±2°C) with rated voltage applied. | The buzzer will be measured after being placed at +25°C for 4 hours. The value of the oscillation frequency/current consumption should be ±10% compared to the initial measurements. The SPL should be within ±10dB compared to the initial measurements. |

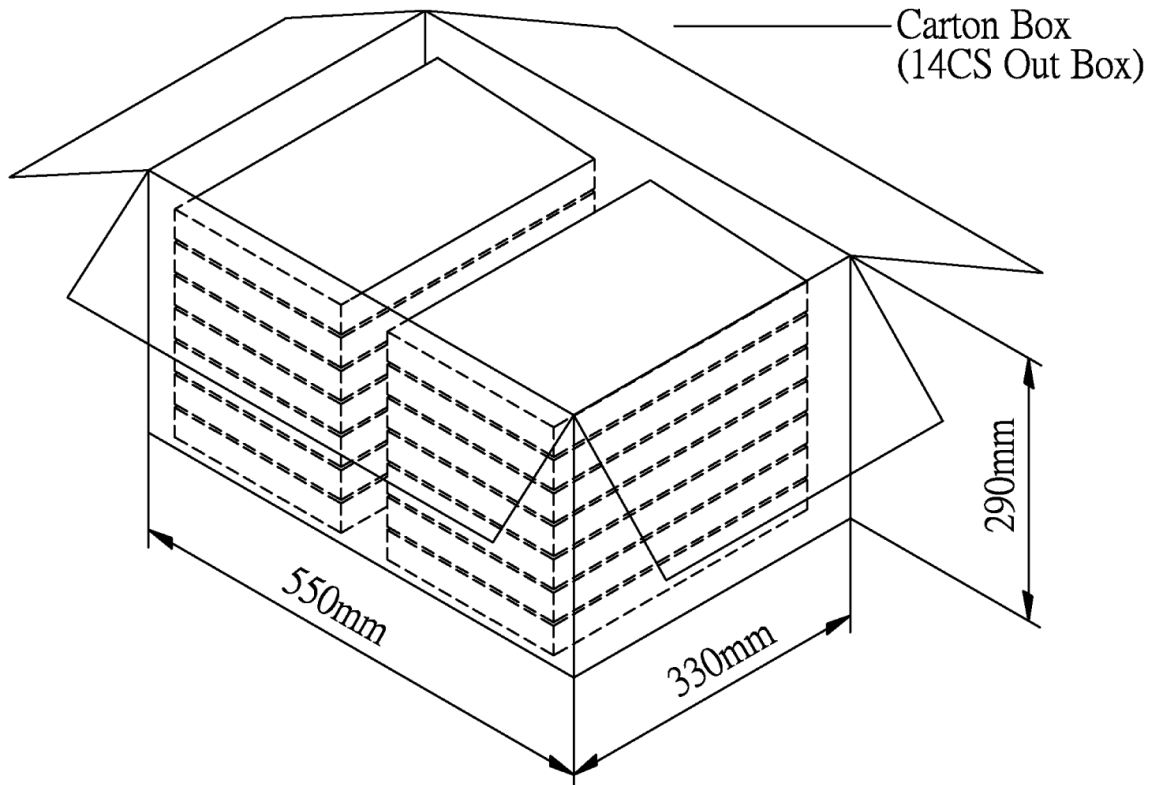
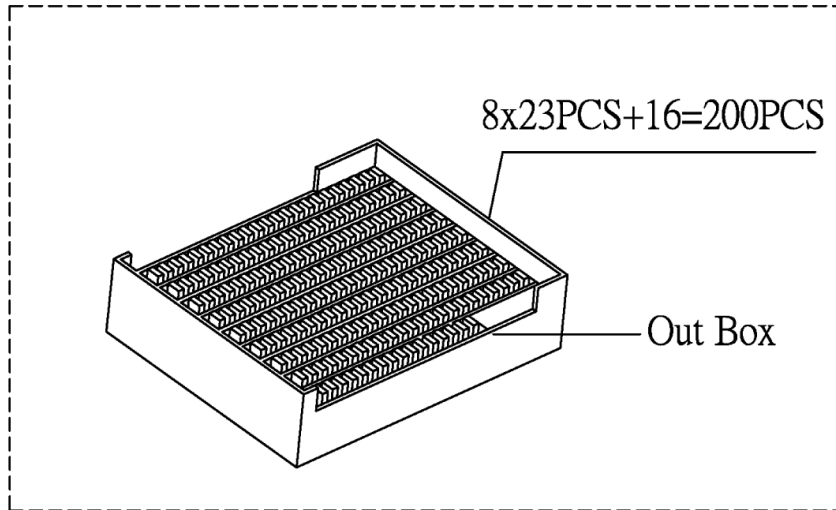
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**TEST CONDITIONS**

|                          |                            |                       |                            |
|--------------------------|----------------------------|-----------------------|----------------------------|
| standard test condition  | a) temperature: +5 ~ +35°C | b) humidity: 45 - 85% | c) pressure: 860-1060 mbar |
| judgement test condition | a) temperature: +25 ±2°C   | b) humidity: 60 - 70% | c) pressure: 860-1060 mbar |

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**PACKAGING**


|            |                   |                    |
|------------|-------------------|--------------------|
| Out Box    | 310mmx248mmx40mm  | 1x200PCS=200PCS    |
| Carton Box | 550mmx330mmx290mm | 200PCSx14=2,800PCS |