

**PART NUMBER:** CPE-164

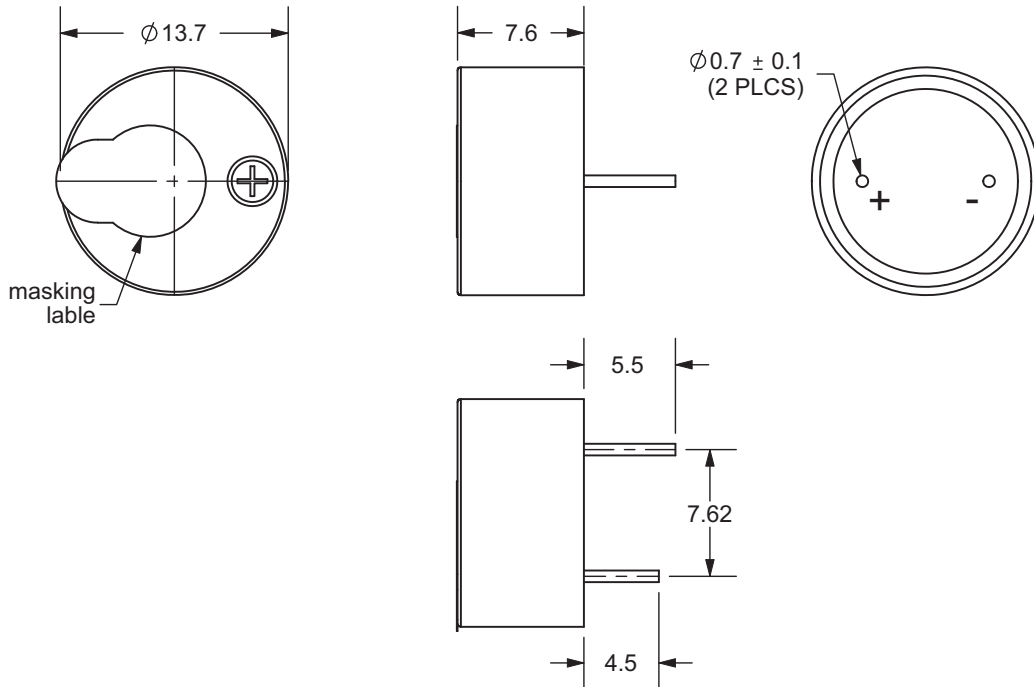
**DESCRIPTION:** piezo audio transducer

**SPECIFICATONS**

|                        |                       |                                       |
|------------------------|-----------------------|---------------------------------------|
| operating voltage      | 20 Vp-p max.          |                                       |
| current consumption    | 10 mA max.            | at 10 Vp-p, sqare wave, 4.0 Khz       |
| sound pressure level   | 80 db min.            | at 10 cm/10 Vp-p, sqare wave, 4.0 Khz |
| electrostatic capacity | 16,000 ± 30%          | at 1 Khz/1 V                          |
| operating temperature  | -20 ~ +70° C          |                                       |
| storage temprature     | -30 ~ +80° C          |                                       |
| dimensions             | Ø13.7 x H7.6 mm       |                                       |
| weight                 | 0.9 g max.            |                                       |
| material               | NORYL (black)         |                                       |
| terminal               | pin type (Au plating) |                                       |
| RoHS                   | yes                   |                                       |

**APPEARANCE DRAWING**

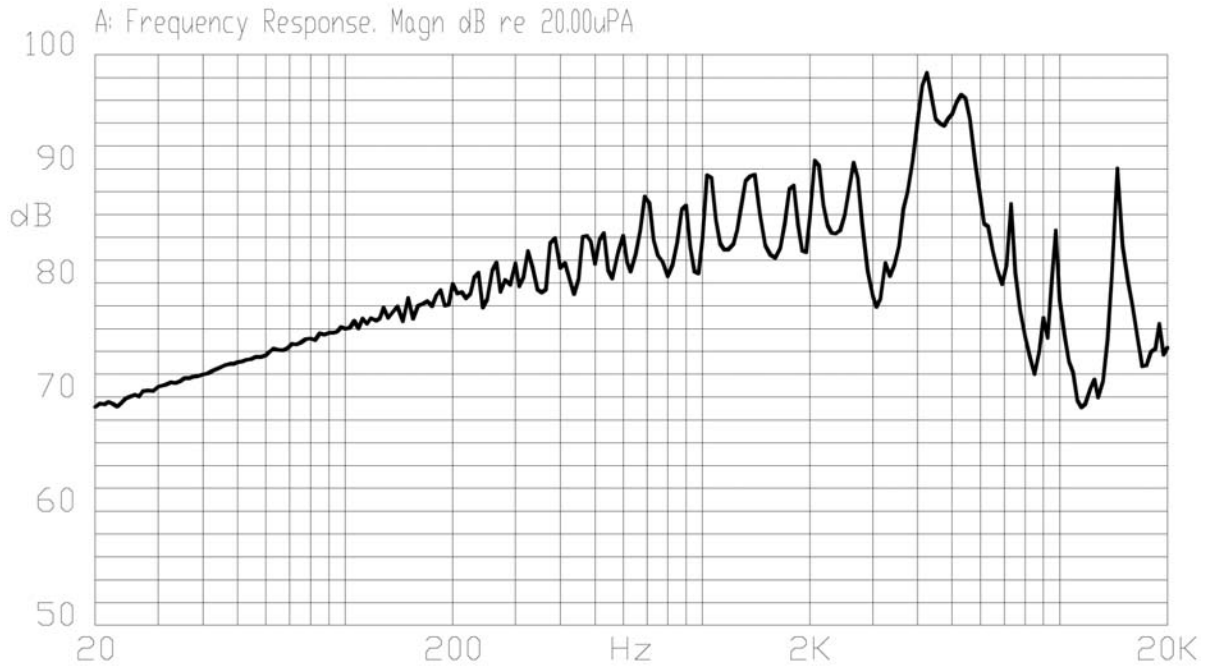
tolerance: ±0.5  
units: mm



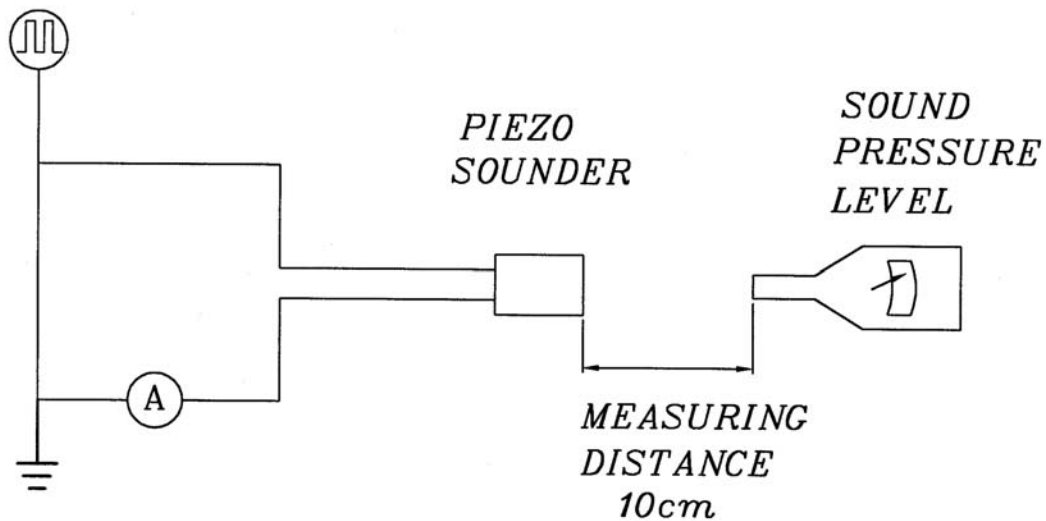
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### FREQUENCY RESPONSE CURVE



### MEASUREMENT METHOD



S.P.L. Measuring Circuit  
Input Signal: 10 Vp-p, 4.0 KHz, square wave  
Mic: RION S.P.L. meter UC30 or equivalent  
S.G.: Hewlett Packard 33120A function generator or equivalent



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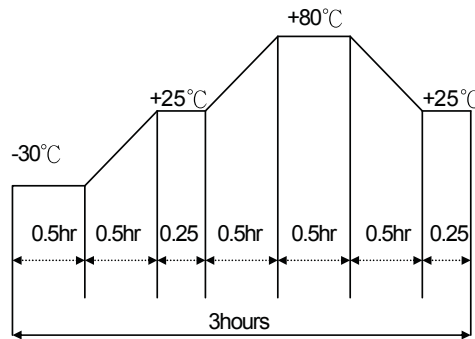
**MECHANICAL CHARACTERISTICS**

| item                         | test condition  | evaluation standard  |
|------------------------------|---|--|
| solderability <sup>1</sup>   | Lead terminals are immersed in rosin for 5 seconds and then immersed in solder bath of 270 ±5°C for 3 ±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 ±5°C for 3 ±0.5 seconds or 260 ±5°C for 10 ±1 seconds.   | No interference in operation.  |
| terminal mechanical strength | For 10 seconds, the force of 9.8N (1.0kg) 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 ±10% of the initial measurements. The SPL should be within ±10dB 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.   |  |

Notes: 1. Not recommended for wave soldering

**ENVIRONMENT TEST**

| item             | test condition  | evaluation standard   |
|------------------|---|---|
| high temp. test  | After being placed in a chamber at +80°C for 240 hours.                             | 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. |
| low temp. test   | After being placed in a chamber at -30°C for 240 hours.                             |   |
| humidity test    | After being placed in a chamber at +40°C and 90±5% relative humidity for 240 hours. |   |
| temp. cycle test | The part shall be subjected to 5 cycles. One cycle will consist of:                 |   |





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## RELIABILITY TEST

| item                  | test condition   | evaluation standard   |
|-----------------------|--|---|
| operating (life test) | <p>1. Continuous life test:<br/>The part will be subjected to 48 hours of continuous operation at +55°C with rated voltage applied.</p> <p>2. Intermittent life test:<br/>A duty cycle of 1 minute on, 1 minutes off, a minimum of 5,000 times at room temp (+25 ±2°C) with rated voltage applied.</p> | 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. |

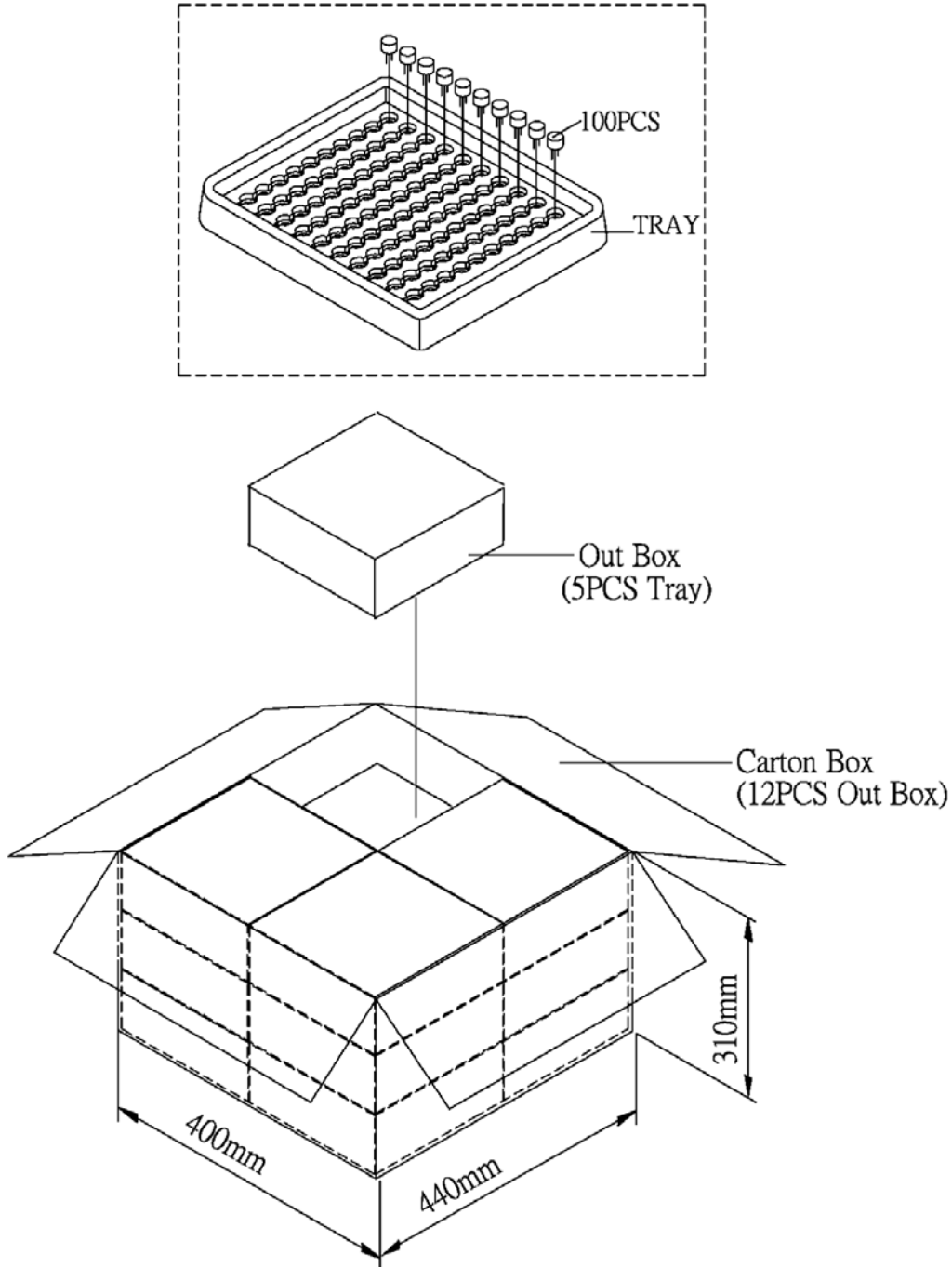
## TEST CONDITIONS

|                          |                            |                       |                            |
|--------------------------|----------------------------|-----------------------|----------------------------|
| 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**



|            |                   |                      |
|------------|-------------------|----------------------|
| Tray       | 184mmx180mmx23mm  | 1x100PCS=100PCS      |
| Out Box    | 200mmx190mmx100mm | 5LAYERx100PCS=500PCS |
| Carton Box | 440mmx400mmx310mm | 500PCSx12=6,000PCS   |