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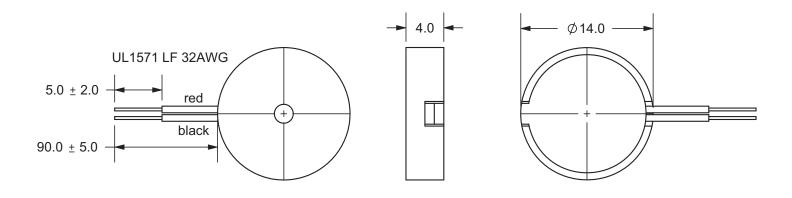
PART NUMBER: CPE-165 DESCRIPTION: piezo audio transducer

## **SPECIFICATIONS**

| operating voltage      | 30 Vp-p max.              |  |
|------------------------|---------------------------|--|
| current consumption    | 11 mA max.                | at 10 Vp-p, sqaure wave, 4.8 Khz       |
| sound pressure level   | 85 db min.                | at 10 cm/10 Vp-p, sqaure wave, 4.8 Khz |
| electrostatic capacity | 15,000 ± 30%              | at 1 Khz/1 V                           |
| operating tempurature  | -30 ~ +85° C              |  |
| storage tempurature    | -40 ~ +95° C              |  |
| dimensions             | Ø14.0 x H4.0 mm           |  |
| weight                 | 1.0 g max.                |  |
| material               | ABS UL-94 1/16" HB high I | neat (black)                           |
| terminal               | wire type                 |  |
| RoHS                   | yes                       |  |

## **APPEARANCE DRAWING**

tolerance: ±0.5 units: mm

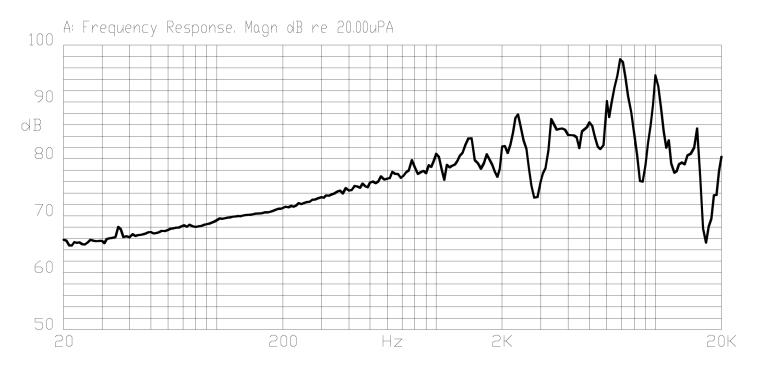




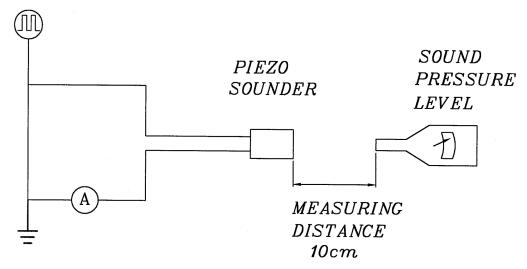
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#### FREQUENCY RESPONSE CURVE



#### **MEASUREMENT METHOD**



S.P.L. Measuring Circuit

Input Signal: 10 Vp-p, 4.8 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              | Stripped wires are immersed in rosin for          | 90% min. of the lead terminals   |  |
|                            | 5 seconds and then immersed in solder bath        | will be wet with solder  |  |
|                            | of 270 ±5°C for 3 ±1 seconds.                     | (except the edge of the terminal).   |  |
| soldering heat resistance  | Stripped wires are immersed up to 1.5mm from      |  |  |
|                            | buzzer's body in solder bath of 300 ±5°C for      | No interference in operation.  |  |
|                            | 3 ±0.5 seconds or 260 ±5°C for 10 ±1 seconds      |  |  |
| lead wire pull strength    | The pull force shall be applied to lead wire:     |  |  |
| , ,                        | Horizontal 3.0N                                   | No damage or cutting off.  |  |
|                            | Vertical 2.0N                                     |  |  |
| vibration                  | The buzzer shall be measured after applying       |  |  |
|                            | a vibration amplitude of 1.5 mm with 10 to        | The value of oscillation   |  |
|                            | 55 Hz band of vibration frequency to each of      | frequency/current consumption should be ±10% of the initial measurements. The SPL should |  |
|                            | the 3 perpendicular directions for 2 hours.       |  |  |
| drop test                  | The part will be dropped from a height of         |  |  |
|                            | 75 cm onto a 40 mm thick wooden board 3           | be within ±10dB compared with  |  |
|                            | times in 3 axes (X, Y, Z) for a total of 9 drops. | the initial measurement.   |  |
| bottom covering pull force | The pull force of 3.0N shall be applied to        | No damage or cutting off.  |  |
|                            | bottom covering on the vertical direction.        |  |  |

#### **ENVIRONMENT TEST**

| item             | test condition                                      | evaluation standard               |
|------------------|---|-----------------------------------|
| high temp. test  | After being placed in a chamber at +95°C for        |                                   |
|                  | 240 hours.  |                                   |
| low temp. test   | After being placed in a chamber at -40°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        | The buzzer will be measured after |
|                  | cycle will consist of:                              | being placed at +25°C for 4       |
|                  |   | hours. The value of the           |
|                  |   | oscillation frequency/current     |
|                  |   | consumption should be ±10%        |
|                  | +25°C   | compared to the initial           |
|                  |   | measurements. The SPL should      |
|                  | -40°C /   | be within ±10dB compared to the   |
|                  |   | initial measurements.             |
|                  |   |                                   |
|                  | 0.5hr   0.5hr   0.25   0.5hr   0.5hr   0.5hr   0.25 |                                   |
|                  |   |                                   |
|                  | 3hours  |                                   |
|                  | <b>————</b>   |                                   |
|                  |   |                                   |



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#### **RELIABILITY TEST**

| item                  | test condition                                | evaluation standard              |  |
|-----------------------|---|----------------------------------|--|
| operating (life test) | Continuous life test:                         | The buzzer will be measured afte |  |
|                       | The part will be subjected to 48 hours of     | being placed at +25°C for 4      |  |
|                       | continuous operation at +70°C with rated      | hours. The value of the          |  |
|                       | voltage applied.                              | oscillation frequency/current    |  |
|                       |   | consumption should be ±10%       |  |
|                       | 2. Intermittent life test:                    | compared to the initial          |  |
|                       | A duty cycle of 1 minute on, 1 minutes off, a | measurements. The SPL should     |  |
|                       | minimum of 5,000 times at room temp           | be within ±10dB compared to      |  |
|                       | (+25 ±2°C) with rated voltage applied.        | the initial measurements.        |  |

## **TEST CONDITIONS**

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



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# **PACKAGING**

