



Part No: CEB-27D44

Date: 7/28/2006

Unit: mm

Description: piezo electric diaphragm

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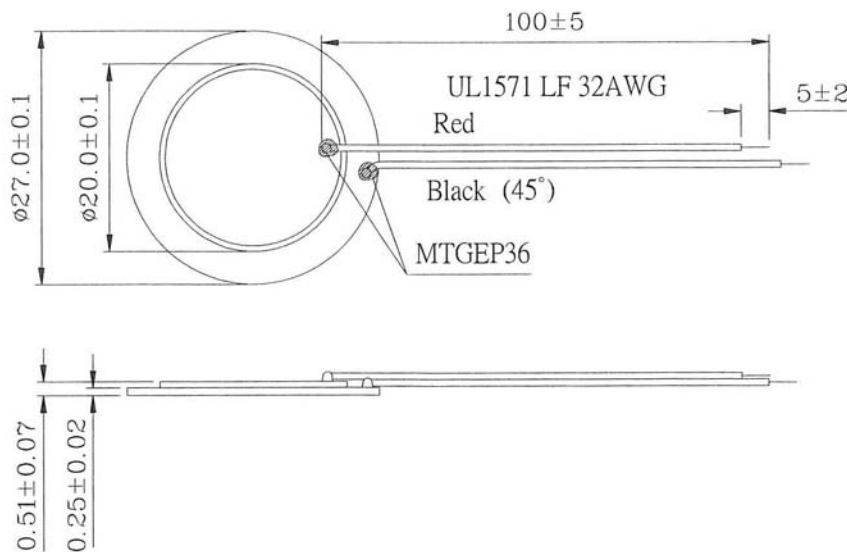


Specifications

| | | |
|---------------------------|------------------|--|
| Maximum input voltage | 20 Vp-p | |
| Resonant frequency | 4.6 ± 0.5 KHz | see Measurement Methods |
| Resonant impedance | 250 Ω max. | see Measurement Methods |
| Electrostatic capacitance | 16,000 ±30% pF | at 1 KHz / 1 V |
| Operating temperature | -20 ~ +70° C | |
| Storage temperature | -30 ~ +80° C | |
| Dimensions | Ø27.0 x H0.51 mm | |
| Weight | 2.0 g max. | |
| Material | Brass | |
| Terminal | Wire type | |
| DC resistance | 20 M Ω min. | Fluke 45 rate: Fast Measurement time: 1 second (only for ≤ 20 mm test) |
| RoHS | yes | |

Appearance Drawing

Tolerance: ±0.5





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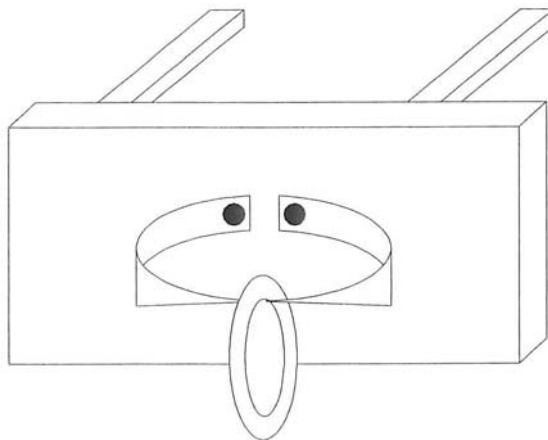
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Measuring Methods

1) Resonant frequency / Resonant impedance

The piezo electric diaphragm should be clamped at a node point (as shown in the following figure) to be free from any mechanical stress. Measure its resonant frequency and resonant impedance by using a vector impedance analyzer or equivalent.

When the input frequency is swept within 100 Hz to 7 KHz, the resonant frequency is defined as the frequency where the impedance shows minimum value. This impedance should be the resonant impedance.



2) Static capacitance

The electrostatic capacitance should be measured at 1 KHz by using an L.C.R. meter (ex. HP4194A(H.P.)) or equivalent. The part should be clamped in the same way as the measurement or resonant frequency / resonant impedance mentioned above.

Mechanical Characteristics

| Item | Test Condition | Evaluation Standard |
|---------------------------------------|---|--|
| Solderability (Connector excepted) | Stripped wires of lead wires are immersed in rosin for 5 seconds and then immersed in solder bath of $270 \pm 5^{\circ}\text{C}$ for 3 ± 0.5 seconds. | 90% min. of the stripped wires will be wet with solder. (Except the edge of the terminal) |
| Lead Wire Pull Strength | The horizontal force of 3.0N (0.306kg) should be applied to the double lead wire for 30 sec. | No damage or cutting off. |
| Vibration | The diaphragm should 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 the resonant frequency should be $\pm 10\%$ of the initial measurements. Electrostatic capacitance should be $\pm 20\%$ compared with the initial measurement. The SPL should be within $\pm 10\text{dB}$ compared with the initial measurement. |



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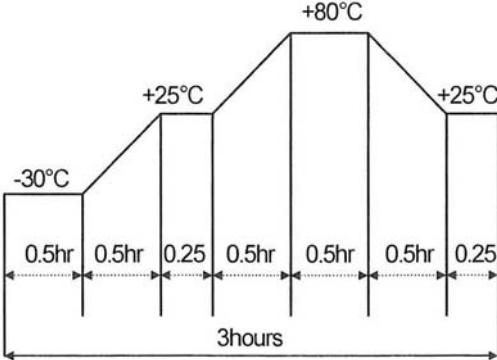
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Environment Test

| Item | Test Condition | Evaluation Standard |
|------------------|---|--|
| High temp. test | After being placed in a chamber at +80°C for 240 hours. | The diaphragm will be measured after being placed at +25°C for 4 hours. The value of the resonant frequency should be ±10%, the value of the electro static capacitance should be ±20% compared to the initial measurements. The resonant impedance should be 2,000 Ω max. |
| 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:  | |

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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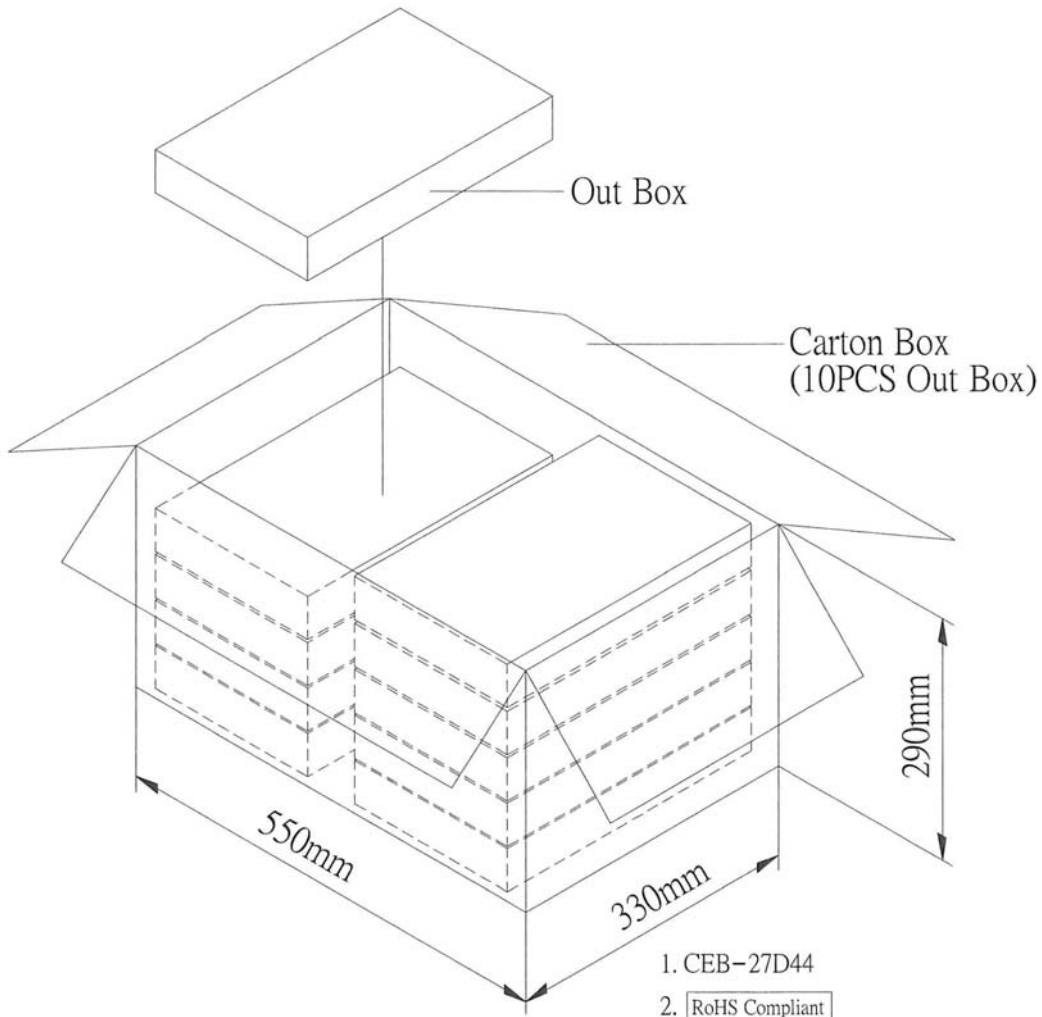
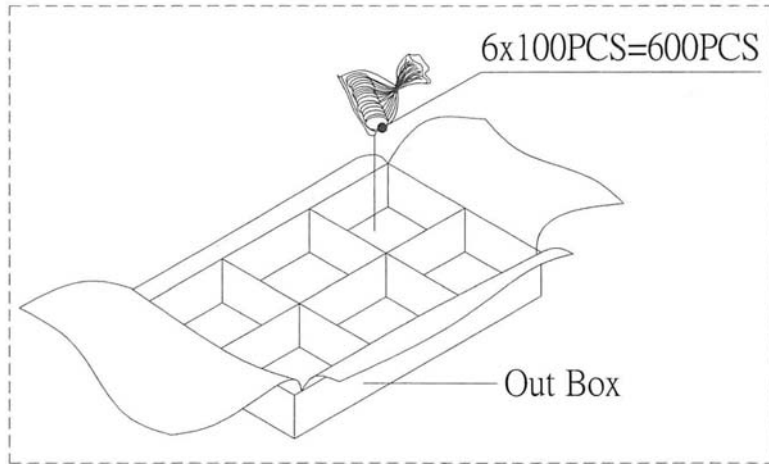
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Packaging



| | | |
|------------|-------------------|--------------------|
| Out Box | 310mmx248mmx49mm | 6x100PCS=600PCS |
| Carton Box | 550mmx330mmx290mm | 600PCSx10=6,000PCS |