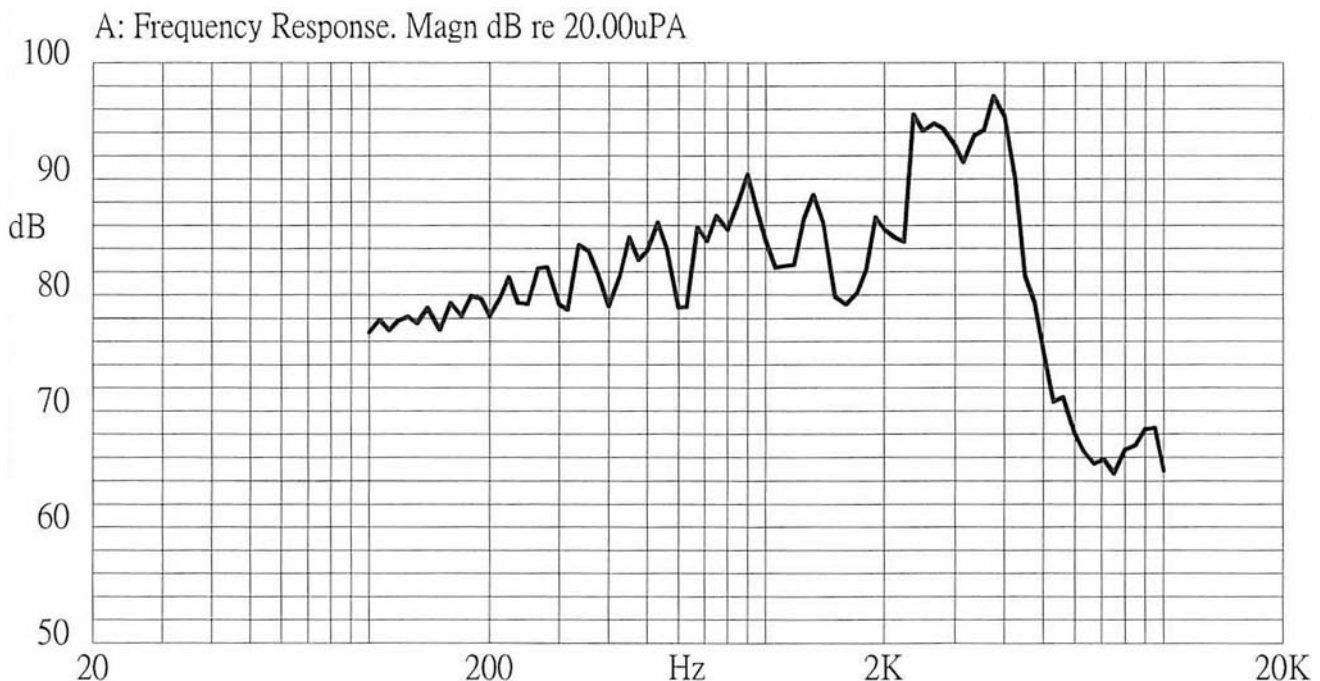


**CUI INC****Part No: CEM-1212S****Description: magnetic buzzer****Date: 6/12/2006****Unit: mm****Page No: 1 of 5****Specifications**

|                       |                              |                                                                                                 |
|-----------------------|------------------------------|-------------------------------------------------------------------------------------------------|
| Rated voltage         | 12.0 Vo-p                    |              |
| Operating voltage     | 6.0 - 16.0 Vo-p              |                                                                                                 |
| Mean current          | 40 mA max.                   |                                                                                                 |
| Coil resistance       | 140 $\pm$ 21 Ohm             | Applying rated voltage, 2400 Hz square wave, 1/2 duty                                           |
| Sound output          | Min. 85 (Typical 92) dBA     | Distance at 10cm (A-weight free air). Applying rated voltage of 2400 Hz, square wave, 1/2 duty. |
| Rated frequency       | 2,400 Hz                     |                                                                                                 |
| Operating temperature | -20 ~ +60° C                 |                                                                                                 |
| Storage temperature   | -30 ~ +70° C                 |                                                                                                 |
| Dimensions            | $\varnothing$ 12.0 x H9.5 mm |                                                                                                 |
| Weight                | 1.6 g                        |                                                                                                 |
| Material              | PBT (Black)                  |                                                                                                 |
| Terminal              | Pin type (Au Plating)        |                                                                                                 |
| RoHS                  | yes                          |                                                                                                 |

**Frequency Response Curve**



Part No: CEM-1212S

Description: magnetic buzzer

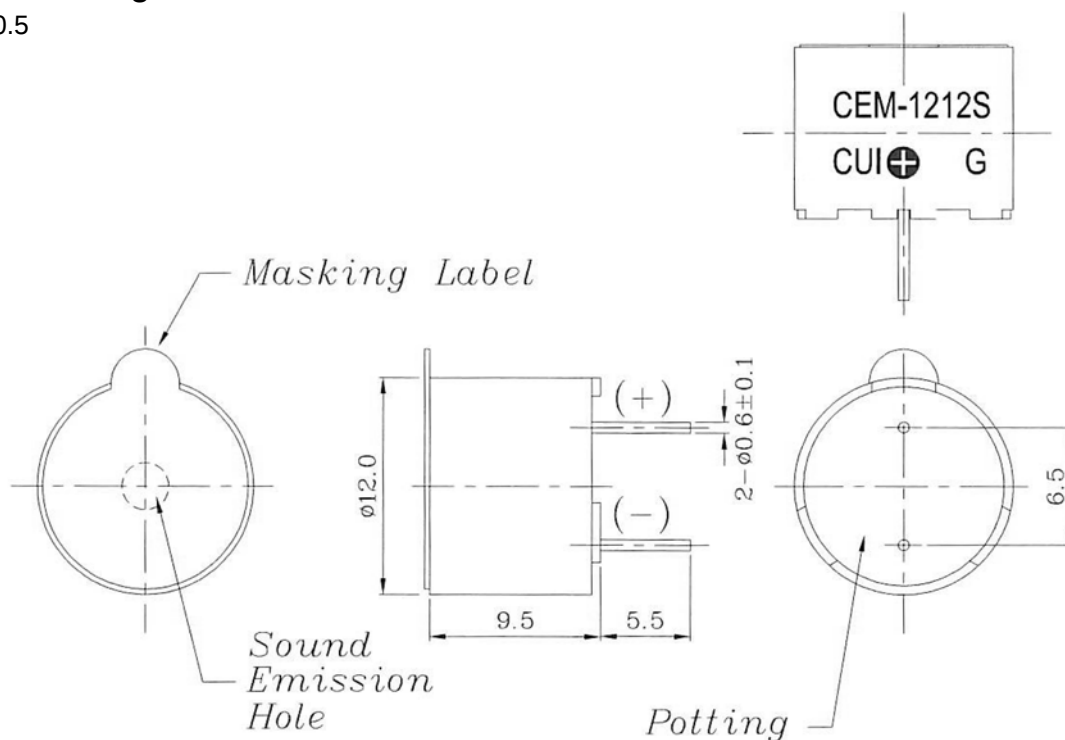
Date: 6/12/2006

Unit: mm

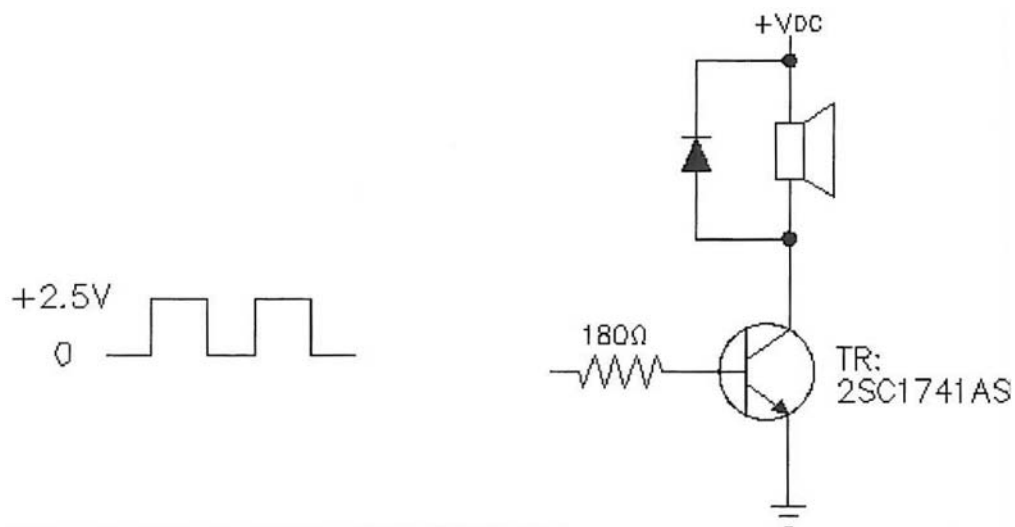
Page No: 2 of 5

## Appearance Drawing

Tolerance:  $\pm 0.5$



## Measurement Method

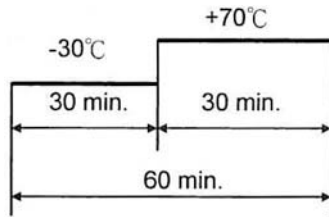
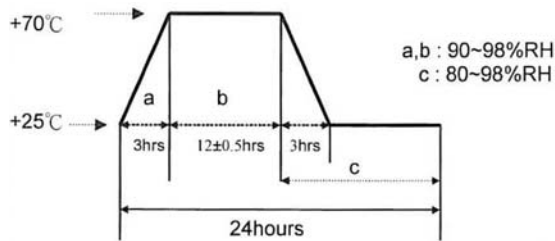


**Part No: CEM-1212S****Description: magnetic buzzer****Date: 6/12/2006****Unit: mm****Page No: 3 of 5**

## Mechanical Characteristics

| Item                         | Test Condition                                                                                                                                                                 | Evaluation Standard                                                                                                                                  |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Solderability                | Lead terminals are immersed in rosin for 5 seconds and then in a solder bath of $+270 \pm 5^{\circ}\text{C}$ for $3 \pm 1$ seconds.                                            | 90% min. of the lead terminals must be wet with fresh solder. (Except the edge of the terminal)                                                      |
| Soldering Heat Resistance    | Lead terminals are immersed up to 1.5mm from the buzzer's body in a solder bath of $+260 \pm 5^{\circ}\text{C}$ for $3 \pm 1$ seconds.                                         | No in interference in operation.                                                                                                                     |
| Terminal Mechanical Strength | The force of 9.8 N (1.0 kg) will be applied to each terminal in each axial direction for 10 seconds.                                                                           | No damage or cutting off.                                                                                                                            |
| Vibration                    | The buzzer will 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. | After the test, the part will meet specifications without any damage to the appearance and the SPL should be within $\pm 10$ dBA of the initial SPL. |
| Drop Test                    | The part is to be dropped from a height of 75 cm onto a 40 mm thick wooden board 3 times in 3 axis (X, Y, Z) for a total of 9 drops.                                           |                                                                                                                                                      |

## Environment Test

| Item                 | Test Condition                                                                                                                                               | Evaluation Standard                                                                                                                                                  |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High temp. test      | The part will be subjected to $+70^{\circ}\text{C}$ for 96 hours.                                                                                            | After the test, the part shall meet specifications without any damage to the appearance or performance and the SPL should be within $\pm 10$ dBA of the initial SPL. |
| Low temp. test       | The part will be subjected to $-30^{\circ}\text{C}$ for 96 hours                                                                                             |                                                                                                                                                                      |
| Thermal shock        | The part will be subjected to 10 cycles. One cycle will consist of:<br>   |                                                                                                                                                                      |
| Temp./Humidity cycle | The part shall be subjected to 10 cycles. One cycle will consist of:<br> |                                                                                                                                                                      |

**Part No: CEM-1212S****Description: magnetic buzzer****Date: 6/12/2006****Unit: mm****Page No: 4 of 5****Reliability Tests**

| <b>Item</b>           | <b>Test Condition</b>                                                                                                                                                                                                                                                           | <b>Evaluation Standard</b>                                                                                                                                            |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating (Life Test) | <p>1. Continuous life test:<br/>The part will be subjected to 72 hours at +45°C with 12 V, 2400 Hz applied.</p> <p>2. Intermittent life test:<br/>A duty cycle of 1 minute on, 1 minutes off, a minimum of 10,000 times at room temp (+25±10°C) with 12 V, 2400 Hz applied.</p> | After the test, the part shall meet specifications without any damage to the appearance. After 4 hours at +25°C, the SPL should be within ±10 dBA of the initial SPL. |

**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 |



**CUI INC**

**Part No: CEM-1212S**

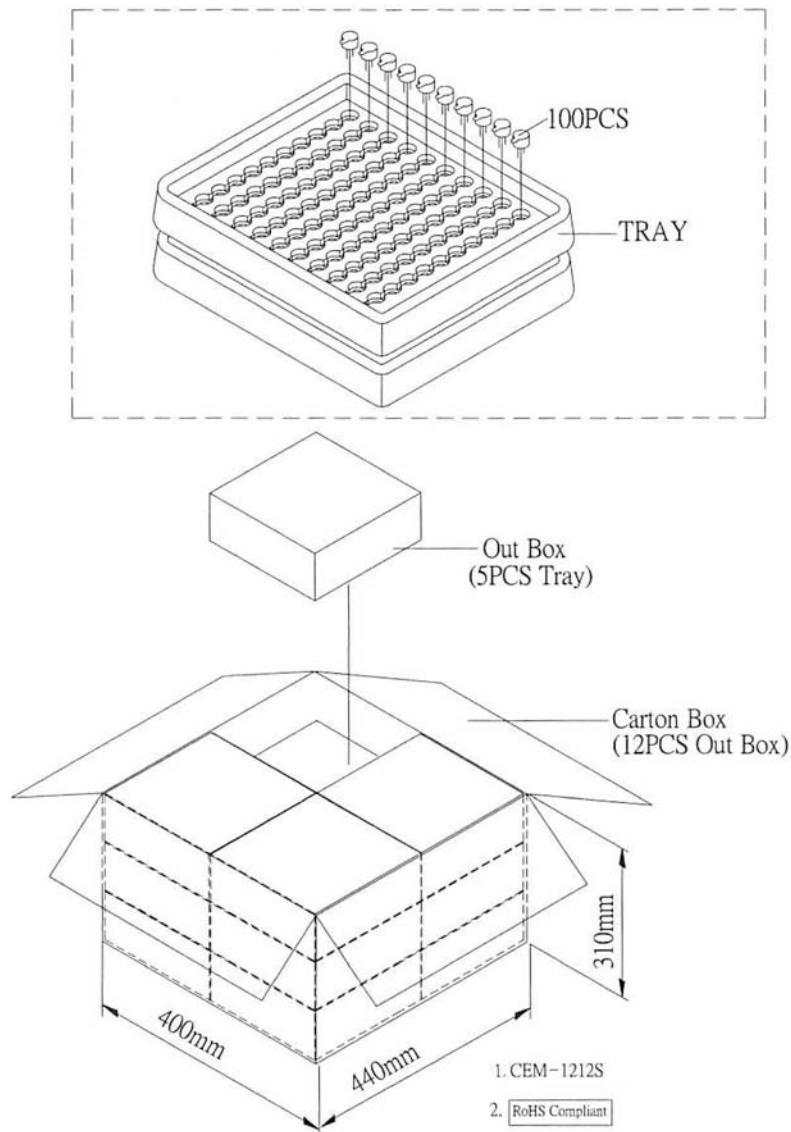
**Description: magnetic buzzer**

**Date: 6/12/2006**

**Unit: mm**

**Page No: 5 of 5**

## Packaging



|            |                   |                      |
|------------|-------------------|----------------------|
| Tray       | 184mmx184mmx23mm  | 1x100PCS=100PCS      |
| Out Box    | 200mmx190mmx100mm | 5LAYERx100PCS=500PCS |
| Carton Box | 440mmx400mmx310mm | 500PCSx12=6000PCS    |