



# PUIaudio



Data Sheet

SMT-0540-T-7-R

## Features:

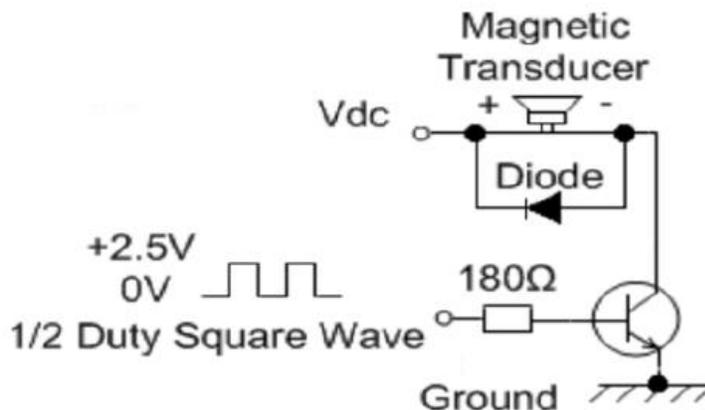
- 5x5mm SMT magnetic transducer
- 3V0-p, 4kHz

## Specifications

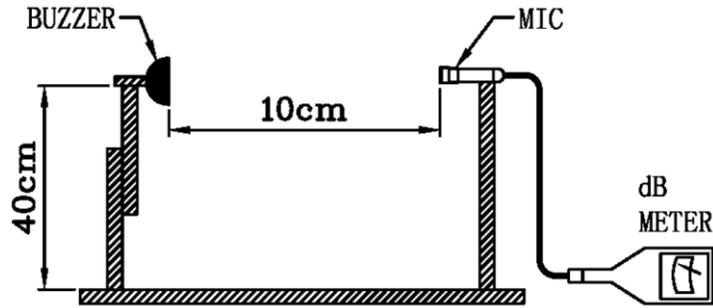
| Parameters                       | Values              | Units |
|----------------------------------|---------------------|-------|
| Rated Voltage                    | 3                   | V0-p  |
| Operating Voltage Range          | 2 ~ 4               | V0-p  |
| Current Draw at Rated Voltage*   | 100                 | mA    |
| Coil Resistance                  | 12 ± 2              | Ohms  |
| Minimum SPL @ 10cm*              | 78                  | dBa   |
| Resonant Frequency               | 4,000 ± 500         | Hz    |
| Housing Material                 | LCP                 | -     |
| Terminal Material                | Tin-Plated Brass    | -     |
| Weight                           | 0.16                | Grams |
| Acceptable Soldering Methods     | See Following Pages | -     |
| Environmental Compliances        | RoHS/REACH          | -     |
| Moisture Sensitivity Level (MSL) | 2                   | -     |
| Operating Temperature            | -30 ~ +70           | °C    |
| Storage Temperature              | -40 ~ +85           | °C    |

\*At rated voltage with 50% duty cycle 4 kHz positive biased square-wave

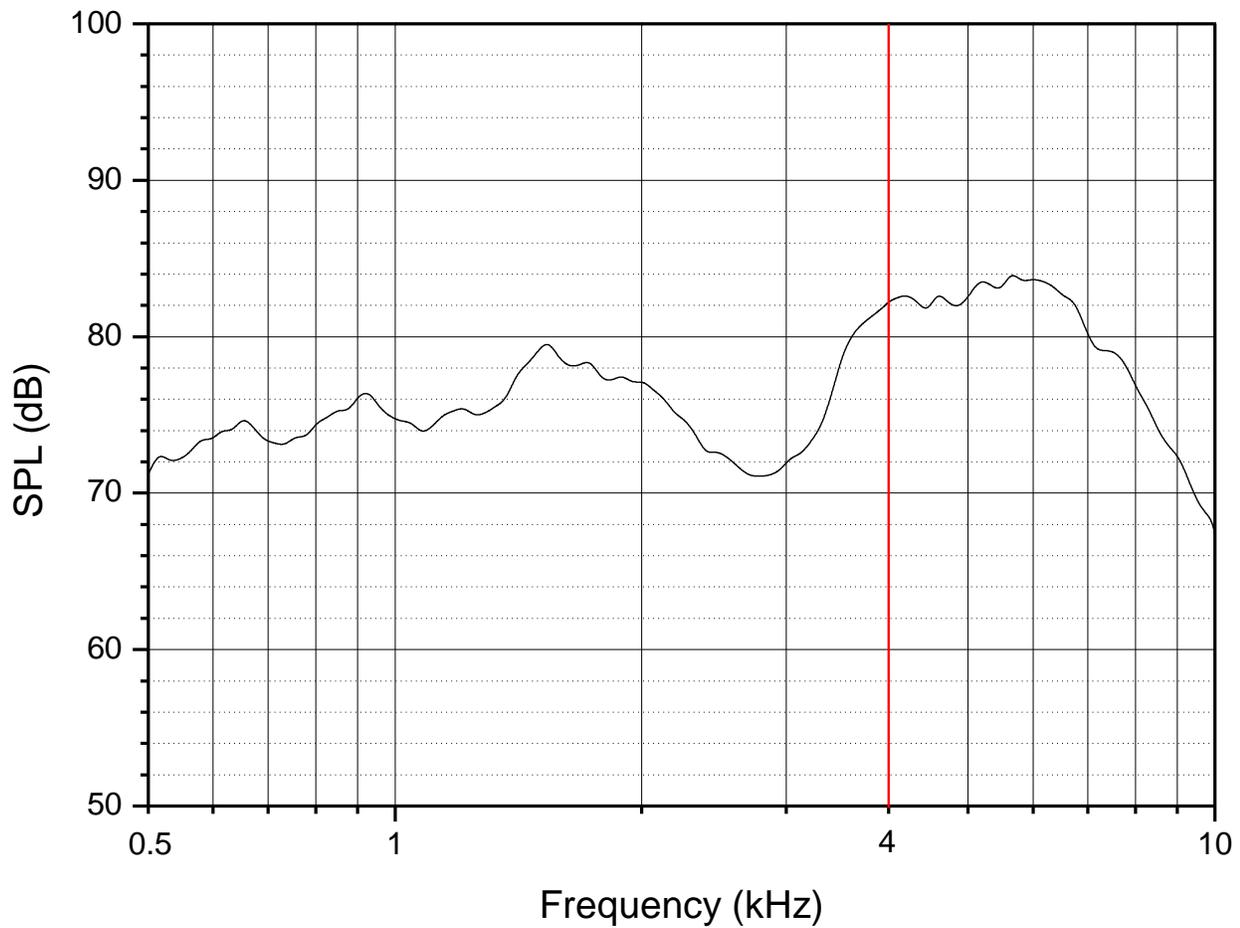
## Recommended Drive Circuit (Transistor should have a $V_{ce} \leq 0.15V$ and $h_{FE} \geq 200$ )



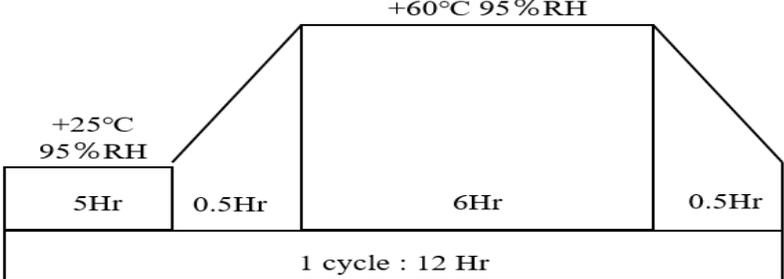
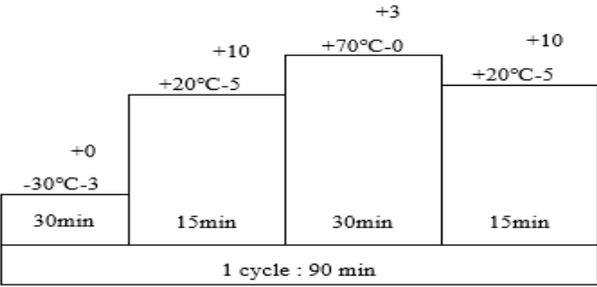
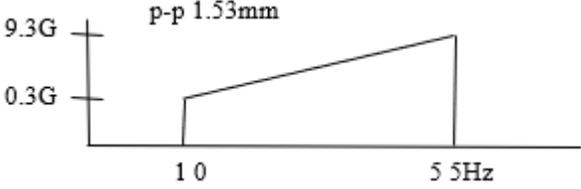
## Test Condition



## Typical Frequency Response (3Vpk square wave sweep at 10cm)

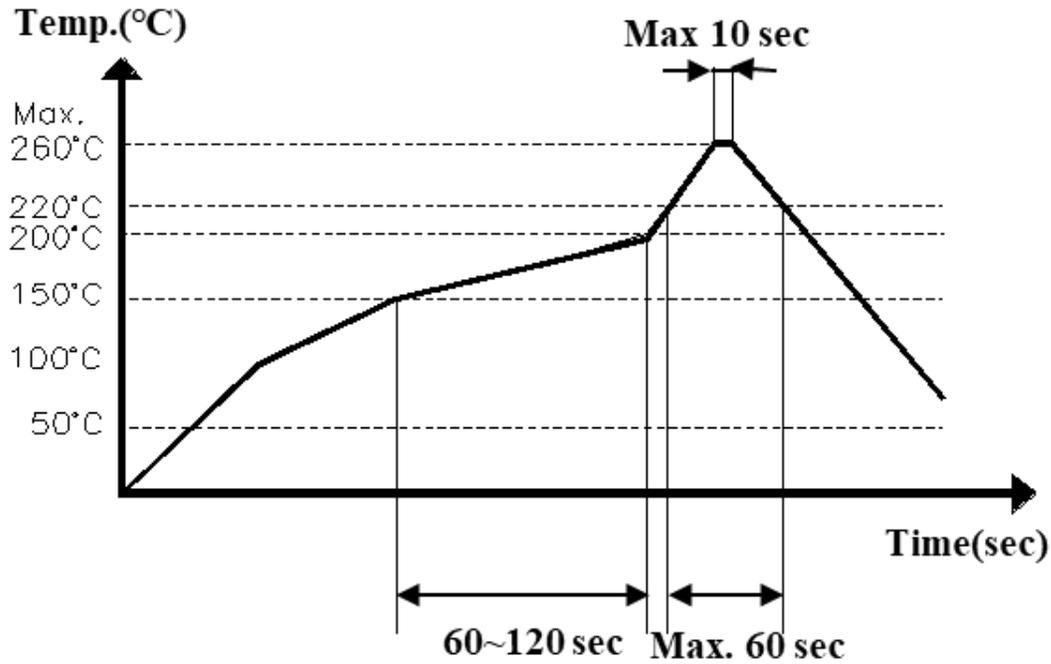


## Reliability Testing

| Type of Test              | Test Specifications   |
|---------------------------|---|
| High Temperature Test     | The part shall be capable of withstanding a temperature +85°C for 96 hours. Rest at room temperature for 2 hours.   |
| Low Temperature Test      | The part shall be capable of withstanding a temperature -40°C for 96 hours. Rest at room temperature for 2 hours.   |
| Life Test                 | Continuous operation for 1000hrs, 3Vpk, 4kHz square wave using drive circuit.   |
| Humidity Cycle Test       |  <p>The diagram shows a humidity cycle profile. It starts with a 5-hour dwell at +25°C and 95% RH. This is followed by a 0.5-hour ramp up to +60°C and 95% RH. There is a 6-hour dwell at +60°C and 95% RH. This is followed by a 0.5-hour ramp down to +25°C and 95% RH. The total duration of one cycle is 12 hours.</p> <p>Make this test for 10 cycles without applying power, then expose to the room temperature for 2 hours.</p> |
| Temperature Cycle Testing | <p>Total 5 cycles of the following without power.</p>  <p>The diagram shows a temperature cycle profile. It starts with a 30-minute dwell at -30°C and -3% RH. This is followed by a 15-minute dwell at +20°C and -5% RH. This is followed by a 30-minute dwell at +70°C and 0% RH. This is followed by a 15-minute dwell at +20°C and -5% RH. The total duration of one cycle is 90 minutes.</p>                                      |
| Vibration Test            |  <p>The diagram shows a vibration test profile. It starts with a dwell at 0.3G. This is followed by a ramp up to 9.3G at 5 Hz. The total duration of the test is 2 hours.</p> <p>Test for direction of X, Y, Z for 2 hours each (6hrs total).</p>   |
| Drop Test                 | Affix transducer on PCB to weight of 100g. Drop 120cm to direction of 6 surfaces for 3 cycles.  |

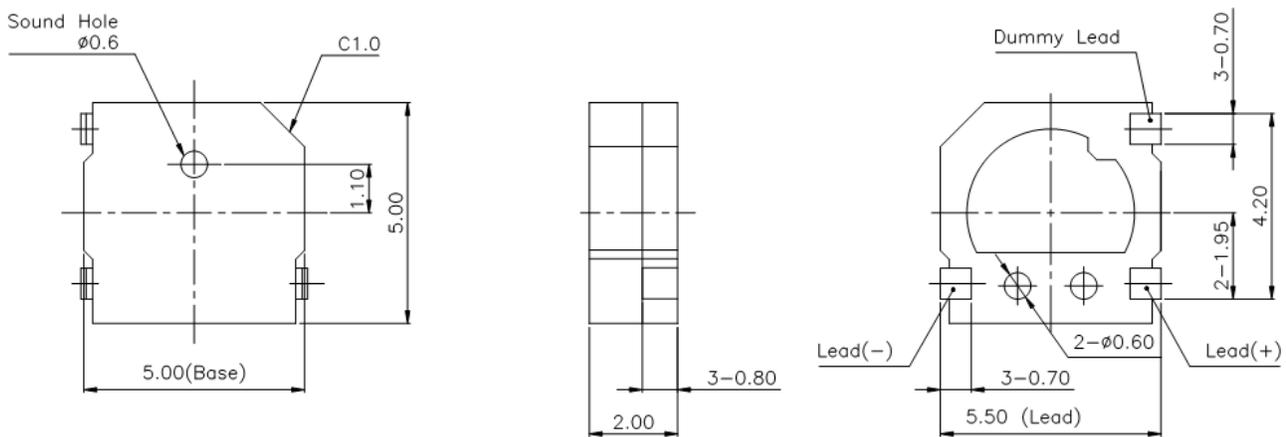
**After each test, part shall meet specifications with an SPL variance that of specification tolerance.**

## Recommended Reflow Soldering Procedure

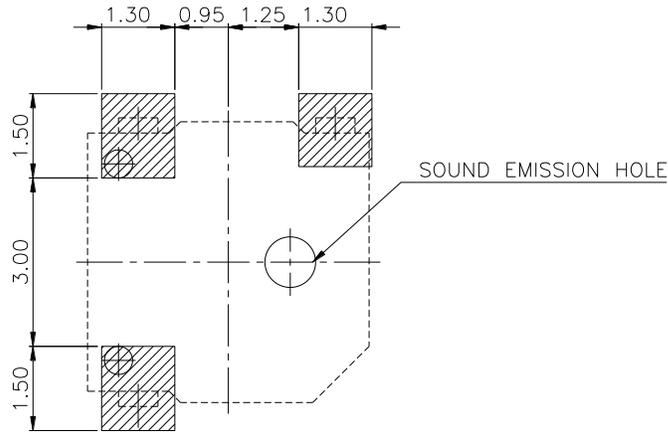


**\*Manual Soldering iron temperature 350C, solder time 2-3 second per terminal**

## Dimensions



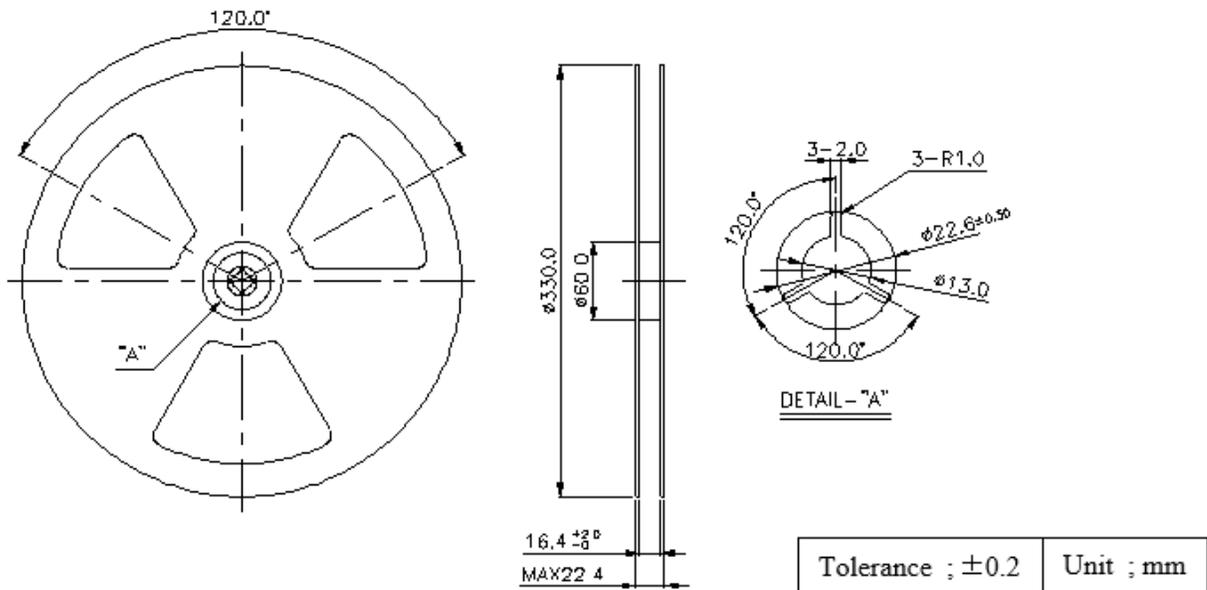
## Suggested Land Pattern\*

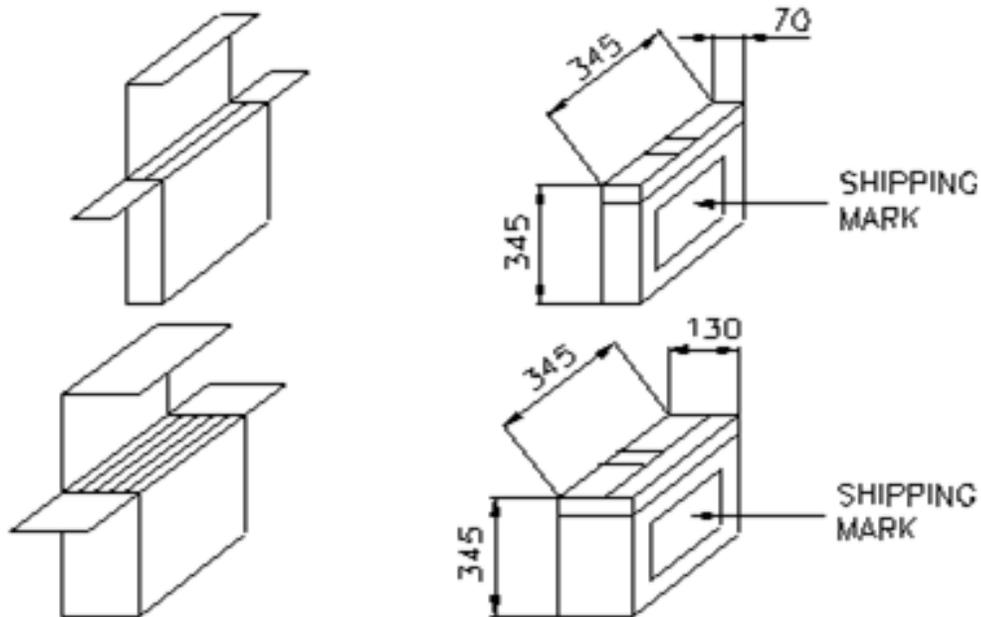
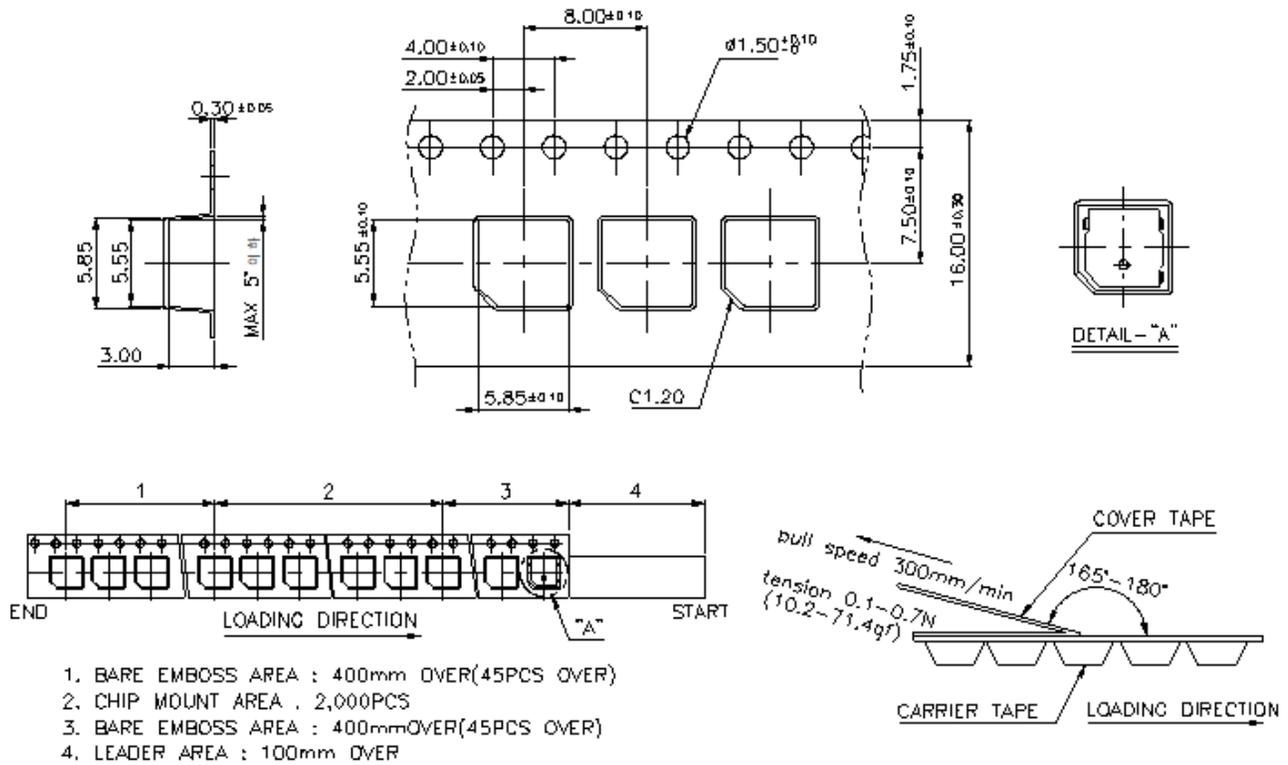


\*This land pattern is advisory only and its use or adaptation is entirely voluntary. PUI Audio disclaims all liability of any kind associated with the use, application, or adaptation of this land pattern.

## Packaging

2000pcs/Reel





**Specifications Revisions**

| <b>Revision</b> | <b>Description</b>  | <b>Date</b> | <b>Approved</b> |
|-----------------|---|-------------|-----------------|
| -               | Released from Engineering   | 06/18/2008  | -               |
| A               | Revised to inventor 3D drawing template   | 06/04/2010  | BR              |
| B               | Update Spec Format, Add details for Reliability, Packaging, etc. Add MSL 2, Revise Note 3 and remove Note 4 | 01/23/2025  | ML              |

Note:

1. Unless otherwise specified:
  - A. All dimensions are in millimeters.
  - B. Default tolerances are  $\pm 0.5\text{mm}$  and angles are  $\pm 3^\circ$ .
2. Specifications subject to change or withdraw without notice.
3. Date Code:
  - a. First digit represents number of the year
  - b. Last digit represents the month (A-Jan, B-Feb, etc.)