



PUIaudio



Data Sheet

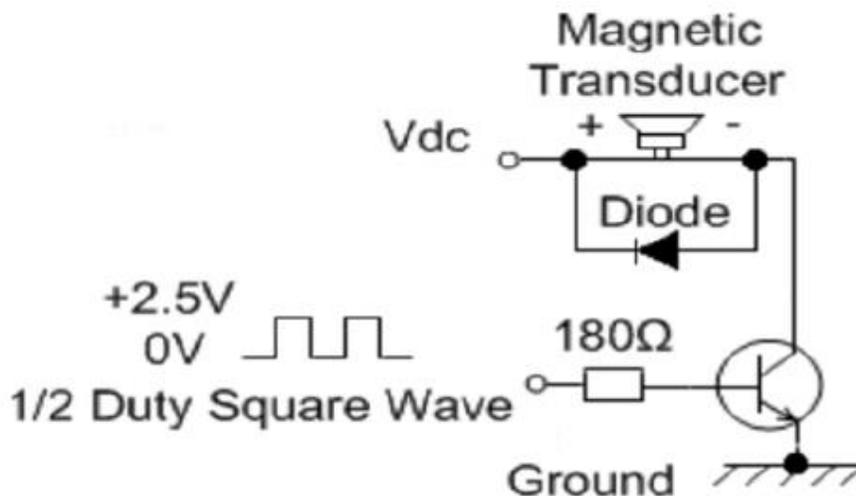
SMT-0440-S-R

Specifications

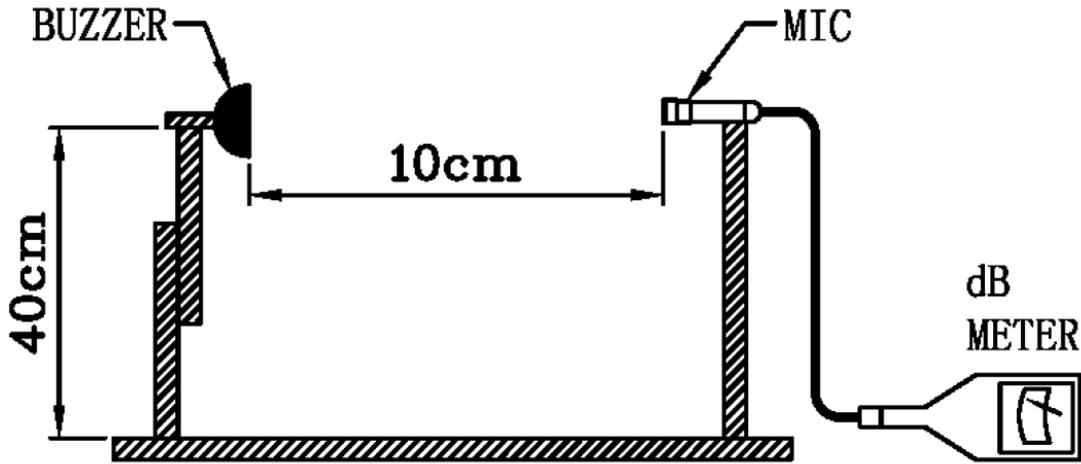
Parameters	Values	Units
Rated Voltage	3	V0-p
Operating Voltage Range	2~4	V0-p
Current Draw at Rated Voltage*	≤90	mA
Coil Resistance	17 ±3	Ohms
Minimum SPL @ 10cm*	70	dBa
Resonant Frequency	4,000 ±500	Hz
Housing Material	LCP	-
Terminal Material	Tin-Plated Brass	-
Moisture Sensitivity Level (MSL)	2A	-
Weight	0.1	Grams
Acceptable Soldering Methods	Hand Solder @ 350C for 5s, Reflow Solder	See page 3 for reflow solder information
Environmental Compliances	RoHS/REACH	-
Operating Temperature	-20 ~ +70	°C
Storage Temperature	-30 ~ +80	°C

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

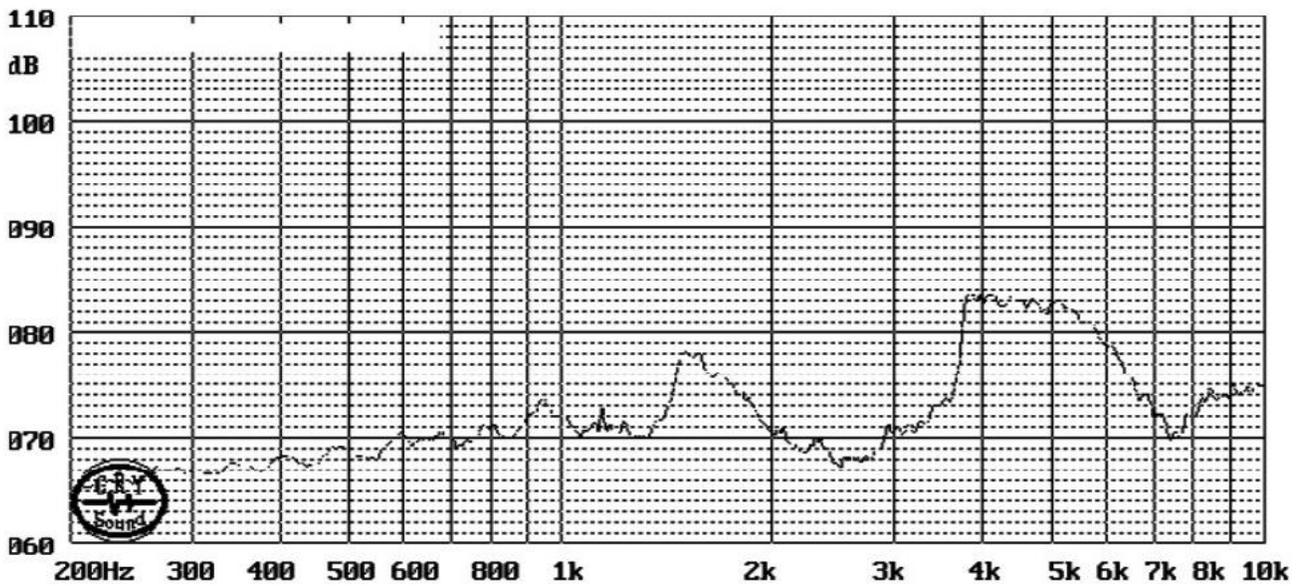
Recommended Drive Circuit (Transistor should have a $V_{ce} \leq 0.15V$ and $h_{FE} \geq 200$)



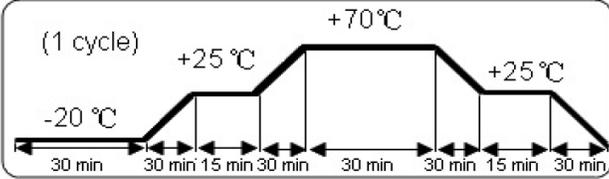
Test Condition



Typical Frequency Response (3V0-p input measured at 10cm)

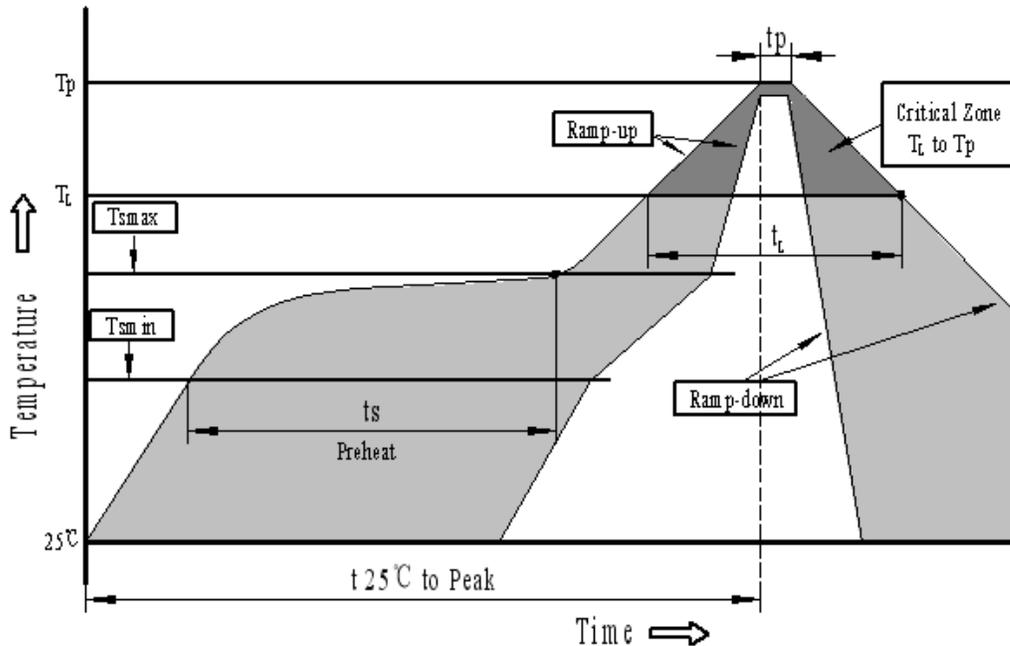


Reliability Testing

Type of Test	Test Specifications
High Temperature Test	The part shall be capable of withstanding a temperature +70°C for 96 hours
Low Temperature Test	The part shall be capable of withstanding a temperature -20°C for 96 hours
Humidity Test	25±2°C, 90~95% RH, 5 hours up to 55°C, 0.5hr for 25±2°C, 5 hours to 25±2°C, then 0.5hr. Complete 10 cycles.
Temperature Cycle Testing	<p>Total 1 cycle of the following</p> 
Vibration Test	After vibration part with 1.5mm amplitude at 10-50Hz in 3 perpendicular directions for 2 hours each.
Drop Test	Drop from a height of 700mm onto 10mm thick wood board in 3 directions.

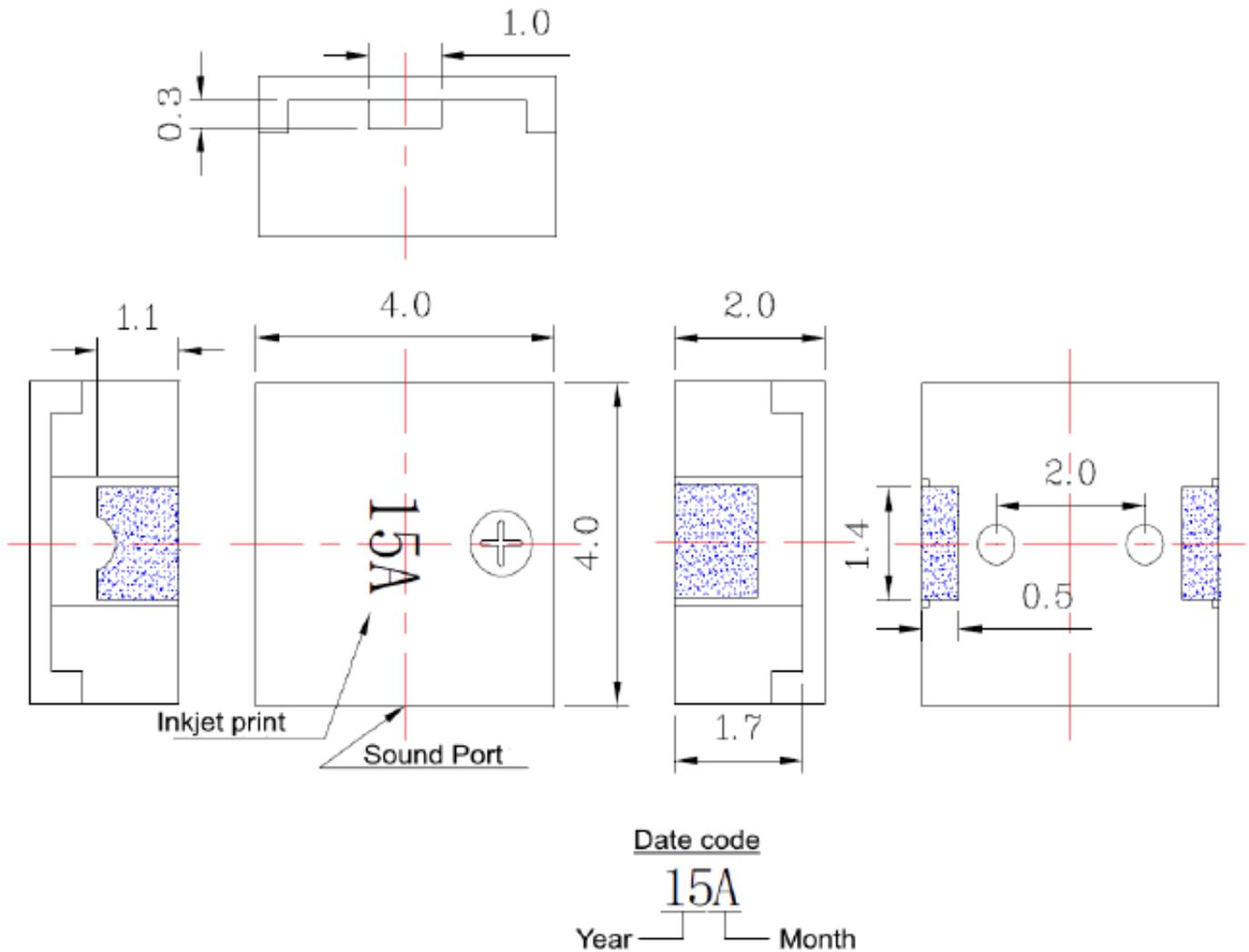
After each test, part shall meet specifications with an SPL variance that of specification tolerance.

Recommended Reflow Soldering Procedure

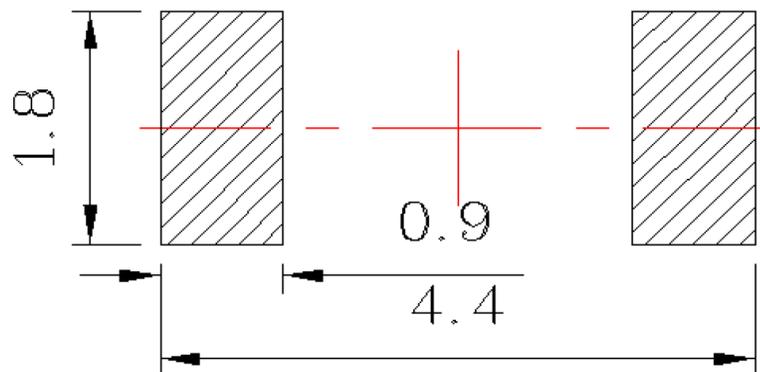


Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_p)	3°C/second max.
Preheat	
-Temperature Min. (T_{smin})	150°C
-Temperature Min. (T_{smax})	200°C
-Temperature Min. (T_s)	60~180 seconds
T_{smax} to T_L	
-Ramp-up Rate	3°C/second max.
Reflow	
- Temperature (T_L)	217°C
-Time (T_L)	60~150 seconds
Peak temperature (T_p)	260°C+0/-5°C
Time within 5°C of actual Peak temperature (T_p)	6 seconds max.
Ramp-down Rate	6°C/second max.
Time 25°C to Peak Temperature	8 minutes max.

Dimensions



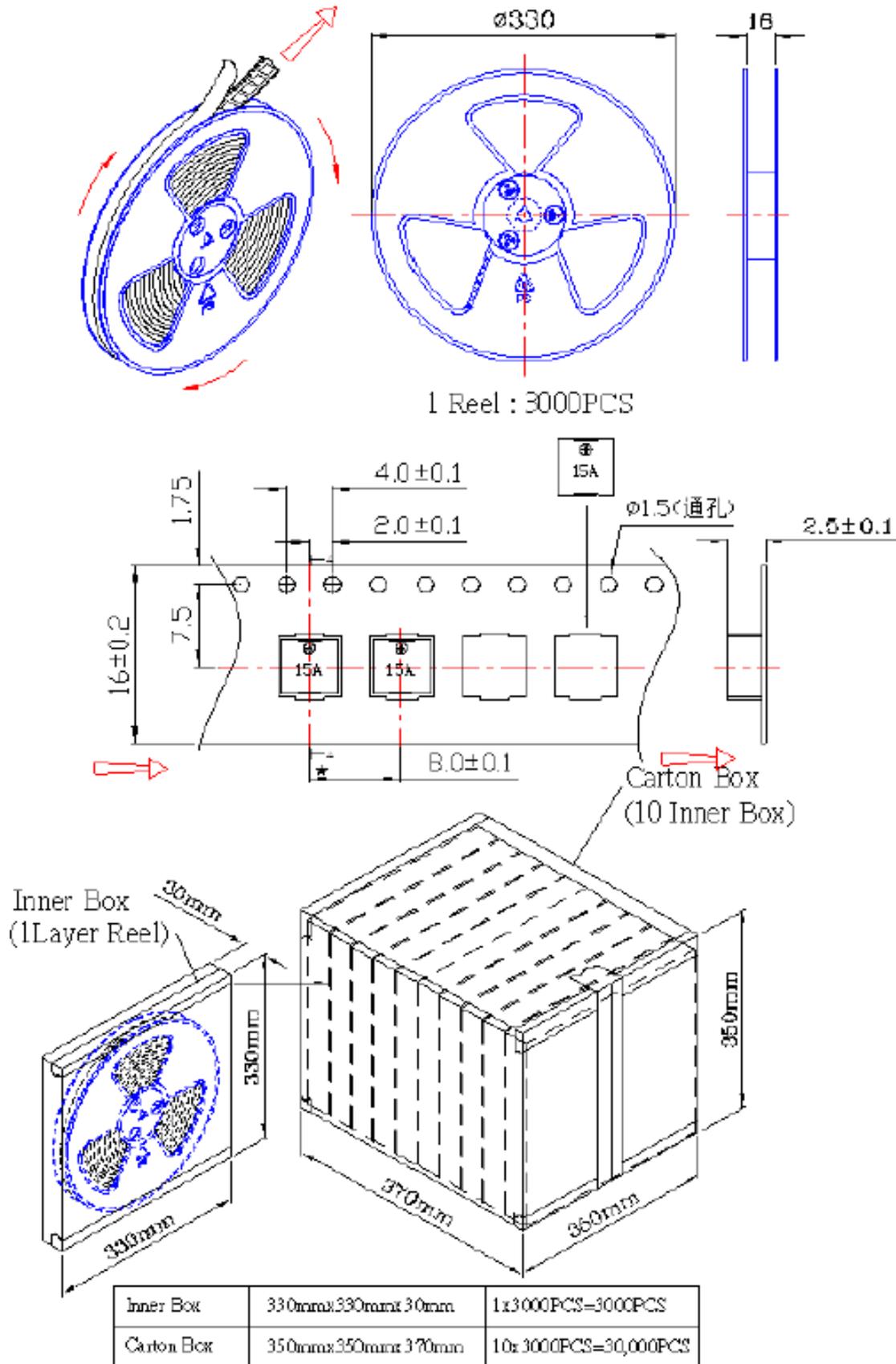
Suggested Land Pattern*



*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



Specification Revisions

Revision	Description	Date	Approved
A	Released from Engineering	12/18/2014	
B	Revised Drawing to show sound port and update 3D Image	01/30/2024	ML
C	Add Detail for MSL 2A	11/14/2024	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 or changes may not be made without prior customer notification and approval.