



PUIaudio



Data Sheet

SMT-0440-T-2-R

Though extremely small, the SMT-0440 series transducers are constructed almost exactly the same as electro-mechanical transducers three times their size.

The 4mm square by 2mm high **SMT-0440-T-2-R** top-firing electro-mechanical transducer features a minimum SPL of 70 dBA at 10cm with only 3V (0-peak) input at 4 kHz. Glue is externally applied to the housing seams to prevent ingress of potting material.

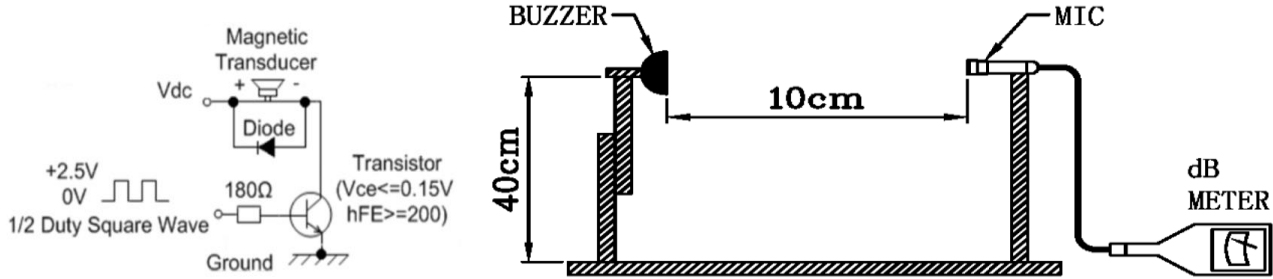
Features:

- Ultra-small design for wearable devices
- High output in a small, lightweight package
- Pick-and-place and reflow compatible
- Designed for use on potted PCBs

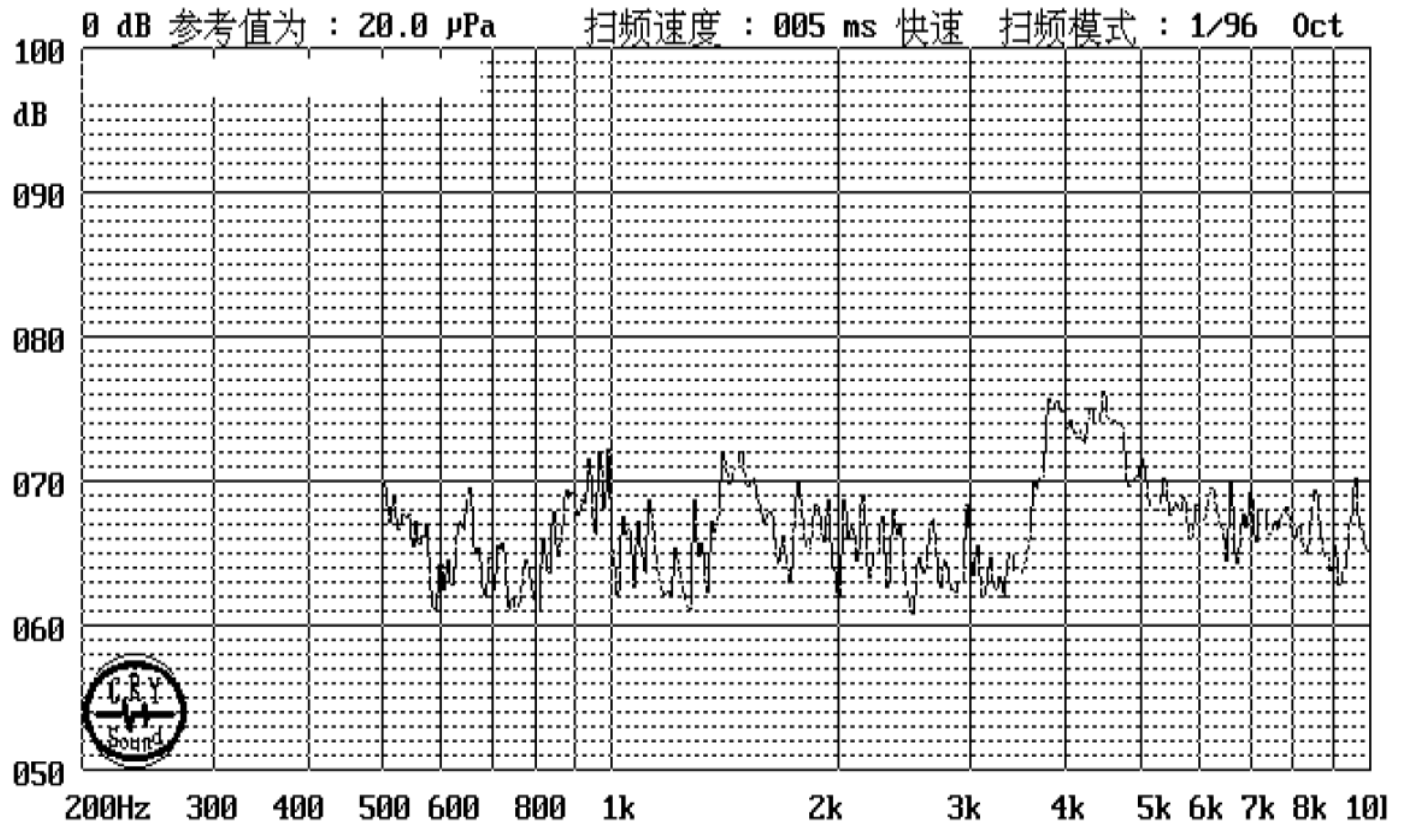
Specifications

Parameters	Values	Units
Rated Voltage	3	V0-p
Operating Voltage Range	2 ~ 4	V0-p
Impedance	17 ± 3	Ohms
Minimum SPL (Rated voltage @ 10cm)	70	dBA
Resonant Frequency	4,000 ±500	Hz
Max Current Draw (Rated voltage, 50% duty cycle, at resonant frequency)	90	mA
Housing Material	LCP	-
Terminal Material	Tin-plated Brass	-
Moisture Sensitivity Level (MSL)	2A	-
Weight	0.1	Grams
Operating Temperature	-20 ~ +70	°C
Storage Temperature	-30 ~ +80	°C

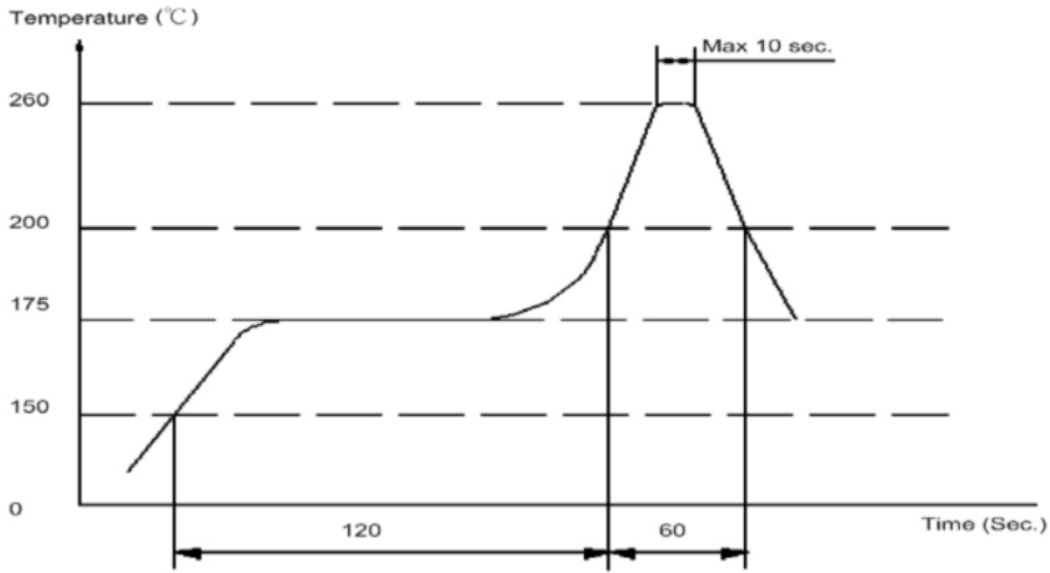
Measurement Method (3Vpk square wave, 10cm)



Frequency Response (3Vpk square wave, 10cm)



Recommended Reflow Profile



***Manual Solder Temperature 350C within 5 seconds.**

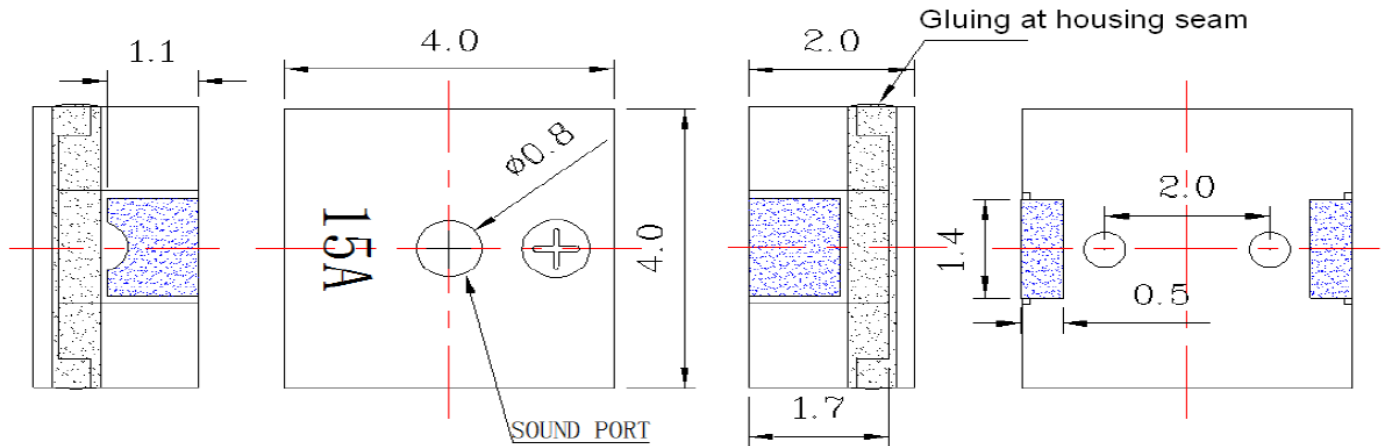
****Washing NOT Allowed.**

Reliability Testing

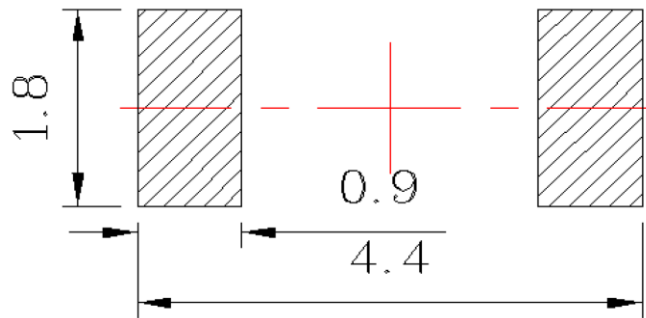
Type of Test	Test Specifications
High Temperature Test	96 hours at $+70^{\circ}\text{C} \pm 2^{\circ}\text{C}$ followed by two hours in normal room temperature
Low Temperature Test	96 hours at $-20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ followed by two hours in normal room temperature
Humidity Test	$25 \pm 2^{\circ}\text{C}$ at 90-95% RH for 5 hr, then to $55 \pm 2^{\circ}\text{C}$ at 90-95% RH for 5hr, then to $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ at 90-95% RH for 0.5hr, 10 cycles
Temperature Cycle Testing	<p>The part shall be subjected to 5 cycles using the following procedure followed by two hours at room temperature:</p>
Vibration Test	10 to 50 to 10 Hz in three perpendicular directions for two hours each.
Drop Test	Drop transducer from a 70cm height onto a 10mm thick wooden board in three directions.

After each test, the part's SPL, frequency response, and current draw shall meet specifications.

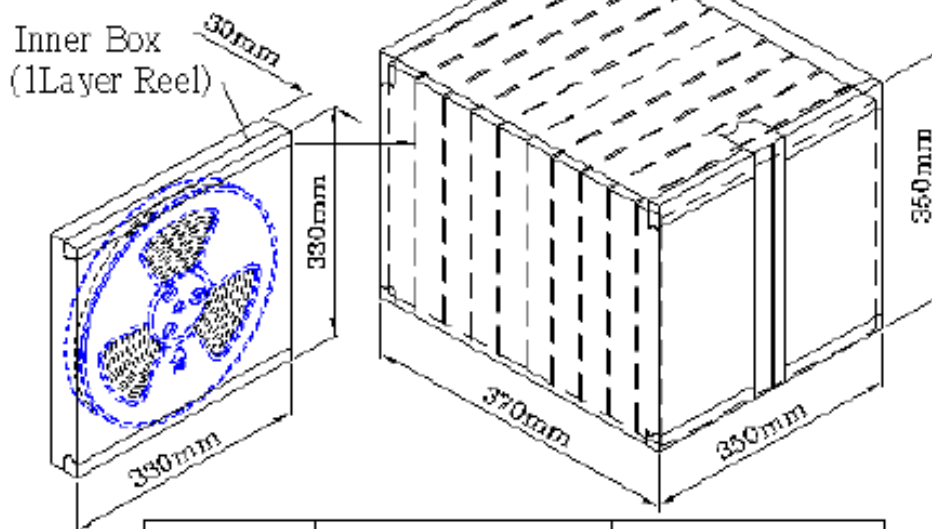
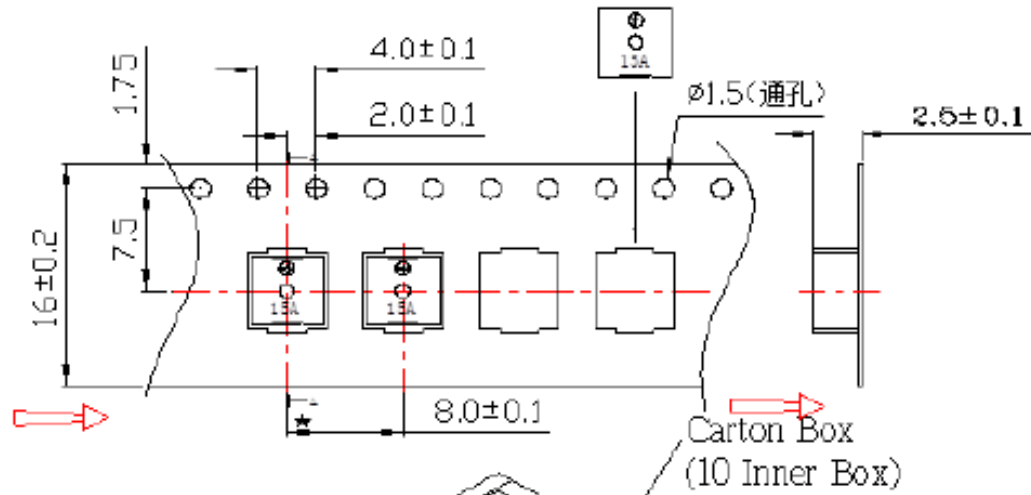
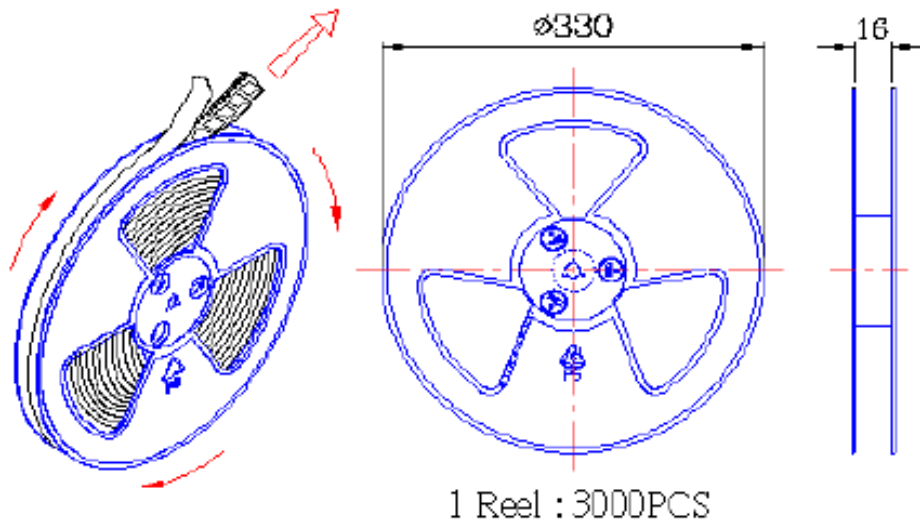
Dimensions (Tolerances $\pm 0.3\text{mm}$ unless otherwise specified)



Recommended PCB Land Pattern



Packaging



Inner Box	330mm x 330mm x 30mm	1 x 3000PCS = 3000PCS
Carton Box	350mm x 350mm x 370mm	10 x 3000PCS = 30,000PCS

Specifications Revisions

Revision	Description	Date	Approved
-	Released from Engineering	02/10/2017	-
A	Added Note 4 to add inspection of solder pads for glue.	02/28/2018	-
B	Update Company Logo and Footer Information, Add Detail For MSL 2A	12/02/2024	ML

Notes:

- Unless otherwise specified:
 - All dimensions are in millimeters.
 - Default tolerances are $\pm 0.5\text{mm}$ and angles are $\pm 3^\circ$.
- Specifications subject to change or withdrawal without notice.
- This part is ROHS Compliant.
- Parts are inspected with UV light after external glue is applied to the housing to ensure no glue is present on the solder pads.