



Data Sheet	SMT-0821-T-R
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**Features:**

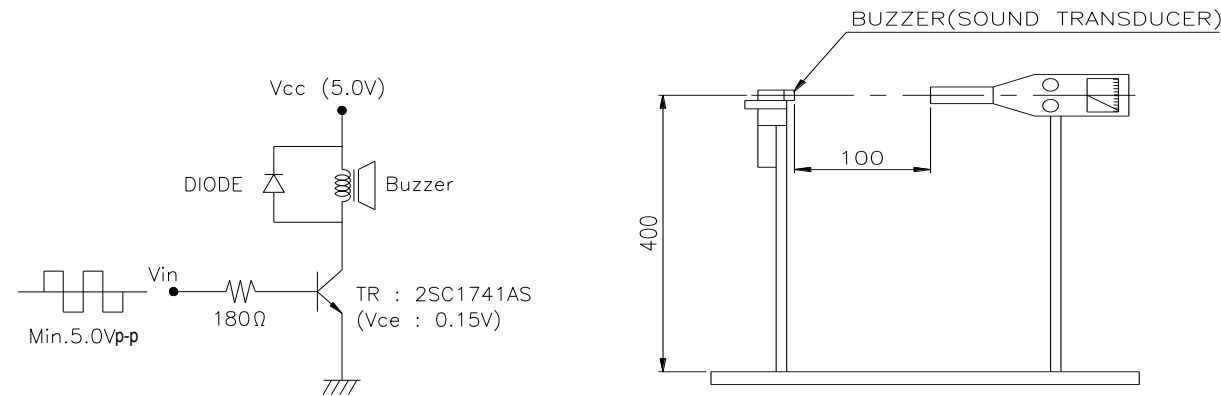
- 8.5x8.5mm SMT magnetic transducer
- 3.6V0-pk, 2100Hz, 16Ω

**Specifications**

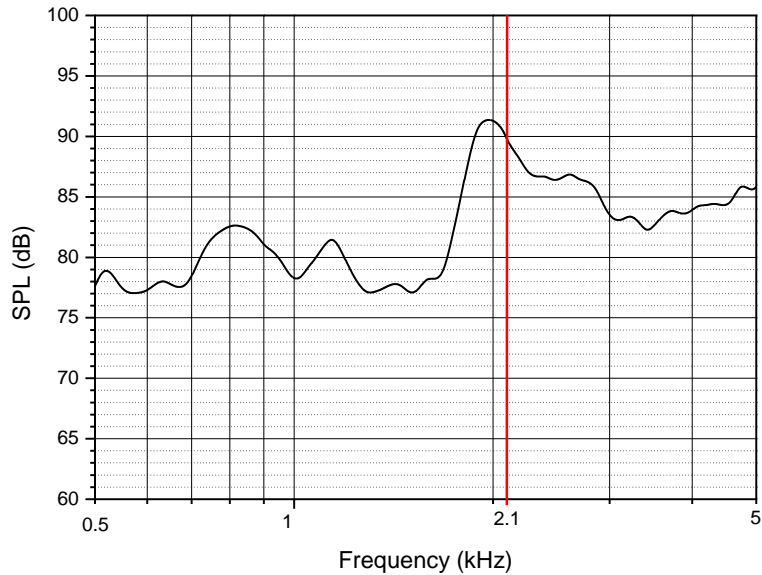
Parameters	Values	Units
Rated Voltage	3.6	V0-pk
Operating Voltage Range	2.5 ~ 4.5	V0-pk
Current Draw at Rated Voltage*	90	mA
Coil Resistance	16 ± 2.4	Ohms
Minimum SPL @ 10cm*	87	dBA
Resonant Frequency	2,100 ± 500	Hz
Housing Material	LCP	-
Terminal Material	Sn-Plated Phosphor Bronze	-
Weight	0.45	Grams
Acceptable Soldering Methods	See following pages	-
Environmental Compliances	RoHS/REACH	-
Moisture Sensitivity Level (MSL)	2	-
Operating Temperature	-30 ~ +80	°C
Storage Temperature	-40 ~ +85	°C

\*At rated voltage with 50% duty cycle 2.7kHz positive biased square-wave

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

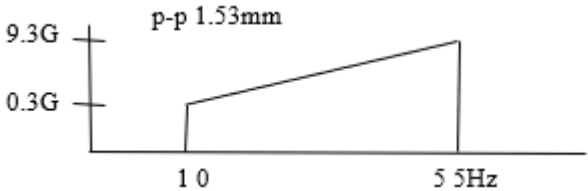


Typical Frequency Response (3.6Vpk square wave input measured at 10cm)



Reliability Testing

Type of Test	Test Specifications
High Temperature Test	The part shall be capable of withstanding a temperature +85°C for 96 hours.
Low Temperature Test	The part shall be capable of withstanding a temperature -40°C for 96 hours
Humidity Test	Place in chamber with 90-95%RH at 40C for 96 hours followed by ambient room conditions for 2 hours.
Temp/Humidity Cycle	<p>Perform 10 cycles of the following cycle.</p> <div><div><div>+25°C 95%RH 5Hr</div><div>0.5Hr</div><div>+60°C 95%RH 6Hr</div><div>0.5Hr</div></div><div>1 cycle : 12 Hr</div></div>
Temperature Cycle Testing	<p>Total 5 cycles of the following without power.</p> <div><div><div>+0 -30°C-3 30min</div><div>+10 +20°C-5 15min</div><div>+3 +70°C-0 30min</div><div>+10 +20°C-5 15min</div></div><div>1 cycle : 90 min</div></div>

Vibration Test	 <p>Test for direction of X, Y, Z for 2 hours each (6hrs total).</p>
Drop Test	Drop onto 4cm hardwood board in x,y,z direction (6 times) from 75cm height.
Solderability	Solder bath temp 300°C ± 5°C, time 3 ± 1 sec

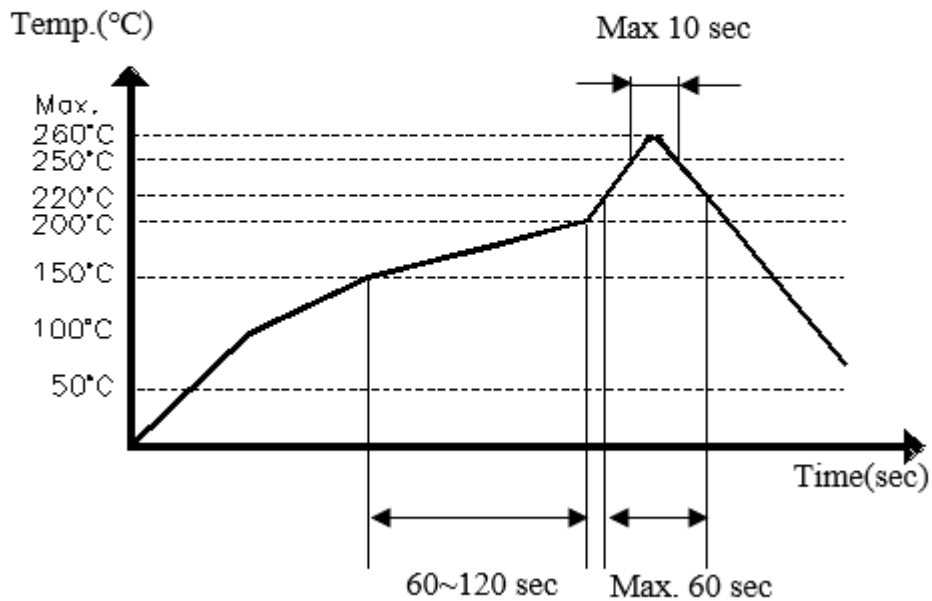
**After each test, part shall meet specifications with an SPL variance of ±10dB**

## Recommended Reflow Soldering Procedure

- Recommendable reflow soldering condition is as follows.

Note 1; It is requested that reflow soldering should be executed after heat of product goes down to normal temperature.

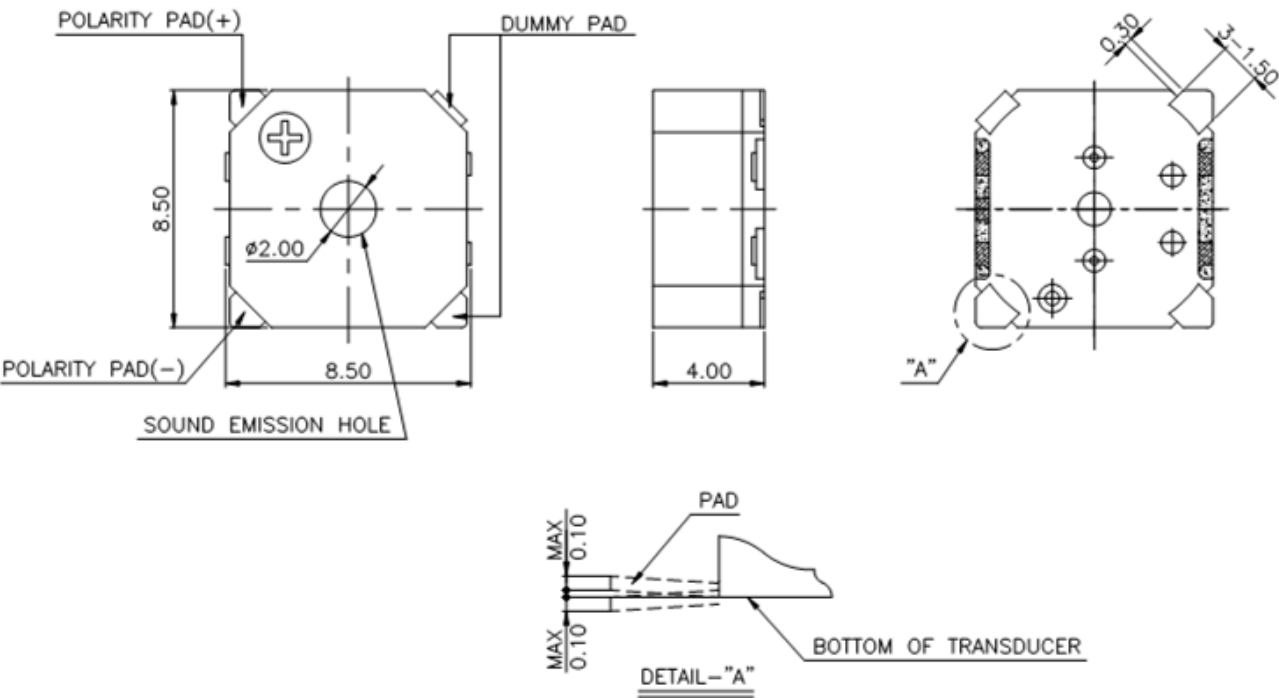
Note 2; Peak reflow temperature of 260°C, with a maximum duration of 60 sec. between 220°C and 260°C



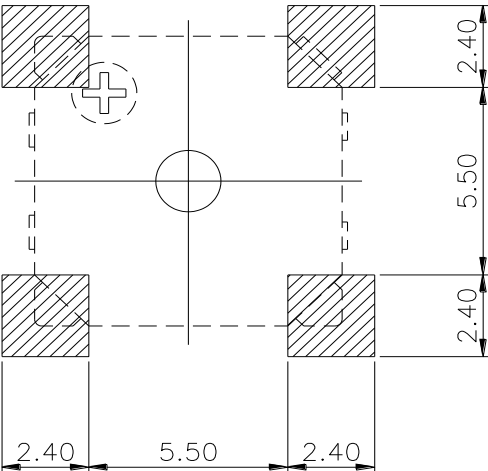
\* Reflow profile of lead-free solder

**\*Manual soldering iron temperature 350C, soldering time less than 5 seconds.**

Dimensions

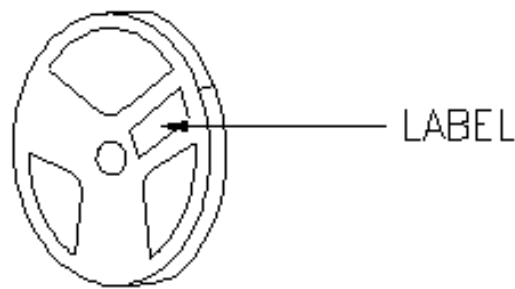


Suggested Land Pattern

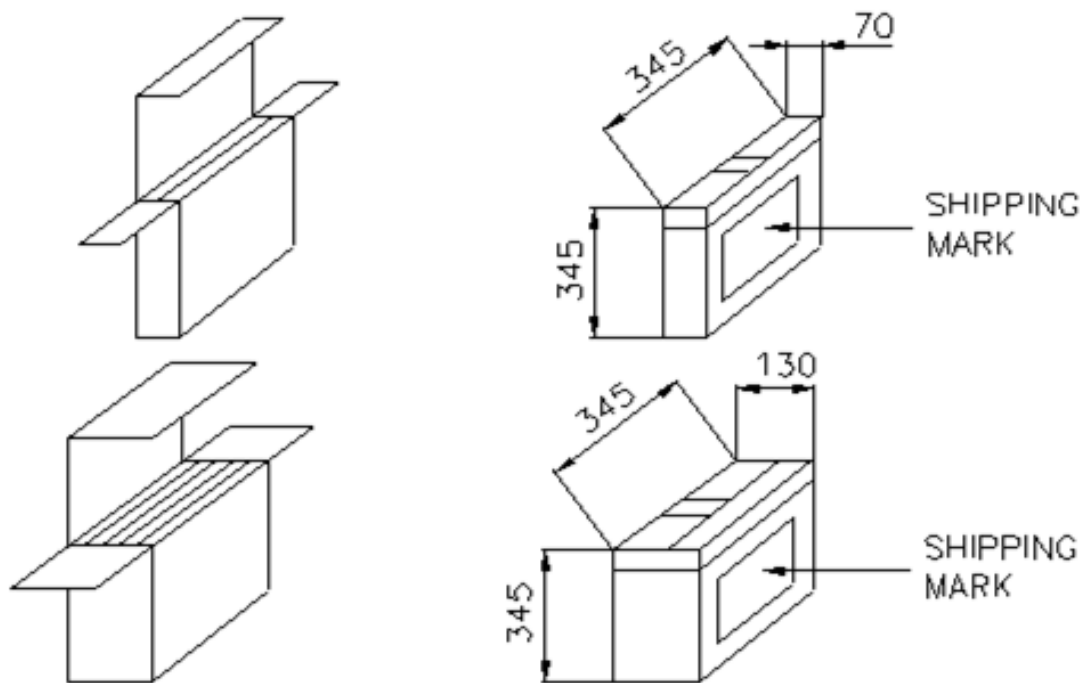




1,000 PCS per 1roll by using the tapping M/C.



2rolls or 5rolls per 1 double(thick) carton box packed by polypropylene tape.



Specifications Revisions			
Revision	Description	Date	Approved
-	Released from Engineering	09/16/2005	-
A	Revised Lower Housing	10/08/2008	BR
B	Revised to Inventor 3D Drawing Template	10/26/2008	EP
C	Revised Voltage, Temperature, Coil Impedance, and Terminal Material	02/28/2020	MV
D	Update Spec Format, Add details for Reliability, Packaging, etc., Add MSL 2, Revised Voltage Range	02/05/2025	ML

- Note:
- 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 withdraw without notice.

