
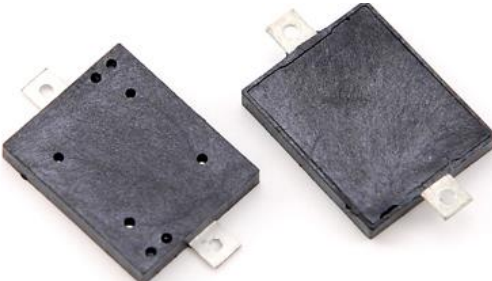
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## SPECIFICATION FOR APPROVAL

### SMD PIEZO TRANSDUCER

Model Name	LPT1109DS-HL-05-4.1-12-R
Note	

Product Photo	Cre-Sound
	<b>DRAWING :</b> 吴义涛
	<b>CHECKED :</b> 韦 娟
	<b>APPROVED :</b> 宋雪琪
<b>Customer Confirmation:</b>	

**ChangZhou Cre-Sound Electronics Co.,Ltd.**  
**Tel: +86-519-86321175 Fax: +86-519-86702455**  
**E-mail:sales3 @wj-lianhua.com**



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## SPECIFICATION


ChangZhou Cre-Sound  
Electronics Co.,Ltd.

www.cre-soundbuzzer.com  
www.wj-Lianhua.com

*MODEL NAME: LPT1109DS-HL-05-4.1-12-R*

### Alteration History

Change NO.	Note	Before of changes	After of changes	Reason	Revision by	Rev.

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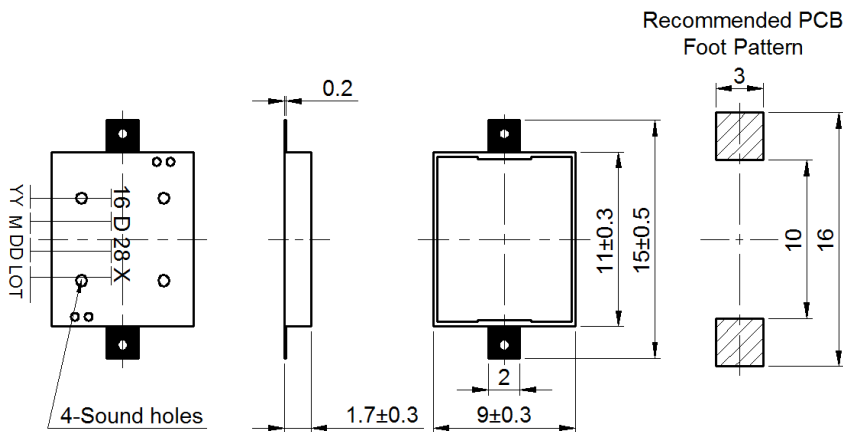
**Technical Terms:**

No.	Technical terms	Value
1	Rated Voltage (Vp-p)	5
2	Max Input Voltage(Vp-p)	25
3	*Rated Current(mA)	≤5
4	Capacitance at 100Hz (pF)	12000 ± 30%
5	*Sound Output at 10cm(dB)	≥70
6	Resonance Frequency (KHz)	4.1±0.5
7	Operating Temperature(°C)	-40~+105
8	Storage Temperature(°C)	-40~+120
9	Weight (g)	0.25
10	Housing Material	LCP
11	MSL(Moisture Sensitivity Level)	5a(≤30°C/60%RH 24Hrs Floor life)
12	RoHS	Yes


\*Applying rated voltage (at 4.1KHz, 1/2 duty , square wave)  
 Test Basic State: Temp(20 ± 2°C), Humidity(40~70%RH), Air pressure(860~1060hPa).

**Dimensions (UNIT: mm):**

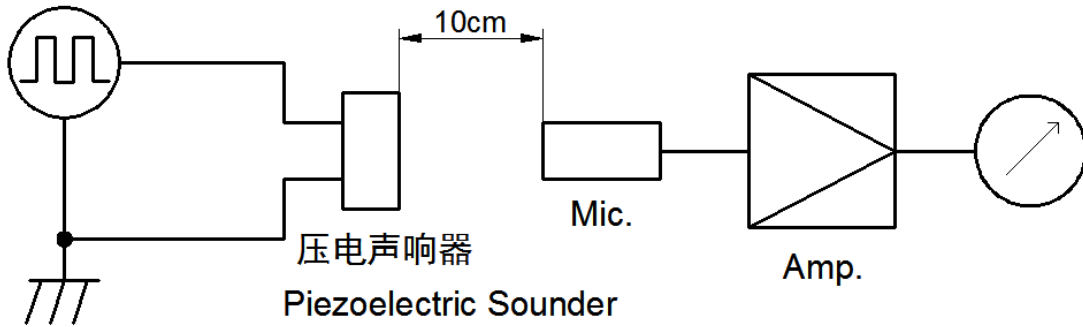
Tolerance: ±0.5mm Except Specified



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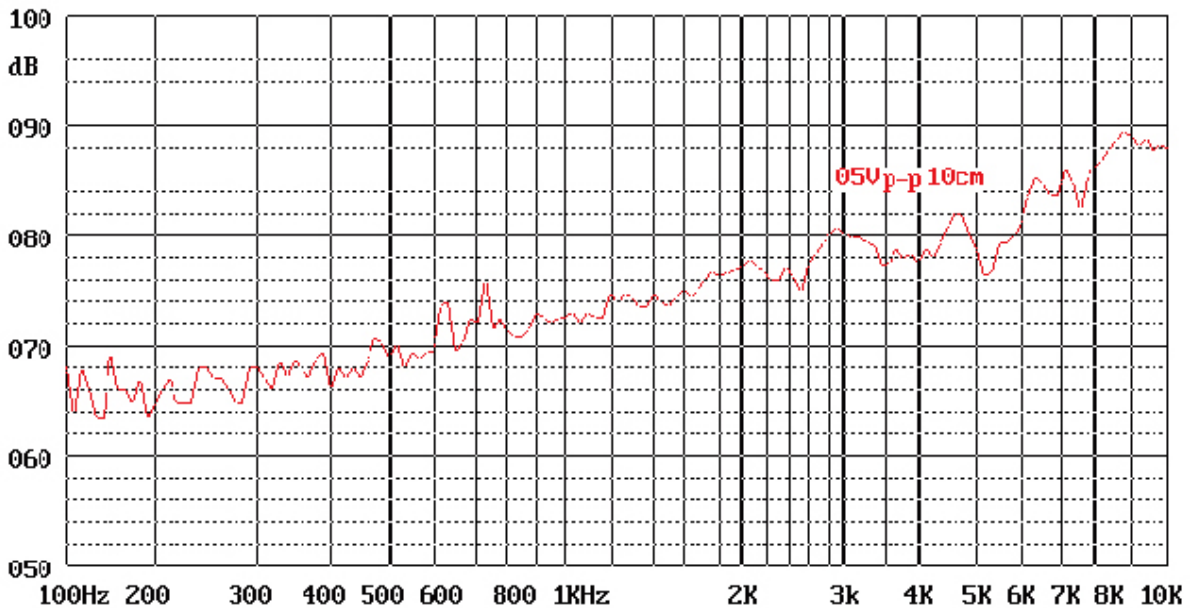
**Test Method:**




MIC: ND10 普通声级计或等同品  
 MIC: ND10 Sound Meter or equivalent

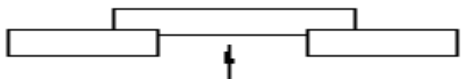
信号发生器: DF1641D或等同品  
 Signal Generator: DF1641D or equivalent

**Frequency Response:**




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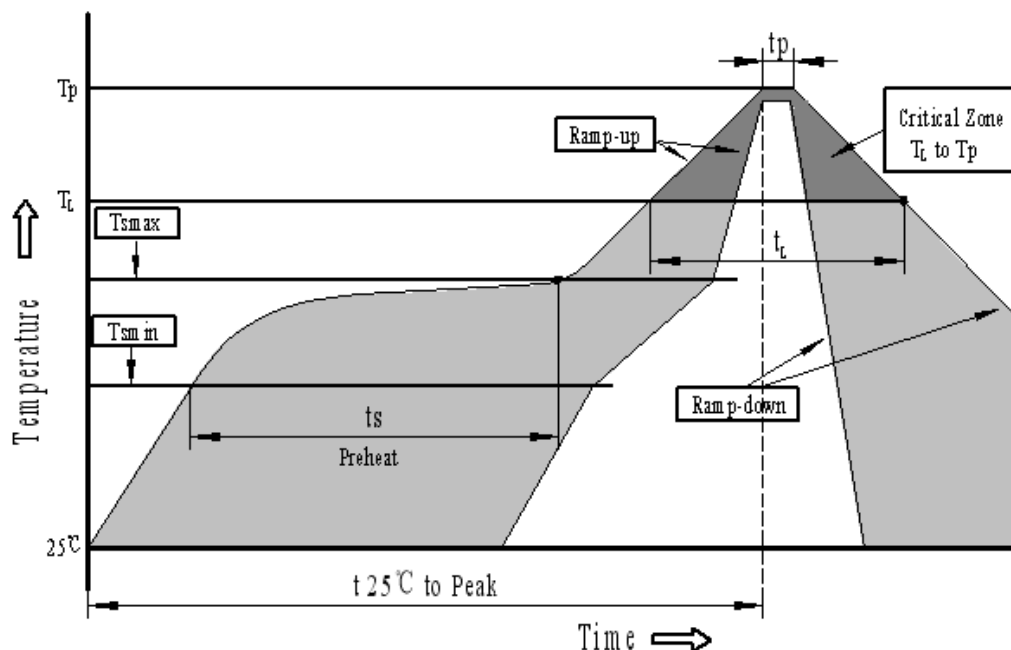
### Reliability Test:

No.	Item	Test condition	Variance after test
1	High temp. storage life	The part shall be capable of withstanding a storage temperature is +120°C for 120 hours	After being placed for 2 to 4hrs at room temp, the product shall meet specification, except the SPL should be in ±10dB compared with initial one.
2	Low temp. storage life	The part shall be capable of withstanding a storage temperature is -40°C for 120 hours	
3	Temp. Cycle	Total 5 cycles, 1 cycle consisting of -40±2°C, 30 minutes 20±5°C 15 minutes 120±2°C, 30 minutes 20±5°C 15 minutes	
4	Humidity Test	40±2°C, 90~95% RH, 120 hours	
5	Vibration Test	To-and-fro. sweep time (from 10 to 55 Hz and then 55 to 10 ) under single amplitude of 1.0mm is 1 minute. The vibration test shall consist of 2 hours per plane in each three mutually perpendicular planes for a total time of 6 hours.	The SPL should meet specification.
6	Shock	Sounder shall be measured after being applied shock (980m/s <sup>2</sup> ) for each three mutually perpendicular directions to each of 3 times by half sine wave.	After the test, the product shall meet specification,except the SPL should be in ±10dB compared with initial one.
7	Drop Test	Dropped naturally from 700mm height onto the surface of 10mm thick wooden board. 2 directions-upper and side of the part are to be applied.	
8	Lead pull	The part shall be pushed with a force of 9.8N for 10±1 seconds behind the part. 	After the test part shall meet specifications without any degradation in appearance and performance.
9	Recommended temp. Profile for Reflow Oven	Shown in Fig.1	The SPL should meet specification.

**Warranty:** For a period of **six months** from date of manufacturer under normal operations.


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### Recommended Temp. Profile for Reflow Oven (Fig.1)

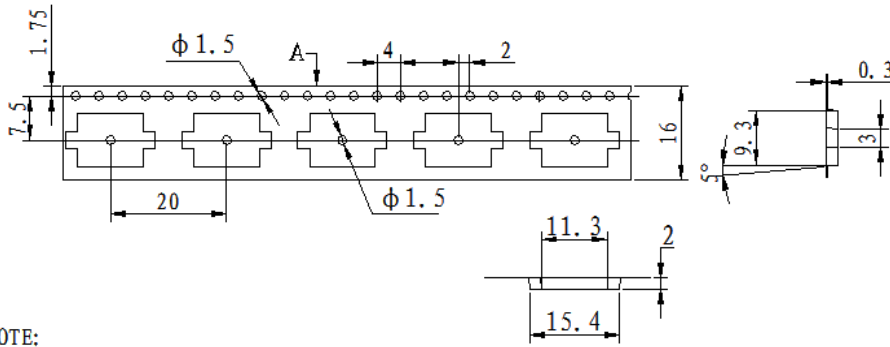


Profile Feature	Pb-Free Assembly
Average ramp-up rate( $T_L$ to $T_p$ )	3°C/second max.
Preheat	
-Temperature Min.( $T_{Smin}$ )	150°C
-Temperature Min.( $T_{Smax}$ )	200°C
-Temperature Min.( $t_s$ )	60~180 seconds
$T_{Smax}$ to $T_L$	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
- Temperature( $T_L$ )	217°C
-Time( $t_L$ )	60~150 seconds
Peak temperature( $T_p$ )	245°C+0/-5
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.
<b>We suggest the customer do the reflow soldering once.</b>	

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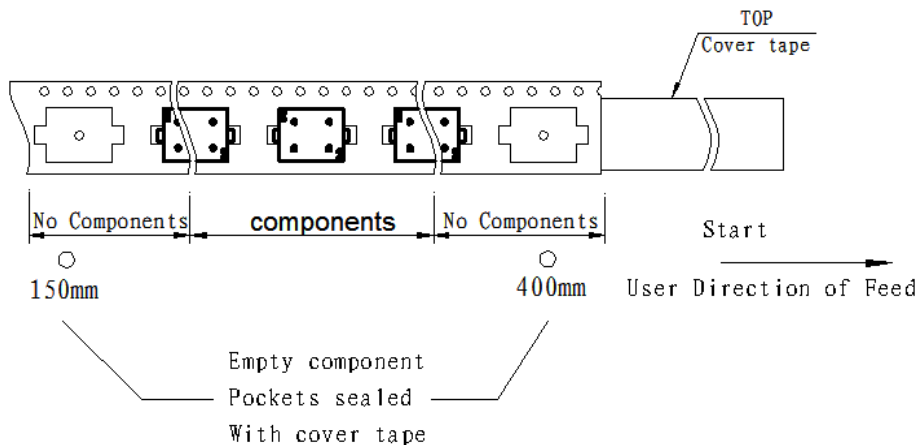
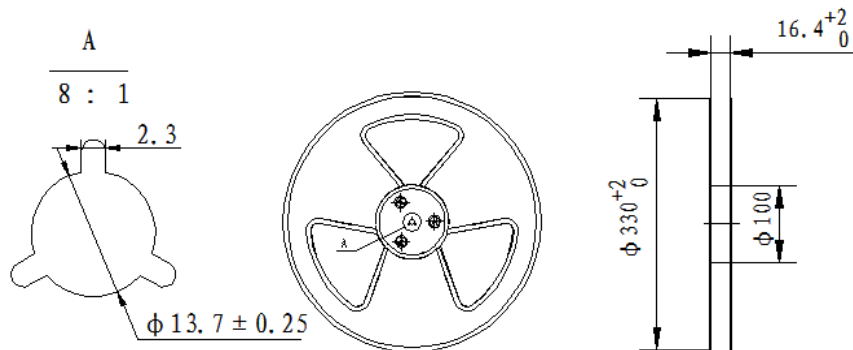
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**Packing:**



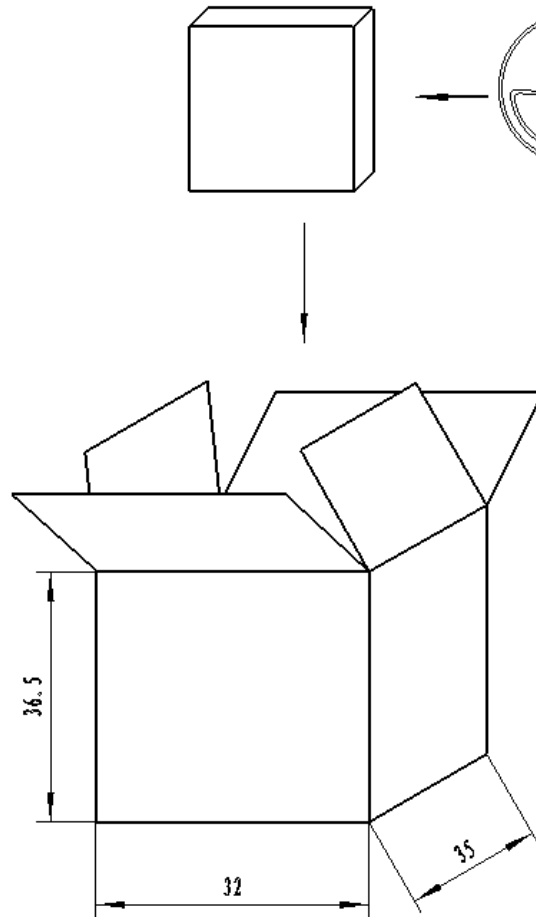
NOTE:

1. 10 sprocket hole pitch cumulative tolerance  $\pm 0.20\text{mm}$ .
2. All dimensions meet EIA-481-D requirements.
3. Thickness:  $0.3 \pm 0.05\text{mm}$ .
4. Component loaded per 13" reel: 1000pcs.



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**Packing:**



**NOTES:**

- 1.1000 PCS per box
- 2.Total 10 boxes per carton
- 3.Total 10000 PCS carton
- 4.Volum:32\*35\*36.5cm



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## MSL Rating and Notice:

### Moisture Sensitivity level and Floor Life

Level	Floor life(out of bag) at factory Ambient $\leq 30^{\circ}\text{C}/60\%\text{RH}$
5a	24 hours

① **The products must not be washed.**

② **Storage Condition:**

The products should be stored in the room, where the temperature/humidity is stable.

And avoid such places where there are large temperature changes.

Please store the products at the following conditions:

Temperature:  $-10$  to  $+40^{\circ}\text{C}$  Humidity: 15 to 85% R.H.

③ **Expire Date on Storage:**

Expire date (shelf life) of the products is **six months** after delivered under the conditions of a sealed and an unopened package.

Please use the products with **six months** after delivered.

④ **Notice on product Storage:**

Please use the products immediately after the package is opened, because the characteristics may be reduced at quality.