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## SPECIFICATION FOR APPROVAL


### SMD PIEZO TRANSDUCER

Model Name	LPT9018BS-HL-03-4.0-12-R
Note	

Product Photo	Cre-Sound
	DRAWING: 王 杨
	CHECKED: 姚宝鑫
	APPROVED: 宋雪琪
<b>Customer Confirmation:</b>	

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



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### Technical Terms:

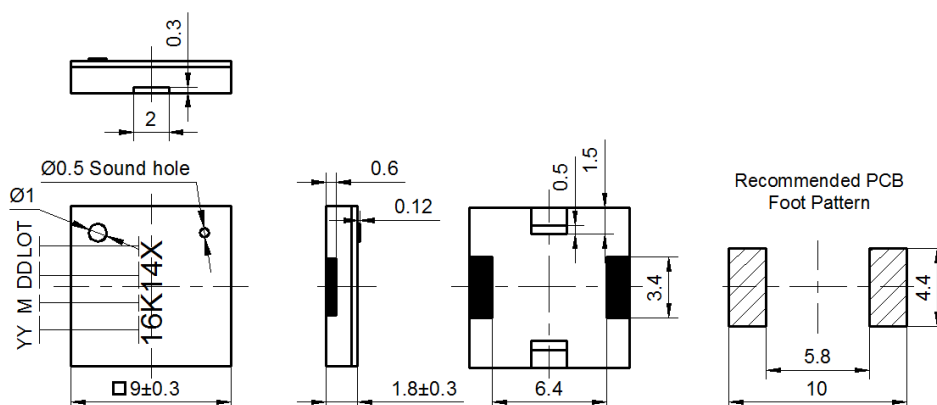
No.	Technical terms	Value
1	Rated Voltage (Vp-p)	3
2	Max Input Voltage(Vp-p)	25
3	*Rated Current(mA)	≤3
4	Capacitance at 100Hz (pF)	12000 ± 30%
5	*Sound Output at 10cm(dB)	≥65
6	Resonance Frequency (KHz)	4.0±0.5
7	Operating Temperature(°C)	-40~+105
8	Storage Temperature(°C)	-40~+120
9	Weight (g)	0.25
10	Housing Material	LCP
11	MSL(Moisture Sensitivity Level)	5a(≤30°C/60%RH 24hrs Floor life)
12	RoHS	Yes

\*Applying rated voltage (at 4.0KHz, 1/2 duty , square wave)

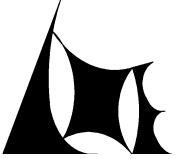
Test Basic State: Temp(20 ± 2°C), Humidity(40~70%RH), Air pressure(860~1060hPa).

### Dimensions (UNIT: mm):

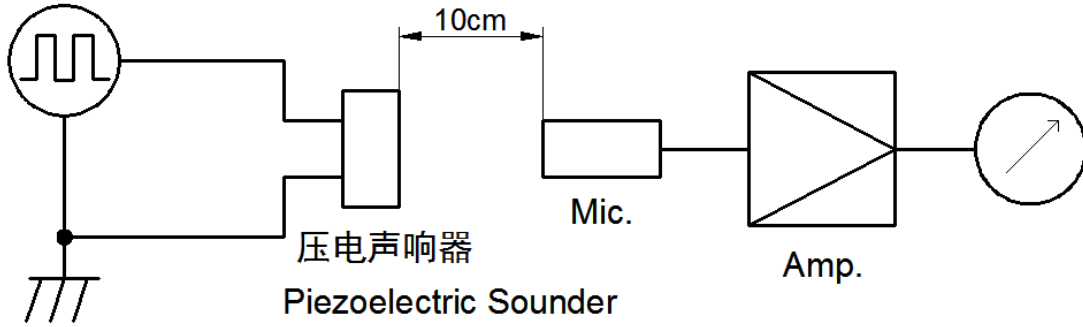
Tolerance: ±0.5mm Except Specified



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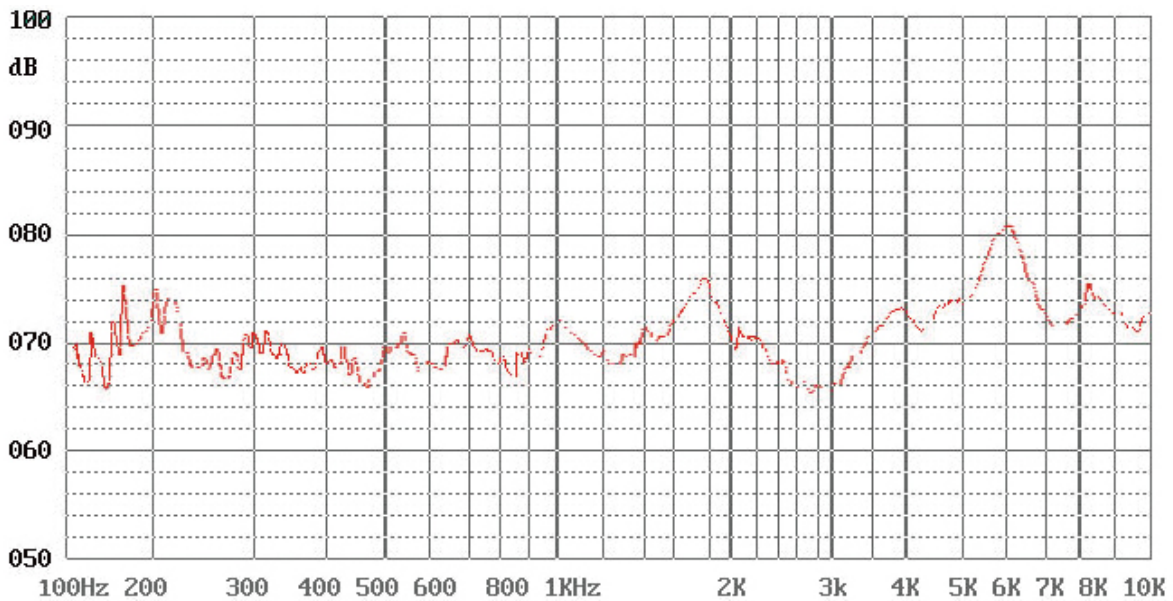
**Test Method:**




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

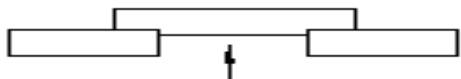
**Frequency Response:**



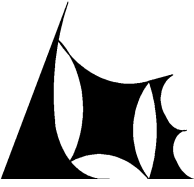
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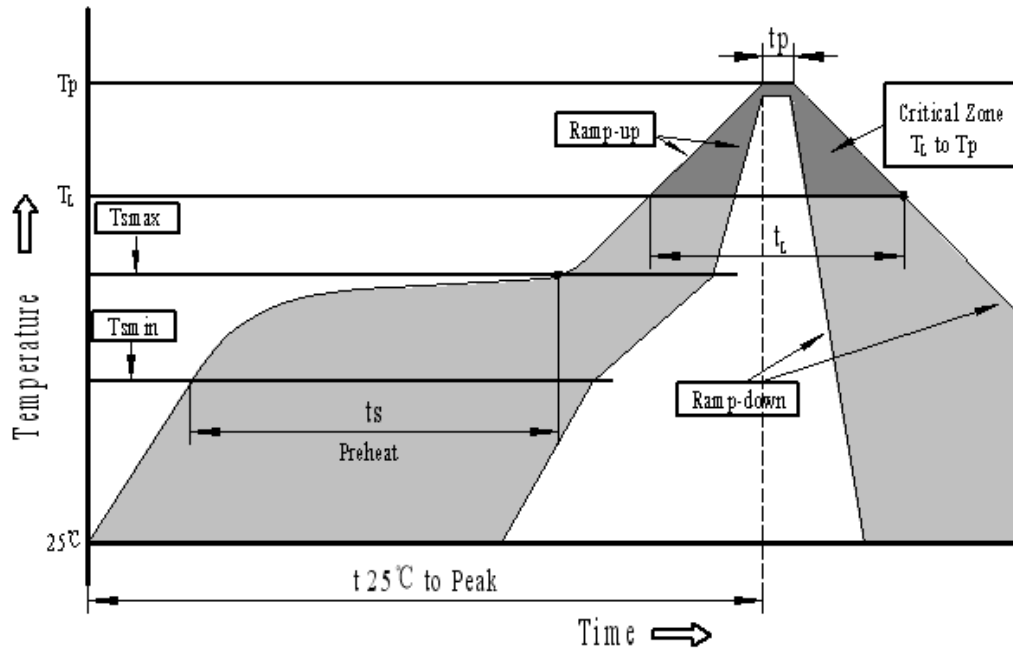
### Reliability Test:

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)

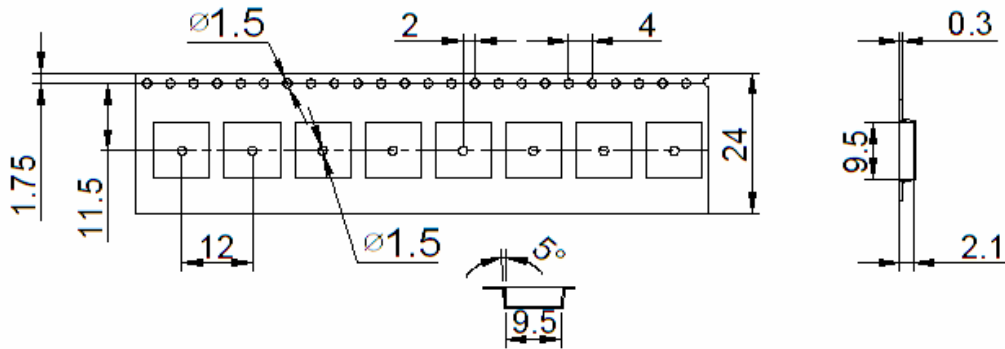


Profile Feature	Pb-Free Assembly
Average ramp-up rate( $T_L$ to $T_p$ )	3°C/second max.
Preheat	
-Temperature Min.( $T_{smin}$ )	150°C
-Temperature Min.( $T_{smax}$ )	200°C
-Temperature Min.( $t_s$ )	60~180 seconds
$T_{smax}$ to $T_L$	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
- Temperature( $T_L$ )	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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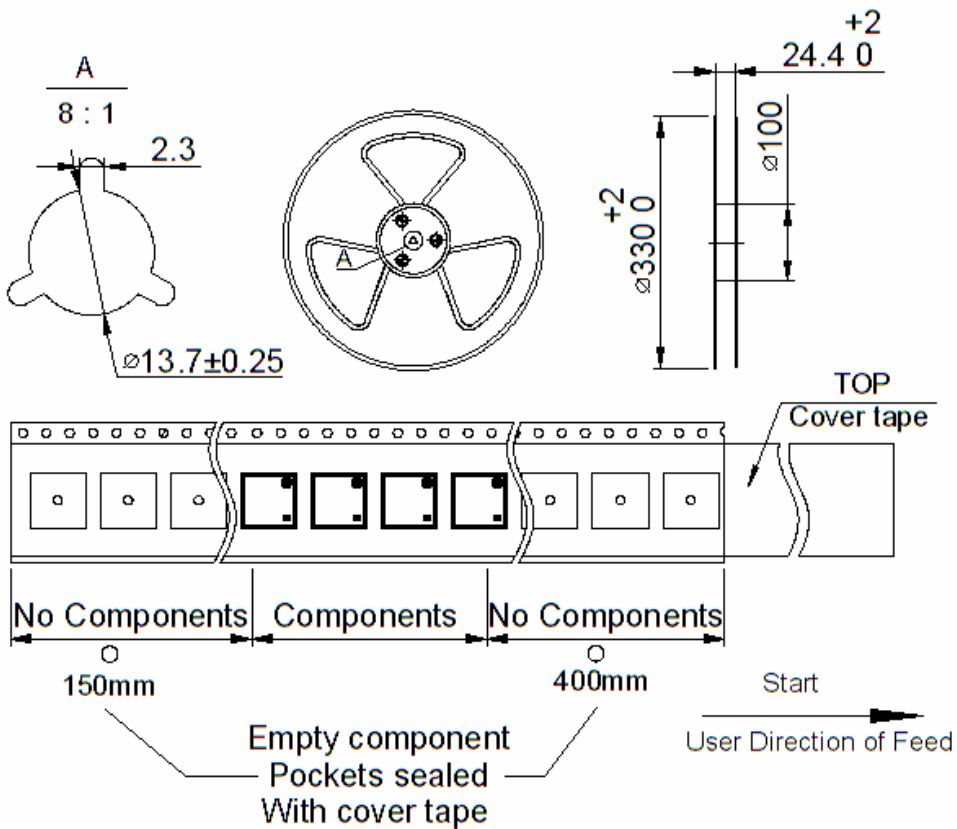
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**Packing:**



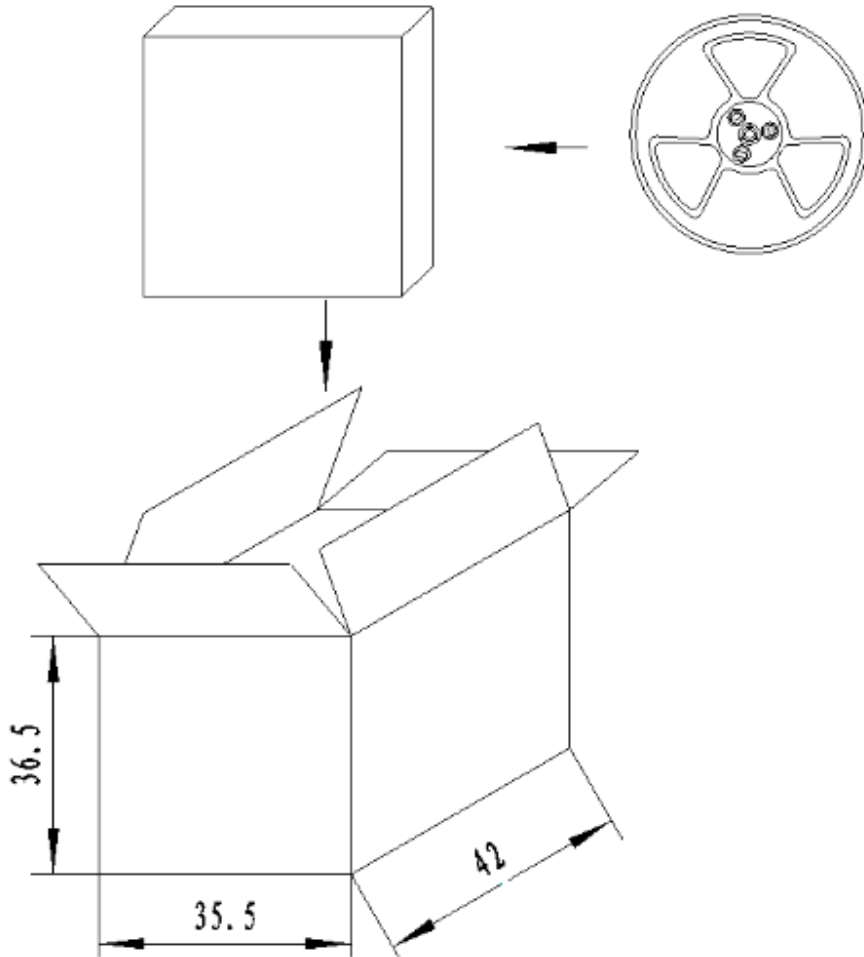
**NOTE:**

- 1.10 sprocket hole pitch cumulative tolerance +/-0.20mm.
- 2.All dimensions meet EIA-481-D requirements.
- 3.Thickness: 0.3+/-0.1mm.
- 4.Component loaded per 13"reel: 2000pcs.



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**Packing:**



**NOTES:**

- 1.2000 PCS per box
- 2.Total 10 boxes per carton
- 3.Total 20000 PCS carton
- 4.Volum:42\*35.5\*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.