

	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	1/9		www.cre-soundbuzzer.com
	Rev.	A/0		www.wj-Lianhua.com
<i>MODEL NAME: LPT1440S-HS-05-4.0-12-R</i>				


SPECIFICATION FOR APPROVAL

SMD PIEZO TRANSDUCER

Model Name	LPT1440S-HS-05-4.0-12-R
Note	

Product Photo	Cre-Sound
	DRAWING: 周文占
	CHECKED: 韦 娟
	APPROVED: 宋雪琪
Customer Confirmation:	

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	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	3/9		www.cre-soundbuzzer.com
	Rev.	A/0		www.wj-Lianhua.com
MODEL NAME: LPT1440S-HS-05-4.0-12-R				

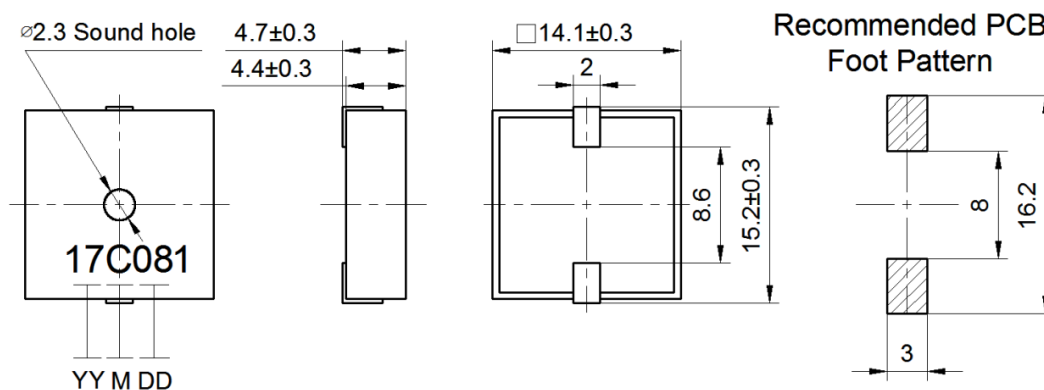
Technical terms:

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)	≥80
6	Resonance Frequency (KHz)	4.0±0.5
7	Operating Temperature(°C)	-30~+85
8	Storage Temperature(°C)	-40~+90
9	Weight (g)	1.1
10	Housing Material	PPS
11	RoHS	Yes
12	MSL(Moisture Sensitivity Level)	5a(≤30°C/60%RH 24H Floor life)

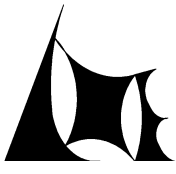
*Value applying at rated voltage , 4.0KHz, 1/2 duty , square wave

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

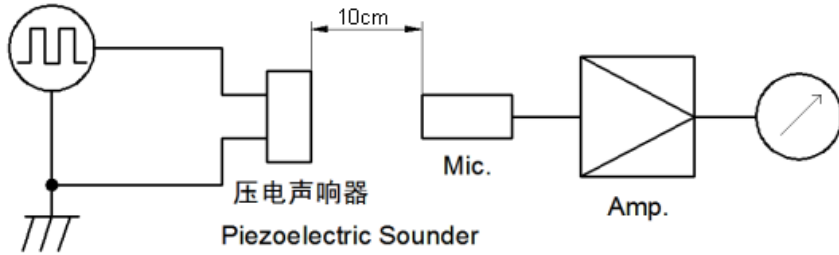
DIMENSIONS (UNIT: mm)Tolerance: ±0.5mm Except Specified



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	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	4/9		www.cre-soundbuzzer.com
	Rev.	A/0		www.wj-Lianhua.com
MODEL NAME: LPT1440S-HS-05-4.0-12-R				

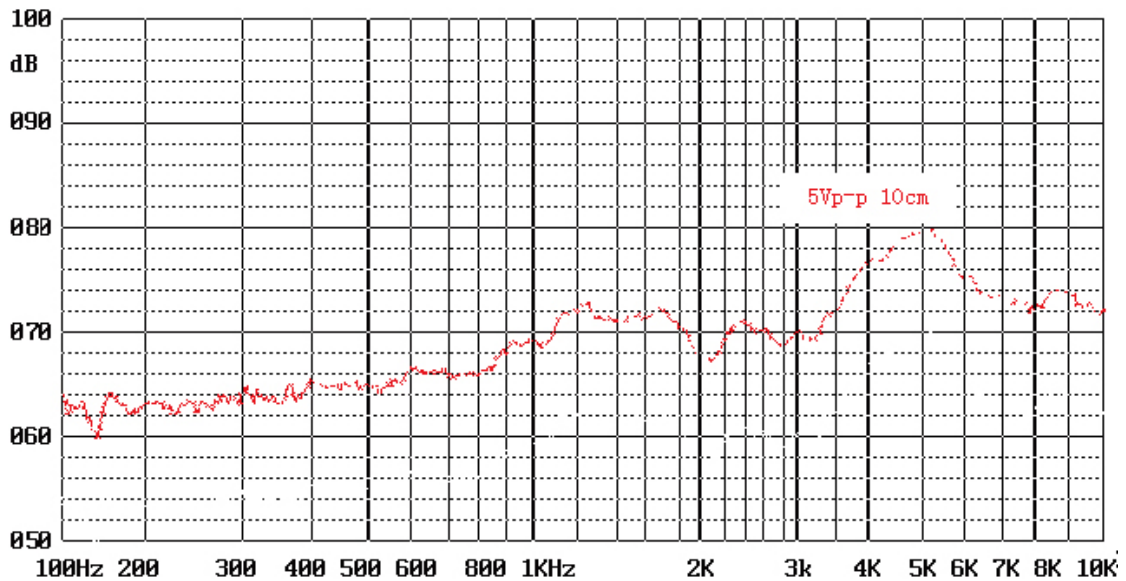
TEST METHOD:



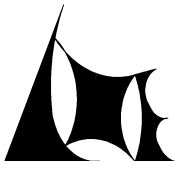
MIC: ND10 普通声级计或等同品
 MIC: ND10 Sound Meter or equivalent

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


FREQUENCY RESPONSE:



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	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	5/9		www.cre-soundbuzzer.com
	Rev.	A/0		www.wj-Lianhua.com
MODEL NAME: LPT1440S-HS-05-4.0-12-R				

RELIABILITY TEST:

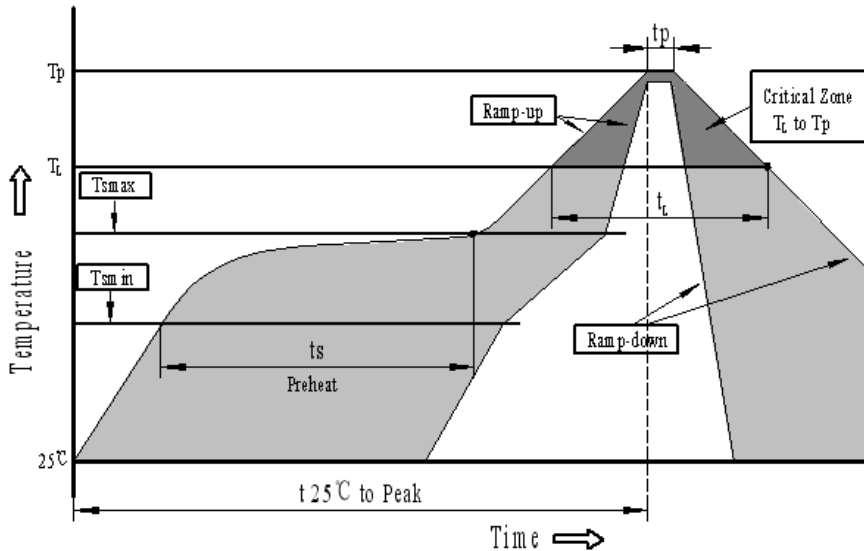
NO	ITEM	TESTING CONDITION	VARIANCE AFTER TEST
1	High temp. storage life	The part shall be capable of withstanding a storage temperature is +90°C for 120 hours	After being placed for 2 to 4hrs at room temp, the product shall meet specifications,except the SPL should be in ±10dB compared with initial one.
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 90±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 shall meet specification.
6	Shock	Sounder shall be measured after being applied shock (980m/s ²) for each three mutually perpendicular directions to each of 3 times by half sine wave.	After the test, the product shall meet specifications,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 shall meet specification.

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

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	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	6/9		www.cre-soundbuzzer.com www.wj-Lianhua.com
	MODEL NAME: LPT1440S-HS-05-4.0-12-R			

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°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.
We suggest the customer do the reflow soldering once.	

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DATE 22-12-2020

PAGE 7/9

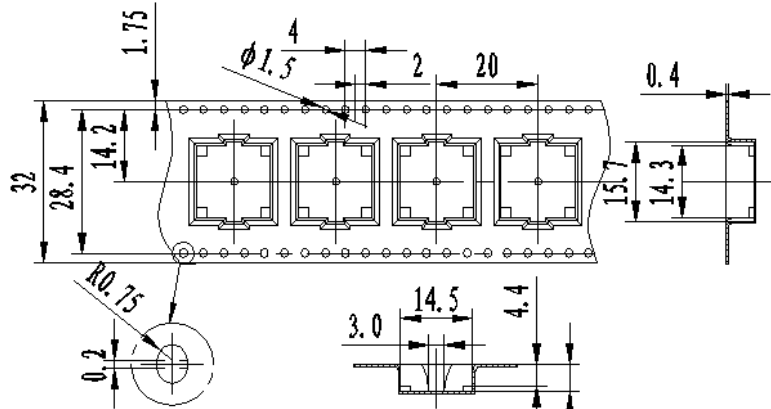
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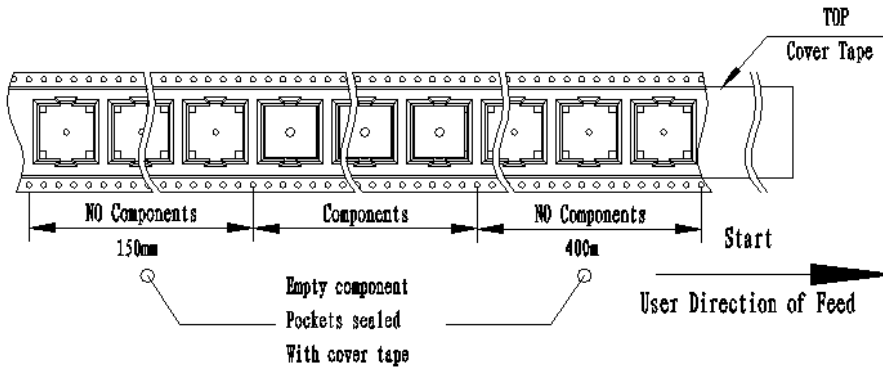
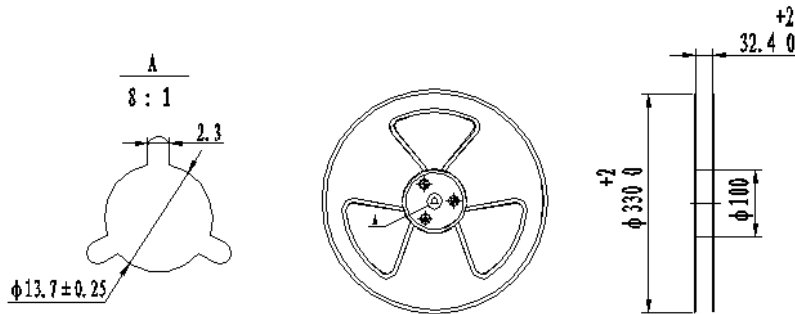
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PACKING:




NOTE:

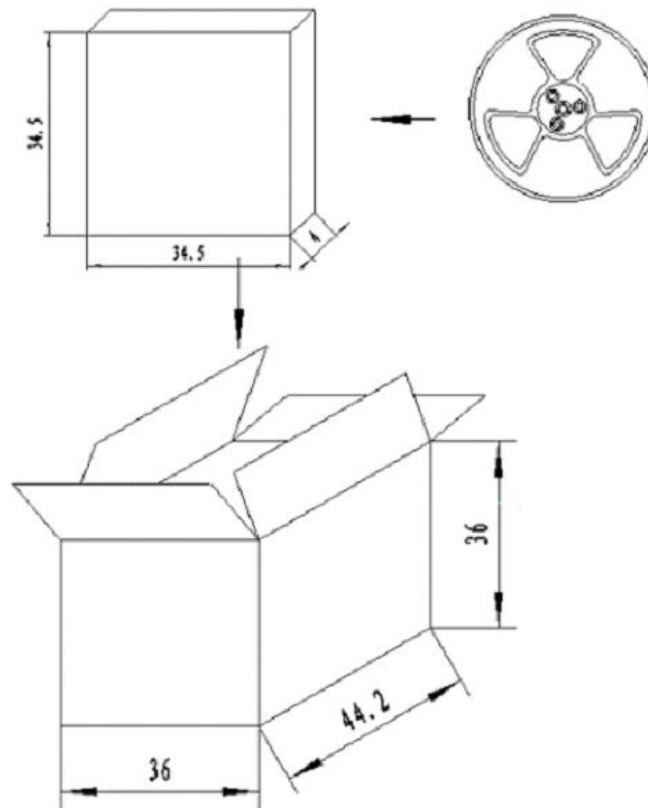
1. 10 sprocket hole pitch cumulative tolerance +/-0.2mm.
2. All dimensions meet EIA-481-D requirements.
3. Thickness: 0.4 +/-0.05mm.
4. Component loaded per 13" reel: 600pcs.



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	PAGE	8/9		www.cre-soundbuzzer.com www.wj-Lianhua.com
MODEL NAME: LPT1440S-HS-05-4.0-12-R				

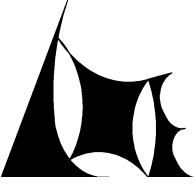
PACKING:



NOTES:

- 1.600 PCS per tray
- 2.Total 10 trays per carton
- 3.Total 6000 PCS carton
- 4.Volume:36×44.2×36cm

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	DATE	22-12-2020	SPECIFICATION	ChangZhou Cre-Sound Electronics Co.,Ltd.
	PAGE	9/9		www.cre-soundbuzzer.com
	Rev.	A/0		www.wj-Lianhua.com
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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.

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