


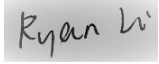
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| | CN | P/N: OWPB-121230S-40-3.6 | | Revision: 03 |



SPECIFICATION FOR APPROVAL

Piezo Transducer

| | |
|--------------|--|
| Part Number | OWPB-121230S-40-3.6 |
| Note | This item was compliance with the following requirements: 1. RoHS directive 2. REACH |
| Customer P/N | |

| | | | | |
|-----------|------------------|-------------------|------------------------|--|
| Ole Wolff | Signature / Date | Prepared | Checked | Approved |
| | | 吴义涛 2018.09.21 | Davy Liu 2018.09.21 |  2018.09.21 |

| | | | | |
|----------|------------------|--------------|--|--|
| Customer | Signature / Date | Confirmation | | |
| | | | | |

REVISION NOTES:

| Date | Rev. | Description of Revision |
|------------|------|--|
| 2012.03.21 | 00 | Initial Release |
| 2015.11.09 | 01 | Add Life Time: continuous working 1000hrs, change the carton size from 41.5x39x37.5cm to 42x35.5x36.5cm. |
| 2018.06.14 | 02 | Add marking in drawing, Use recommended within 6 months in page 2. |
| 2018.09.21 | 03 | High temp. correct to 80±2°C in Temperature cycling, compliance with Rev01 |

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1. SCOPE

THIS SPECIFICATION IS APPLIED TO OLE WOLFF SMD PIEZO TRANSDUCER UNIT OF MODEL: OWPB-121230S-40-3.6

2. GENERAL REQUIREMENTS

OPERATING TEMPERATURE RANGE: -20°C ~ +70°C

STORAGE TEMPERATUR RANGE: -30°C ~ +80°C

3. MECHANICAL LAYOUT & DIMENSIONS

DIMENSIONS: SHOWN IN FIGURE 4.

WEIGHT: 0.3g

4. ELECTRICAL CHARACTERISTICS

| NO. | ITEM | SPECIFICATION |
|---|------------------------|----------------|
| 1 | RATED VOLTAGE | 3.6Vp-p |
| 2 | MAX INPUT VOLTAGE | 25 Vp-p |
| 3 | RESONANT FREQUENCY | 4000+/-500Hz |
| 4 | CAPACITANCE AT 120HZ | 16000 ± 30% pF |
| 5 | *RATED CURRENT | ≤ 3mA |
| 6 | * SOUND OUTPUT AT 10CM | ≥ 75dB |
| 7 | HOUSING MATERIAL | LCP |
| We recommend usage in 6months,If 12 months old we recommend baking at 35 Deg C for 48 Hours. | | |

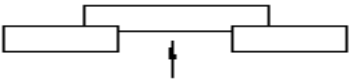
*Value applying at rated voltage , 4.0KHz, 1/2 duty , square wave

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

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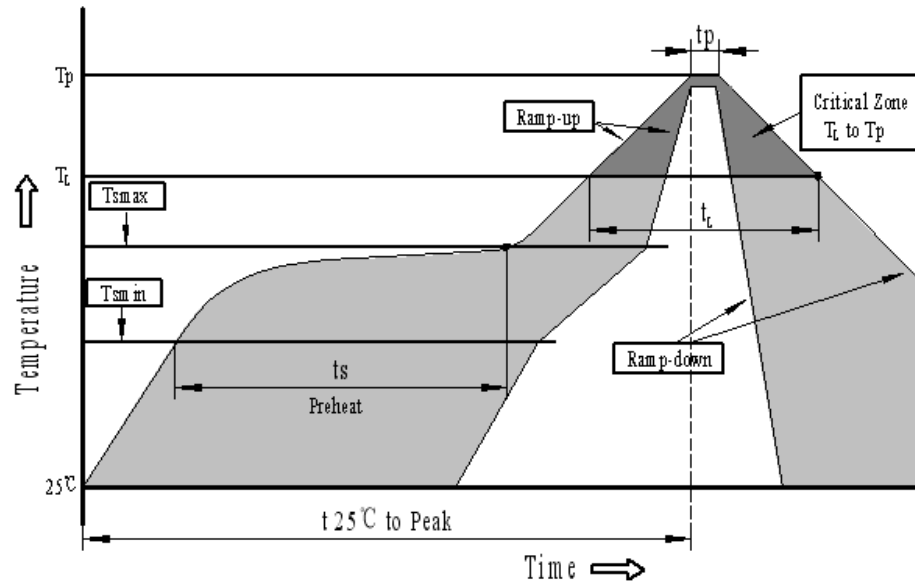
5. RELIABILITY TEST

| | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|--------------------------|---------------------------|--------------------------|--------------|---------------------------|--------------------------|---------------------------|--------------------------|-----------|-------|-------|-------|-------|--------|----------|--|--|--|
| <p>- After Test After being placed for 2 to 4hrs at room temperature, part shall be tested. The value of current consumption should be in $\pm 10\%$ compared with initial ones. The SPL should be in $\pm 10\text{dB}$ compared with initial one.</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.1 High temperature Test Temperature: $+80 \pm 2^\circ\text{C}$ Duration: 120HRS</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.2 Low temperature Test Temperature: $-30 \pm 2^\circ\text{C}$ Duration: 120HRS</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.3 Humidity Test Temperature: $+40 \pm 2^\circ\text{C}$ Humidity: 90~95%RH Duration: 120HRS</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.4 Temperature cycling Test</p> <table border="0" style="width: 100%;"> <tr> <td>Temperature:</td> <td>$-30 \pm 2^\circ\text{C}$</td> <td>$20 \pm 5^\circ\text{C}$</td> <td>$+80 \pm 2^\circ\text{C}$</td> <td>$20 \pm 5^\circ\text{C}$</td> </tr> <tr> <td>Duration:</td> <td>30min</td> <td>15min</td> <td>30min</td> <td>15min</td> </tr> <tr> <td>Cycle:</td> <td colspan="4">5 cycles</td> </tr> </table> | | | | | Temperature: | $-30 \pm 2^\circ\text{C}$ | $20 \pm 5^\circ\text{C}$ | $+80 \pm 2^\circ\text{C}$ | $20 \pm 5^\circ\text{C}$ | Duration: | 30min | 15min | 30min | 15min | Cycle: | 5 cycles | | | |
| Temperature: | $-30 \pm 2^\circ\text{C}$ | $20 \pm 5^\circ\text{C}$ | $+80 \pm 2^\circ\text{C}$ | $20 \pm 5^\circ\text{C}$ | | | | | | | | | | | | | | | |
| Duration: | 30min | 15min | 30min | 15min | | | | | | | | | | | | | | | |
| Cycle: | 5 cycles | | | | | | | | | | | | | | | | | | |
| <p>5.5 Vibration Test power: 10Hz (sweep time:1 minute) Amplitude: 1.52mm(9.3g). Direction: 2 hours per plane in each three mutually perpendicular planes for a total time of 6 hours.</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.6 Shock Test Sounder shall be measured after being applied shock (980m/s^3) for each three mutually perpendicular directions to each of 3 times by half sine wave.</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.7 DROP TEST Height : 700mm Drop Surface : 10mm thick wooden board Direction : 3 times</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.8 Lead pull The part shall be pushed with a force of 9.8N for 10 ± 1 seconds behind the part.</p> <div style="text-align: center;">  </div> <p>After the test part shall meet specifications without any degradation in appearance and performance.</p> | | | | | | | | | | | | | | | | | | | |
| <p>5.9 Recommended temp. Profile for Reflow Oven Shown in Fig.1</p> | | | | | | | | | | | | | | | | | | | |
| <p>Warranty: For a period of one year from date of manufacture under normal operations. Life Time: continuous working 1000hrs</p> | | | | | | | | | | | | | | | | | | | |

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6. RECOMMENDED TEMP. PROFILE FOR REFLOW OVEN (Figure 1)

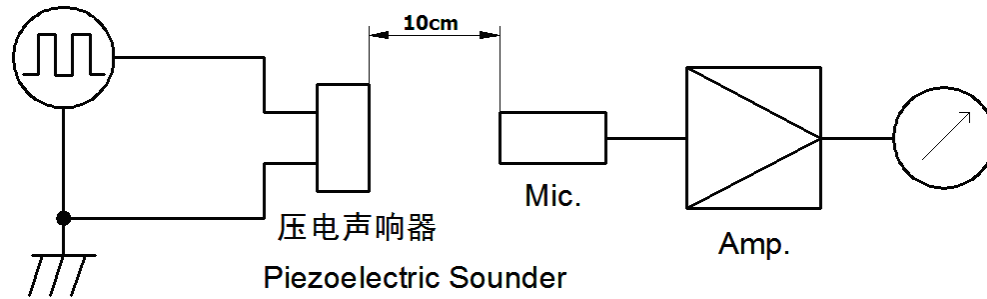


| Profile Feature | Pb-Free Assembly |
|--|------------------|
| Average ramp-up rate(T_L to T_p) | 3°C/second max. |
| Preheat | |
| -Temperature Min.(T_{smin}) | 150°C |
| -Temperature Min.(T_{smax}) | 200°C |
| -Temperature Min.(t_s) | 60~180 seconds |
| T_{smax} to T_L | |
| -Ramp-up Rate | 3°C/second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

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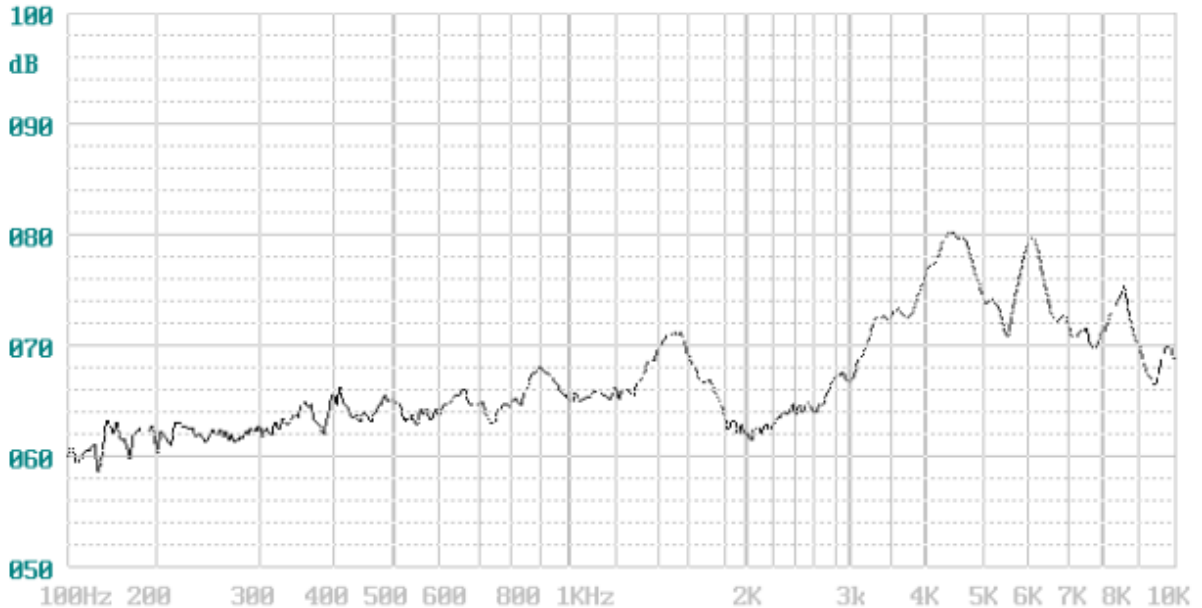
7. TEST METHOD (Figure 2)



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

8. FREQUENCY RESPONSE (Figure 3)

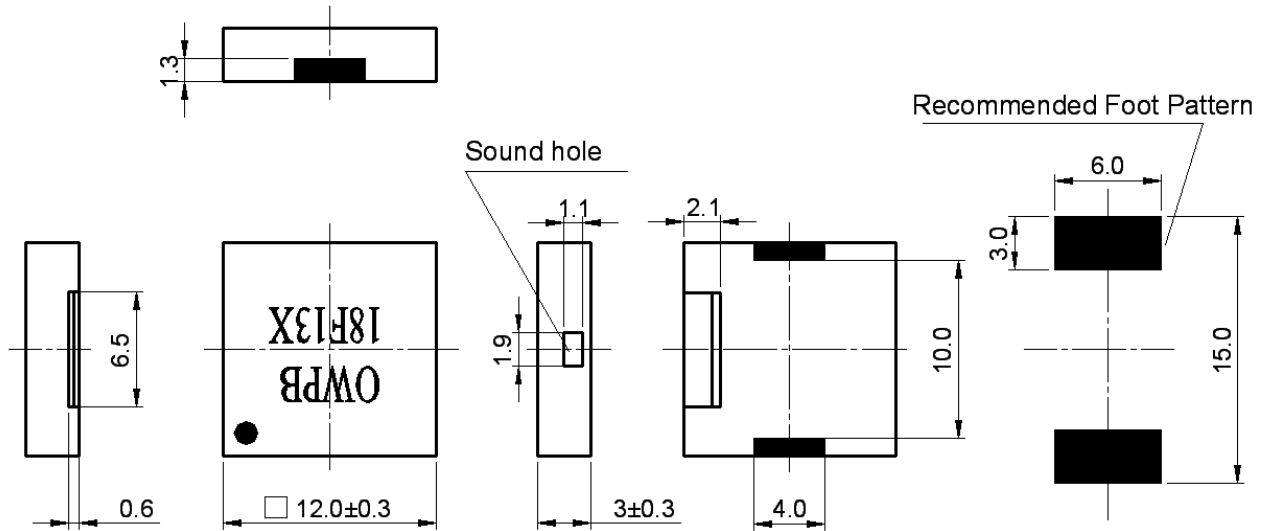


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9. DIMENSIONS (Figure 4) Unit: mm

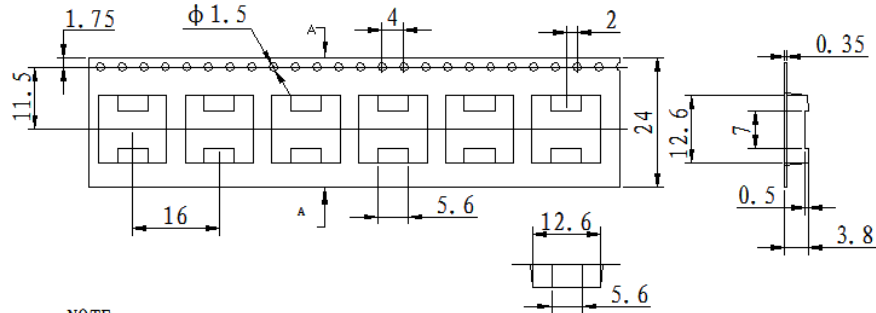
Tolerance: $\pm 0.5\text{mm}$ Except Specified



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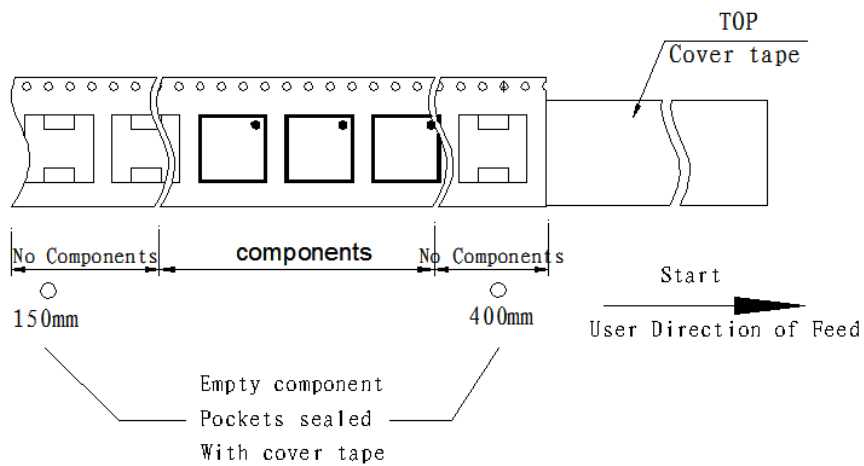
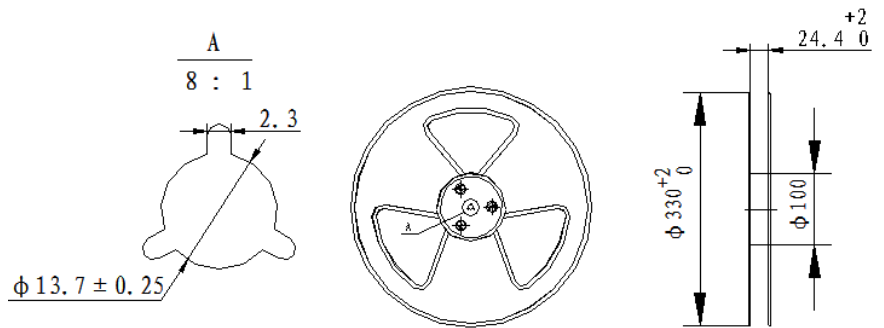
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10. PACKAGE INFORMATION (Figure 5)



NOTE:

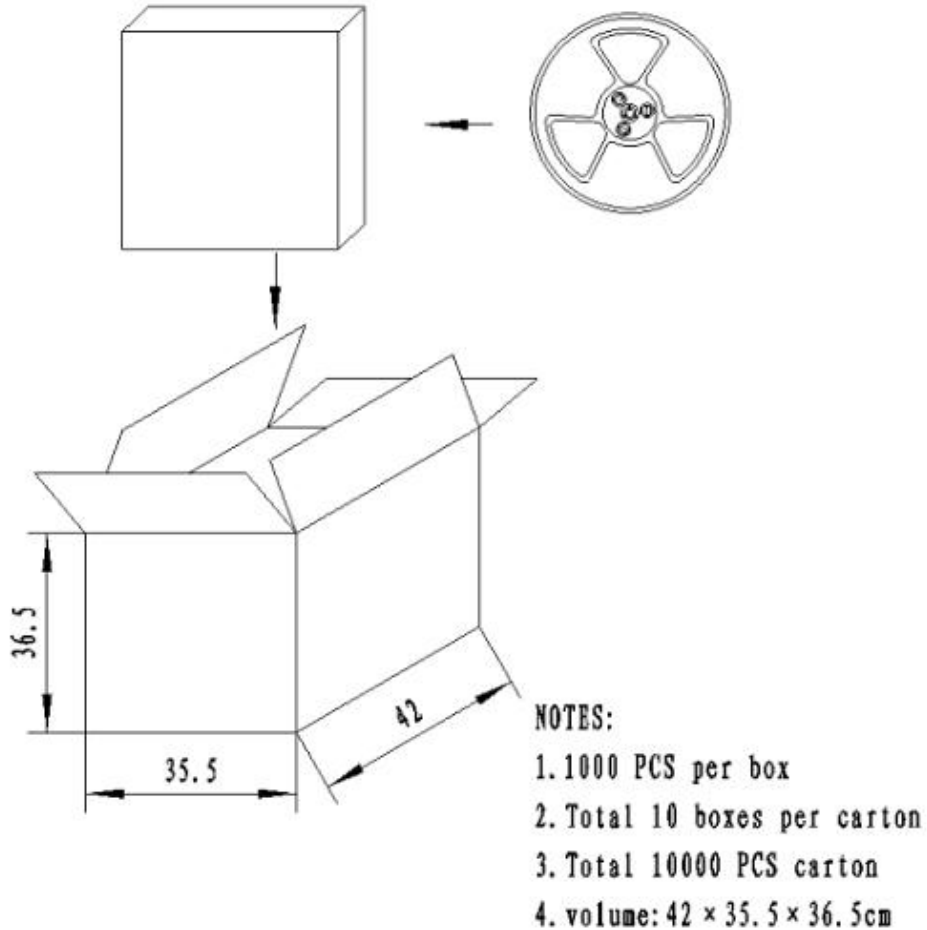
1. 10 sprocket hole pitch cumulative tolerance $\pm 0.2\text{mm}$.
2. All dimensions meet EIA-481-D requirements.
3. Thickness: $0.35 \pm 0.05\text{mm}$.
4. Component loaded per 13" reel: 1000pcs.



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11. PACKAGE INFORMATION (Figure 6)



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