



**MODEL:** WST-1310S-1  
**PRODUCT:** Electromagnetic Buzzer  
**EDITION:** A/2016

**THIS SPECIFICATION APPLIES TO THE ELECTROMAGNETIC BUZZER**

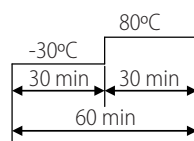
**SPECIFICATION**

Test condition: TEMP=+25±2 °C Related humidity=65±5% Air pressure: 860 ~ 1060mbar

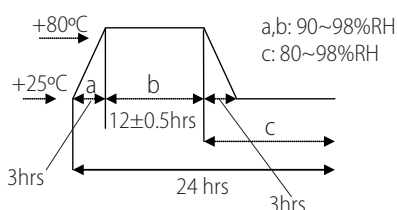
| item                                | unit | specification         | condition   |
|-------------------------------------|------|-----------------------|---|
| rated voltage                       | Vo-p | 1.5                   |   |
| operating volt                      | Vo-p | 1.0 ~ 3.0             |   |
| mean current                        | mA   | Max.30                | At rated voltage direct current                             |
| sound output                        | dba  | 75                    | At 10cm(A-weight free air), at rated voltage direct current |
| rated frequency                     | Hz   | 2400 ± 400            |   |
| operating temp                      | °C   | -20 ~ +70             |   |
| storage temp                        | °C   | -30 ~ +80             |   |
| dimension                           | mm   | L12.8 x W12.8 x H10.0 | See attached drawing  |
| weight                              | gram | 2.8                   |   |
| material                            |      | PPS (Gray)            |   |
| terminal                            |      | SMD type (Plating Sn) | See attached drawing  |
| environmental protection regulation |      | RoHS                  |   |

**ENVIRONMENT TEST**

| item            | test condition  | evaluation standard   |
|-----------------|---|---|
| high temp. test | After being placed in a chamber at +80°C for 96 hours.                  | After the test the part will meet specifications without any degradation in appearance and performance except SPL, after 4 hours at +25°C. The SPL will be in ±10dba compared with initial one. |
| low temp. test  | After being placed in a chamber at -30°C for 96 hours.                  |   |
| thermal shock   | The part will be subjected to 10 cycles.<br>One cycle shall consist of: |   |



temp./humidity cycle The part will be subjected to 10 cycles.  
One cycle shall be 24 hours and consist of:





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**RELIABILITY TEST**

| item                | test conditions   | evaluation standard  |
|---------------------|---|--|
| operating life test | ORDINARY TEMPERATURE<br>The part shall be subjected to 96 hours of continuous operation at room temperature.    | After the test the part will meet specifications without any degradation in appearance and performance except SPL, after 4 hours at +25°C. The SPL would be in ±10dBA compared with initial one. |
|                     | HIGH TEMPERATURE<br>The part shall be subjected to 72 hours of continuous operation at +60°C with 1.5V applied. |  |
|                     | LOW TEMPERATURE<br>The part shall be subjected to 72 hours of continuous operation at -20°C with 1.5V applied.  |  |
|                     | HIGH AND LOW VOLTAGE<br>Applying 1.0 voltage and 3.0 voltage, available time 24 hours each.                     |  |

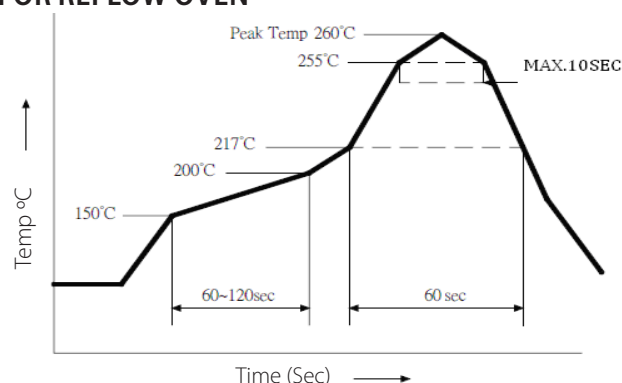
**TEST CONDITION**

Standard Test Condition: a)Temperature: +5~+35°C b)Humidity:45~85% c)Pressure: 860~1060mbar

**MECHANICAL CHARACTERISTICS**

| item                         | test conditions   | evaluation standard   |
|------------------------------|---|---|
| solderability                | Lead terminal are immersed in rosin for 5 seconds and then immersed in solder bath of +250±5°C for 3±0.5 seconds.   | 90% min. lead terminals will be wet with solder<br>No interference in operation.  |
| soldering heat resistance    | Lead terminal are immersed in soldering bath of +250±5°C for 2±0.5 seconds.   |   |
| terminal mechanical strength | Apply the terminal with 1KG tension for 1 minute.   | No damage and cutting off.  |
| vibration                    | The part will be subjected to a vibration cycle of 10Hz to 55Hz to 10Hz in a period of 1 minute. Total peak amplitude will be 1.52mm(9.3G). The vibration test will consist of 2 hours per axis in each three axes(X,Y,Z). Total 6 hours. | After the test the part will meet specifications without any damage in appearance and performance except SPL. The SPL would be in ±80dBA compared with initial one. |
| drop test                    | The part only will be dropped from a height of 75cm onto a 40mm thick wooden board 3 times in 3 axes(X,Y,Z). Total of 9 times.  |   |

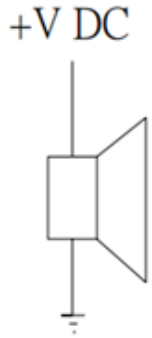
**RECOMMENDED TEMPERATURE PROFILE FOR REFLOW OVEN**



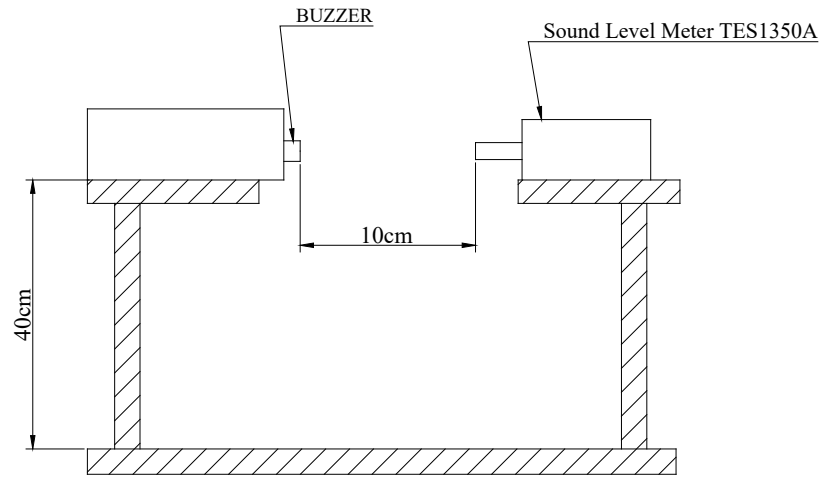


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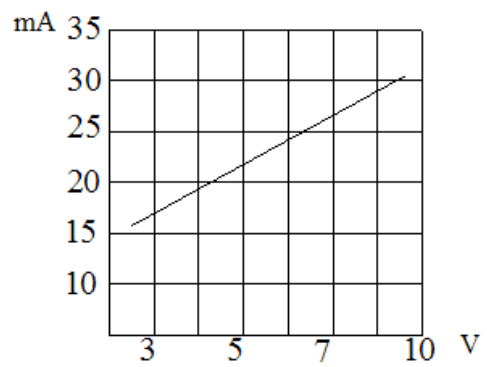
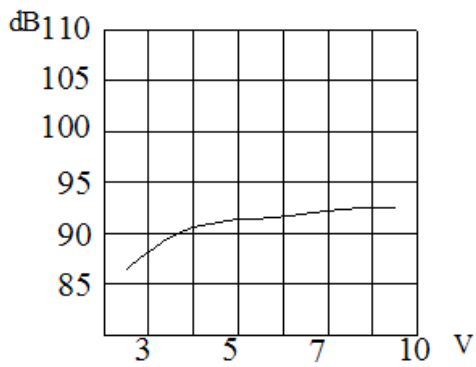
**MEASUREMENT TEST CIRCUIT**



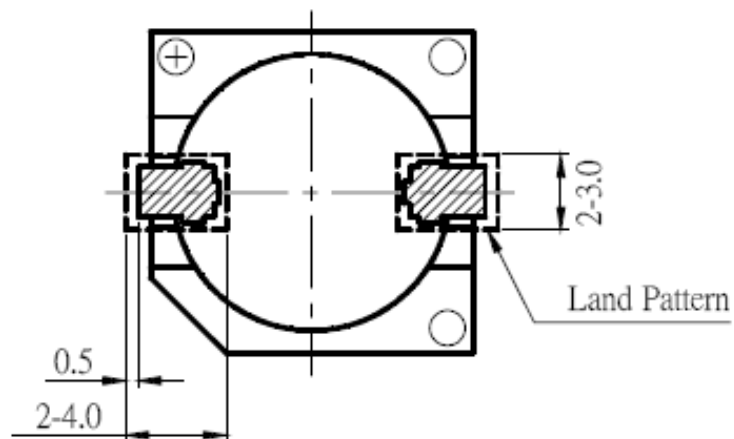
**INSPECTION FIXTURE**



**FREQUENCY RESPONSE**



**RECOMMENDED LAND PATTERN**

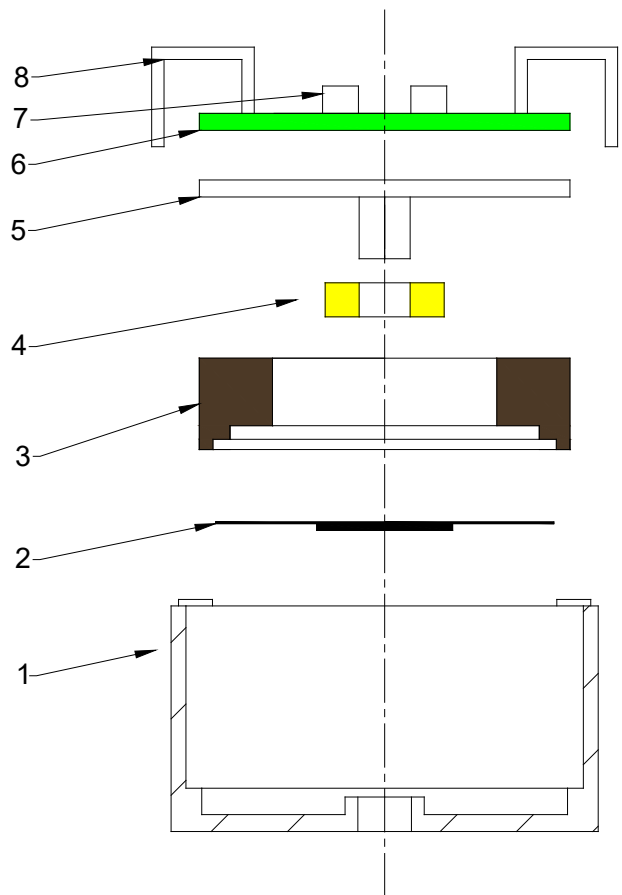
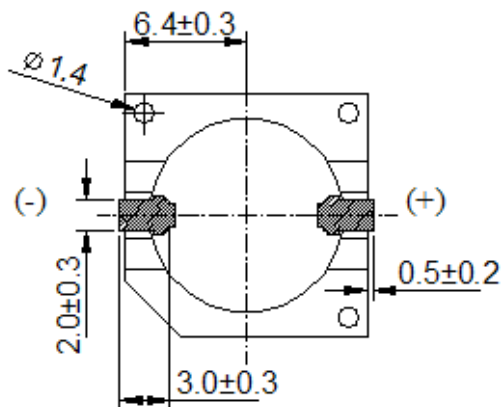
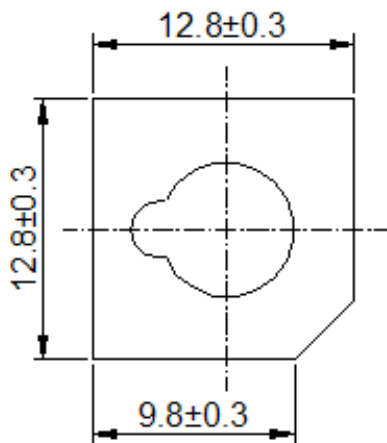
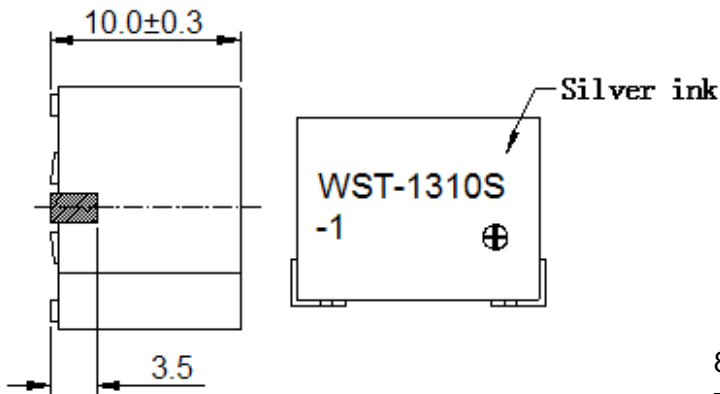




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**DIMENSIONS**

Tolerance: ±0.5 (unit: mm)

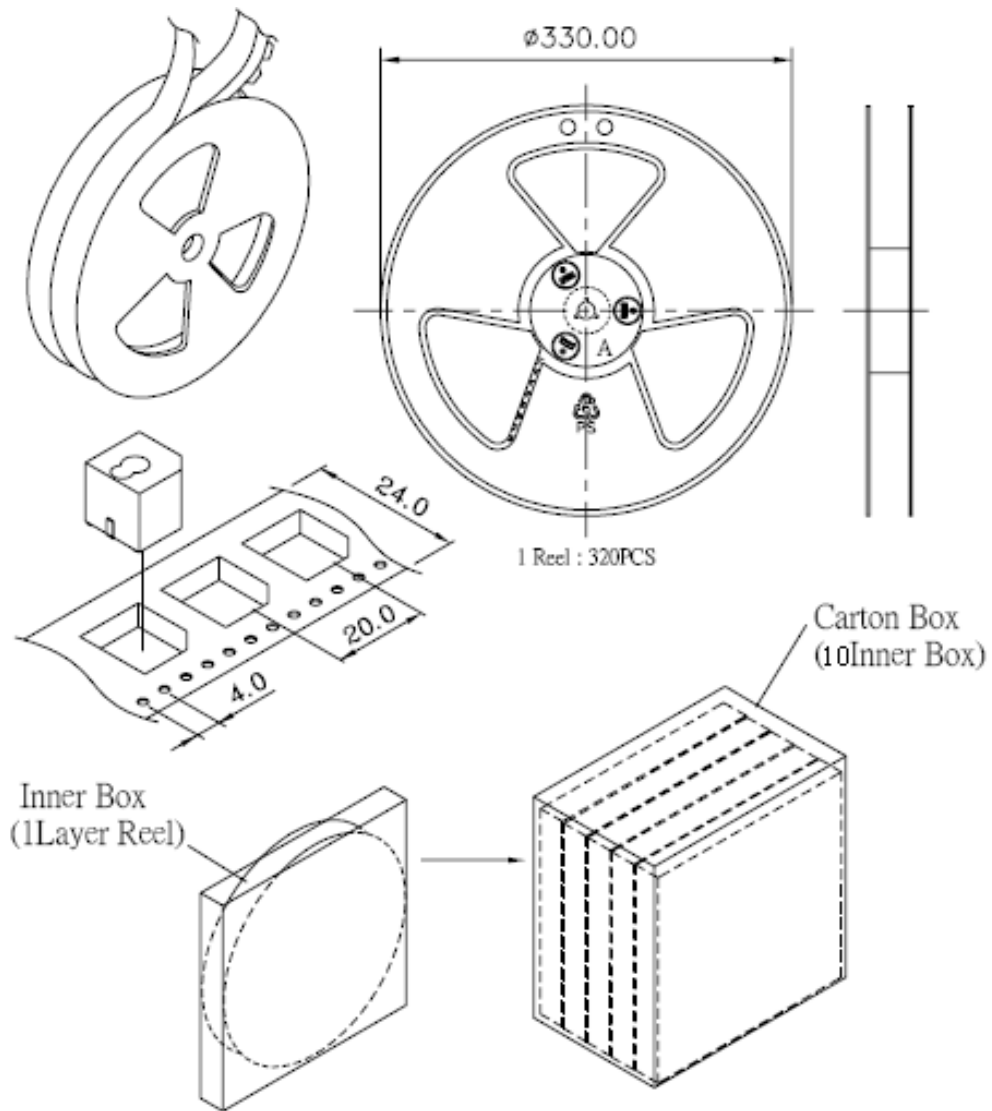


| no | item        | material                         | quantity |
|----|-------------|----------------------------------|----------|
| 1  | CASE        | PPS                              | 1        |
| 2  | Diaphragm   | Ferrum                           | 1        |
| 3  | Magnet ring | Poly+ferrite                     | 1        |
| 4  | Coil        | Copper                           | 1        |
| 5  | Core        | Ferrum                           | 1        |
| 6  | PCB         | Epoxy glass fiber cloth + copper | 1        |
| 7  | Transistor  | Epoxy + copper                   | 2        |
| 8  | PIN         | Copper                           | 2        |



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**PACKING**



| packing box | LxWxH (mm)      | pieces           |
|-------------|-----------------|------------------|
| Inner box   | 340 x 340 x 40  | 1 x 320 = 320    |
| Carton box  | 360 x 360 x 420 | 10 x 320 = 3,200 |