

PRODUCT: Piezo Buzzer **EDITION:** A/2017

Soberton Inc.

THIS SPECIFICATION APPLIES TO THE PIEZO BUZZER

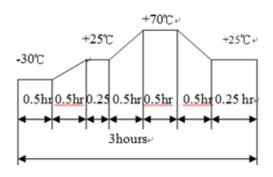
SPECIFICATION

Test condition: TEMP= $+25\pm2$ °C Related humidity= 65 ± 5 % Air pressure: $860 \sim 1060$ mbar

| item | unit | specification | condition |
|-----------------------|------|-----------------------|--|
| rated voltage | VDC | 3.0 | |
| operating volt | VDC | 1 ~ 25 Max | |
| current consumption | mA | 1 Max | At 3V p-p, square wave, 4.0 KHz |
| sound output | dBA | 70 | At 10 cm / 3V p-p, square wave, 4.0KHz |
| resonant frequency | Hz | 4000 | |
| capacitance at 30 Hz | pF | 15000 ± 30 | at 120Hz |
| operating temp | °C | -20 ~ +70 | |
| storage temp | °C | -40 ~ +85 | |
| dimension | mm | 16x16x2.5 | See attached drawing |
| weight | gram | 1.0 | |
| material | | LCP (Black) | |
| terminal | | SMD type (Plating Sn) | See attached drawing |
| environmental | | RoHS | |
| protection regulation | | | |

ENVIRONMENT TEST

| item | test condition | evaluation standard |
|------------------|--|--|
| high temp. test | After being placed in a chamber at +70°C for 96 hours. | Being placed for 4 hours at +25°C, buzzer will be measured. The value of oscillation, frequency / current consumption would be in ±10% compared with initial one. The SPL would be in ±10dB compared with initial one. |
| low temp. test | After being placed in a chamber at -20°C for 96 hours. | |
| Humidity test | After being placed in a chamber at +70℃, and 90±5% relative humidity for 96hours | |
| Temp. cycle test | The part will be subjected to 5 cycles. | _ |



One cycle shall be consist of:



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RELIABILITY TEST

| test conditions | evaluation standard |
|---|--|
| CONTINUOUS LIFE TEST | After the test the part will meet specifications |
| 48hours of continuous operation at +55°C with | without any degradation in appearance and |
| maximum rated voltage applied. | performance except SPL, after 4 hours at +25% |
| INTERMITTENT LIFE TEST | The SPL would be in ± 10 dBA compared with |
| A duty cycle of 1 minute on, 1 minutes off, a | initial one. |
| minimum of 1000 times at +25±2°C and | |
| maximum rated voltage applied | |
| | CONTINUOUS LIFE TEST 48hours of continuous operation at +55°C with maximum rated voltage applied. INTERMITTENT LIFE TEST A duty cycle of 1 minute on, 1 minutes off, a minimum of 1000 times at +25±2°C and |

TEST CONDITION

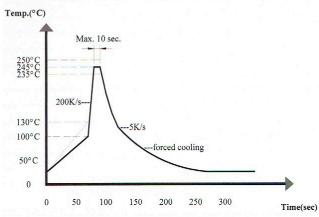
Standard Test Condition: a)Temperature: +5~+35°C b)Humidity:45~85% c)Pressure: 860~1060mbar

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±1 seconds. | 90% min. lead terminals will be wet with solder | |
| soldering heat resistance | The product is followed the reflow temperature curve to test it's reflow thermostability. | No interference in operation. | |
| terminal mechanical strength | The force 10 seconds of 9.8N is applied to each terminal in axial direction. | No damage and cutting off. | |
| vibration | Buzzer will be measured after being applied vibration of amplitude of 1.5mm with 10Hz to 55Hz band of vibration frequency to each of 3 perpendicular directions for 2 hours | The value of oscillation frequency current consumption should be in $\pm 10\%$ 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). A total of 9 times. | The SPL would be in±10dB compared with initial one | |

RECOMMENDED TEMPERATURE PROFILE

* Wave Soldering profile of lead-free



Recommendable wave soldering condition is as follows:

Note 1: It is requested that wave soldering should be executed after heat of product goes down to normal temperature.

Note 2: Peak wave temperature of 235°C maximum of 10 seconds.



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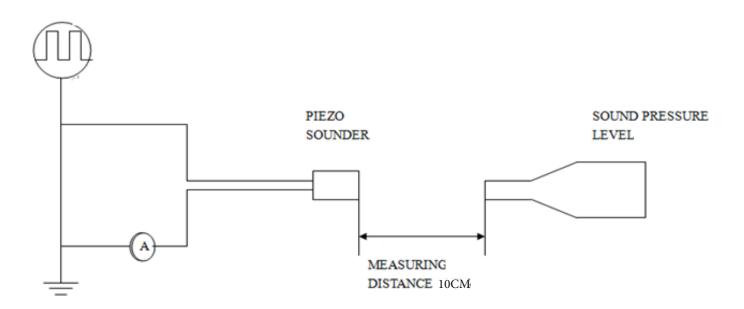
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MEASURING METHOD

S.P.L Measuring Circuit

Input Signal: 3.0V p-p, 4.0KHz, square wave

Mic: S.P.L meter TES1351B or equivalent Mic: RION S.P.L meter UC30 or equivalent Mic: TION UC30 S.G: Hewlett Packard 33120A Function generator or equivalent





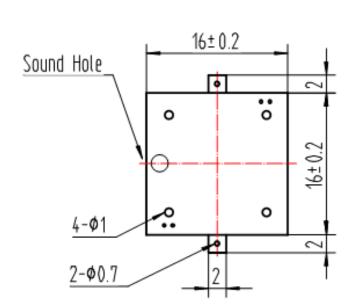
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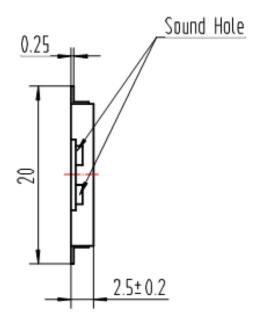
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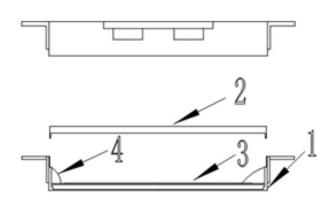
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DIMENSION

Tolerance:±0.5 (unit: mm)







| no | item | material | quantity |
|----|-------|------------------|----------|
| 1 | Case | LCP | 1 |
| 2 | Cover | LCP | 1 |
| 3 | Piezo | Nickel + Ceramic | 1 |
| 4 | Wire | Copper | 2 |



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PACKING

