

OBO Pro.2**SPECIFICATIONS**MODEL NO.
OBO-27C3PART NAME
Piezoelectric BuzzerSHEET
OBO PRO. 2 INC.

2007 NOV 21

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MODEL NO : OBO-27C3

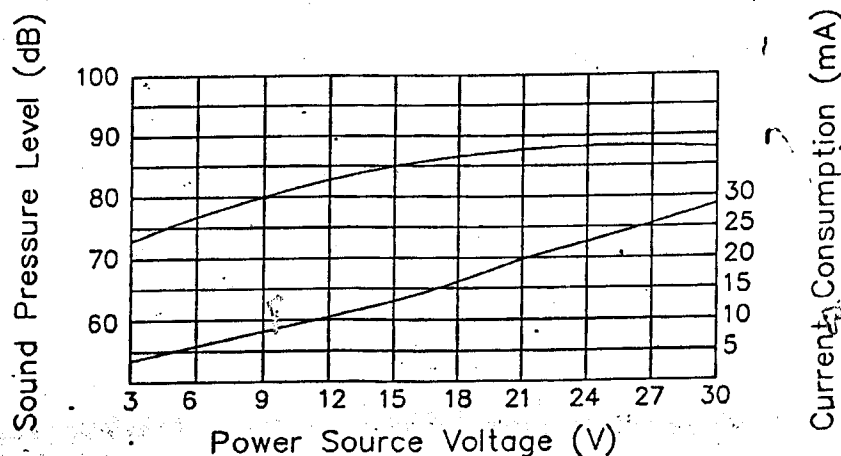
Features : Conformity RoHS Directive (2002/95/EC) Requests. *2

1. General Specifications :

| | Items | Specification |
|------|--|---------------------|
| 1.1 | Sound Pressure Level | 80dB Min/30cm/DC 9V |
| 1.2 | Oscillating Frequency | 2.5 ± 0.5KHz |
| 1.3 | Current Consumption | 8mA Max./DC9V |
| 1.4 | Tone | Continuous Tone |
| 1.5 | Operating Voltage | DC 3 to 30V |
| 1.6 | Case Material | PBT |
| 1.7 | Operating Temp. Range | -30°C to +70°C |
| 1.8 | Storage Temp. Range | -40°C to +85°C |
| 1.9 | Weight | 7 gms |
| 1.10 | Voltage vs Sound Pressure vs Current Consumption Curve | As Per Fig.1 |

2. Voltage/Sound Pressure/Current Consumption :

Measurement distance : 30cm. / Current consumption by GDM-8145
 Sound level meter by IEC651 TYPE2 / DC power supply by GPC-3030D



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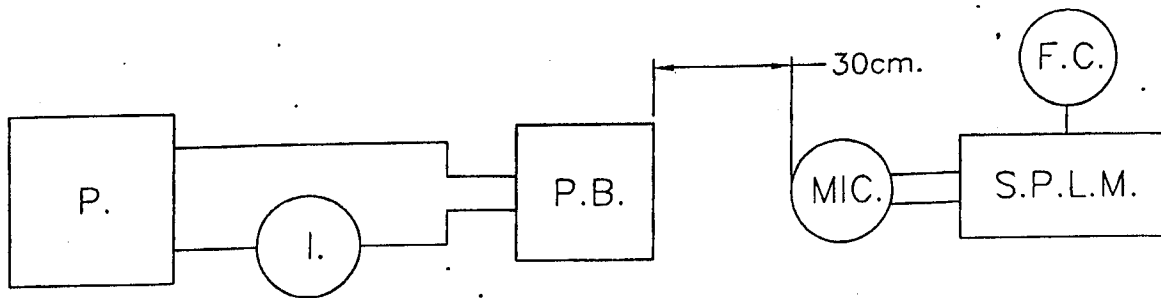
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3. Test Method :

3.1 Standard Test Diagram



- P. : DC Power Supply GPC-3030D or Equivalent
- S.P.L.M. : Sound Pressure Level Meter IEC651 TYPE2
- I. : Multimeter GDM-8145 or Equivalent
- F.C. : Function Generator GFG-8016G or Equivalent
- P.B. : Piezoelectric Buzzer

4. Soldering condition

- 4.1 Hand soldering / touchup
soldering iron tip temperature 380°C for 3 seconds.

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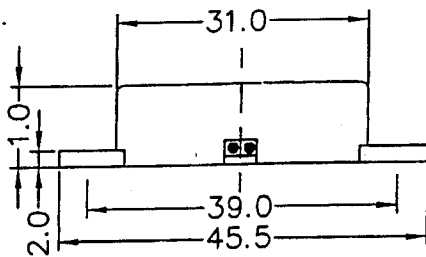
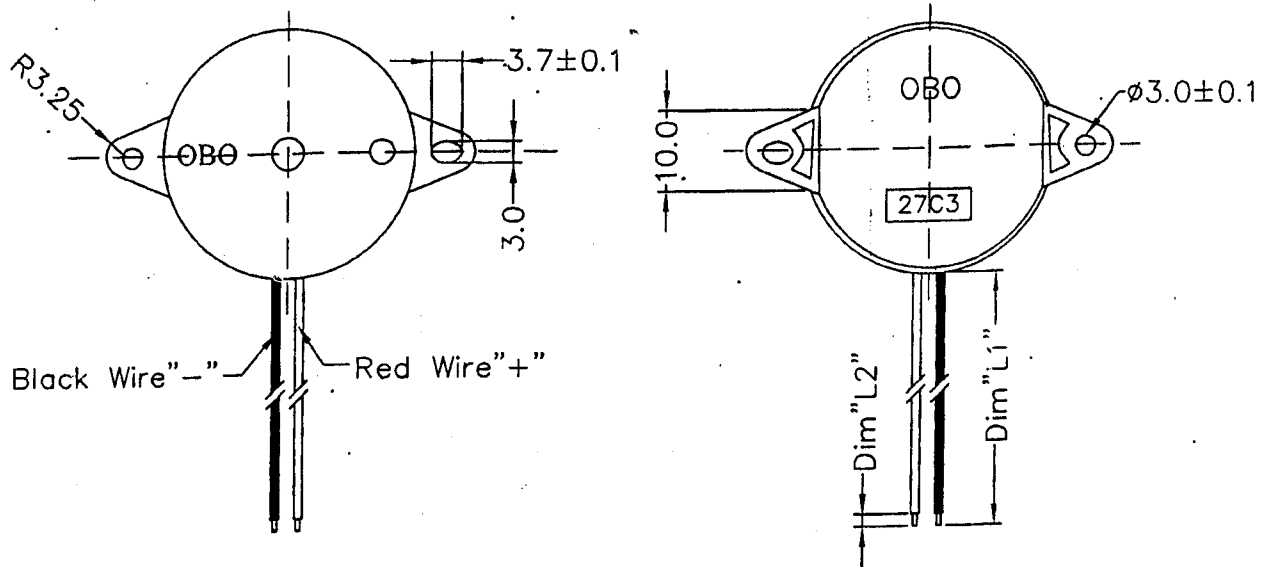
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5. Appearance and Dimensions :

Unit : mm Tolerance : ± 0.5



| Customer | Lead Wire | Dim "L1" | Dim "L2" |
|----------|-----------|------------|-----------|
| Standard | UL1095#28 | 75 \pm 5 | 3 \pm 1 |

6. Environment-related substances to be controlled :

◎ Piezoelectric Ceramic Disc.

RoHS Annex :

Application of lead, mercury, cadmium and hexavalent chromium, which are exempted from the requirement of article 4(1).

* Lead in electronic ceramic parts.(e.g. piezoelectronic devices).

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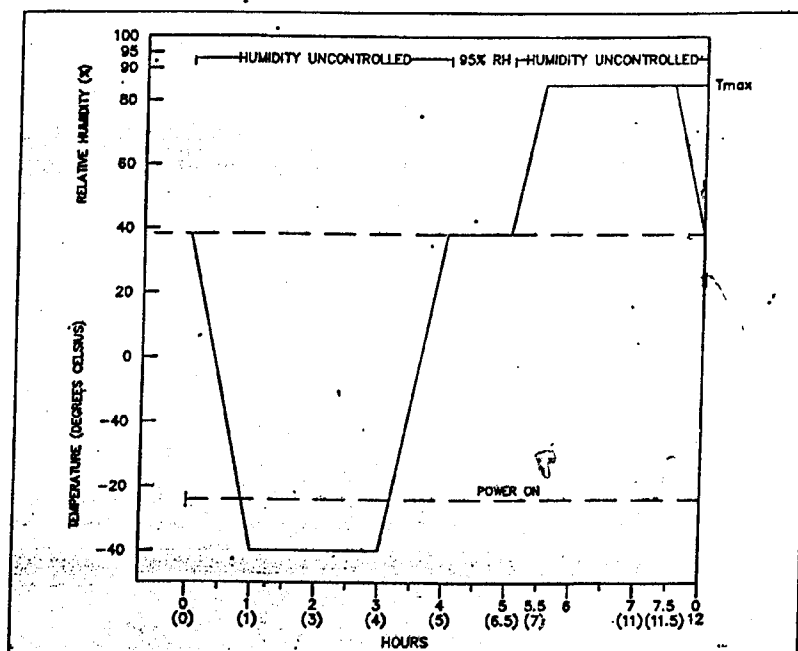
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7. Reliability Test Conditions :**7.1 LIFE TEST**

| | |
|----------------|--|
| Purpose | To describe the functionality and durability in an accelerated manner by exposing the assembly to repetitive cycles of worst case temperature/humidity conditions within the range of expected environment extremes. |
| Test Procedure | <p>The samples are exposed to the temperature/humidity/power profile in Figure 1. for 99 operational (power on) hours.</p> <ol style="list-style-type: none"> At time = 0 hour stabilize the chamber temperature at 38°C with humidity uncontrolled , lower the temperature TO -40°C over a period of 1 hour. At time = 1.0 hour stabilize the temperature at -40°C for 2 hours. At time = 3.0 hour, begin to ramp up the temperature over the next hour to 38°C. At time = 4.0 hour, stabilize the chamber temperature at 38°C and 95% relative humidity for 1 hour. At time = 5.0 hours, begin to ramp up the temperature to 85°C in 0.5 hours. At time = 5.5 hours, stabilize the temperature at 85°C for 2 hours. At time = 7.5 hours, begin to lower the chamber temperature to 38°C within 0.5 hours. At time = 9.0 hours, repeat steps 1-7, total 12 cycle. Power On = DC12V |

FIGURE 1 : LIFE TEST TEMPERATURE / HUMIDITY / POWER PROFILE ***



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7.2 THERMAL SHOCK

| | |
|----------------|--|
| Purpose | To describe functionality after exposure to sudden changes in temperature. |
| Test Procedure | <ol style="list-style-type: none"> 1. Place the sample in a low temperature chamber at -40°C for 30 minutes. 2. Transport the samples to a high temperature chamber in a maximum of 30 seconds, set to $+85^{\circ}\text{C}$. 3. Soak at $+85^{\circ}\text{C}$ for 30 minutes. 4. Transport to the low temperature chamber within 30 seconds. 5. Repeat steps 1-4. for a total of 50 cycles. |

7.3 HUMIDITY CYCLE

| | |
|----------------|---|
| Purpose | To describe an accelerated manner, functionality and durability of samples to repetitive cycles of extreme humidity and temperature. |
| Test Procedure | <p>Follow the profile in Figure 2. with the following steps:</p> <ol style="list-style-type: none"> 1. At time = 0 hour, stabilize the chamber temperature at 25°C, ramp up the temperature to 65°C within the two hours, and maintain the relative humidity at 95% for 5.5 hours. 2. At time = 2.0 hours, stabilize the chamber temperature at 65°C for 3.5 hours. 3. At time = 5.5 hours, lower the temperature to 25°C within the next two hours while maintaining the relative humidity at 90%. 4. At time = 7.5 hours, stabilize the temperature at 25°C for 0.5 hours while maintaining the relative humidity at 95% for six hours. 5. At time = 8.0 hours, ramp up the temperature to 65°C within the next two hours. 6. At time = 10.0 hours, stabilize the temperature at 65°C for 3.5 hours. |

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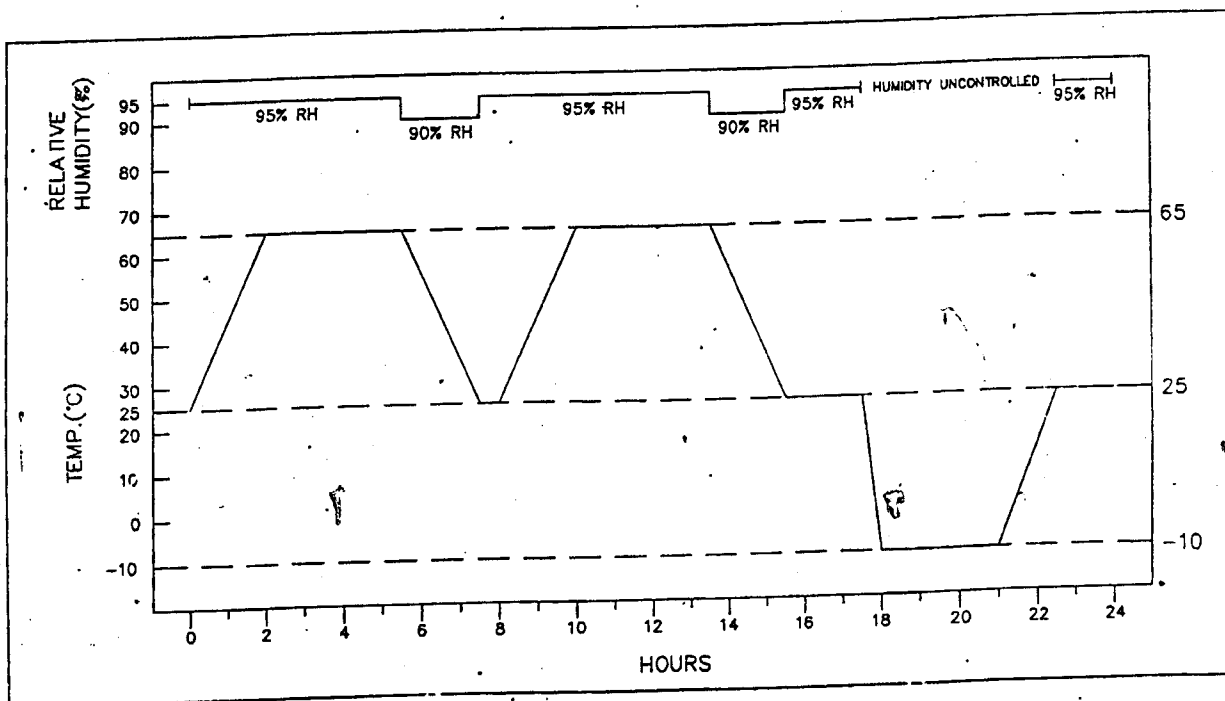
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Test Procedure

7. At time = 13.5 hours, lower the temperature to 25°C within the next two hours while maintaining the relative humidity at 90%.
8. At time = 15.5 hours, stabilize the chamber temperature at 25°C for two hours while maintaining the relative humidity at 95%.
9. At time = 17.5 hours, lower the temperature to -10°C within the next 0.5 hours and turn off the humidity for five hours.
10. At time = 18.0 hours, stabilize the temperature at -10°C for three hours.
11. At time = 21.0 hours, ramp up the temperature to 25°C within the next 1.5 hours.
12. At time = 22.5 hours, stabilize the temperature at 25°C for 1.5 hours while maintaining the relative humidity at 95%.
13. At time = 24.0 hours repeat steps 1-12, total 4 cycle.

FIGURE 2 : HUMIDITY CYCLE TEST PROFILE



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7.4 MECHANICAL VIBRATION

| | |
|----------------|---|
| Purpose | To describe functionality and endurance after exposure to vibrations. |
| Test Procedure | 33Hz, Sinewave sweep(4G), X,Y,Z direction, 4 hours each direction Amplitude 1.5mm, Total 12 hours. Power On = DC12V |

7.5 DROP TEST

| | |
|----------------|--|
| Purpose | To describe functionality and structural rigidity after exposure to handling and shipping shocks. |
| Test Procedure | Drop the sample from a height of 75cm onto a concrete surface. Orientate the sample so that impacts are applied once in 6 directions. Inspect for functionality and physical damage. |

7.6 PULL STRENGTH TEST.

| | |
|----------------|---|
| Purpose | To describe disconnection between connector and sample after exposure to the pull strength test. |
| Test Procedure | The sample assembly shall suffer from a pull strength of Min. 2KGs continuous applied between the connector and the sample. |

Remarks :

1. Sounder shall be measured after being placed in natural condition for 4 hours.
2. After the test the part shall meet specifications without any degradation in appearance and performance except SPL: Initial \pm 10dB

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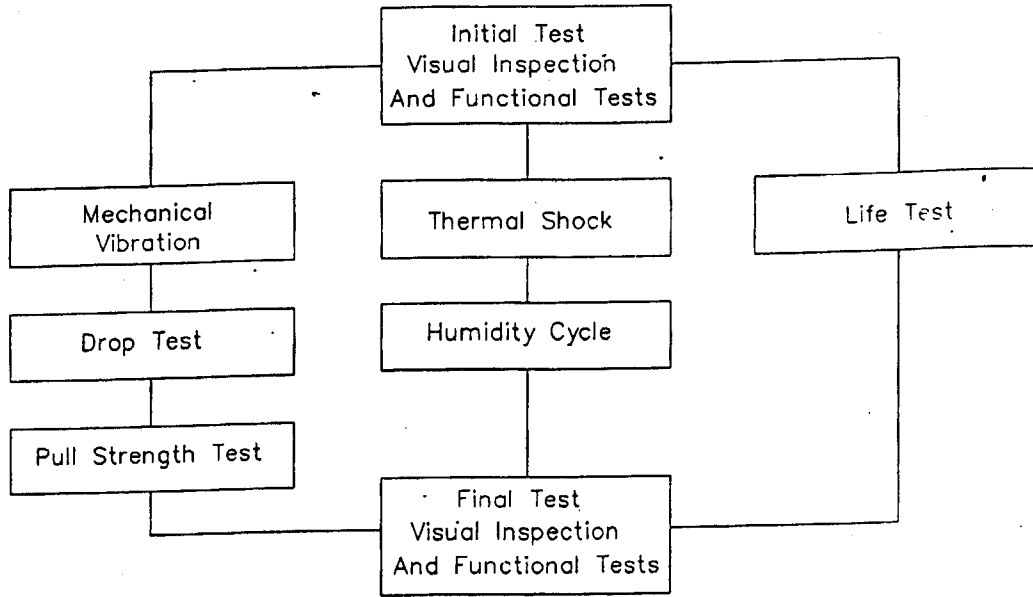
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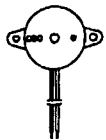
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8. Test Flow :



9. Packing :



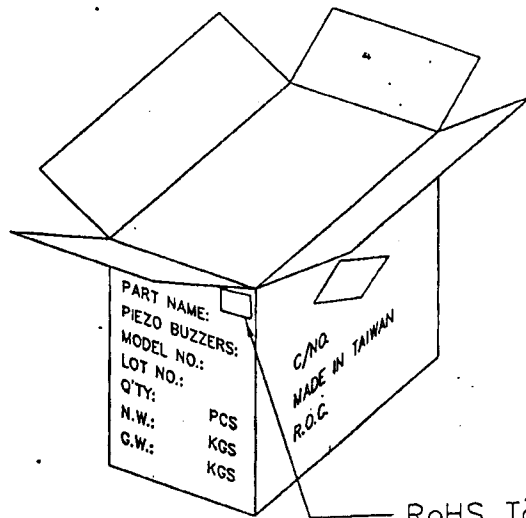
| OBO Piezoelectric Buzzers | |
|---------------------------|--|
| MODEL NO. | |
| LOT NO. | |
| QUANTITY | |
| DATE | |

20pcs / Label
(80*50*0.08mm)



RoHS Tape

20pcs / PE Bag
22*15.5*0.005cm



RoHS Tape

60 Bag(1200pcs) / Carton
0.96m(35.2*23.3*33.6cm)

