

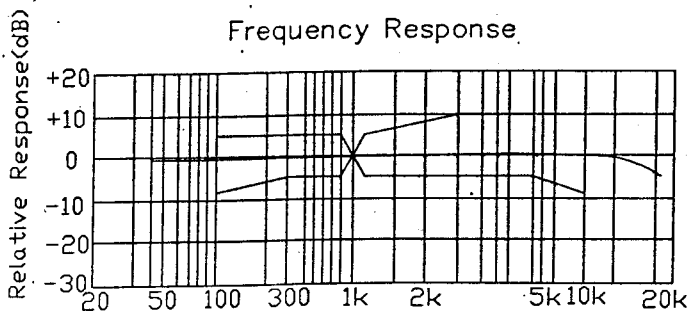
OBO Pro.2®**SPECIFICATIONS****MODEL NO.**
OBO-54LP-0B-1R5**PART NAME**
ELECTRET CONDENSER MICROPHONEOBO PRO. 21
SHEET
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2006.12.08

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MODEL NO : OBO-54LP-0B-1R5**Features : Conformity RoHS Directive (2002/95/EC) Requests.****1. ELECTRICAL CHARACTERISTICS**

Test Condition : (Vs=5.0V,RL=1.0 KΩ,Ta=20±2°C,R.H.=50±5%)

| Directivity : Omnidirectional | | | | | | | |
|-------------------------------|-----------------------|------------------|---|-------|--------|------|------|
| No | Parameter | Symbol | Condition | Limit | | | Unit |
| | | | | Min | Center | Max | |
| 1.1 | Sensitivity | S | F=1KHz,S.P.L.=1Pa 0dB=1V/Pa | -48 | -45 | -42 | dB |
| 1.2 | Output Impedance | Zout | F=1KHz | | | 1.0K | Ω |
| 1.3 | Current Consumption | I _{oss} | VS=5.0V, RL=1.0KΩ | | | 500 | μA |
| 1.4 | Signal to Noise Ratio | S/N | S:(F=1KHz, S.P.L=1Pa) N:(A-Weighted Curve) | 58 | | | dB |
| 1.5 | Decreasing Voltage | ΔS-VS | VS=3.0V to 1.5V | | | -3 | dB |

1.6 Typical Frequency Response Curve Limit**Microphone Response Tolerance Window**

| Frequency(Hz) | Lower Limit(dB) | Upper Limit(dB) |
|---------------|-----------------|-----------------|
| 100 | -6 | 3 |
| 300 | -3 | 3 |
| 1000 | 0 | 0 |
| 1200 | -3 | 10 |
| 2000 | -3 | 10 |
| 5000 | -3 | 10 |
| 10000 | -8 | 10 |

Frequency : 50~16,000Hz

Operating Voltage : 1.0V to 10V

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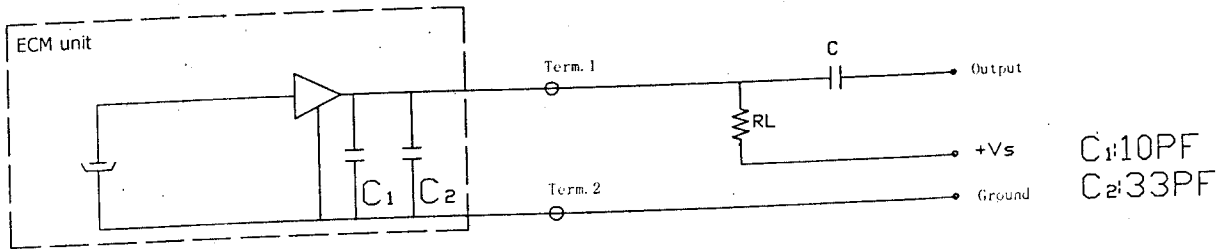
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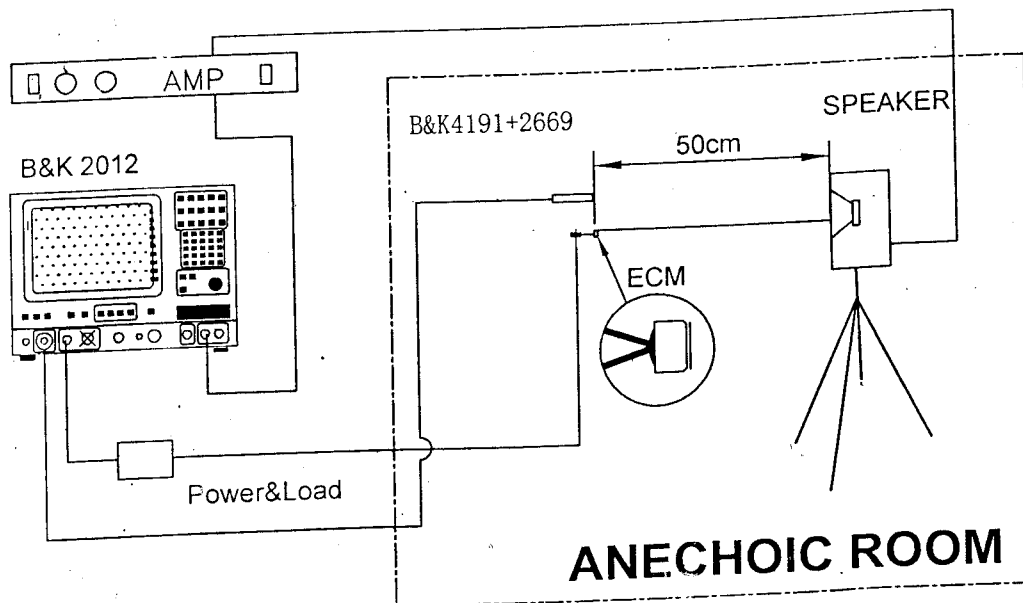
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2. MEASUREMENT CIRCUIT



3. MEASUREMENT METHOD



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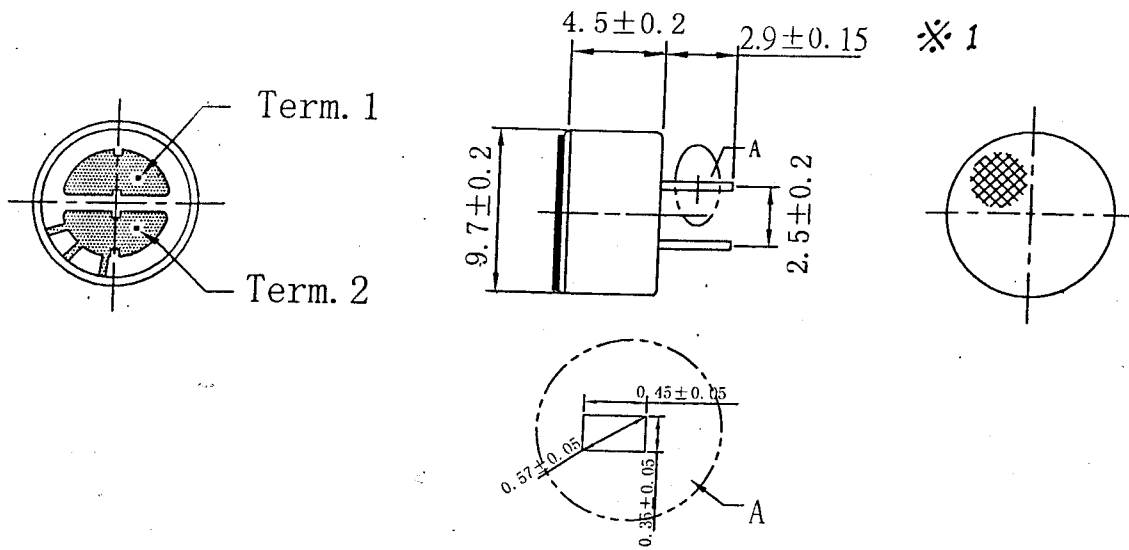
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4. MECHANICAL CHARACTERISTICS

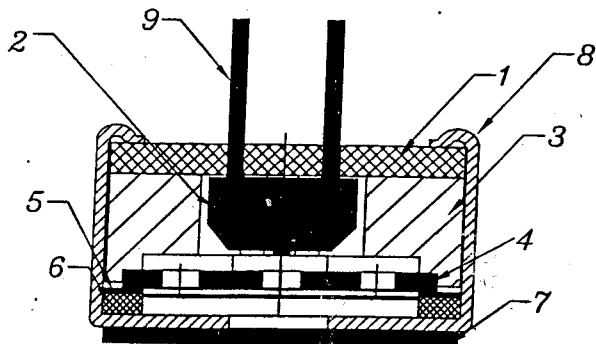
4.1 Soldering Standard : $280 \pm 10^{\circ}\text{C}$ /Max. 2 seconds

4.2 Mechanical Layout and Dimensions:

Unit : mm Tolerance: ± 0.2



4.3 Construction Diagram



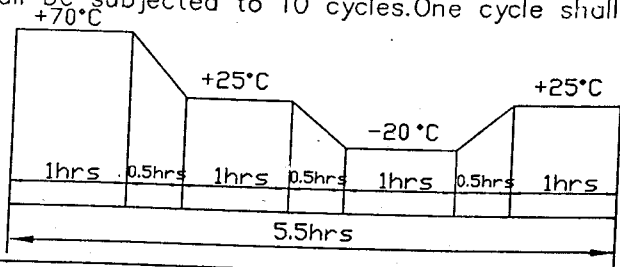
| | |
|---|-----------|
| 1 | PCB |
| 2 | FET |
| 3 | Cavity |
| 4 | Electrets |
| 5 | Spacer |
| 6 | Diaphragm |
| 7 | FELT |
| 8 | Case |
| 9 | Pin |

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5. TEMPERATURE CONDITIONS5.1 Operating Temperature Range : $-20^{\circ}\text{C} \sim +60^{\circ}\text{C}$ 5.2 Storage Temperature Range : $-25^{\circ}\text{C} \sim +70^{\circ}\text{C}$ **6. RELIABILITY TEST**

| | |
|------------------------|---|
| Vibration Test | To be no interference in operation after vibrations, 10Hz to 55Hz for 1 minute full amplitude 1.5mm, for 2 hours at 3 axes. |
| Drop Test | The microphone unit without packaged must be subjected to each 3 drops at three axes from the height of 1 meter to 20mm thick wooden board |
| Temperature Test | (a)After exposure at 70°C for 72 hours, sensitivity to be within $\pm 3\text{dB}$ from initial sensitivity. (b)After exposure at -25°C for 72 hours, sensitivity to be within $\pm 3\text{dB}$ from initial sensitivity. (The measurement to be done after 6 hours of conditioning at 25°C .) |
| Humidity Test | After exposure at 60°C and $90\pm 5\%$ relative humidity for 240 hours. sensitivity to be within $\pm 3\text{dB}$ from initial sensitivity. (The measurement to be done after 6 hours of conditioning at 25°C .) |
| Temperature Cycle Test | The part shall be subjected to 10 cycles. One cycle shall be consist of:  |

7. CONCEPT OF UNIT

The difference between concept of unit "Pascal" and the one of unit "ubar" can be explained as follows. In calibrating the sensitivity of ECMS, the sensitivity is manifested differently according as the unit is "Pascal" or "ubar". That is the sensitivity will be increased by 20dB in the usage of unit "Pascal". Example: $-62\text{dB} (0\text{dB} = 1\text{V}/\text{ubar}) = -42\text{dB} (0\text{dB} = 1\text{V}/\text{Pa})$.

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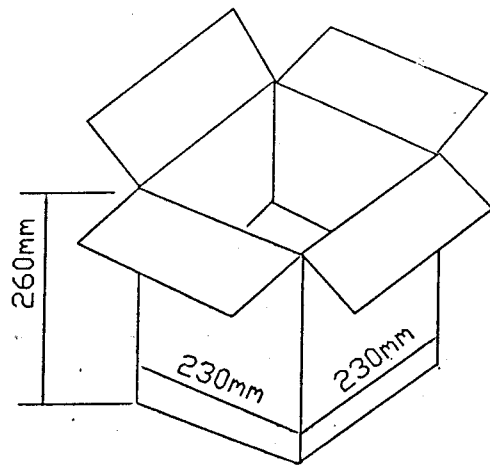
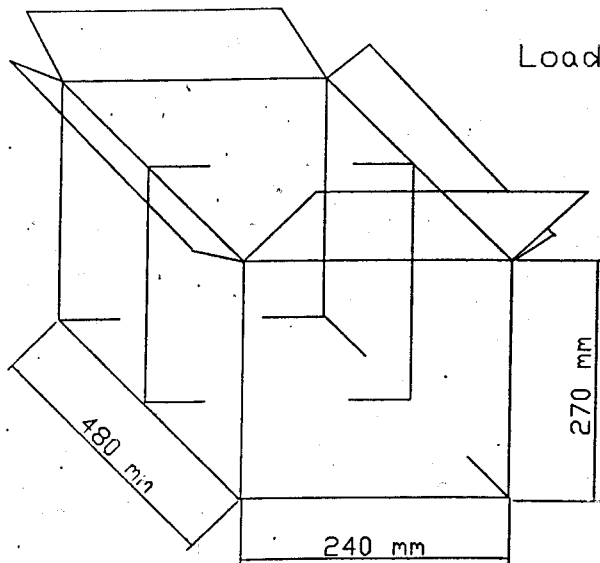
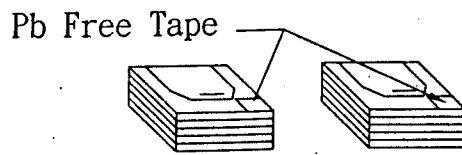
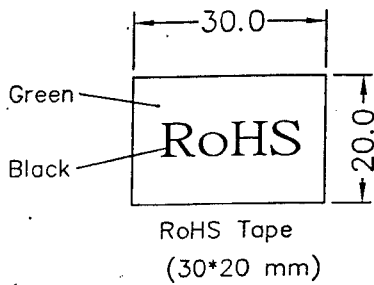
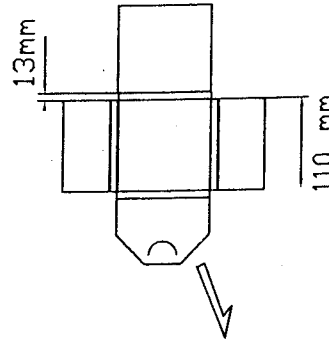
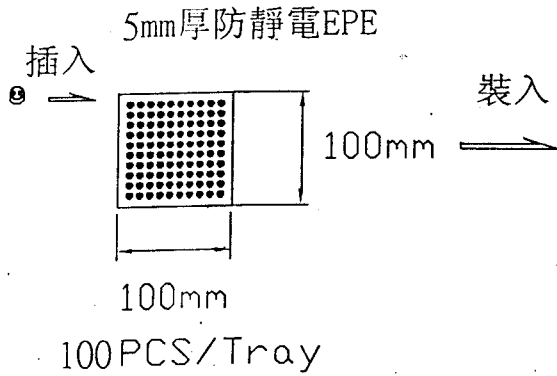
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8. PACKAGING



80CARDBOXES/PER
MIDDLE BOX(8000PCS)
(IMPORTED CARTON MATERIAL)

2 MIDDLE BOXES/PER
CARTON(16000 PCS)
(IMPORTED CARTON MATERIAL)