

OBO® Pro.2®

SPECIFICATIONS

MODEL NO.  
OBO-15210

PART NAME  
Piezoelectric Buzzer

SHEET  
2 OF 9

MODEL NO : OBO-15210

Features : Drive circuit built-in and lead pin type Wave solder and wash allowed.

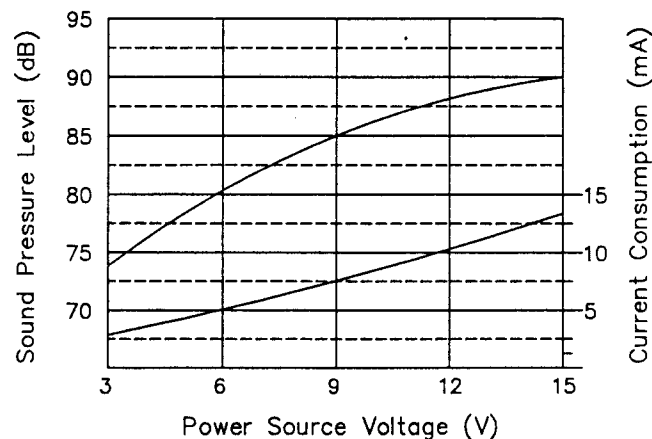
Conformity RoHS Directive ( 2002/95/EC ) Requests. (※1)

— 、General Specifications :

	Items	Specification
1.1	Sound Pressure Level	85dB min./10cm/DC9V
1.2	Oscillating Frequency	4.4 ± 0.5KHz
1.3	Current Consumption	8mA max./DC9V
1.4	Tone	Single Tone
1.5	Operating Voltage	DC 3 to 15V
1.6	Case Material	PBT (UL 94V-0)
1.7	Lead Pin Material	Brass (Plated of Sn)(※1)
1.8	Operating Temp. Range	-20°C to +70°C
1.9	Storage Temp. Range	-40°C to +85°C
1.10	Weight	1.0 gms
1.11	Voltage vs Sound Pressure vs Current Consumption Curve	As Per Fig.1

Fig.1:

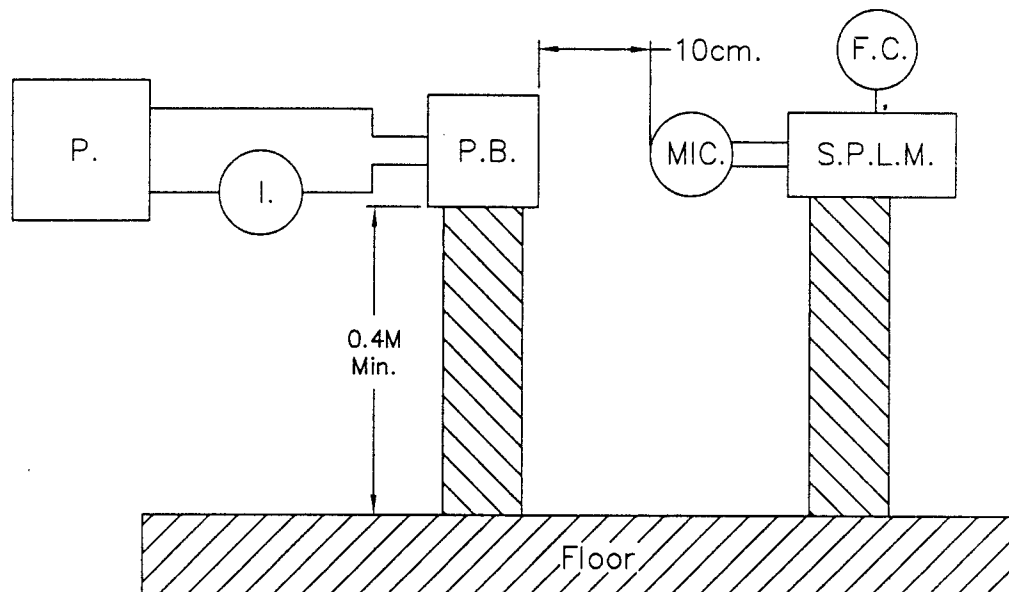
Measurement distance : 10cm. / Current consumption by GDM-8145  
Sound level meter by B&K-2232 / DC power supply by GPC-3030D



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## 二、Test Method :

### 2.1 Standard Test Diagram



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

### 2.2 Standard Test Condition

Part shall be measured under a condition  
(Temperature : +5 to +35°C, Humidity : 45% to 85%R.H.)  
unless the standard condition. (Temperature : +25±3°C,  
Humidity : 60±10%R.H.) is regulated to measure.

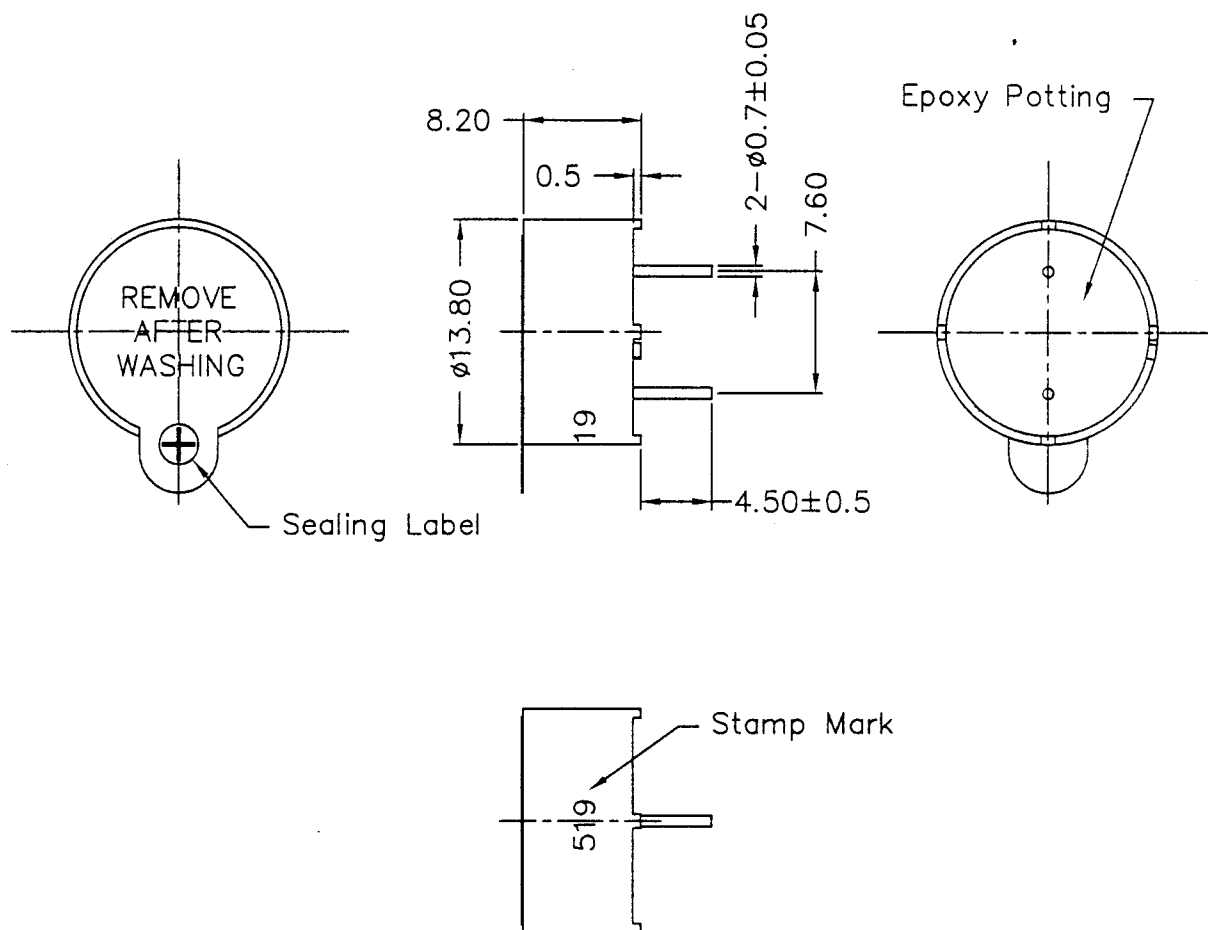
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### 三、 Mechanical Layout & Dimensions :

#### 3.1 Dimensions

Tolerance:  $\pm 0.3$  mm except specified

Unit: mm



Note : Meaning of Stamp Mark

519 : Production Lot No.

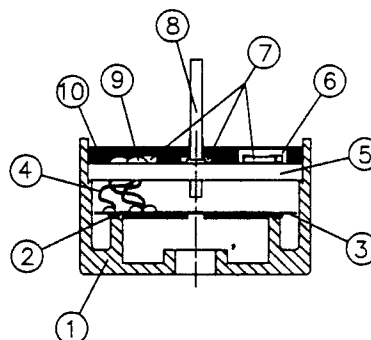
5 : Year 200<sup>5</sup> (last 1 figures of the year)

19 : Week ( 01 to 55 )

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### 3.2 Material List (※1)

We Hereby Certificate That Our Product Meet With ROHS Request And The Details As Below.



No.	Part Name	Material	Hazardous Substances Limit (ppm)						Q'TY
			Pb	Cd	Hg	Cr+6	PBBs	PBDE	
1	Plastics Case	PBT	< 100	< 5	< 5	< 100	< 5	< 5	1
2	Silicon Gum	Silica	< 1000	< 75	< 5	< 1000	< 1000	< 1000	
3	Piezoelectric Diaphragm	ceramics & Ni-Alloy	----	----	----	----	----	----	1
4	Bare Copper Wire	Copper	<40000	< 75	< 5	< 1000	----	----	3
5	PCB Plank	94HB	< 1000	< 75	< 5	< 1000	< 1000	< 1000	1
6	Transistor		< 1000	< 75	< 5	< 1000	< 1000	< 1000	1
7	Chip Resistor	ceramics	< 1000	< 75	< 5	< 1000	----	----	1
8	Pin	Brass	<40000	< 75	< 5	< 1000	----	----	2
9	Solder Wire	Sn	< 1000	< 75	< 5	< 1000	< 1000	< 1000	
10	Two-Component Epoxy Resin	Epoxy	< 1000	< 75	< 5	< 1000	< 1000	< 1000	
11	Ink		< 100	< 5	< 5	< 100	< 5	< 5	1

Note : (1) ppm = mg/kg (2) "----" = Not Applicable.

### 3.3 Environment-related substances to be controlled (※1)

#### 3.3.1 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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### 3.3.2 Ni-Alloy Plate.

RoHs Annex :

Lead in an alloying element in steel containing up to 0.35% lead by weight, aluminium containing up to 0.4% lead by weight and as a copper alloy containing up to 4.0% lead by weight.

## 四、Soldering Condition : (※1) (※2)

### 4.1 Wave Soldering

Peak temperature	Dipping time	Soldering
+ 260°C	5 seconds	1 time

### 4.2 Hand Soldering

Iron Tip Temperature	Soldering time
+ 380°C , Duration	3 seconds Max.

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## 五、Reliability Test Conditions：

### 5.1 Mechanical Sequence

	Test Items	Test Conditions	Performance Requirements
1	Vibration	10 – 55 –10Hz, Sinewave sweep 15 minutes. X,Y,Z 3 direction 2 hours each, Total 6 hours	The measured values shall meet Remarks 1,2
2	Resistance to Soldering Heat (※1)	Lead terminal are immersed up to 1.5m/m from sounder's body in solder bath of 300±5°C for 5±0.5 seconds.	
3	Free Drop Test	Free fall from a hight of 100 cm. Onto the 10 m/m thick hardwood board, 9 times, any directions	
4	Solderability (※1)	Lead terminals are immered in rosin for 5 seccods and then immered in solder bath of 260±5°C for 5±0.5 seconds.	90% min. lead terminals shall be wet with solder. (Except the edge of terminal.)
5	Terminal Strength Pushing	The force 10 seconds of 1.0Kg is applied to each terminal in axial direction.	No visible damage and cutting off.

### 5.2 Environmental Sequence

	Test Items	Test Conditions	Performance Requirements
1	Humidity Test	+70±2°C, 90 ~ 95%RH,96 hrs.	The measured values shall meet Remarks 1,2
2	High Temp. Sotorage	+85±2°C,96 hrs.	
3	Low Temp. Sotorage	–40±2°C,96 hrs.	
4	Thermal Shock	–40±2°C(30min.) → +85±2°C (30min.) 50 cycle. Transfer Time : 10 minutes	

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### 5.3 Operating Life Sequence

	Test Items	Test Conditions	Performance Requirements
1	Ordinary Temp. Operating Test	Continuous sound generation for 96 hrs. at rated voltage and $+25\pm10^{\circ}\text{C}$	The measured values shall meet Remarks 1,2
2	High Temp. Operating Test	Continuous sound generation for 96 hrs. at rated voltage and $+70\pm2^{\circ}\text{C}$	
3	Low Temp. Operating Test	Continuous sound generation for 96 hrs. at rated voltage and $-20\pm2^{\circ}\text{C}$	

#### 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 $\pm10\text{dB}$

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六、Packing Information :

