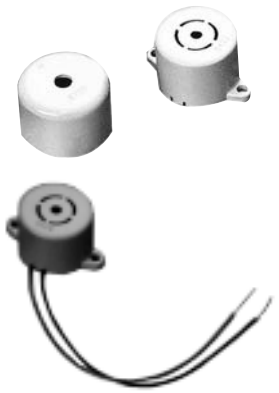
Piezoelectronic Buzzers
PB Series(Pin Terminal/Lead)

Conformity to RoHS Directive



FEATURES

- The PB series are high-performance buzzers with a unimorph piezoelectric ceramic element and an integral self-excitation oscillator circuit.
- They exhibit extremely low power consumption in comparison to electromagnetic units.
- They are constructed without switching contacts to ensure long life and no electrical noise.
- Compact, yet produces high acoustic output with minimal voltage.

APPLICATIONS

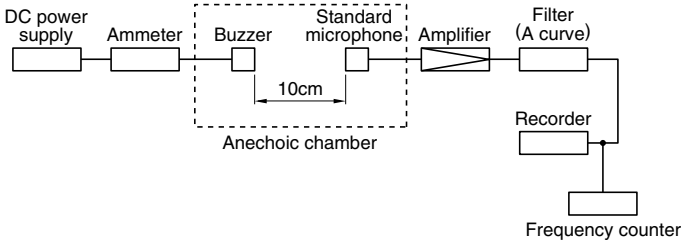
Fire alarms, smoke detectors, home security systems, call buzzers, car alarm systems, clocks, and cash registers.

ELECTRICAL CHARACTERISTICS

Part No.	Resonant frequency (kHz)	Operating voltage Edc(V)	Sound pressure (dB(A)/100cm)	Consumption current (mA)max.	Testing voltage (V)	Terminal construction
PB2130UP002A	3.3±0.8	4 to 15	75min.	20	12	Pin terminal
PB2320UP002A5	2±0.5	4 to 17	75±5	20	13	Pin terminal
PB2130UP002C	3.3±0.8	4 to 15	65min.	20	12	Pin terminal
PB2130UL100A	3.3±0.8	4 to 15	75min.	20	12	Lead

• Measured at 25°C, operating temperature range –20 to +60°C

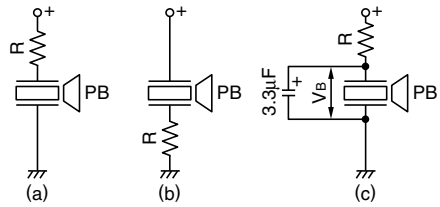
SOUND MEASURING METHOD



•20dB is subtracted from the 10cm measured value, and converted to 1m value.

VOLTAGE BUZZER SOUND CONTROLS

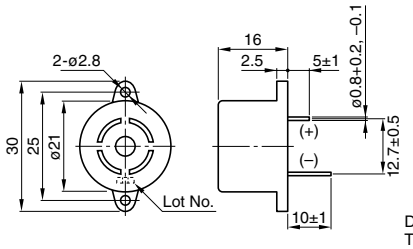
When resistance is connected in series (as shown in illustrations (a) and (b)), abnormal oscillation may occur when adjusting the sound volume. In this case, insert a capacitor in parallel to the voltage oscillation board (as shown in illustration (c)). By doing so, abnormal oscillation can be prevented by grounding one side. However, the voltage V_B added to the voltage oscillation board must be within the maximum input voltage range, and as capacitance of 3.3µF or greater should be connected.



• Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

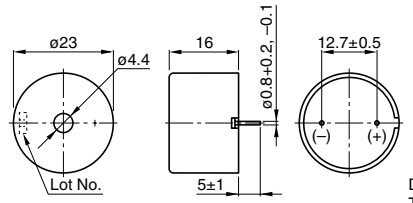
SHAPES AND DIMENSIONS

PB2130UP002A



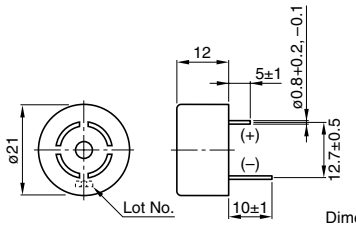
Dimensions in mm
Tolerance: ±0.3

PB2320UP002A5



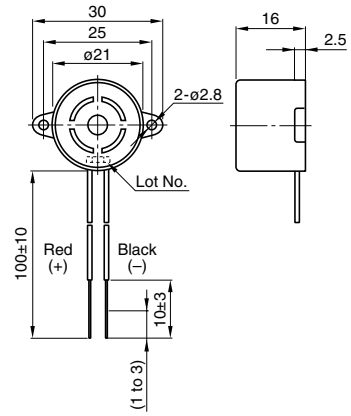
Dimensions in mm
Tolerance: ±0.3

PB2130UP002C



Dimensions in mm
Tolerance: ±0.3

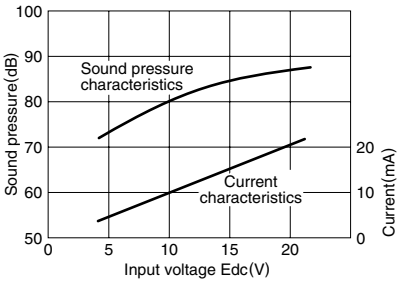
PB2130UL100A



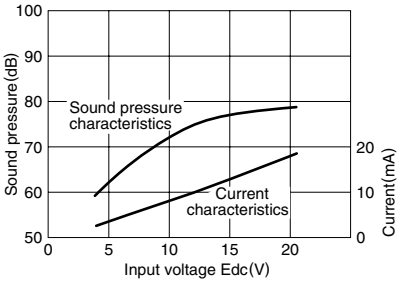
Dimensions in mm
Tolerance: ±0.3

SOUND PRESSURE-CURRENT CHARACTERISTICS

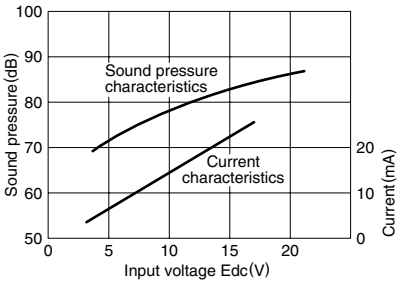
PB2130UP002A



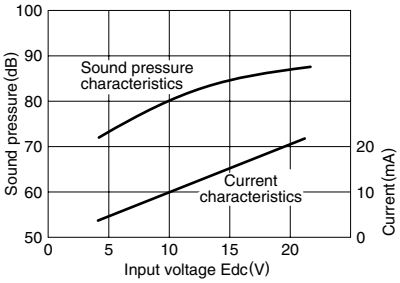
PB2320UP002A5



PB2130UP002C



PB2130UL100A



PRECAUTIONS FOR USE

TDK's PB series piezoelectric buzzer has an oscillation circuit. It therefore sounds when a DC voltage is supplied. Bear the following precautions in mind before use.

- The input polarity. Make sure to connect it correctly.
- Do not supply to the buzzer any voltage greater than permissible.
- Use a regulated DC power supply voltage with low ripples.
- Avoid using the buzzer outdoors. It is designed for indoor use. If it has to be used outdoors, provide a waterproofing and other necessary measures. It may not operate properly if terminals have subjected to moisture.
- Avoid washing the buzzer to allow solvent or gas to enter it; otherwise solvent that has entered from the sound release hole may stay in it a long time and affect its performance.
- A piezoelectric ceramic in approximately 100 micron meters thickness is used as a buzzer sound generator. If the ceramic is pressed with a pin or the like through the sound release holes, it may be damaged. Do not stack these buzzers.
- Do not apply any mechanical force to the buzzer; otherwise the buzzer case may be deformed and result in improper buzzer operation.
- Do not place any shielding material or the like just in front of the sound release hole of the buzzer; otherwise the sound pressure may vary and result in unstable buzzer operation. Make sure that the buzzer is not affected by a standing wave or the like.
- It is recommended that the PB23 type buzzer be installed off a printed circuit board because the buzzer case and terminal vibrate; otherwise resonance may occur on the board.
- Do not bend the terminal pin; otherwise the state of vibration between the case and terminal pin or board may vary and result in a characteristic change, causing the buzzer to make no sound.
- The terminal pin of the buzzer must be soldered at 350°C max.(80W max.)(soldering iron trip) within 5 seconds.
- Do not use the buzzer in an atmosphere containing corrosive gas (H_2S etc.) for a long time; otherwise the circuit parts or sound generator may corrode and result in improper buzzer operation.
- Do not drop the buzzer; handle it carefully.