



May 2019

PiezoListen™

For general use

Piezo Speakers

Preliminary data sheet

- Please request us a delivery specification sheet for further details on characteristics and specifications to use the product in a correct and safe manner.
- Contents are subject to change without notice for updating and revising purpose.
- Conformity to RoHS Directive : In conformity to EU Directive 2011/65/EU, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

Safety Reminders for Customers

Please pay sufficient attention to the following reminders for your safety when using this products



Reminders

- Please thoroughly check before use the individual standard for every unit and pay attention to the following reminders for safe design.
- Please do not apply DC bias to the product. It will cause the insulation resistance to degrade and result in malfunction.
- Please keep the piezoelectric element away from water or any other material with moisture.
- To avoid performance degradation, please abide by the following instructions.
 - Please keep the product in an environment without any drastic temperature change, condensation, direct sunlight, corrosive gases and dust, and do not remove the packaging until use to avoid any load stress.
 - Use the product within six month.
 - Do not apply strong shock (dropping etc.) or pressure that might cause a crack to the product.
 - Do not apply voltage higher than the set operating voltage range.
 - This product is for indoor use. Do not use it outdoors.
 - Do not apply heat of 150 degree Celsius or above.
- When designing your equipment even for general-purpose applications, you are kindly requested to take into consideration securing protection circuit/device or providing backup circuit in your equipment.
- Please refrain from cleaning the product in ways that it will be exposed to solvent or gas.
- Please do not touch the piezoelectric element with bare hand. It may cause corrosion or discharge of electricity to your hand.
- Please discharge the product before connecting to measuring instruments.
- When soldering, please be careful that the piezoelectric element is kept clean from flux and other foreign substance.
- When soldering the terminal, please make sure that there is no dirt or rust to avoid contact failures.
- If the product is to be attached with adhesives, please consider the adequate type, quantity and adhesion of the adhesive material used and check before use with conducting reliability evaluation test.
- Please do not use this product if the application device's design exposes the actuator itself for consumers to touch.
- Please do not reprocess the product.
- Characteristics may change depending on the attachment location and form. Please check with the actual housing.
- Please make sure the operating environment would not cause the Ag-Pd electrode's migration, otherwise the insulation between the electrodes will not be kept.
- Please understand that we are not responsible for any damage or liability caused by use of the product in any of the applications below or for any other use exceeding the range or conditions set forth in this data sheet.
 - Applications with very stringent safety standard and reliability requirement
 - Applications that any malfunction, trouble, or failure of the product could cause serious damage to the life, body or property of a person
 - Applications that any malfunction, trouble, or failure of the product could cause severe impact to the society (such as automobiles, airplanes, medical instruments, nuclear devices)
- Please do not use the product in the environments with:
 - Corrosive gases (Cl₂, NH₃, H₂S, SO_x, NO_x etc.)
 - Highly conductive substances (electrolytes, water, saltwater etc.)
 - Acid, alkali, or organic solvents
 - Excessive dust
- This product is a test sample, which is not intended for commercial use in series products of the purchaser.

PiezoListen™

(Prototype sample)

Summary

■ Features

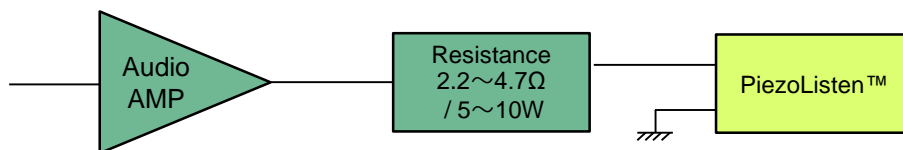
- Ultra thin
- Immersive onscreen sound
- Excellent response
- Wide range of driving voltage

■ Applications

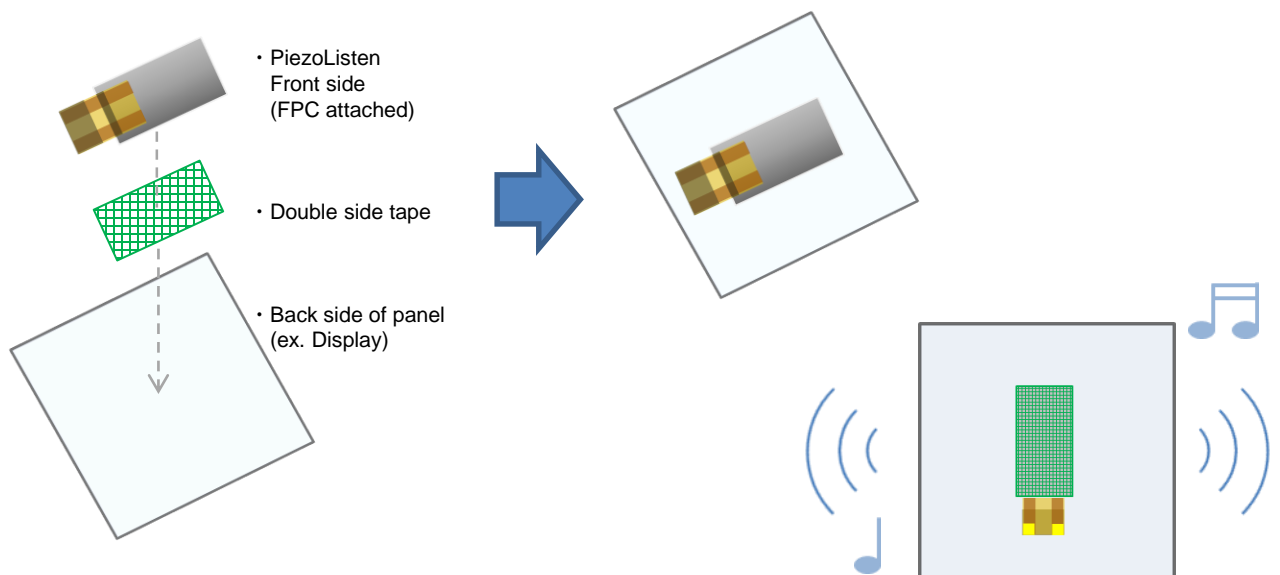
Television , PC , Smartphone etc.

■ Driving circuit block diagram

Discrete



How to install

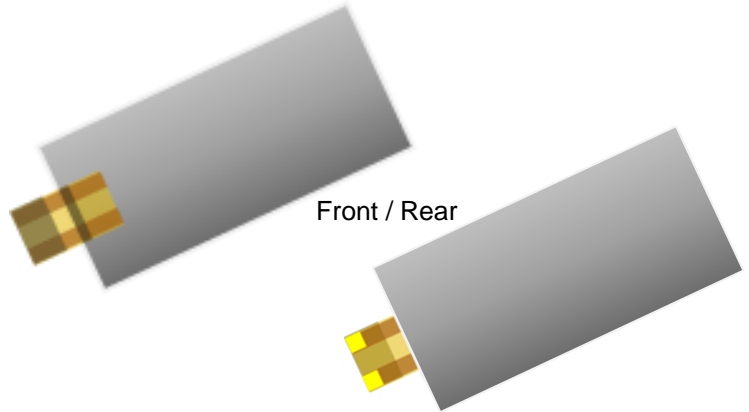
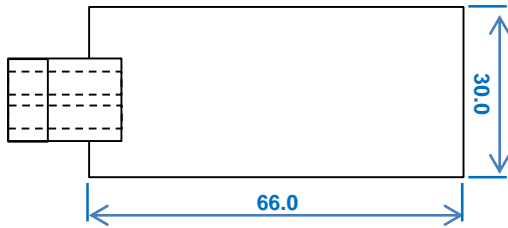


PHUA6630-076B-00-000

(Prototype sample)

*Mark is undecided

■ Shape and Dimensions



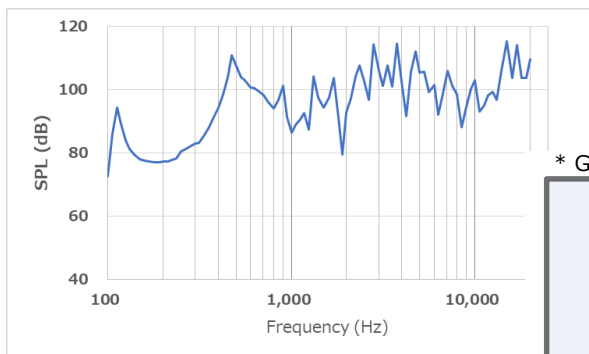
■ Specifications

Size	Element	66×30×0.76 mm
Electrode		FPC (23.5×12×0.3 mm)
Operating voltage range (max.)		0±24V
Operating temperature range		-10 to 60℃

■ Electrical characteristics

Capacitance : C		(8.2uF±15%)
Current consumption : mA(peak to peak) / mA(RMS)		0±1200mA / 870mA (Drive@0±24V, 1kHz)

■ Frequency characteristics (Reference value)



* Glass fixing



Measurement Condition

Input Voltage : 0±6Vp-p

Distance : 10cm to mic

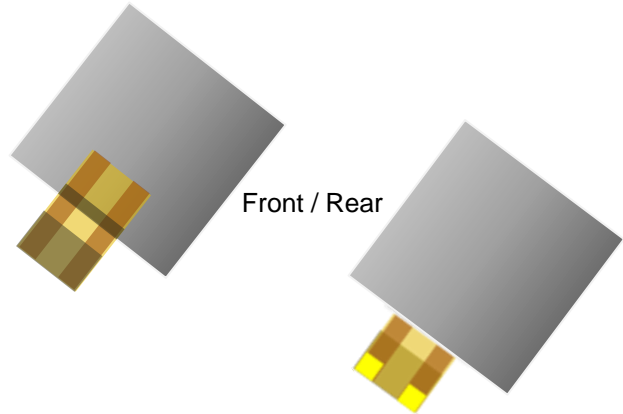
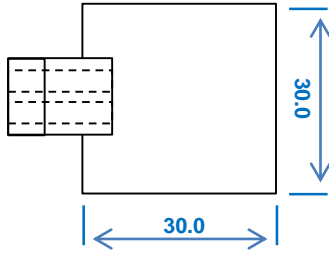
Frequency : 100~20kHz

Fixed : Glass
220×220×0.7mm
(*Refer Left)

PHUA3030-049B-00-000 *Mark is undecided

(Prototype sample)

■ Shape and Dimensions



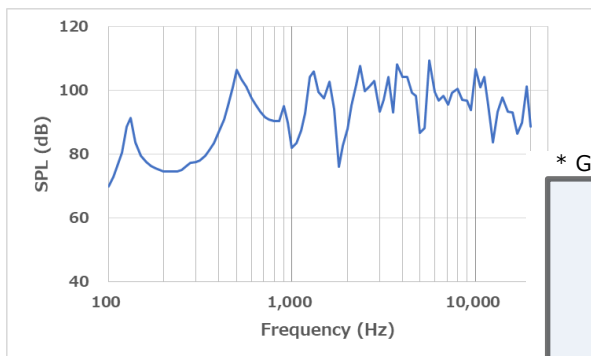
■ Specifications

Size	Element	30×30×0.49 mm
Electrode		FPC (23.5×12×0.3 mm)
Operating voltage range (max.)		0±12V
Operating temperature range		-10 to 60℃

■ Electrical characteristics

Capacitance : C		(4.8uF±15%)
Current consumption : mA(peak to peak) / mA(RMS)		0±450mA / 320mA (Drive@0±12V, 1kHz)

■ Frequency characteristics (Reference value)



Measurement Condition

Input Voltage : 0±6Vp-p

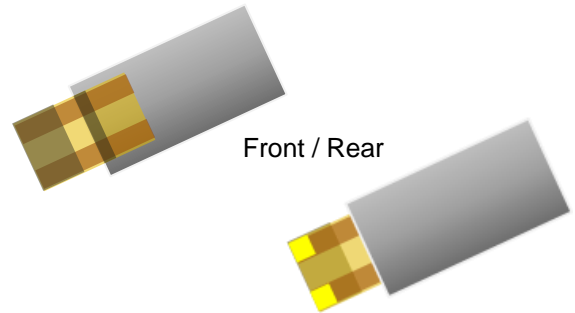
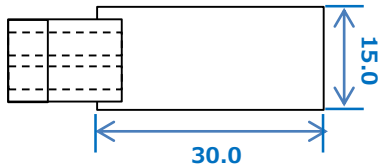
Distance : 10cm to mic

Frequency : 100~20kHz

Fixed : Glass
220x220x0.7mm
(*Refer Left)

PHUA3015-049B-00-000 *Mark is undecided (Prototype sample)

■ Shape and Dimensions



Front / Rear

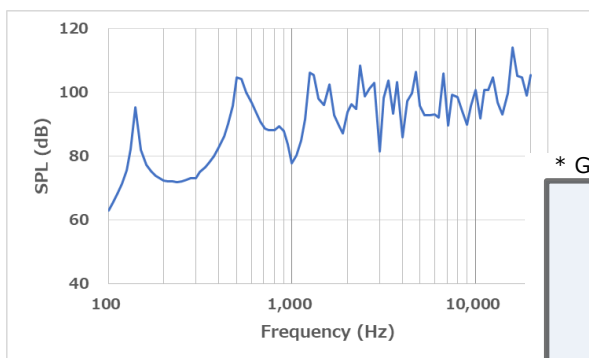
■ Specifications

Size	Element	30×15×0.49 mm
Electrode		FPC (23.5×12×0.3 mm)
Operating voltage range (max.)		0±12V
Operating temperature range		-10 to 60°C

■ Electrical characteristics

Capacitance : C		(3.5uF±15%)
Current consumption : mA(peak to peak) / mA(RMS)		0±300mA / 210mA (Drive@0±12V, 1kHz)

■ Frequency characteristics (Reference value)



* Glass fixing



Measurement Condition

Input Voltage : 0±6Vp-p

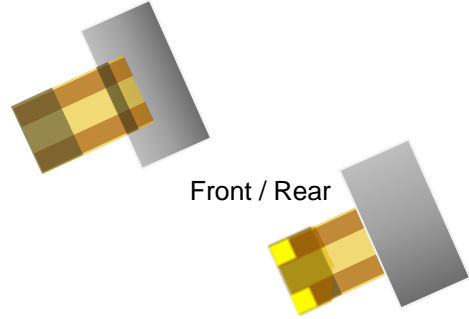
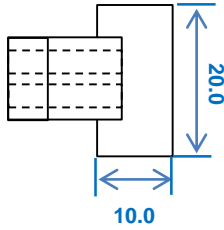
Distance : 10cm to mic

Frequency : 100~20kHz

Fixed : Glass
220×220×0.7mm
(*Refer Left)

PHUA2010-049B-00-000 *Mark is undecided (Prototype sample)

■ Shape and Dimensions



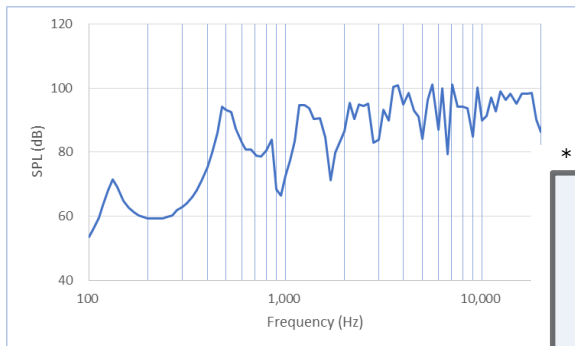
■ Specifications

Size	Element	20×10×0.49 mm
Electrode		FPC (23.5x12x0.3 mm)
Operating voltage range (max.)		0±12V
Operating temperature range		-10 to 60℃

■ Electrical characteristics

Capacitance : C	(1.0uF±15%)
Current consumption : mA(peak to peak) / mA(RMS)	N/A

■ Frequency characteristics (Reference value)



Measurement Condition
Input Voltage : 0±6Vp-p
Distance : 10cm to mic
Frequency : 100~20kHz
Fixed : Glass 220x220x0.7mm (*Refer Left)