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## Part Number

PJFVMA011001B-B0



## Products Name

Piezo Vibe

### Features

- Low power consumption
- Small and Thin
- Built in driver circuit
- Easy assembling at flat space by double side tape

### Applications

- Activity band
- Smart ring
- Wearable Applications

## Unique vibrator based on the application of piezo electronics

### Overview

'Piezo Vibe' is a new vibration device that is using piezoelectric ceramics.

Its feature is small flat package (3.8×10.5×2mm).

And there is no compliance about consumption power (6mW).

It works by only applying DC supply (1.8-3.5V) also, because it has a driver circuit.

By these points, we think 'Piezo Vibe' is best solution for Activity-Band, Smart-Ring and other wearable applications.

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## 1. Introduction

Piezo Vibe is used to be applied in wearable devices such as 'Active Tracker', 'Smart Watch' and so on for vibration function of notifications.

In order to make vibration to use piezo ceramics and plate spring, this product has a big merit compared with other vibrator.

Power consumption is excellent low level beyond competition.

And it is easy to assemble by built driver circuit and flat package.

## 2. Specifications

### 2.1 Rating

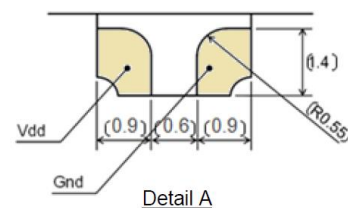
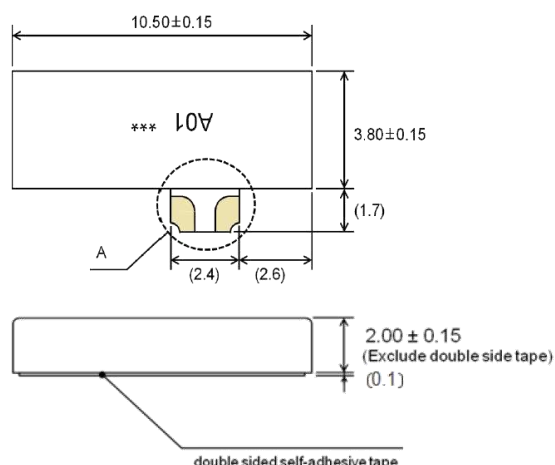
	Item	Specification
2.1.1	Input Voltage	1.8 to 3.5V DC
2.1.2	Operating Temperature Range	-20 to +60°C
2.1.3	Storage Temperature Range	- 20 to +70°C

### 2.2 Electrical Characteristics

	Item	Min.	Typ.	Max.	Unit.
2.2.1	Vibration Quantity (driven by 3V DC, at resonant frequency)	1.2			G
2.2.2	Vibration Frequency	205	240	275	Hz
2.2.3	Current consumption			2	mA rms.

Refer to next item for measuring method.

### 2.3 Dimensions



+ Marking

A01 : Part No. Code

\*\*\* : Year Weekly Code

[Unit : mm]

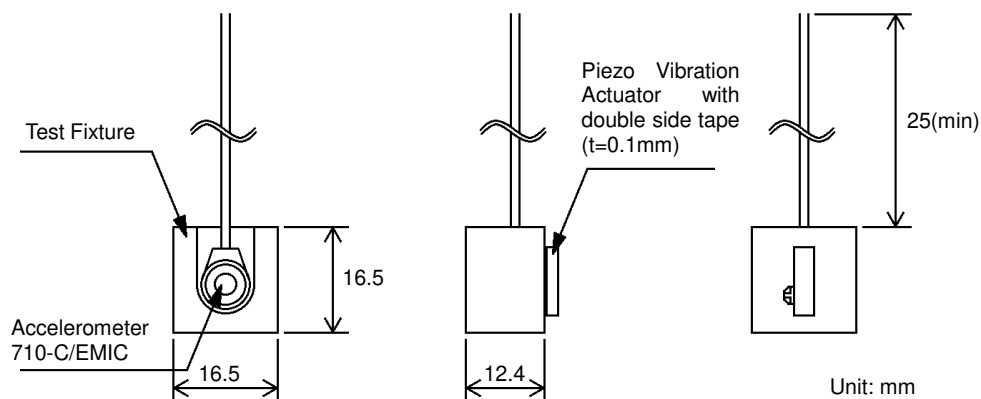
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## 2.4 Measuring Method

### 2.4.1 Vibration Quantity and Vibration Frequency Measuring Method



Total weight of Fixture and Accelerometer : 20g

### 2.4.2 Measuring Condition

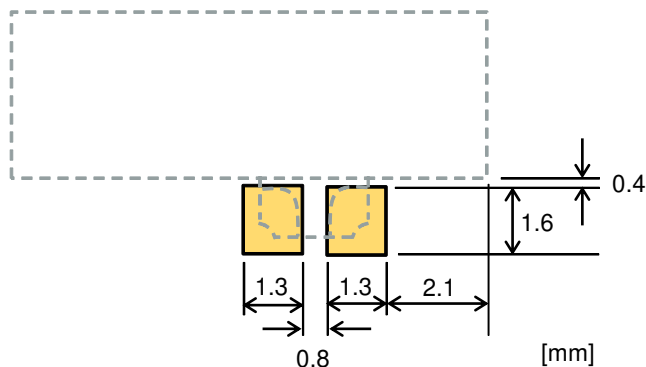
Piezo Vibration Actuator must set with measuring tool for measuring, without tool it does not vibrate. After mounting products on measuring tool, standard conditions for the measurement shall be  $+25\pm3^{\circ}\text{C}$  temperature and  $+60\pm10\%\text{R.H.}$  humidity. The measurement shall be performed at the temperature of  $+5$  to  $+35^{\circ}\text{C}$  and the humidity of  $+45$  to  $+85\%\text{R.H.}$  unless otherwise the result is doubtful.

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### 3. Mounting

#### 3.1 Recommended Land pattern for Soldering

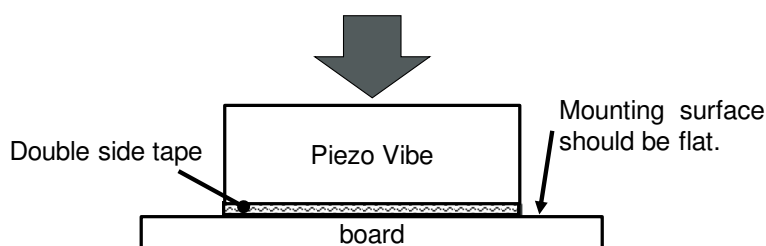


#### 3.2 Recommended Soldering Conditions

Size	solder	Temperature	Time at each terminal	Number of times
Cone R0.5	Sn-3.0Ag-0.5Cu	350°CMax.	3sec max.	once

#### 3.3 Recommended Mounting method for Mechanical Connection

Push its top side uniformly by 4N, 1sec.



Please eliminate superfluous dust, moisture and smear from the surface of application that our product is put on.

#### Attention:

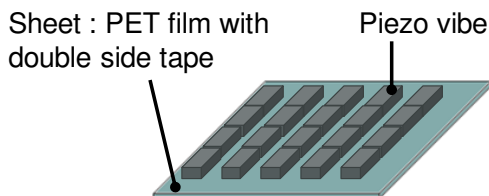
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## 4. Packing and Storage Conditions

### 4.1 Standard Packing

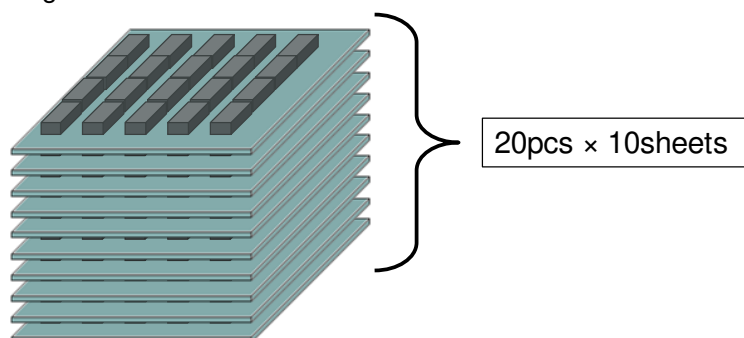
#### 4.1.1 Sheet

Piezo Vibe is 20pcs on a sheet.



#### 4.1.2 Package

10sheets in one package



## 4.2 Storage Conditions

4.2.1 Please store the products in room where the temperature / humidity is stable. And avoid such places where there are large temperature changes. Please store the products under the following conditions.

Temperature	: -10 to +40 (degree C)
Humidity	: +15 to +85% R.H.

4.2.2 The shelf life of the products is 6 months after delivery under the conditions of a sealed and an unopened package because adhesive strength between the product and a sheet will get stronger and it may be difficult to peel the product from a sheet. Please use the products within 6 months after delivery. And after unpack aging of the package, please reseal it promptly.

4.2.3 Please do not store the products in a chemical atmosphere (Acids, Alkali, Bases, Organic gas, Sulfides and so on), because the characteristics may be reduced in quality, and/or be degraded in the solder-ability due to the storage in a chemical atmosphere.

4.2.4 Please do not put the products directly on the floor without anything under them to avoid damp places and/or dusty places.

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4.2.5 Please do not store the products in the places such as : in a damp heated place, in a place where direct sunlight comes in, in place applying vibrations.

4.2.6 Please do not drop the products to avoid cracking of ceramic element.

## 5. Cautions

### 5.1 Limitation of Applications

Please contact us before using our products for the applications listed below which require especially high reliability for the prevention of defects which might directly cause damage to the third party's life, body or property .

- 1 Aircraft equipment
- 2 Aerospace equipment
- 3 Undersea equipment
- 4 Power plant control equipment
- 5 Medical equipment
- 6 Transportation equipment (vehicles, trains, ships, etc.)
- 7 Traffic signal equipment
- 8 Disaster prevention / crime prevention equipment
- 9 Data-processing equipment
- 10 Applications of similar complexity and /or with reliability requirements to the applications listed in the above.

### 5.2 Fail-Safe

Be sure to provide an appropriate fail-safe function on your product to prevent a second damage that may be caused by the abnormal function or the failure of our product.

### 5.3 Cautions for Use

5.3.1 The component may be damaged if mechanical stress over this specification is applied.

5.3.2 Please pay attention to protect operating circuit from surge voltage provided by something of force such as falling, shock and temperature changing.

5.3.3 Washing or molding of the component is not acceptable, because it is not sealed.

5.3.4 High pressure air should not be blown on the component directly at short range by air gun or equivalent.

5.3.5 The component is not available for reflow soldering process.

5.3.6 Please don't use in the state by which a product condensed into dew.

5.3.7 The FPC may be damaged if excessive mechanical stress is applied.

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## 6. Note

- 6.1.1 Please make sure that your product has been evaluated in view of your specifications with our product being mounted to your product.
- 6.1.2 You are requested not to use our product deviating from this product specification.
- 6.1.3 Please return one duplicate of this product specification to us with your signature to acknowledge your receipt. In case of no return within three months from submission date, or if we receive order before the duplicate is returned, this product specification will be deemed to have been received by you.
- 6.1.4 We consider it not appropriate to include any terms and conditions with regard to the business transaction in the product specifications, drawings or other technical documents. Therefore, if your technical documents as above include such terms and conditions such as warranty clause, product liability clause, or intellectual property infringement liability clause, they will be deemed to be invalid.

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