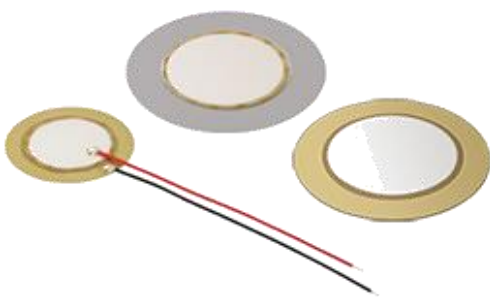


## Important notice for usage to Piezoelectric Diaphragms

Please take a look for technical guideline  
and failure mode information before  
using products.



## Important notice for usage to Piezoelectric Diaphragms

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Item	Guideline
Pre-Mounting	<p><b>Do not pull on a lead wire or handle it in such a way that it becomes bent.</b></p> <p>The lead wire may separate from the soldering point or become an open circuit, which would prevent sound from being emitted.</p>
Other	<p><b>Do not use this product in an atmosphere containing chlorine gas, sulfidizing gas, acid, or another corrosive substances.</b></p> <p>This may cause the characteristics of the product to deteriorate, and also reduce the sound volume level or prevent the emission of any sound at all.</p>

# Precautions to observe when mounting the Diaphragm

Applicable Series : 7BB Series (with lead wire)

## Do not pull on a lead wire or handle it in such a way that it becomes bent.

The lead wire may separate from the soldering point or become an open circuit, which would prevent sound from being emitted.

<How the failure occurs>

The material of the electrode on the ceramic side consists mainly of silver.

This silver electrode is made by printing silver in the form of a paste on both sides of the ceramic. It is then baked at high temperature to complete the electrode.

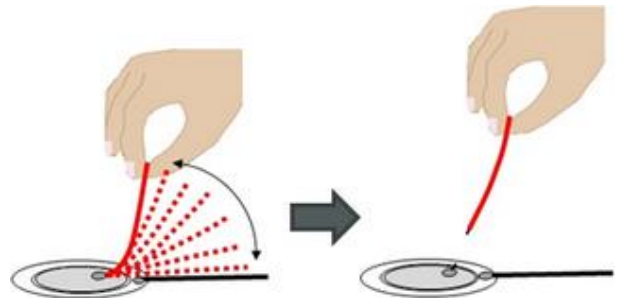
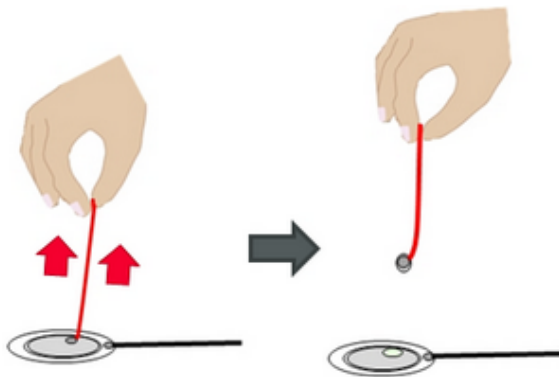
When the bond between the silver electrode and the ceramic becomes strong, the ceramic no longer expands or contracts easily, and the electrical characteristics deteriorate (the sound pressure falls).

Conversely, if the adhesive strength is weak, the ceramic will readily expand and contract, and the electrical characteristics will improve (the sound pressure will increase).

In this way, the adhesive strength of the silver electrode has an inverse relation to the electrical characteristics. Because the product is designed to ensure that both the adhesive strength and electrical characteristics are optimum, a limit is imposed on the adhesive strength.

Separation of the lead wire from the soldering point due to pulling

Open circuit due to bending of a lead wire



<Case>



Electrode face at the point where lead wire separation occurred



Soldering point where lead wire separation occurred

Applicable Series : 7BB Series / 7BB Series (with lead wire) / 7NB Series

**Do not use this product in an atmosphere containing chlorine gas, sulfurizing gas, acid, or another corrosive substances.**

This may cause the characteristics of the product to deteriorate, and also reduce the sound volume level or prevent the emission of any sound at all.

<How the failure occurs>

The silver electrode of the piezoelectric diaphragm will sulfurize, resulting in the formation of silver sulfide. Because silver sulfide does not conduct electricity, an open circuit condition is likely to occur.

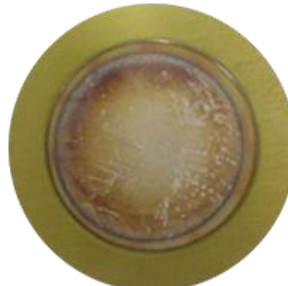
Sulfidation :  $\text{H}_2\text{S} + \text{Ag} \rightarrow \text{Ag}_2\text{S} + \text{H}_2$

<Case>

Normal



Abnormal



The electrode has turned black due to sulfidation.

\* In order to indicate cases of sulfidation, Murata has example photographs for different part numbers.

<For reference>

Among our products, Murata also produces a silver electrode type which has been subjected to a simple coating process. Please contact us for details.