

# Piezoelectric Sound Components



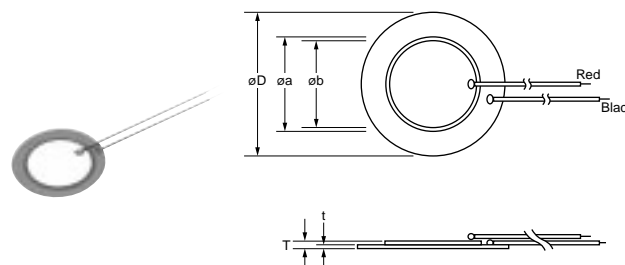
## Piezoelectric Diaphragms

### ■ Features

1. Low power consumption
2. No contacts therefore, no noise and highly reliable

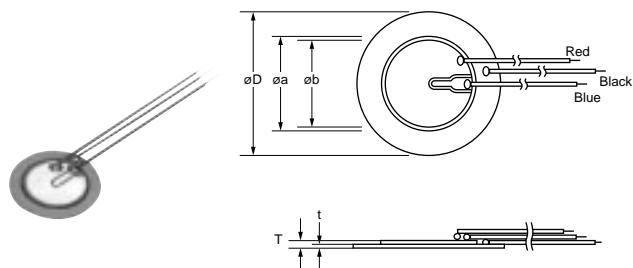
### ■ Applications

1. Telephone ringers
2. Various office equipment such as PPCs, printers and keyboards
3. Various home appliances such as microwave ovens
4. Confirmation sound of various audio equipment



### External Drive Type

Part Number	Resonant Frequency (kHz)	Resonant Impedance (ohm)	Capacitance (nF)	Plate Size dia. D (mm)	Element Size dia. a (mm)	Electrode Size dia. b (mm)	Thickness T (mm)	Plate Thickness t (mm)	Plate Material
7BB-12-9	9.0 ±1.0kHz	1000 max.	8 ±30% [1kHz]	12.0	9.0	8.0	0.22	0.10	Brass
7BB-15-6	6.0 ±1.0kHz	350 max.	10 ±30% [1kHz]	15.0	10.0	9.0	0.22	0.10	Brass
7BB-20-3	3.6 ±0.6kHz	500 max.	20 ±30% [1kHz]	20.0	14.0	12.8	0.22	0.10	Brass
7BB-20-6	6.3 ±0.6kHz	350 max.	10 ±30% [1kHz]	20.0	14.0	12.8	0.42	0.20	Brass
7BB-20-6A0	6.3 ±0.6kHz	1000 max.	10 ±30% [1kHz]	20.0	14.0	12.8	0.42	0.20	Brass (with Lead Wire :AWG32 Length 50mm)
7BB-27-4	4.6 ±0.5kHz	200 max.	20 ±30% [1kHz]	27.0	19.7	18.2	0.54	0.30	Brass
7BB-27-4A0	4.6 ±0.5kHz	300 max.	20 ±30% [1kHz]	27.0	19.7	18.2	0.54	0.30	Brass (with Lead Wire :AWG32 Length 50mm)
7BB-35-3	2.8 ±0.5kHz	200 max.	30 ±30% [1kHz]	35.0	25.0	23.0	0.53	0.30	Brass
7BB-35-3A0	2.8 ±0.5kHz	200 max.	30 ±30% [1kHz]	35.0	25.0	23.0	0.53	0.30	Brass (with Lead Wire :AWG32 Length 50mm)
7BB-41-2	2.2 ±0.3kHz	250 max.	30 ±30% [1kHz]	41.0	25.0	23.0	0.63	0.40	Brass
7BB-41-2A0	2.2 ±0.3kHz	300 max.	30 ±30% [1kHz]	41.0	25.0	23.0	0.63	0.40	Brass (with Lead Wire :AWG32 Length 50mm)
7MB-20-5R5	5.5 ±1.5kHz	1000 max.	6 ±35% [1kHz]	20.0	10.0	9.0	0.37	0.20	Nickel Plated Iron
7NB-31R2-1	1.3 ±0.5kHz	300 max.	40 ±30% [120Hz]	31.2	19.7	18.2	0.22	0.10	Iron Nickel Alloy



## Self Drive Type

Part Number	Resonant Frequency (kHz)	Resonant Impedance (ohm)	Capacitance (nF)	Plate Size dia. D (mm)	Element Size dia. a (mm)	Electrode Size dia. b (mm)	Thickness T (mm)	Plate Thickness t (mm)	Plate Material
<b>7BB-20-6C</b>	6.3 ±0.6kHz	500 max.	8.5 ±30% [1kHz]	20.0	14.0	12.8	0.42	0.20	Brass
<b>7BB-20-6CA0</b>	6.3 ±0.6kHz	800 max.	8.5 ±30% [1kHz]	20.0	14.0	12.8	0.42	0.20	Brass (with Lead Wire :AWG32 Length 50mm)
<b>7BB-27-4C</b>	4.6 ±0.5kHz	200 max.	18 ±30% [1kHz]	27.0	19.7	18.2	0.54	0.30	Brass
<b>7BB-27-4CA0</b>	4.6 ±0.5kHz	350 max.	18 ±30% [1kHz]	27.0	19.7	18.2	0.54	0.30	Brass (with Lead Wire :AWG32 Length 50mm)
<b>7BB-35-3C</b>	2.8 ±0.5kHz	200 max.	26 ±30% [1kHz]	35.0	25.0	23.0	0.53	0.30	Brass
<b>7BB-35-3CA0</b>	2.8 ±0.5kHz	200 max.	26 ±30% [1kHz]	35.0	25.0	23.0	0.53	0.30	Brass (with Lead Wire :AWG32 Length 50mm)
<b>7BB-41-2C</b>	2.2 ±0.3kHz	250 max.	24 ±30% [1kHz]	41.0	25.0	23.0	0.63	0.40	Brass
<b>7BB-41-2CA0</b>	2.2 ±0.3kHz	350 max.	24 ±30% [1kHz]	41.0	25.0	23.0	0.63	0.40	Brass (with Lead Wire :AWG32 Length 50mm)
<b>7SB-34R7-3C</b>	3.1 ±0.3kHz	150 max.	24 ±30% [1kHz]	34.7	25.0	23.4	0.50	0.25	Stainless

## ■ Node Diameter

Part Number	Node Diameter (mm)
<b>7BB-20-6C</b>	φ13.5
<b>7BB-27-4C</b>	φ17.5
<b>7BB-35-3C</b>	φ22.5
<b>7BB-41-2C</b>	φ26.5

• Sound diaphragms without feedback electrode also have the same node diameters.

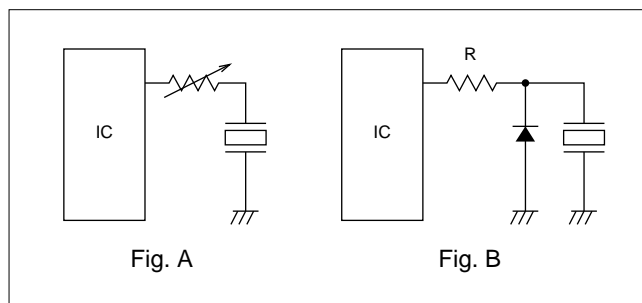
## Piezoelectric Diaphragms Notice

### ■ Notice (Soldering and Mounting)

1. Applying load on the center area of the diaphragm may cause cracking in the ceramic element. When the diaphragm is supported by the edge, the load should be only applied around the edge.
2. Please consult with Murata or Murata representative, if soldering of the component is needed.

### ■ Notice (Handling)

1. Please do not touch the component with bare hand because electrode may be corroded.
2. The component may be damaged if mechanical stress exceeding specifications is applied.
3. Take care to protect operating circuit from surge voltage resulting from excessive force, falling, shock or temperature change.
4. If DC voltage is applied to the component, silver migration may occur. Please pay full attention to avoid subjecting the component to DC voltage for long periods.
5. The resistor should be used as shown in Fig. A.  
A suitable resistance value should be chosen, preferably  $1\text{k}\Omega$  to  $2\text{k}\Omega$ . Instead of this measure, a diode may also be applied as shown in Fig. B.



6. Avoid excessive pulling of lead wire because wire may break or soldering point may come off.