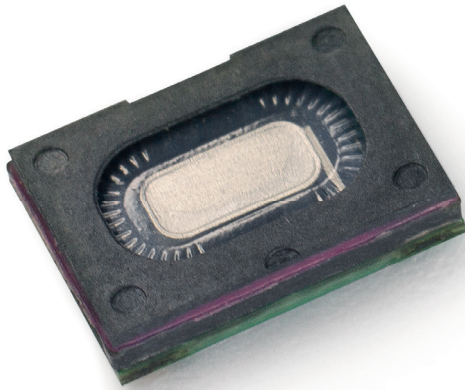


MEMS SPEAKERS

HANDLING GUIDE

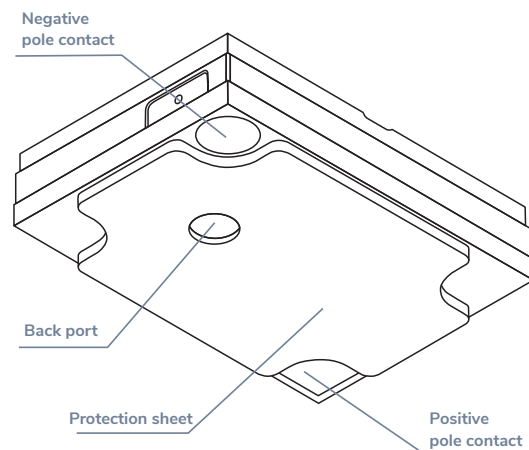
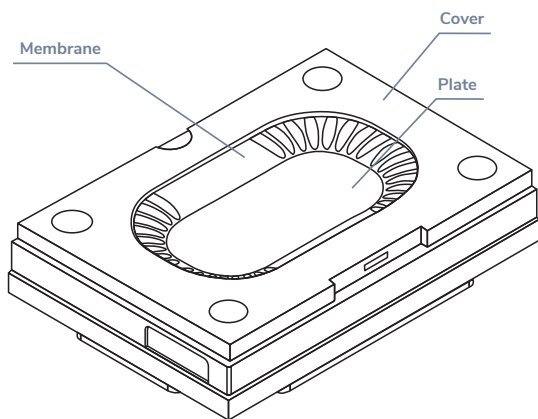
U))) SOUND



The purpose of these handling instructions is to ensure the correct use of USound's MEMS speakers and to:

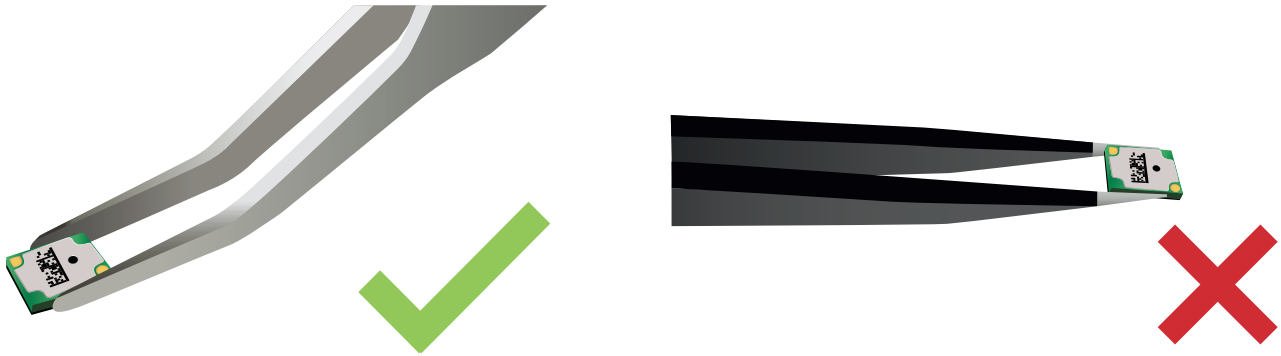
- avoid mechanical mishandling
- avoid handling the speakers with the wrong tools
- avoid careless soldering practices
- provide proper electrical connection to the speaker

MEMS SPEAKERS COMPONENTS



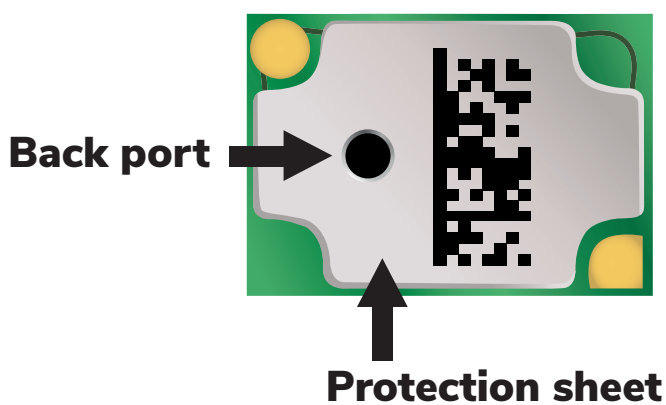
HANDLING

To preserve the functionality and form of the speaker, it is recommended to grab the speakers from the sides with blunt curved tweezers. Using sharp tweezers while manipulating the speakers can lead to accidentally piercing the membrane, which can lead to a loss of functionality.



The protection sheet on the back side of the speaker serves several purposes such as tracking, venting and mechanical protection of the MEMS. It is essential to preserve its integrity through the entire assembly and embedding process.

The purpose of the backport is to provide the connection to the back volume in the application; therefore, it shouldn't be airtight covered. The result would be an acoustic degradation.



SOLDERING

Temperatures at which MEMS speakers are exposed during soldering can potentially damage the component if not done correctly. Apply soldering iron only on the electrical pads on the bottom side of the speaker during the soldering process. It's recommended to follow the standard IPC J-STD-001 "Requirements for Soldered Electrical and Electronic Assemblies." For inspection, it's suggested to follow IPC-A-610G.

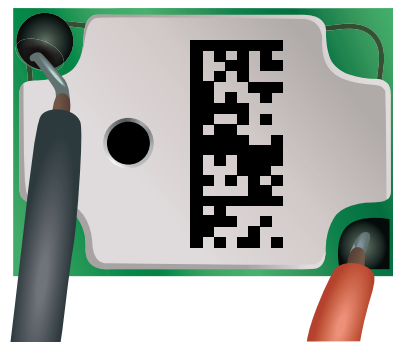
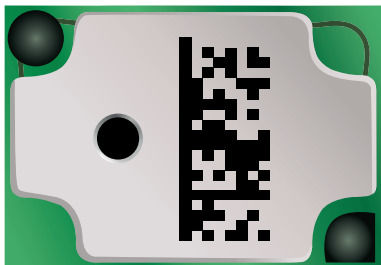
RECOMENDATIONS

Type	Recommended Parameters	Comments
Soldering Temperature	340°C (Possible range: 290 - 400°C)	Adjust with the soldering station
Soldering Time	1-2 s (maximum 5 s)	Keep contact duration short
Soldering Iron Tip	Weller LT 1S 0.2 mm – 0.4 mm	Fine solder tip for precise soldering
Soldering Station	JBC DDE 2 Tools	User preference
Soldering Wire	RS-756-884 0.71 mm Lead Free EDSYN SU35100 with Flux EDSYN SSAC2010 0.2 mm Lead Free	Use lead-free soldering wire
Flux	Chemtronics CW8100 Flux Dispensing Pen	Avoid excess application

SOLDERING PROCESS

1. Tin the copper wire or use pre-tinned wires to simplify the soldering process.
2. Locate the copper pads of the loudspeaker and apply solder on the speaker pads by using a soldering iron.
3. Solder the wire onto the pads of the speaker.

2. Locate the copper pads of the loudspeaker and apply solder on the speaker pads by using a soldering iron.



The materials of the protection sheet can melt during the soldering process. Make sure not to touch the protection sheet when soldering.

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