



NXP multifunction speaker for extremely small cavities

Smallest multifunction speaker for stereo applications

Since this thin, rectangular speaker needs only a very small back volume, it is ideal for slim, small phones

Key features

- ▶ Easy mechanical integration
- ▶ Unique compound membrane
- ▶ Robust spring contact

Applications

- ▶ Closed back volumes
- ▶ Stereo applications
- ▶ Front- and side-firing designs
(8-mm width enables flipped usage)

Designed for stereo applications in small and thin phones, NXP's latest rectangular speaker is a multifunction speaker that measures only 8 x 12 x 2.5 mm. It is a high-end product developed with the most advanced technologies.

The rectangular shape simplifies the mechanical integration. The spring contacts, which are highly robust and extremely versatile, make design-in easier, too.

The resonance frequency in small back volumes is extremely low, so the speaker is ideally suited for use in closed back volumes. Drawing on decades of experience, our acoustic engineers have lowered the resonance frequency to 900 Hz in only 0.5 cm³.

The speaker is only 8 mm wide, so it is well suited to front- or side-firing designs, where it can be mounted perpendicular to the PCB in a stereo application, as shown in the figure.

The speaker achieves excellent performance in high frequencies, resulting in crisp, clear sound. The unique design yields a high sound flow from its very small size. An innovative compound membrane, built using a lightweight composite material, noticeably reduces distortion, Q-factor, and tumbling modes.

For added design flexibility, the speaker can also be used as a receiver.

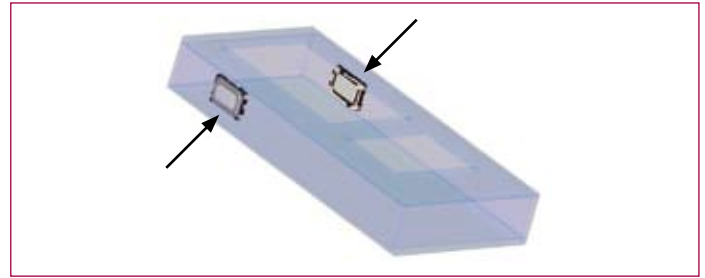
About NXP Sound Solutions

NXP Sound Solutions has produced more than three billion mobile-phone speakers and receivers, and is the leader in mini-acoustic solutions for telecommunication applications.

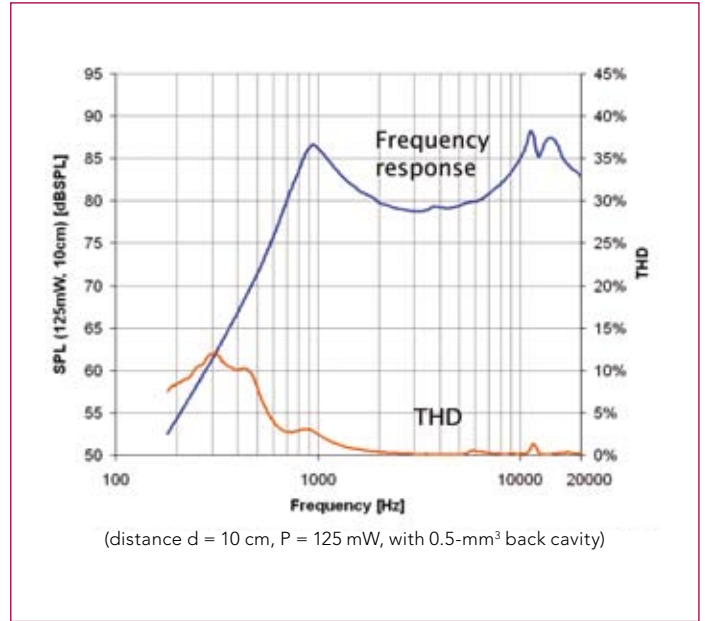
With manufacturing sites and application-support centers in Beijing and Vienna, NXP Sound Solutions offers fully automated, high-volume production for standard products, and semi-automated or manual production for low-volume, specialty products.

Specifications

Dimensions	8 x 12 x 2.5 mm
Impedance	8 Ω
Sensitivity	68 dB (1 W / 1 m)
Power handling	0.25 / 0.5 W nominal / max (shaped noise)
Resonance	900 Hz (at 0.5 cm ³)
Sine sweep	200 mW (at 0.5 cm ³)



Mock-up of a stereo application



Speaker performance in 0.5 cm³