

Audio Subsystems Feature Low Power for Handhelds



National Semiconductor has extended its family of low-power Boomer Class D audio subsystems with two devices that are said to simplify portable product design. The LM49352 mixed-signal audio subsystem and LM49151 analog subsystem are targeted at smart phones, full-featured phones, portable gaming devices and portable GPS devices. The LM49352 integrates audio codec functionality with ground-referenced headphone amplifiers, earpiece driver, Class D loudspeaker and audio digital signal processor (DSP) in one miniature 3.3 mm x 3.3 mm package. The loudspeaker delivers efficiency (93 percent at 970 mW from a 4.2 V supply), while the headphone amplifier offers low-power (18 mW) MP3 playback to extend battery life. The LM49151 analog subsystem integrates an earpiece driver, Class D loudspeaker, ground-referenced headphone amplifiers and automatic level control (ALC) in an ultra-small 2.2 mm by 2.6 mm package. The LM49151 consumes 7.3 mA of quiescent current at 3.3 V for the loudspeaker and headphone. The subsystem's ALC feature provides handset manufacturers with a variety of options to control audio distortion levels and prevent speaker damage. Available now, the LM49352 is priced at \$7.55 each and the LM49151 is priced at \$1.60 each. All prices are in 1,000-unit quantities.

National Semiconductor

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