

LLP Active Noise Cancelling Processor for Over-the-Ear Headphones

General Description

The LMV1100 is an active noise canceling processor with integrated, custom tuned filters that a user can optimize for different over-the-ear headphone designs. The LMV1100 solution offers improved cancellation over a wider frequency range than typical discrete designs. The LMV1100 can typically cancel 20dB of environmental noise and can cancel frequencies up to 800 Hz.

The LMV1100 single IC solution replaces traditional discrete analog designs, eliminating dozens of components, lowering manufacturing cost, improving reliability, and reducing space requirements. With the accompanying LMV1100 Development Kit, the LMV1100 also provides users the ability to tune filters that can be optimized for different headset designs. The solution also utilizes an automated multi-variable calibration to correct for variations in headphone, microphone, speaker, and other components, improving performance and enhancing yield without requiring manual adjustments. The filter parameters can be programmed at IC test or after the headphone assembly. The automated system reduces time to market and simplifies ANC headphone design.

The LMV1100 uses National's APT™ (Analog Processing Technology), which provides latency-free processing and low power consumption.

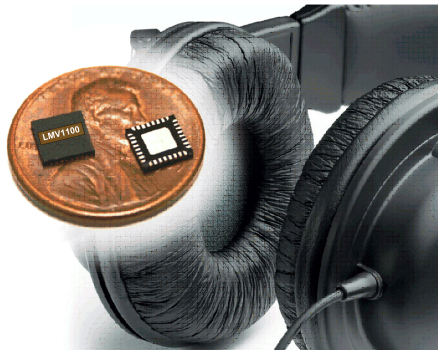
Notice: This document is not a full datasheet. For more information regarding this product or to order samples please contact your local National Semiconductor sales office or visit <http://www.national.com/support/dir.html>

Features

- Superior Noise Cancellation
 - 20dB @200Hz
- Wide Cancellation Frequency Range
- Full Range Frequency Response
- Custom Tuned Cancellation Filters
 - Optimizes performance
- Multi-variable Calibration
 - Automated for production test
 - Improves production yield
- Easy Mechanical Integration
 - Integrated signal processor
 - Minimum number of external components
 - Stereo processing
- Low Power Consumption
- Zero-Latency Signal Processing
 - No signal conversion latency
- Talk-through and Bypass Support
- Feedback Architecture
- Small Size: 5 x 5 mm LLP

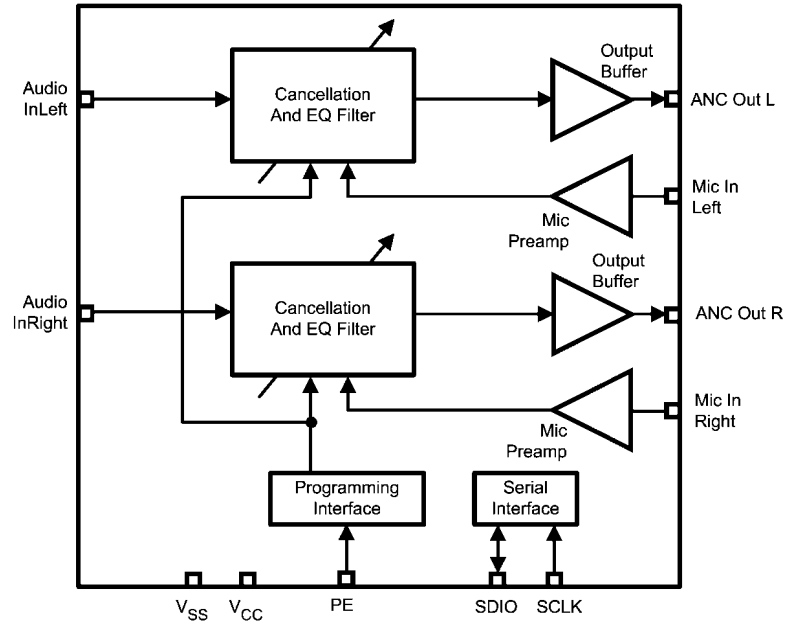
Applications

- Wired Stereo Headphones
- Stereo Bluetooth Headphones
- Over-the-ear or On-ear Feedback design



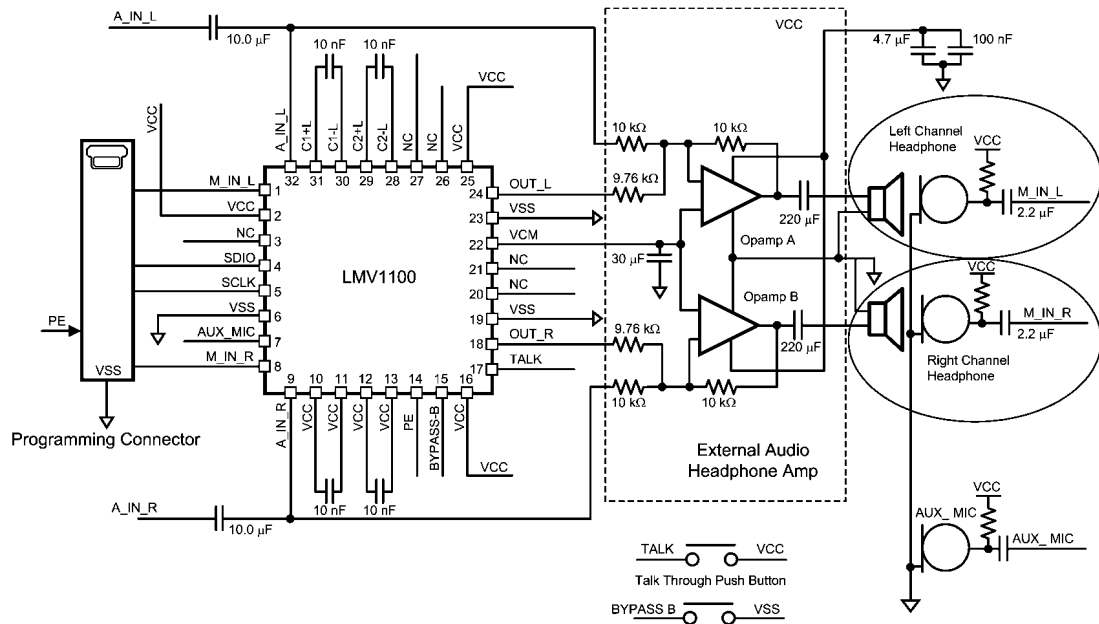
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Block Diagram



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Typical Applications Circuit



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Notes

LMV1100

Notes

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Switching Regulators	www.national.com/switchers	Distributors	www.national.com/contacts
LDOs	www.national.com/ldo	Quality and Reliability	www.national.com/quality
LED Lighting	www.national.com/led	Feedback/Support	www.national.com/feedback
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