
PRODUCT INFORMATION

Vol.96

Clear Sound Controller IC Developed

One-way speaker system audio quality improved by unique Sanyo algorithm.

LA2655V

Overview

Since cost reduction is important in popularly priced audio and video equipment speaker systems, most of these systems adopt one-way speaker systems in which single-driver speakers are used for the left and right channels. However, in addition to the popularity of the audio CD, the market for high audio quality digital audio equipment, such as DVD, games, and personal computers, is growing rapidly. As a result, there is now a strong need for speakers with performance that can exhibit fully the inherent sound quality of digital audio sources in simple audio systems.

Since one-way speaker systems output the full audio range of low to high frequencies from a single speaker, a difference in the arrival time at the listener's ear between low and high frequencies occurs. In particular, high frequencies arrive first and low frequencies arrive somewhat later. As a result, listeners report that "the sound is muddy", that it is "not clear", or that it is "lacking in presence."

Sanyo has now developed a unique new algorithm and technology, "Plus Sound™"* that uses phase detection to compensate for this arrival time difference due to the audio band in one-way speaker systems and furthermore can correct, up to the limiting performance of the speaker itself, the attenuation in both the low band and the high band in the F characteristics (frequency) that shows energy values of the ranges. Sanyo is now releasing the LA2655V sound control IC that incorporates this algorithm.

Since the LA2655V can improve the characteristics of one-way speaker systems used in radio/cassette players, mini-component stereos, miniature TV sets, and other audio products, these products can now provide clear sound with an improved sense of presence. The LA2655V can be particularly effective in portable equipment, such as portable audio units and notebook personal computers, where miniature speakers must be used due to space limitations.

*: Sanyo has applied for registration of this algorithm "Plus Sound™" as a registered trademark.

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Features and Functions

- Provides improved audio quality from one-way speaker systems by incorporating the Sanyo algorithm “Plus Sound™”, which corrects delay and attenuation differences between high and low frequencies due to the characteristics of the speaker.
- Adjustable Clear Sound effect level (using external components)
- Provided in a miniature 20-pin SSOP package.

Specifications

Maximum Ratings at Ta = 25°C

Parameter	Symbol	Ratings	Unit
Maximum supply voltage	Vcc max	13	V
Allowable power dissipation	Pd max	150	mW
Operating temperature	Topr	-25 to +70	°C
Storage temperature	Tstg	-40 to +125	°C

Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Ratings	Unit
Recommended supply voltage	Vcc	9.0	V
Operating supply voltage range	Vcc opg	4.5 to 12.0	V
Control data high level	VIH	25 to Vcc (Vcc = 9V)	V
Control data low level	VIL	0 to 1.5 (Vcc = 9V)	V

Sample Availability

The LA2655V will be available in sample quantities in mid-April 2000 and in production quantities in October 2000.

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