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Industry's Fastest CD-R/RW Signal-Processing IC Achieves a 12× Write Speed

BURN-Proof technology achieves error-free writing

LC898023, LC898093

Overview

Recently, the demand for CD-R/RW drives has been increasing rapidly due to their use as data storage in personal computer systems. The market for these drives will reach 12 million units in 1999, and that figure is expected to double in the year 2000. While most of the currently available CD-R drives provide a 4× to 8× write speed, there are increasing demands for even higher speeds to respond to the needs for even shorter recording times.

Sanyo has already developed and released CD-R/RW signal-processing ICs that achieve the industry's fastest write speed, 12×. These have been incorporated in Sanyo-brand CD-R/RW drives and these drives are already shipping.

Sanyo has now incorporated their newly-developed "BURN-Proof" technology, a revolutionary technology that eliminates write errors, into these ICs to develop the LC898023 and LC898093 products. These ICs will be available in sample quantities in mid-November 1999 at sample prices of ¥3,000 and ¥2,500, respectively.

The functions provided by these ICs support 12× write and 40× read speeds, and include CD encoder/decoder, CD-ROM encoder/decoder, digital servo, write strategy, ATIP demodulator, ATIP decoder and PC interface functions. In addition, Sanyo's BURN-Proof functionality has been incorporated in software in these system-on-chip ICs.

The LC898023 includes a SCSI interface that supports Ultra SCSI, and the LC898093 includes an ATAPI interface that supports Ultra DMA 33. Otherwise, these two ICs provide identical functionality.

Recording at high speed on CD-R/RW media requires a write strategy function that performs write control optimal for the disc actually being written to, since CD-R/RW media manufactured by different manufacturers has different characteristics. Sanyo CD-R/RW ICs incorporate a Sanyo-developed write strategy function that performs stable and high-precision pulse width control. This function eases the difficulties both in optical pickup matching during drive design as well as in the design of

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drives that can handle a wide range of CD-R/RW media.

Since these ICs include all the digital signal-processing circuits required for CD-R/RW drives that provide high-speed recording, and also incorporate Sanyo's newly-developed BURN-Proof technology, these ICs can contribute to end-product simplification and shorter development cycles.

Features and Functions

- BURN-Proof technology achieves error-free recording.
- Supports 12× write and 40× read speeds.
- CD decoding and encoding functions
- CD-ROM decoding and encoding functions
- Subcode decoding and encoding functions
- Digital servo function
- Write strategy function
- ATIP demodulator, ATIP decoder, and wobble-CLV servo functions
- Personal computer interfaces
 - LC898023: SCSI interface (Ultra SCSI)
 - LC898093: ATAPI interface (Ultra DMA 33)
- CAV audio function
- Auto-sequence function
- Batch transfer function
- Multi-block transfer function
- CD-text support
- Buffer RAM mapping function
- Fabricated in a CMOS process. 3.3 V, 5 V supply voltage
- Package: 208-pin SQFP

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Sample Availability

The LC898023 (SCSI) and LC898093 (ATAPI) will be available in sample quantities in mid-November 1999 and in production quantities by spring 2000.

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