



ISD4002 Series

Single-Chip Voice Record/Playback Devices

120-, 150-, 180-, and 240-Second Durations

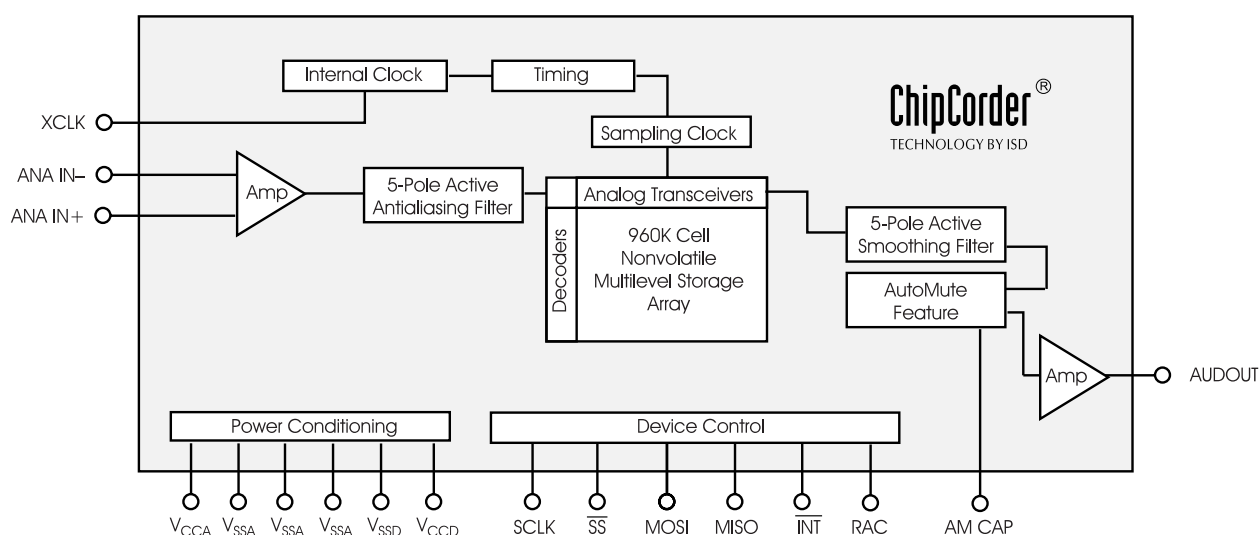
Advanced Information

GENERAL DESCRIPTION

The ISD4002 ChipCorder® products provide high-quality, 3-volt, single-chip record/playback solutions for 2- to 4-minute messaging applications ideal for cellular phones and other portable products. The CMOS-based devices include an on-chip oscillator, anti-aliasing filter, smoothing filter, AutoMute™ feature, audio amplifier, and high density, multilevel Flash storage array. The ISD4002 series is designed to be used in a microprocessor- or microcontroller-based system. Address and control are accomplished through a Serial Peripheral Interface (SPI) or Microwire Serial Interface to minimize pin count.

Recordings are stored in on-chip nonvolatile memory cells, providing zero-power message storage. This unique, single-chip solution is made possible through ISD's patented multilevel storage technology. Voice and audio signals are stored directly into solid-state memory in their natural form, providing high-quality voice reproduction.

Figure: ISD4002 Series Block Diagram



FEATURES

- Single-chip voice record/playback solution
- Single +3 volt supply
- Low-power consumption
 - Operating current:
 I_{CC} Play = 15 mA (typical)
 I_{CC} Rec = 25 mA (typical)
 - Standby current: 1 μ A (typical)
- Single-chip durations of 120, 150, 180, and 240 seconds
- High-quality, natural voice/audio reproduction
- AutoMute feature provides background noise attenuation during periods of silence
- No algorithm development required
- Microcontroller SPI or Microwire™ Serial Interface
- Fully addressable to handle multiple messages
- Nonvolatile message storage
- Power consumption controlled by SPI or Microwire control register
- 100-year message retention (typical)
- 100K record cycles (typical)
- On-chip clock source
- Available in die form, PDIP, SOIC, TSOP, and chip scale packaging (CSP)
- Extended temperature (–20°C to +70°C) and industrial temperature (–40°C to +85°C) versions available

Table: ISD4002 Series Summary

Part Number	Duration (seconds)	Input Sample Rate (KHz)	Typical Filter Pass Band (KHz)
ISD4002-120	120	8.0	3.4
ISD4002-150	150	6.4	2.7
ISD4002-180	180	5.3	2.3
ISD4002-240	240	4.0	1.7

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