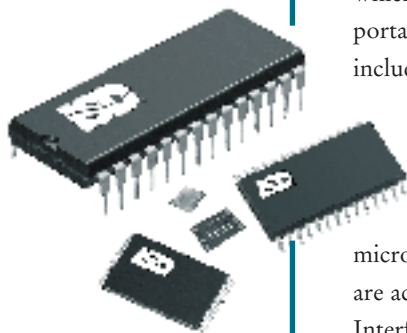


# ISD4000 Series

Single-Chip Voice Record/Playback Devices  
2- to 16-Minute Durations



The ISD4000 ChipCorder® Products provide high-quality, 3-volt, single-chip record/playback solutions for 2- to 16-minute messaging applications which are ideal for cellular phones and other portable products. The CMOS based devices include an oscillator, antialiasing filter, smoothing filter, AutoMute® feature, audio amplifier, and high density, multilevel Flash storage array. The ISD4000 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 memory in their natural form, providing high-quality, solid-state voice reproduction.

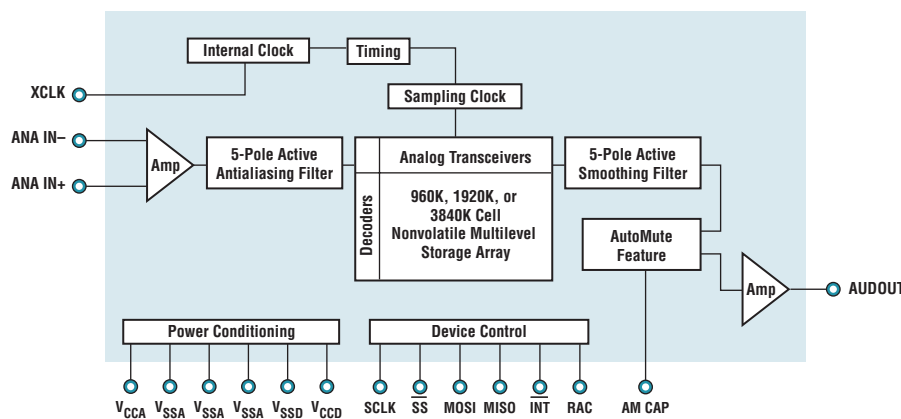
**ISD4000 SERIES CAN BE USED IN VARIOUS APPLICATIONS:**

- Cellular phones
- Portable Digital Recorders (PDR)
- Automotive
- Telephone Answering Devices (TAD)

**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  $\mu$ A (typical)
- Single-chip durations of 2, 2.5, 3, 4, 5, 6, 8, 10, 12 and 16 minutes
- High-quality, natural voice/audio reproduction
- AutoMute feature provides background noise attenuation during periods of silence
- No speech compression 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

**ISD4000 SERIES BLOCK DIAGRAM**





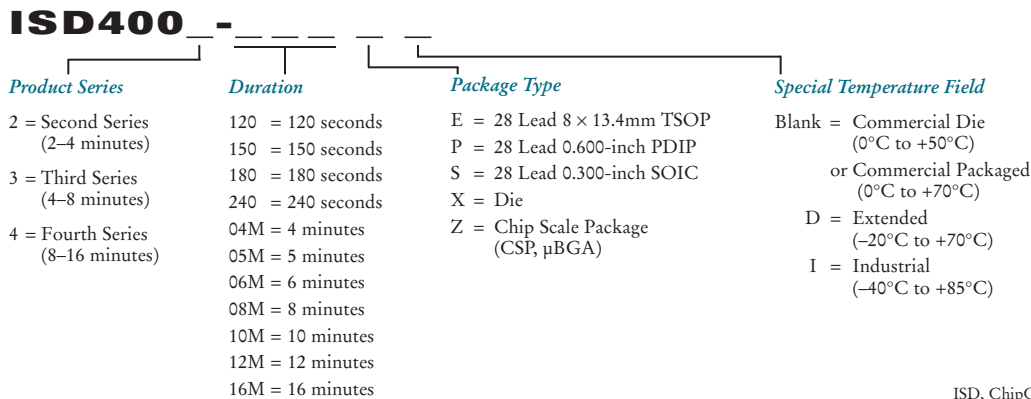
**ISD4000 SERIES AVAILABLE DURATIONS AND SAMPLING RATES**

	<b>8.0 KHz</b>	<b>6.4 KHz</b>	<b>5.3 KHz</b>	<b>4.0 KHz</b>
<b>ISD4002 Series</b> (2-4 Minutes)	ISD4002-120 (120 Seconds)	ISD4002-150 (150 Seconds)	ISD4002-180 (180 Seconds)	ISD4002-240 (240 Seconds)
<b>ISD4003 Series</b> (4-8 Minutes)	ISD4003-04M (4 Minutes)	ISD4003-05M (5 Minutes)	ISD4003-06M (6 Minutes)	ISD4003-08M (8 Minutes)
<b>ISD4004 Series</b> (8-16 Minutes)	ISD4004-08M (8 Minutes)	ISD4004-10M (10 Minutes)	ISD4004-12M (12 Minutes)	ISD4004-16M (16 Minutes)

**ISD4000 SERIES PACKAGE AND TEMPERATURE AVAILABILITY**

	<b>ISD4002 (2-4 Minute)</b>					<b>ISD4003 (4-8 Minute)</b>					<b>ISD4004 (8-16 Minute)</b>				
	<b>TSOP</b>	<b>PDIP</b>	<b>SOIC</b>	<b>DIE</b>	<b>CSP</b>	<b>TSOP</b>	<b>PDIP</b>	<b>SOIC</b>	<b>DIE</b>	<b>CSP</b>	<b>TSOP</b>	<b>PDIP</b>	<b>SOIC</b>	<b>DIE</b>	<b>CSP</b>
Commercial Die (0° to +50°)				•					•					•	
Commercial Packaged (0° to +70°)	•	•	•		•	•	•	•		•	•	•			
Extended (-20° to +70°)	•					•					•				
Industrial (-40° to +85°)	•		•		•	•		•		•	•		•		

**ORDERING THE ISD4000 PRODUCTS**



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All other trademarks are properties of their respective owners.  
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To Order Products or More Information:

**ADDRESS**  
2727 N. First Street  
San Jose, CA 95134

**PHONE**  
1-800-677-0769 (US Only)  
408-943-6666  
408-544-1786 (Fax)

**WEBSITE**  
www.isd.com

**e-mail**  
info@isd.com