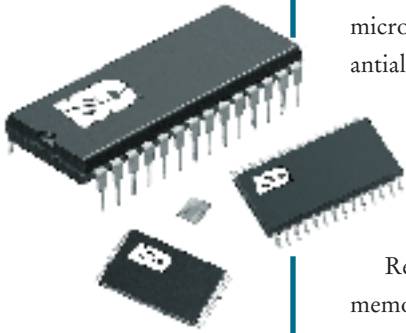# ISD2500 Series

Single-Chip Voice Record/Playback Devices
32-, 40-, 48-, 64-, 60-, 75-, 90- and 120-Second Durations

Product Brief

The ISD2500 ChipCorder® Series provides high-quality, single-chip record/playback solutions for 32- to 120-second messaging applications. The CMOS devices include an on-chip oscillator, microphone preamplifier, automatic gain control, antialiasing filter, smoothing filter, speaker amplifier and high density multilevel storage array. In addition, the ISD2500 is micro-controller compatible, allowing complex messaging and addressing to be achieved.

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.
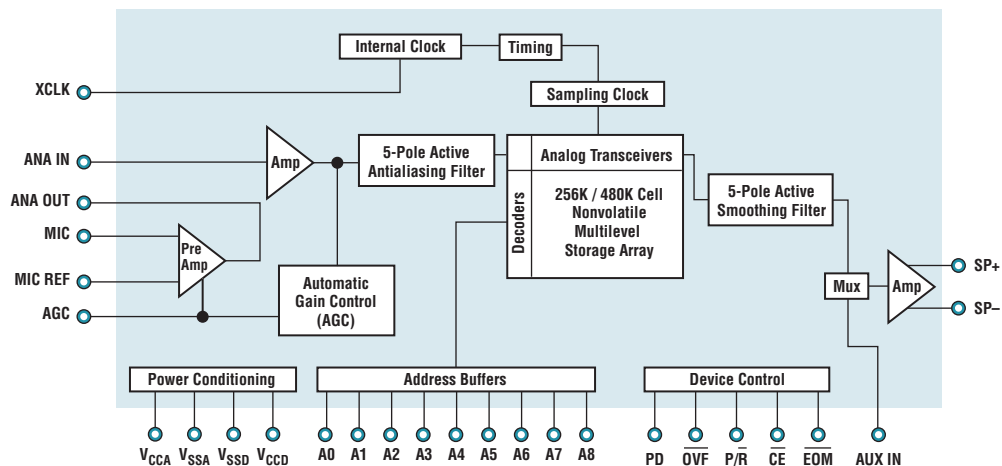
ISD2500 SERIES CAN BE USED IN VARIOUS APPLICATIONS:

- Personal message recorders
- Medical applications
- Caller ID systems
- Point of sale displays
- Announcement systems
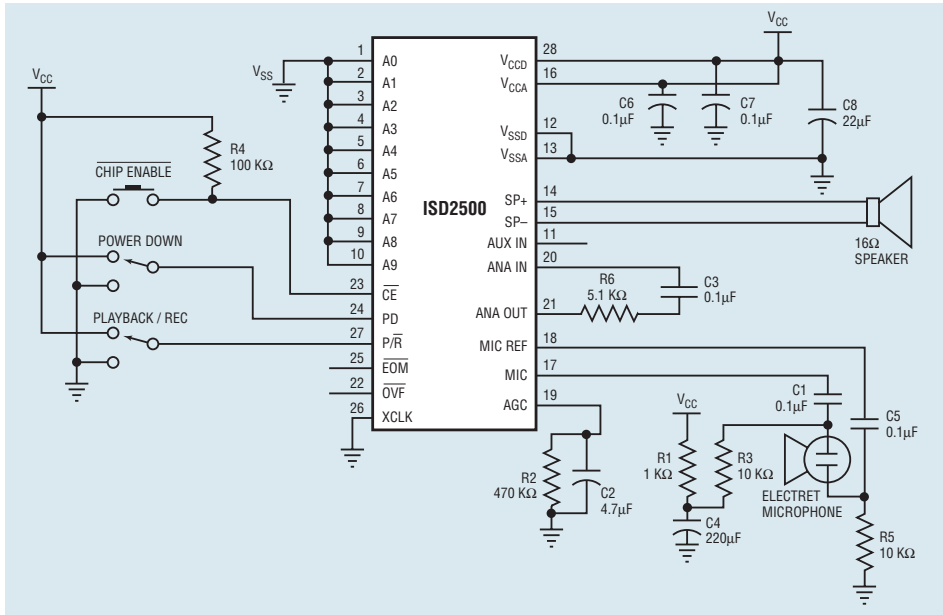- Toys
- Pagers
- Car stereos
- Security systems

FEATURES

- Easy-to-use single-chip voice record/playback solution
- High-quality, natural voice/audio reproduction
- Manual switch or microcontroller compatible playback can be edge- or level-activated
- Single-chip durations of 32, 40, 48, 64, 60, 75, 90, and 120 seconds
- Directly cascadable for longer durations
- Automatic Power-Down (Push-Button Mode)
- Standby current 1µA (typical)
- Zero-power message storage

- Eliminates battery backup circuits
- Fully addressable to handle multiple messages
- 100-year message retention (typical)
- 100,000 record cycles (typical)
- On-chip clock source
- Programmer support for play-only applications
- Single +5 volt power supply
- Available in die form, PDIP, SOIC and TSOP packaging
- Industrial temperature (– 40°C to +85°C) versions available

ISD2500 SERIES BLOCK DIAGRAM

ISD2500 SERIES APPLICATION EXAMPLE

ISD2500 application schematic. Pin connections: 1 A0, 2 A1, 3 A2, 4 A3, 5 A4, 6 A5, 7 A6, 8 A7, 9 A8, 10 A9, 23 CE, 24 PD, 27 P/R, 25 EOM, 22 OVF, 26 XCLK, 28 V_CCD, 16 V_CCA, 12 V_SSD, 13 V_SSA, 14 SP+, 15 SP−, 11 AUX IN, 20 ANA IN, 21 ANA OUT, 18 MIC REF, 17 MIC, 19 AGC. External components: R4 100 KΩ, R6 5.1 KΩ, R2 470 KΩ, R1 1 KΩ, R3 10 KΩ, R5 10 KΩ, C1 0.1µF, C2 4.7µF, C3 0.1µF, C4 220µF, C5 0.1µF, C6 0.1µF, C7 0.1µF, C8 22µF, 16Ω SPEAKER, ELECTRET MICROPHONE.

ISD2500 SERIES PACKAGE AND TEMPERATURE AVAILABILITY

	ISD2532 (32 Seconds)				ISD2540 (40 Seconds)				ISD2548 (48 Seconds)				ISD2564 (64 Seconds)			
	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE
Commercial Die (0° to +50°)			●					●				●				●
Commercial Packaged (0° to +70°)		●	●			●	●			●	●			●		
Industrial (−40° to +85°)		●	●			●	●									

	ISD2560 (60 Seconds)				ISD2575 (75 Seconds)				ISD2590 (90 Seconds)				ISD25120 (120 Seconds)			
	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE	TSOP	PDIP	SOIC	DIE
Commercial Die (0° to +50°)			●					●				●				●
Commercial Packaged (0° to +70°)	●	●	●		●	●	●		●	●	●			●	●	

ORDERING THE ISD2500 PRODUCTS

ISD25__ - __

Product Series
ISD2500 Series

Duration
32 = 32 seconds
40 = 40 seconds
48 = 48 seconds
64 = 64 seconds
60 = 60 seconds
75 = 75 seconds
90 = 90 seconds
120 = 120 seconds

Package Type
E = 28 Lead 8 × 14.4mm TSOP
P = 28 Lead 0.600-inch PDIP
S = 28 Lead 0.300-inch SOIC
X = Die

Special Temperature Field
Blank = Commercial Die
(0°C to +50°C)
or Commercial Packaged
(0°C to +70°C)
I = Industrial
(−40°C to +85°C)

ISD
A Winbond Company

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