

## Z893X3 DSP Single Chip Microcontroller Family

### Your Cost-Effective Alternative to Embedded Controllers

Simplify your product development, while reducing your overall system costs, with ZiLOG's Z893X3 family of *Totally Logical* DSP microcontrollers. The Z893X3 family's on-chip peripherals and low power allow greater flexibility and performance over traditional microcontrollers.

### Applications

- Card Scanners
- Security
- Speech/Voice Synthesis
- Wireless Transceivers
- Motor/Disk Control
- Power Tools
- Data Encryption

### High Integration at Low System Cost

- 8K Words of On-Chip Program Memory (ROM/OTP)
- 512 Words of On-Chip Data Memory
- 32 kHz Crystal-Driven PLL Clock to Reduce Power Consumption
- Software Wait States
- On-Board, 4-Channel, 8-Bit A/D Conversion
- 40 I/O Lines
- SPI
- Three Counter/Timers

### High Performance

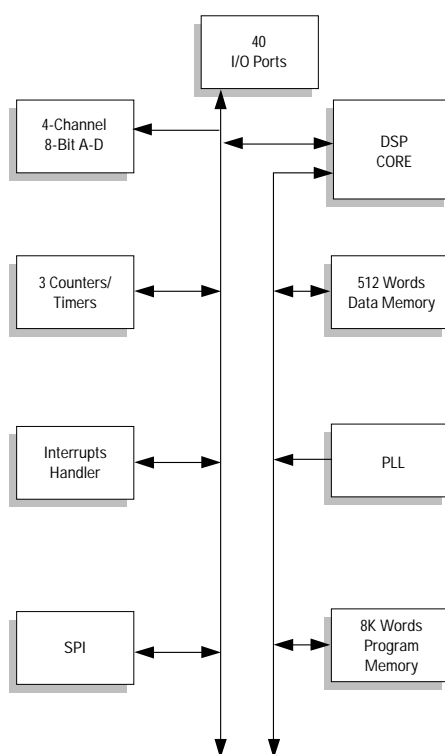
- 20 MIPS at 20 MHz (ROM/OTP)
- Modified Harvard Architecture
  - Two data accesses and a program access in a single cycle

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| Device                | Z89323                              | Z89373                           | Z89393         |
|-----------------------|-------------------------------------|----------------------------------|----------------|
| Type                  | Mask                                | OTP                              | ROMless        |
| ROM (words)           | 8K                                  | 8K                               | 64K (external) |
| RAM (words)           | 512                                 | 512                              | 512            |
| Instruction/Execution | 50 ns                               | 50 ns                            | 50 ns          |
| Package               | 44/80 PQFP<br>44/68 PLCC<br>64 TQFP | 80 PQFP<br>44/68 PLCC<br>64 TQFP | 100 PQFP       |

## Z893X3 Simplified Block Diagram



## Support Tools

Zilog provides comprehensive support tools that ease the development of digital signal processing and high speed control systems.

## Hardware

|                         |                            |
|-------------------------|----------------------------|
| In-Circuit Emulator     | Z8932301ZEM<br>Z8932302ZEM |
| OTP devices             | Z89373/273                 |
| Protopack 68PLCC        | Z8932300TSC                |
| Protopack 80PQFP        | Z8932302TSC                |
| OTP Programming Adapter |                            |
| 80PQFP/68PLCC           | Z8937300ZAC                |
| 44 Pin Accessory Kit    | Z8922301ZAC                |

## Software

|                 |             |
|-----------------|-------------|
| Macro Assembler | ZMASM0W0ZAS |
| C-Compiler      | Z893XXW0ZSW |

## Z893X3 Family Features and Benefits

|                     | Feature               | Benefit                              |
|---------------------|-----------------------|--------------------------------------|
| Low Power           | Static DSP Core       | Low Power-Down Current Drain         |
|                     | Flexible System Clock | Optimize to Performance Requirements |
| On-Chip Peripherals | A-D Converter         | Analog Sensor I/F                    |
|                     | Timers                | Time Control, Event Count, PWM, WDT  |
|                     | SPI                   | High-Speed Serial Access             |
|                     | 40 I/O lines          | Parallel Access                      |

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